

**MINISTRY OF  
EDUCATION AND TRAINING**

**MINISTRY OF  
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**DEVELOPMENT STRATEGY INSTITUTE**

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**EVALUATING THE FACTORS THAT HAVE  
IMPACTS ON THE URBAN ECONOMIC GROWTH  
IN VIETNAM  
(TAKING HANOI CITY FOR EXAMPLE)**

**Major: DEVELOPMENT ECONOMICS**

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**SUMMARY OF DOCTORAL THESIS**

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# INTRODUCTION

## **1. Research purpose:**

Urban areas are the places that has high rate in economic growth, plays the role of being a center for trade, service, industry, culture, education, technology development, labor resource, new professions; a center for domestic and foreign commercial trade, attracting investment, developing external economic; plays the role in increasing national budget revenue and in protecting security and defense. Up to 2019, urban areas only account for 10% of the nation's natural land, but urban economy contributes about 70% to the GDP annually. Thus, the urban economy plays a huge role in the national economy.

In the period 2011-2019, with an average urbanization rate of 3.8%, Vietnam is a country with a high urbanization rate in Southeastern Asia, but the urbanization rate in 2019 only reached 35% while the world has achieved an average urbanization rate of 50% since 2007. The urbanization rate is one of the criteria that defines whether a country belongs to a group of developed or developing countries. Urbanization also contributes to economic growth. Therefore, promoting urbanization in Vietnam will remain an indispensable and objective trend in the coming time.

However, urbanization in Vietnam are facing many challenges such as technical infrastructure system, urban planning, urban landscape architecture, environmental pollution ... this has a great impact on urban economic growth and national economic growth. Therefore, the study on the impact factors to overcome the shortcomings, avoid continuing to make mistakes in the urbanization process, contributing to promoting urban economic growth are very necessary.

So which factors influence the urban economic growth and make the difference of Hanoi city, make the difference between urban economy, rural economy and national economy so that the urban areas always make huge contribution and reach a high rate in economic growth, at the same time generate a strong attraction for the urban sides? In the thesis framework, the author would like to find out the answers for these questions, in order to come up with the solutions which improve the factors, help promoting and controlling economic growth of Hanoi and urban areas in Vietnam fast and sustainably.

In the world, researches about urban economy were first done in America in the early 1960s, after that many countries developed researches on urban economy. The economic growth models have been existing for a long time. However, the difference in choosing research samples, among the nations, periods and analytical variations make it impossible to generalize or apply a model to Vietnamese urban areas, especially when they have their own identities and characteristics.

In our country, the urbanization process goes after many countries, researches on urban economy has been started in Vietnam for about twenty years now. In the country, there are quite a few studies and analyzes on economic growth throughout the nation and regional economic growth, ... however, there are not many studies on economic growth within urban areas. Some topics have been mainly researched on urbanization, economic development, quality of growth ... While, unlike the regional economy, urban economic growth is the concentration of industries with high density. , agglomeration / clustering of economic activities in the urban boundary - an administrative region. Some other studies have assessed the impact of some traditional factors such as capital, population, labor, import and export, poverty reduction, environment, financial policy ... on economic growth but yet done any researches to simultaneously assess the impact of these traditional factors on urban specific factors such as location, scale, urban spatial planning, architectural works, and integrated systems. traffic infrastructure, urban compression and convergence, construction density, road density, land use coefficient, housing market... to urban economic growth. Meanwhile, for urban areas, these factors have made a big difference between urban and rural areas and had a huge impact on urban economic growth. Therefore, in addition to studying the overall economic growth for the whole country and the region, the study of urban economic growth under the influence of urban specific factors, taking into account the specific characteristics of the urban areas Vietnam and Hanoi city, proposing solutions and the extent to which the factors are improved in many areas for the rapid, quality and sustainable economic growth of Hanoi city and Vietnam's cities.

Vietnamese urban areas in general and Hanoi city in particular, with the role of being economic entities, are the growth poles which make contributions to the national economic growth, at the same time are important driven forces in attracting and spreading, making forces to promote the development in region and country.

In Vietnam, Hanoi is the second biggest urban area (ranks after Ho Chi Minh city). Therefore, Hanoi has enough urban characteristics such as planning, landscape architecture, infrastructure system, scientific technology and specific characters of the Vietnamese urban areas so that the author can choose the models, contrasting and comparing. The statistic figures of Hanoi are quite adequate, able to serve the research purpose of the author so as to achieve a higher accurate rate.

Moreover, Hanoi is a special urban area, the capital of Vietnam, a city that is in the top 17 biggest capitals in the world. Hanoi is now determining to become an international capital, stand side by side with other modern regional and worldwide capitals. Hanoi needs to lead in the revolution of reforming, changing to become an international urban area in the coming time. Besides, the issues that researches have shown and offered, Hanoi is the urban area that has enough potential to make needed reformation immediately and effectively

so as to make big resilience in the modern, sustainable model of economic growth. Therefore, Hanoi has been chosen as the representative for Vietnamese urban area to do research on in this thesis.

## **2. Research objectives and missions**

### ***2.1. Research objectives***

The objectives of the thesis are clarifying the theoretical issues about factors system that have impact on urban economy, in which study deeper on the specific urban factors; making utility about the particular cases – Hanoi city, in order to point out the pros and cons, so that come up with solutions that help improve the factors so as to promote urban economic growth in Vietnam.

### ***2.2. Research missions***

According to the research objectives, the thesis has decided that the particular missions for researching are:

1. Systematizing theoretical framework research on urban economic growth and which factors affecting urban economic growth, affecting urban economic growth.

2. Adding and clarifying the theory about urban economic growth and the factors affecting urban economic growth. Developing a theoretical framework of factors affecting urban economic growth, the connotation of factors, evaluation methods, evaluation criteria of factors affecting urban economic growth.

3. Using qualitative and quantitative assessment methods to point out the pros and cons of Hanoi's economic growth and the factors affecting Hanoi's economic growth.

4. Pointing out the cause that led to the shortcomings of economic growth and those of factors affecting economic growth in Hanoi.

5. Proposing new opinions to orientate economic growth model in Hanoi city and urban areas of Vietnam that linked to the Vietnamese characteristics, at the same time offering some solutions to improve, reform the factors, so that can promote economic growth in urban areas of Vietnam.

## **3. Research objects and scope**

### ***3.1. Research objects***

The research object of the thesis is urban specific factors and their impact on economic growth in Hanoi city. During the research process, the thesis also studies urban specific factors that affect the economic growth of some cities in the world, including the capitals of several countries. Since then, giving the research results to apply for reference, improve the factors in

the process of building development directions, planning and development plans for Hanoi capital in the period of 2021-2030.

### ***3.2. Research scope***

- *Content scope*: The thesis concentrates on studying 4 urban specific factors:

1. Location, urban scale;
2. Urban planning;
3. Urban landscape architecture;
4. Urban infrastructure system.

- *Spatial scope*: Studying the impact on whole urban administrative boundaries, including inner city and suburban areas.

- *Time scope*: Studying Hanoi city since 2010 to present time; Orientating and proposing the development solutions for the period 2021 – 2030.

## **4. Research methods**

### ***4.1. Approaching method***

To study on the topic, the author has approached in the ways below:

Firstly, from macro to micro approach: Approach from national economic growth to urban economic growth, from the general factors to the specific factors of the urban area.

Secondly, approach from theory to practice: Apply theory to analyze the factors affecting urban economic growth, then apply that theory into practice to check with specific cases which is Hanoi city.

Thirdly, the systematic approach: Consider each of the factors affecting urban economic growth in the same system. Each factor has its own effects as well as interacting with each other in the system on different aspects of growth, contributing to the change in quality and quantity of urban economic growth.

Fourthly, approach from general to particular: However, the impact of these factors on urban economic growth of cities in different regions will have distinct characteristics. Hanoi is the capital of Vietnam and has its own specific characteristics of a city located in the center of the northern key economic region. Therefore, when studying these factors in Hanoi, the author has evaluated the association with the specific characteristics of Hanoi city.

### ***4.2. Document collecting method***

Evaluating economic growth is a research activity that follows a developmental process. In the process of collecting information, documents

and data, there are many different sources such as data in the statistical yearbook of the General Statistics Office, data from the Urban Development Department (the Ministry of Construction. ), data from the master plan of socio-economic development and master plan of Hanoi city construction ... Data from these sources have significant differences. Therefore, the thesis has chosen to consistently use the latest data sources in 2019 published in the statistical yearbook of the General Statistics Office and Hanoi Statistical Yearbook for the research contents of the thesis. .

The thesis also collects additional documents from other sources such as legal documents of the Government, documents of ministries related to Hanoi city, national topics and projects related to Hanoi; books, articles published in specialized journals of other disciplines, fields ... as the basic sources of documents for research to support the main research objective of the thesis.

### ***4.3. Research and data processing method***

During the research process, the thesis has used some of the following main methods:

#### *- Analysis and synthesis method*

Analyze the collected statistics of Hanoi city and some other cities over the years to build data tables, use calculation formulas to analyze and compare statistical tables, considering the rate changes in Hanoi's economic growth, the quantitative results resulting from the change in the impact level of the factors, make an assessment and find out the number necessary to serve the content and comments of the thesis topic.

System analysis is also used in the thesis. Urban economic growth in the national economic growth system and put Hanoi in the urban system of the Red River Delta region, the northern key economic region to see the close relationship and the impacts of the regional urban system for Hanoi. From there, it is possible to bring the most realistic assessment of the factors affecting Hanoi's economic growth.

Using policy analysis method to see how, when a change in policy mechanism can change factors, these changes affect Hanoi's economic growth in particular and urban economic centers in general, to forecast the effectiveness and reasonableness of each policy mechanism, to help propose the improvement of the policy mechanism to improve the impact factors, promote economic growth.

From the data and documents collected in many different angles, the author has used methods of analyzing, synthesizing, generalizing and synthesizing data not only in detail over time but also for evaluation in space

to discover issues that need research, to make judgments, conclusions are the basis for promoting economic growth in Hanoi city. This method is used throughout the implementation of this thesis.

*- Theoretical research combined with practical summation method*

On the basis of theoretical research, the author has combined with the summary of practical problems and development status, and verified the research results. Thereby going back to get the vision, judgment, evaluation and the right ideas, close to the actual situation.

*- Comparative method*

During the research process, the author has compared Hanoi city with other cities in the country and internationally to see the strengths, weaknesses and characteristics of Hanoi city compared to other cities.

*- Forecasting method*

The author has used the forecasting method to present situations and scenarios for Hanoi's economic growth in the future when the factors affecting the current economic growth have been better improved. with present. These forecasts are the basis to propose directions and solutions to improve the factors affecting the city's economic growth in the coming years.

*- Expert consultation method*

The author conducts direct exchange and consultation with experts, scientists, managers on the thesis topic to refer to experience and receive valuable and valuable contributions to the thesis, at the same time. get more information and reinforce, evaluate more thoughts, comments, directions and suggestions of the author, especially for the impact assessment of factors and the orientation of economic growth model. Hanoi City.

*- Modeling method*

Using the model to simplify the input factors affecting economic growth, forming a relationship between the factors, reflecting the changes of factors, helping to better assess the impact and influence. of factors in the system to urban economic growth.

*- Graphs and diagrams method*

In the process of researching and analyzing factors, the thesis uses graphs, diagrams, and charts to be more vivid and easier to understand.

#### ***4.4. Research process***

The thesis is carried out in the following order: Starting from an overview of the research related to the thesis topic, studying the existing practical experiences of some cities in the world, thereby forming a research

framework on urban economic growth. On the basis of the developed research framework, practical research in Hanoi city and then assessing the current situation of factors and their impacts on economic growth in Hanoi, finding out the success, the aspects that have not been done yet and the causes of those deficiencies. From there, proposing perspectives, orientations and solutions to convert the economic growth model of Hanoi city and Vietnamese cities.

## **5. New contributions of the thesis**

*Theoretically:*

- **Firstly, the thesis has added and clarified the reasoning of urban economic growth, the difference between urban economic growth and national economy.**

- Secondly, the thesis has established research framework about the factors system that affect urban economic growth, added some issues in the reasoning of urban resource factors and their impact on urban economic growth. Simultaneously, the thesis has illuminated the connotation of the factors.

- Thirdly, the thesis has supplemented the reasoning and connotation about urban specific factors and their impact on urban economic growth. From those, we can evaluate more surely the importance of specific urban factors towards urban economic growth, contributing a more accurate rate of the evaluation of urban economic growth in the economic growth model.

***Practical applicability:* The thesis has proposed the evaluation, comparison about economic growth linked with urban characteristics of Hanoi city.**

Utilizing research framework and reasoning, connotation, the thesis has studied, combining the conditions, special features of Hanoi city and urban areas in Vietnam, and shown that:

- Firstly, the thesis has analyzed the reality in which are the factors that have impacts on the urban economic growth in Hanoi city. Besides the achievements, the thesis has indicated the limits of the factors and the reasons for those limits. Besides the causes such as investment capital, labor resource, science and technology, production industry structure, firm systems,..., the author has proved that other causes which are urban specific factors, for instance, location, urban scale, urban planning, urban landscape architecture, infrastructure system, urban infrastructure in Hanoi city are still weak and the city has not promoted full potential, advantages of the urban specific factors in economic growth and development.

- Secondly, the thesis has evaluated both positive and negative impacts of each specific urban factors on Hanoi's economic growth, comparing with other domestic and international urban areas.



- Thirdly, the thesis has offered new opinions to orientate the model of economic growth in Hanoi city and Vietnamese urban areas, linking to Vietnam's characteristic. Those are the opinions about growth models which are synchronically, harmoniously and effectively promoted and used among the resource factors, urban specific factors, urban infrastructure factors for economic growth.

- Fourthly, the thesis has proposed solutions in order to improve the factors, solve the negative effects, promote the positive sides of the factors towards urban economic growth, making sure that the factors are effectively raised and used, which can push the economic growth in Hanoi city and Vietnamese urban areas to keep up with the pace, the high and stable growth quality in the new era – digital era and worldwide connection in the 4.0 revolution.

## **6. Thesis structure**

Besides the Introduction, Conclusion, List of References and Appendices, the thesis is structured into 4 chapters as follows:

Chapter 1: Overview of research related to the thesis topic;

Chapter 2: Scientific basis to assess the factors affecting urban economic growth;

Chapter 3: Assessing the impact of these factors on economic growth of Hanoi city;

Chapter 4: Orientations and solutions to boost urban economic growth in Vietnam.

## CHAPTER 1

### OVERVIEW OF RESEARCH RELATED TO THE THESIS TOPIC

Through an overview of some studies related to the thesis topic, a number of conclusions have been drawn as follows:

- Existing works have contributed mainly in the following areas:

Most research topics on the overall economic growth of the national economy, regional economic growth, provincial economic growth, focus mainly on areas such as urbanization, quality of growth. economy, economic development, urban development and urban management. The factors studied are mostly general factors such as capital, population, labor, import and export, poverty reduction, environment, financial policy ... Regarding the impact assessment of individuals. Factors: Most of the research works on the impact of individual factors on an industry or the whole country. A number of studies on the factors affecting urban economic growth have studied the importance of the labor supply-demand market in the city, the effects of immigration, migration and the structure of industries in the city.

- Gaps to study:

Studies on urban specific factors such as location, size, urban planning, urban landscape architecture, urban infrastructure systems, ... affecting urban economic growth in Vietnam. There is a shortage in the South, so the law of mobilization and impacts of urban specific factors on economic growth has not been drawn. Meanwhile, for urban areas, these factors are one of the major differences between urban and rural areas and have a large impact on urban economic growth.

With studies in foreign countries, the differences in research sampling, between countries, between different periods and analytical variables make it impossible to generalize or apply a model completely. for Vietnamese cities and Hanoi cities, especially when the capital Hanoi has its own identity and characteristics compared to other cities. Therefore, the field of research still leaves research and in-depth analysis on urban specific factors affecting Hanoi's economic growth associated with the specific characteristics of Hanoi city and other cities. Vietnam.

- Direction for research of the author

In addition to assessing the impact of traditional general factors, the topic focuses on research to clarify the impact of urban specific factors

such as location factors, size, urban spatial planning, architecture. - How urban landscape, transport infrastructure, ... affect urban economic growth, to draw the law of movement and the impact of urban-specific factors on economic growth.

From the overall picture of urban economic growth under the combined impact of the factors studied above, the topic proposes options to adjust, reduce, and improve factors in a better direction. a common economic picture in order to build a modern, efficient and sustainable urban economic growth model, suitable for the new era.

## CHAPTER 2

### SCIENTIFIC BASIS TO ASSESS THE FACTORS AFFECTING URBAN ECONOMIC GROWTH

#### 2.1. Urban economic growth

If the economic growth of the national economy is an increase in income or output calculated for the entire economy in a given period, then urban economic growth is also an increase in the input revenue, quantity, production value of goods and services produced in a given period of time by an urban administrative unit.

##### \* Characteristics of urban economic growth

Urban economic growth is a component of overall economic growth, therefore, urban economic growth has common characteristics with economic growth. The general characteristics are:

- Urban economic growth also has two aspects, which are the quantity and quality of growth.

+ The amount is reflected through the evaluation criteria of increased scale and GRDP growth rate.

+ The quality of growth is an internal attribute of the growth process, reflected through the indicators that reflect the numerical efficiency of the growth and the ability to maintain it in the long term. The quality of economic growth is shown through the system of basic indicators such as: stability, harmony between economic growth and social issues; Environmental quality; inflation, budget deficit; trade balance, payment balance, foreign debt; investment efficiency unemployment through ICOR investment index ... Quality economic growth when improving and improving the quality of life, sustainable development, improving citizen welfare; increase the competitiveness of the economy, businesses and goods. Not only growth in breadth but also need to increase in depth such as labor productivity, efficiency of capital use .., That result is achieved when using resources and inputs effectively.

- If economic development is a standard norm that cannot be expressed by a single measure or index, economic growth is a specific number, related to an increase in real income per capita means an increase in the value of goods and services produced per capita in the city. Economic growth is a measure calculated with different degrees of accuracy depending on the choice of factors and models to calculate economic growth.

#### 2.2. Factors affecting urban economic growth

- Urban economic growth is affected by many factors with different levels of impact, first of all, the general factors such as capital, labor, TFP

combined productivity (faculty level learning and technology, managerial qualifications, institutions and efficiency of the legal system), human knowledge, economic structure, specialization and production capacity of economic sectors, efficiency operation of the enterprise system, ethnic structure, religion; community participation, political stability - social order and safety; national security, economic situation and developments, regional markets, international economic integration, global linkages and value chains ... including quantifiable factors such as capital investment, the number of employees ..., but there are also qualitative factors that are difficult to quantify such as cultural characteristics - customs and habits of urban people, socio-economic political institutions, ethnic structure, religion, community participation, economic situation and developments in the region, the impact of external factors ... There are many ways to classify the factors that affect economic growth. Urban economy such as:

- a. Inner – outer urban factor.
- b. Quantitative – qualitative factor.
- c. Input – output factor.
- d. Spatial and non-spatial matter factor.
- e. Traditional and non-traditional factor
- f. Artificial and natural impact factor.

- Some of the main factors affecting urban economic growth are:

#### A. Traditional factors:

Including investment capital, human resources, natural resources, science and technology level, enterprise system, policy mechanism

1. Capital sources, land resources and other natural resources
2. Labor source, labor quality, urban unemployment rate
3. The level of science and technology applied to the city
4. Enterprise systems in urban areas
5. Factors outside the city
  - National macroeconomic policies
  - Economic situation and developments in the region.

#### B. Key factors that characterize urban areas

1. Location and urban scale
2. Urban spatial planning
3. Construction works, architecture, urban landscape
4. Urban transportation system

### Combination of key factors affecting urban economic growth

No.	Classi - fication	No.	Factors affecting urban economic growth
I	Economy	1	Total income of urban government, Roads for urban capital generation
		2	Investment capital, investment capital rate in total income
		3	Investment capital structure
			- Proportion of investment from the budget, domestic private investment, proportion of FDI from foreign enterprises, ratio of ODA loans.
			- Proportion and level of budget revenues and expenditures, other urban government expenditures (recurrent expenditures, aid, diplomacy, intermediate costs...), ratio of urban government's capital reserves for future consumption.
		4	Economic structure of production work
		5	Enterprises
			- Number of enterprises, Enterprises' structure
			- Level of enterprises, Work efficiency of enterprises
		6	Specific markets of urban area
			- Land market, housing and urban real estate market; Stock market, urban finance; Import-export merchandise and labor market
	- Self-sufficiency in electricity, water, petroleum, food security and alternative energy sources		
II	Location, scale, material and urban space	7	Urban location, urban distance to big centers
		8	Urban acreage scale
		9	Planning and organizing urban space (area, height, coefficient of land use, density of architectures)
		10	Architecture, urban landscape
		11	Urban transportation system
III	Population, Labor resource, Job	12	Urban population scale (total population)
		13	Population density (Coefficients indicate population concentration)
		14	Chất lượng dân số (sức khỏe, thể lực...) Population quality (health, physical...)
		15	Culture, customs (awareness, industrial style, sense of law observance, sense of environmental protection, industrial working style, hard work,

			hospitality ...)
		16	Total labor force (Ratio of labor force / total population)
		17	Labor quality (Rate of skilled workers)
		18	Labor structure
			- Rate of apprentices, engineers, bachelors, scientists; managers
			- Proportion of domestic workers, export workers, and foreign migrant workers
		19	Employment: Urban unemployment rate
IV	Government and institutions	20	Urban government
		21	Development strategies, directions and plans; Attractive mechanisms and policies of urban governments
		22	Urban social security, order and safety
V	Intellectual (Science and technology, education and training)	23	Qualification of education and training
			- Order in the international education rankings
			- The rate of domestic students, international students, and international students coming to study
		24	Science and technology level
			Number of inventions, intellectual property and innovations that have been applied in practice
			Quantity of technology purchased or transferred from abroad; Number of inventions and inventions sold to foreign countries
			Technological level of urban management and administration
			Scientific qualifications of researchers
			The technology level of the manufacturing enterprise
	The technological level of the urban technical infrastructure		
VI	Urban environment	25	Urban environment
		26	Climate change
VII	Outer urban factors	27	State laws and macroeconomic policies
		28	Impacts of neighboring provinces and localities and satellite urban systems, inter-provincial and inter-regional connectivity infrastructure
		29	Market, economic and political situation in the world and in the region (The situation of the electricity and petroleum market ... on which the city depends)

Source: Statistics from the author's point of view

## 2.5 Experience of cities around the world

The cities studied above are large-scale cities with high growth rates, which have become and are becoming major economic centers in the world. Most of Vietnam's cities are still small-scale and in the beginning stage of development. Therefore, studying, learning, acquiring experiences to promote urban economic growth, especially in spatial planning, territorial structure, architecture, transportation system, urban housing settlement urban ... is necessary and useful, but it is necessary to choose experiences to suit the specific conditions of Vietnamese cities and Hanoi cities accordingly and effectively.

From the development of cities around the world, lessons for urban economic growth and development can be drawn as follows:

- About urban scale: Cities often forecast their population accurately in order to choose an urban planning design with an appropriate size for their total population. At the same time, the urban areas always have enough financial resources to carry out urban construction continuously for a certain period of time until it is completed according to the planning, not to let the suspended planning situation cause instability in citizen's life, which is also a great success in urban planning of countries. In addition, a system of satellite towns linked to the central city by highways or subways is also considered as the urban development scale.

- About spatial and structural planning: The cities with good spatial planning, the best conditions for economic development, invest considerable capital, energy and time into spatial planning research and design. The spatial and architectural planning, landscape aesthetics of these cities are always appreciated and implemented methodically, synchronously with the planning of technical infrastructure system, land use planning and norms environmental protection. Planning is implemented in detail to each residential area, each bus stop of the population, creating maximum conditions for people to participate in the public transport system. Every country has a very detailed spatial plan, the general urban plan, the subdivision plan and the detailed planning are made at the same time, simplifying administrative procedures and shortening the planning time.

- About urban landscape architecture: Urban areas are always regulated on the beauty of the city, especially the beauty of works on both sides of the street. All cities have beautiful and unique works in a certain field to become a key highlight, a spiritual symbol as well as a role in creating cultural identity and tourist attraction economy to the city.

- About urban transportation system: Developed countries all choose to use multi-level technical infrastructure (underground) to save land for construction, use public transport such as subway, bus and minimize personal



vehicles to minimize environmental pollution. The public transport system is reasonably connected to the residential areas to ensure that the majority of residents and tourists can move easily in and out of the city.

## **CHAPTER 3**

### **ASSESSING THE IMPACT OF THESE FACTORS ON ECONOMIC GROWTH OF HANOI CITY**

#### **3.1. Overview of Hanoi city**

##### **3.1.1. Real situation of Hanoi's economic growth in the period of 2010 to present time**

The total scale of GRDP (current prices) of Hanoi in 2019 reached 920.272,0 billion VND, equivalent to over 39 billion USD. Total GRDP (SS2010 price) in 2008 reached VND 178.605 trillion, increased to VND 760.014 trillion in 2019. The economic growth rate of the trade and service industry achieved the highest growth rate, followed by the construction industry construction and agriculture.

The economic structure continues to maintain the direction of gradually decreasing the agriculture, forestry and fishery sectors, increasing the service sector; In 2019, the structure of the agriculture, forestry and fishery sector only accounts for 1.94% of the total product in the area, industry - construction accounts for 22.6%, services accounts for 64.1% and product tax minus product subsidies accounted for 11.4%. The value of the contribution of the agricultural sector of Hanoi city only accounts for 3.1%. Per capita GRDP of Hanoi reached 3.150 USD, 1.61 times higher than the GDP per capita of the whole country, the growth rate of domestic product reached 7.12%.

The total state budget revenue in Hanoi City in 2019 reached 238.793 billion VND, 3.2 times as high as in 2008 (73.500 billion VND). In which, domestic revenue accounts for 91.8% of total budget revenue; revenue from crude oil reached VND 3.000 billion, accounting for 1.3% and increasing by 28.5%, revenue from customs and import-export activities accounted for 6.9%. Local state budget expenditures reached 81,363 billion VND, equaling 34% of total budget revenues, of which spending for investment and development reached 38,081 billion VND, up 22.5% over the previous year and equaling 90.4% of the budget estimate book delivery; recurrent expenditures reached 43.282 billion Dong, increased 8.7% and equal to 98.2%. Among recurrent expenditures, expenditures on education - training and vocational training increased by 10.6% compared to 2017 and equaling 100.2% of the estimate; spending on science and technology activities increased 61.6% and equaling 30.9%; spending on health activities, population and family increased by 3.3% and equaling 101.8%; ...

Export turnover in the province in 2019 reached 13.909 million USD, increased by 2.2 times compared to 2008. Import turnover reached 30.977 million USD, 2.2 times more than the export turnover. In which, most of the imported products tended to slow down, some imported goods fell sharply such as fertilizers and other commodity groups, but gasoline and oil imports were increasing due to the number of private vehicles participating in delivery throughput increased significantly.

Labor productivity is twice that of the whole country. By 2018, the growth rate of labor productivity value of Hanoi city in the period 2009-2018 will be 10.1%.

The labor force (workers aged 15 and over) in 2019 is 3.851 million. The labor force participation rate is 67.8%, of which 62.3% is in the urban area and 75.3% in the rural area. The number of employed people is over 3.7 million, accounting for 97.4% of the total number of employees aged 15 and over. In urban areas, 53.1% of the total number of employed people; 46.9% in rural areas. The rate of trained employees in 2019 will reach 60.7%; the urban unemployment rate is 3.1%. Science and technology were promoted by the city, and the management of technology was well implemented.

### Economic growth in Hanoi period 2008 - 2019

Targets	2008	2019	Average growth rate 2009 - 2019
1. Total population (thousand people)	6232,9	8.093,9	2,4
2. Urbanization rate	33,6	49,4	6,8
3. GRDP SS2010 scale (billion dong)	205531	760.014	14,0
- <i>Service</i>	106568	489.077	16,5
- <i>Industry - construction</i>	85523	169.959	7,1
- <i>Agriculture, forestry and fisheries</i>	13440	14.373	0,7
4. GRDP HH scale (billion dong)	178605	920.272	17,8
- <i>Service</i>	109898	589.366	18,3
- <i>Industry - construction</i>	87104	208.212	9,1
- <i>Agriculture, forestry and fisheries</i>	13004	17.827	3,2
5. GRDP HH scale by industry (%)	100	100	
- <i>Service</i>	52,3	64,1	
- <i>Industry - construction</i>	41,2	22,6	
- <i>Agriculture, forestry and fisheries</i>	6,5	1,9	
6. Industries' contribution to growth (%)			
- <i>Service</i>	56,78	56,49	
- <i>Industry - construction</i>	29,01	30,79	
- <i>Agriculture, forestry and fisheries</i>	3,99	2,97	
7. Per capita income (USD/capita)	2.850	3.150	
8. Export value (%)	133,6	112,0	
9. Investment capital (current price) – billion dong	99.013	150.000	
- VDT/GDP (%)	55,5	62,3	
10. Revenue (billion dong)	72.407	90.947	
- Revenue by GRDP (%)	37,8	37,8	

#### ***3.2.2. Evaluating the impact of factors on economic growth in Hanoi city.***

##### ***3.2.2.1. Impact of resource factors***

###### **a. Impact of investment capital**

Investment capital targets include fixed capital, working capital and a part of site clearance costs. The urban capital factor is not only pure capital,

but accounts for a large proportion of capital converted from urban land, housing and urban real estate, as well as other technical facilities.

Capital Investment is one of the important factors driving economic growth. Changes in capital size will have a direct impact on changes in the total product in the area. It not only contributes directly to the economic concentration as an input to the production process (quantity side), but also contributes indirectly through the promotion of technical progress brought about by new investment, due to economic advantages thanks to its large scale (qualitative contributions), it means improving economic efficiency. After expanding the administrative boundaries and with the urbanization process, businesses increased their investment capital to expand production and business, and the city focused on upgrading the infrastructure that made the economy growth is stronger than the previous period.

The capital structure of investment also influences economic growth. The investment capital of the state-owned enterprises has decreased over the years. The non-state economy, with the significant increase in the capital contribution of private companies and the foreign-invested economy, has made a significant contribution to the capital's economy, especially in the export sector. . It is expected that investment from the State budget and investment credit will gradually decrease, increasing investment capital from businesses, the population and the private sector. In the general context of the region and the world, priority for middle-income countries on ODA will tend to decrease, but FDI into Hanoi will gradually increase. FDI enterprises in Hanoi are becoming the pillars to promote the process of economic restructuring, improve industrial production capacity and participate in production networks and global value chains.

#### **b. Impact of labor resource**

Population: According to the result of total investigation of population and housing in 2019, population scale of Hanoi city in 2019 is 8.053,7 thousand people. The population density of 12 urban districts and 18 suburban districts is quite different. Urban areas reach 11,242 people / km<sup>2</sup> (or 11.24 people / 1m<sup>2</sup>), while in suburbs only reach 945.6 people / km<sup>2</sup> (corresponding to 0,946 people / m<sup>2</sup>). The population density in the inner city is ~ 12 times that of the suburban area. That proves that the urbanization of Hanoi is uneven, the inner city has a large consumption market for goods, products, services and labor market, thereby promoting production and business and making a great contribution. for the state budget, while the suburbs are sparsely populated, so the purchasing power and labor market are lacking and weak.

With that population size, in 2019, the people of Hanoi created a total domestic product of 920.3 billion VND. For the whole period 2008-2019, the average workforce of Hanoi each year created the Gross Domestic Product averaging 900 billion VND per year, ranking 2nd in the country. In addition, the large population will create a larger income from taxes, fees ... to create

capital for the urban government to invest and develop. Population size has contributed to the economic power of the city.

Consumption of goods is proportional to the population. The large population has also created for Hanoi a large market for products and goods with faster turnover. Population concentration also creates a large labor market, attracting a source of brainpower for development, synthesizing labor productivity, and the source of material wealth created for the city is also proportional to workforce.

Population (size, structure, quality and growth rate of population) has a great impact on the economic - social - environmental growth and development of Hanoi city. Reasonable population size, population structure, and good population quality are necessary conditions to form a good source of labor. Labor is an important factor in the production process, not only the quantity of labor but also the quality of labor. Especially, the non-material factors of labor such as skills, knowledge and experience of the labor force also contribute a lot to the production process, increasing the total product in the area. This is considered the human capital of the economy. Therefore, investment to improve the quality of human resources is the investment that increases the value of this important input factor.

### **c. Impact of Science and Technology**

With the position of the capital, the place where the largest concentration of leading scientists working at more than 80 universities and colleges, 113 scientific research institutions is concentrated. In which, the number of professors, associate professors, doctors and doctors of science living and working in Hanoi accounts for more than 65% of the total number of scientists in the country. Hanoi has a solid foundation for scientific and technological research and development.

Over the past time, science and technology activities have made important contributions in all fields of security, politics, economy, culture, and society of the Capital, increasingly asserting their role as leverage seven, is the driving force to promote the socio-economic development of the Capital.

### **d. Impact of environment and urban ecosystem**

The city's environmental protection is still inadequate. Environmental pollution has not been fully resolved, such as pollution on rivers and lakes, air pollution (factory exhaust, traffic emissions, smoke, dust ...). The city's air quality has shown signs of deterioration, especially the gateway to the inner city: the concentration of dust and pollutants has increased gradually and many areas have exceeded the permitted standards. The city has a large

proportion of private vehicles that cause environmental pollution and traffic congestion.

The sites: Nam Son (Soc Son) with an average volume of about 3.000 tons / day, Kieu Ky (Gia Lam), Xuan Son (Son Tay), Nui Thoong (Chuong My) and Cau Dien waste treatment plant, Shanxi Seraphin. However, the city's solid waste landfills are about to fill.

The above environmental problems have affected people's health, increased respiratory diseases, reduced productivity and affected the economic growth of the capital.

### **3.2.2.2. Impact of urban specific factors**

#### *- The geo-economic of Hanoi*

Hanoi is located in the center of the Red River Delta, where land is relatively flat, less affected by natural disasters, floods, and favorable for urban construction and development as well as security and defense.

It is very easy for Hanoi to go to cities and towns of the North as well as the whole country by car, iron, water and air. Hanoi has 2 civil airports, is a traffic hub of 5 railway lines, 7 national highways passing through the center. Hanoi has an important position on two economic corridors Vietnam - China: Kunming - Lao Cai - Hanoi - Hai Phong and Nam Ninh - Lang Son - Hanoi - Hai Phong. These are the factors that closely link Hanoi with the centers in the country and create favorable conditions for Hanoi to strongly develop trade exchanges with foreign countries, to promptly receive information and scientific achievements and engineering of the world; participate in the process of international and regional labor division and integrate into the dynamic development process of the East Asia - Pacific region.

Therefore, Hanoi has an important geographical - political position, having special advantages compared with other localities in the whole convention. Ha Noi's geographic location has had a good impact and gives Hanoi a strength to promote trade, cultural, social, and economic growth and development.

#### *- Impact of urban scale*

For Hanoi, after expanding its administrative boundaries in 2008, Hanoi has a natural area of 335,859 hectares (3.6 times the area of the old Hanoi city). Hanoi capital is currently in the top 17 largest capitals in the world.

After expansion, Hanoi has a large urban land fund, relatively flat land, creating a large reserve land fund for Hanoi, which is very convenient for

urban development, industry, and construction modern, large-scale projects favorable for socio-economic development in the future.

Hanoi is expanding, has a large and convenient land bank for urban planning and development, with many domestic and foreign investors interested. According to the general planning of Hanoi city to 2030, a vision to 2050 approved in Decision No. 1259 / QD-TTg dated July 26, 2011 of the Prime Minister, forecasting the population of Hanoi to 2030 is about 9,0-9,2 million people. Population density to 2020 is 2.750 people / km<sup>2</sup>, by 2050 population density will reach 3.229 people / km<sup>2</sup>. Thus, according to this plan, the urban area of Hanoi city is very large, enough to accommodate the population size of Hanoi city up to 2050 with a relatively low population density compared to other capitals in the world.

**Table 12. Comparison between population scale of Hanoi and some cities in the world**

No.	Targets	Acreage (km <sup>2</sup> )	Population – thousand people	Population density (/km <sup>2</sup> )
1	Seoul (Korea)	605,5	10,3	17.009
2	Manila (Philippines)	636,0	10,5	16.497
3	Delhi (India)	1.483	16,8	11.320
4	Taipei (Taiwan)	271,8	2,6	9.626
5	Bangkok (Thailand)	1.568,7	10,0	6.375
6	Singapore	699,0	4,2	6.066
7	Kuala Lumpur (Malaysia)	243,0	7,99	5.859
8	New York (The U.S)	2.187,1	12,5	5.699
9	Tokyo (Japan)	8,547	38,1	4.500
10	Shanghai (China)	6.340,5	24,2	3.826
11	Jakarta (Indonesia)	2.682,3	8,7	3.253
12	Hanoi	3.358,0	7,9	2.410
13	Beijing (China)	16.410,5	21,5	1.311

*Source: Foreign press, foreign statistical yearbook sites*

From the statistics of the table above, it shows that the planned population of Hanoi is quite low, does not match the actual needs and reduces

the development capacity of Hanoi. Therefore, it is appropriate to consider and calculate to increase the population density of Hanoi up to 2030 as high as the average of other countries in the region, so that Hanoi is not only a large city but also has a suitable population.

- *Impact of urban spatial planning*

According to the Decision No. 1259 / QD-TTg on July 26, 2011 of the Prime Minister approving the general planning of Hanoi city to 2030, with a vision to 2050, Hanoi is planned with main contents such as after:

Regarding functional subdivisions, Hanoi capital develops according to the urban cluster model, including the central urban area, 5 satellite towns and towns. The five satellite towns include Hoa Lac, Son Tay, Xuan Mai, Phu Xuyen and Soc Son. The satellite towns and towns are connected to the central city by a ring road traffic system combining radial axes, with links with regional and national traffic networks. The central city is separated from satellite towns and towns by green corridors (accounting for 70% of the city's natural area).

+ Urban central area includes Historic inner city area and expanded inner city area. The Hoa Lac satellite city has the main functions of science, technology and training. Son Tay satellite urban center is a cultural, historical urban center, tourist resort; the focus is on Son Tay ancient citadel conservation area, Duong Lam ancient village and new development of tourism center in association with Xuan Khanh lake, training services, healthcare and new urban areas. Xuan Mai satellite city is a service city - industry supporting the development of handicraft and handicraft village. Phu Xuyen satellite city is an industrial urban center, a traffic hub and transshipment of goods. Soc Son satellite city is a developed city in industry and aviation services, eco-resort tourism.

Until now, the 10-year planning of Hanoi has not yet been completed. Urban spatial planning of Hanoi city is still sketchy and inadequate, which is also one of the reasons that Hanoi has not yet fully utilized its urban infrastructure capital for economic growth. Shown on the sides as follows:

- The planning method faces many shortcomings, having no planning vision for the far future. The method of forecasting the population and the urbanization rate is still inaccurate. Specifically, Hanoi has a population plan up to 2020 of 1.316 people / km<sup>2</sup>, so the planning plan calculates the layout of socio-economic works such as schools, kindergartens, technical infrastructure systems. enough to meet this planned population. But in fact, by 2019, the population density of Hanoi was 2.398 people / km<sup>2</sup>, 1.82 times more than the forecasted population of Hanoi planning, the urbanization rate in 2019 was 65 %, by 2020 the population living in urban areas will exceed the forecast. Thus, the planning has not kept pace with the speed of



urbanization and rapid labor movement into urban areas, following the development of social and market reality, following urbanization and the needs of the people. Planning for a smaller population of people has resulted in Hanoi's lack of schools and kindergartens, a lack of public services, inadequate infrastructure and transportation systems, and overcrowding due to lack of design. population density like that from the start.

- Hanoi puts into action generally in 3 steps. The new Hanoi Master Plan divides and defines the functions of each area and has a number of simple indicators such as population and urbanization rate. By the population subdivision planning defined in the general planning (by 2020 it will be 7.3 to 7.9 million people), it will be divided for each zone, clearly defining the land use functions for economic sectors, principles of spatial organization, landscape architecture, population norms, land use, technical infrastructure, social infrastructure works for each subdivision, strategic environmental assessment. After completing subdivision planning, investors will know exactly planning information for effective investment planning. The detailed plan will continue to further subdivide and identify indicators of urban planning land use, requirements for management of architecture, landscapes, layout of technical infrastructure, and social infrastructure works. of each land lot in order to concretize the zoning plan.

It can be seen that, from the false forecast of the population and the selection of the population size to 2030 and 2050 that is not suitable for urban scale, then take this population to control the height of buildings and houses. Housing (if the project is high, the population will exceed the population specified in the planning), leading to horizontal development of Hanoi city, wasteful land use and ineffectiveness.

In a large area, due to the implementation of 3-step planning and the long time to complete 3 planning steps, it is actually called planning, but in fact, the detailed planning is very lacking. The Hanoi master plan was approved in 2011, but until 2017, the subdivision plans have been completed and approved. Currently, the detailed planning is very lacking. Therefore, the planning targets are simple, general, have not determined specific locations, have not taken into account forecasting factors according to the market, leading to nothing clear, investors cannot develop. investable. Therefore, planning sometimes still runs according to the proposals of investors, creating a begging mechanism, leading to local planning many times.

- Spatial planning has mostly taken account for simple technology, simple functional zoning and a number of issues such as cultural preservation, retaining green spaces, lakes ... but planning targets have not considered

economy, nor integrated and calculated. As for economic indicators, optimal plans to bring the highest economic efficiency to the city have not been given. Lack of regulations to maximize efficiency for economic growth and development is the biggest weakness in Hanoi's spatial planning. For example, in the entire historic inner-city area, from the south of the Red River to the ring road 2, a house of less than 8 floors can be built for conservation, while also in this area, people still live, need economic development, not all need to preserve, so the construction of buildings smaller than 8 stories in this area is not guaranteed to be economical. Urban planning has been implemented and implemented but has not yet paid attention to economic results of the planning.

On the contrary, in economic growth models, when considering the driving force that drives economic growth, economists mainly consider traditional factors such as capital, labor, science and technology ... but not Attention to urban spatial planning factors is also a factor of great importance to promoting economic growth in order to promptly intervene in the indicators and methods of urban space planning in Hanoi.

- Land use and saving have not been ensured, economic growth and development indicators from spatial distribution, density, height are not ensured, land use coefficients have not been optimized and have not been created. the resilience of urban economic growth. The plan has not yet achieved effective economic growth in terms of construction density and land use coefficients because these indicators are contrary to the general trend.

- There has been not in sync with many other industries and fields: not clearly planning areas to build beautiful works that are urban highlights, not associated with architectural works and urban architecture regulations. Quality of planning in urban space, expressed in density and height, is limited. That also leads to not beautiful urban architecture of Hanoi, especially the two sides of the streets and main roads.

- The world's modern scientific and technological level has not been updated to the planning of infrastructure systems, has not been synchronized with the transport system and underground works such as the public transport system to save money fuel; multi-level, underground and overhead traffic system to save land; Not meeting the requirements to respond to climate change. The water supply and drainage systems still have many shortcomings. It only takes a heavy rain or lasts for about a week for Hanoi to face flooding.

- Implementation according to spatial planning has been slow. Weakness in spatial planning leads to difficulties and prolongs time for

enterprises in the implementation process, significantly reduces the development of businesses, significantly affects economic development.

- It has not created its own style and has not brought into play the national cultural identity of the capital of thousands of years of culture and national cultural identity of Vietnam, and has not yet exploited the planning elements to attract visitors international travel. In addition, the urban management according to the planning has not been strict, leading to an unsecured civilized urban order.

It can be seen that the urban planning up to 2030 that Hanoi city is doing is wrong and outdated, although it is only until 2020 and the city has not completed 3 planning steps, even continuing to implement it will cause constraining the capital's economic growth. Therefore, in the coming time, it is necessary to have a solution to formulate a new or adjust Hanoi planning associated with the economy in order to achieve effective growth and socio-economic development of the capital.

- *Impact of architecture, urban landscape*

These preserved architectural works of Hanoi, although not large, built for a long time, but when combined with the planning of the Old Quarter and the French Quarter, architecture combined with culture, history, The water surface, ecological greenery has turned the historic inner city area into a famous tourist area loved by many international tourists, annually bringing huge tourism revenue for Hanoi capital. In 2019, Hanoi welcomed nearly 29 million visitors, of which international visitors reached 7.025 million, tourism revenue reached 104,000 billion.

*Expanded inner city area* has not yet been promoted. New and modern constructions must include the National Convention Center (designed by German kts), My Dinh National Stadium (designed by Chinese contractors), Nhat Tan Bridge (designed by Japan. ), Hanoi Museum (German consortium design), 2 high-rise complexes, Kengnam commercial and housing complex (designed by Korea), Lotte shopping mall complex (designed by Korea ) ...

However, the above-mentioned special works at national level are not really beautiful and unique, have not left strong marks on the artistic value of architecture and are designed and designed by foreign countries. show. So, basically, in addition to the architectural works built from the generations of ancestors such as One Pillar Pagoda, The Pagoda of Literature, Khue Van Cac ... in the historic inner city area, until now, Hanoi capital city lacks modern, beautiful and valuable architectural works, demonstrating the economic strength, science and technology, the creative intellectual quintessence of the

Vietnamese, worthy of the symbol of capital, to make Hanoi worthy of a world-class city like capital of countries in the world.

In addition, the urban face of Hanoi is still quite messy, many main streets in Hanoi also appear many super thin, super distorted, mixed form, convenient to build somewhere, not according to the rules of development. development of space, lack of aesthetic and architectural arts, lack of green spaces and public open spaces. Landscape architecture, the urban exterior aesthetics - especially the area on the two sides of the street and public spaces are not considered properly. Most of the construction works, whether private capital or invested by the state budget, are not considered architecture, so the urban landscape of the city is not beautiful and lacks architectural features of the city dollar.

In addition to the reason due to the lack of strong economic potential and limited capital resources, Hanoi does not have the facilities of a modern society, Hanoi in particular and Vietnamese cities in general, lack of Legal corridors and sanctions implemented to mandate the mandatory beautification of streets and urban works and landscapes such as the City Beauty Law of other cities around the world. Although the Law on Architecture has been enacted, the provisions of the law on the construction of buildings must be beautiful to beautify the streets, beautify the cityscape, not yet stipulated in the law, urban architecture. It has not been combined in the process of urban planning and design, leading to the face of urban architecture that is not beautiful, many places are messy and patchy. Many buildings are old, degraded but have not been resolved by the law, for example the renovation of old buildings in the old quarter, rebuilding of old apartment buildings is slow and there is no appropriate mechanism.

Therefore, Hanoi has not fully utilized its physical capital resources with architecture to develop tourism and services, has not achieved the highest tourism revenue to contribute to economic growth in Hanoi.

- *Impact of urban transportation system*

The transport system plays an important role in the economic development of Hanoi capital by reducing transportation costs, promoting trade and production. Helping households increase access to markets, increase income, expenditure and access public services such as education and health.

Traffic network planning is not reasonable, has not been carefully calculated and outdated compared to the world. Therefore, the transport system and infrastructure system of Hanoi is generally still very weak and has not met development requirements, causing traffic congestion, reducing labor

productivity, increasing transportation costs. Large private car system increases dependence on raw materials such as gasoline, polluting the urban environment, affecting the health of the people. The transport system has not promoted trade and production, and has not brought into full play so that people can access better public services. Therefore, in addition to the positive impacts, the transport system in Hanoi also the above mentioned factors obstructing the process of economic growth and development.

**- Evaluating the impact of the factors in Hanoi city based on the model of production function growth Cobb-Douglas**

Analyze the real situation of economic growth in Hanoi city period 2015 - 2019

Economic growth in terms of input, there are 3 constituent factors: capital (K), labor (L) and total factor productivity (TFP), by production function:  $Y = F(K, L, TFP)$ . TFP is a synthetic factor reflecting the impact of science and technology, human capital, institutional aspects, mechanisms affecting the ability to receive, research and operate science, technology and capital. manpower into production and service activities in the economy. Among these 3 factors, K and L are considered as the growth factors in width and TFP is the growth factor in depth. If growth is made up mainly of labor and capital factors, the growth model is defined as the growth model in width. Conversely, the growth is mainly contributed by TFP, which is a characteristic of the growth model in depth.

Consider growth by input based on the criteria to evaluate the efficiency of using input factors such as capital (coefficient ICOR), labor (labor productivity), energy (energy consumption / GDP). The efficiency of using the inputs clarifies whether the growth model in width or depth is effective or not.

*a. Theoretical model*

To calculate the productivity impact of the aggregate factors (including qualitative factors such as science, technology, planning, efficiency of architecture, policy mechanisms ...) on economic growth, using the Cobb-Douglas production function model to analyze growth.

Treat capital (K) and labor (L) as the economic growth of investment. Therefore, the Cobb-Douglas production function used to consider the role of factors to Hanoi's economic growth in recent years has the following form:

$$Y = A_0 e^{rt} L^\alpha K^\beta \quad (1)$$

In the formula, Y is the output,  $A_0$  is the technological level in the base period, t is the time variable, r is the coefficient of progress and technology, L is the number of employees, K is the amount of capital produced,  $\alpha$  is the elasticity of capital and  $\beta$  is the elasticity of labor.

If we do logarithm 2 on the side of equation (1), we have:

$$\ln Y = \ln A_0 + rt + \alpha \ln L + \beta \ln K \quad (2)$$

Since the use of time series data to calculate the production, labor and capital functions are highly interrelated, this can easily lead to multicollinearity. To eliminate multiple collinearity, we assume that the wage rate remains constant and formula (2) can be converted to:

$$\ln(Y/L) = \ln A_0 + rt + \beta \ln(K/L) \quad (3)$$

Taking the time series data of output Y, capital K and labor force L and the least squares regression we will get A0, r and  $\beta$ .

### Statistics

The growth analysis model presented above requires time series data of Y, K and L. Using data from the General Statistics Office for research on Hanoi's growth model for the period 2015 - 2018

**Total Y output:** The output Y in the study is the total added value (GDP) of Hanoi calculated at constant 2010 prices, unit of calculation: million dong

**Labor (L):** Labor used in the study is the number of employees working in the national economic sectors and in both rural and urban areas. This can be a relatively accurate reflection of the investment in the workforce as required to contribute to growth, we assume that there are no differences between each worker in the workforce. about quality. Individual employee differences will reflect an investment in scientific and technological progress, as improving the quality and skills of workers is often the result of continued development of faculty education. learning and technology. Unit: million people

**Capital (K):** The capital used in the study is the reserve of production capital because it is an indicator showing the amount of capital actually used in the economy taking into account the rate of depreciation of assets (rather than invested capital, capital) accumulation or fixed assets). Unit: million VND. Using the calculation formula mentioned in Tran Tho Dat's study (2005), K is roughly measured by the following formula:

$$K_t = (1 - \delta)K_{t-1} + I_t \quad (4)$$

In which: K is accumulative capital  
I is annual increasing investment capital  
 $\delta$  is capital depreciation rate ( $\delta = 0,05$ )

To calculate Kt, we choose 2015 as the base year for Hanoi with the following calculation  $K(t) = GDP(t) * ICOR(t)$ . Labor volatility (L) is measured by the entire number of employed workers in the industry. Table 2.1 shows the data used to calculate the Cobb-Douglass production function.

**Table : Figure series of K and L used to measure production function Cobb-Douglass**

*Calculating units: million dong, million people*

<b>Year</b>	<b>K</b>	<b>L</b>
<b>2010</b>	2270951579	3514000
<b>2011</b>	2311464000	3559000
<b>2012</b>	2360337800	3736000
<b>2013</b>	2418566910	3763000
<b>2014</b>	2490312565	3781000
<b>2015</b>	2574713936	3868000
<b>2016</b>	2680134239	3900000
<b>2017</b>	2803242527	3927000
<b>2018</b>	2949263401	3987000
<b>2019</b>	3123089231	4049000

*Source: Summery from statistics and author's calculation*

**Calculation results:**

Combined with the GRDP data, using the estimation model  $\ln(\text{GDP} / \text{L}) = \ln A + \alpha \ln(\text{K} / \text{L}) + \text{rt}$  (described in chapter 1, model 2, page 45)

With the data in the table above with the use of SPSS software to estimate the OLS for the production function and obtain the results of the equation as follows:

$$\ln(\text{Y/L}) = 1,43 + 0,486 \ln(\text{K/L}) + 0,044t$$

From that, the result Y (GRDP) have the equation:

$$Y = 4,179e^{0,044} K^{0,486} L^{0,514}$$

The statistical test shows that the results are reliable. As follows:

+ Test R2:  $R^2 = 0,999$  not only explains the variables  $r$ ,  $\ln(\text{K} / \text{L})$  and  $\ln(\text{Y} / \text{L})$  have a close linear relationship, but also shows the numbers in the number table. Whether 11 is very consistent with the proposed equation.

+ F-Test: With  $\alpha = 0,05$ , we have the p-value of this test that takes value of 0, which shows that the regression equation is acceptable.

The variable input is capital ( $\alpha$ ) shows that a 1% increase in input capital can make Hanoi's GRDP increase 0,486%, the variable input is labor ( $\beta$ ) shows that if labor input increases by 1%, GDP in Hanoi increased by 0,514%.

The growth rate and the contribution rate of the TFP factor are presented in the following table:

**Table: Increase rate and contribution proportion of TFP in Hanoi city period 2011 - 2019**

Year	Increase rate (%)				Elements' contribution (%)		
	GRDP	Capital (K)	Labor (L)	TFP	K	L	TFP
2011	6,84	1,78	1,28	5,32	12,67%	9,62%	77,71%
2012	6,28	2,11	4,97	2,70	16,36%	40,71%	42,93%
2013	6,95	2,47	0,72	5,38	17,24%	5,34%	77,41%
2014	7,20	2,97	0,48	5,51	20,02%	3,41%	76,56%
2015	7,39	3,39	2,30	4,56	22,30%	16,01%	61,68%
2016	7,16	4,09	0,83	4,74	27,79%	5,94%	66,27%
2017	7,39	4,59	0,69	4,81	30,19%	4,81%	64,99%
2018	7,25	5,21	1,53	3,94	34,90%	10,83%	54,28%
2019	7,63	5,89	1,56	3,97	37,53%	10,47%	52,00%
<b>2011-2015</b>	<b>6,93</b>	<b>2,54</b>	<b>1,95</b>	<b>4,69</b>	<b>17,84%</b>	<b>14,47%</b>	<b>67,70%</b>
<b>2016-2019</b>	<b>7,36</b>	<b>4,95</b>	<b>1,15</b>	<b>4,36</b>	<b>32,67%</b>	<b>8,04%</b>	<b>59,29%</b>
<b>2011-2019</b>	<b>7,12</b>	<b>3,61</b>	<b>1,60</b>	<b>4,55</b>	<b>24,65%</b>	<b>11,51%</b>	<b>63,84%</b>

*Source: Author's calculation*

As we see, the contribution of these factors to Hanoi's economic growth is very different from year to year, in the period 2015 - 2018 the picture of the role of factors in Hanoi's economic growth has changed. change in the negative direction. On average for the whole period, TFP's contribution to the city's economic growth is the largest, accounting for 56.37%, and by 2018 it still accounts for 67.36% of economic growth. This shows that the factors of science and technology, architectural planning, transport infrastructure ... in the urban area have been promoted and have an impact on urban economic growth.

With the contribution of the TFP factor productivity factor, technological progress has been quite high, showing that the economic growth model of Hanoi is decreasing the trend of growth in width and to growth in depth and in line with the position of the capital. However, the contribution of TFP's skilled labor force is not equal, so the growth model of Hanoi is not as expected.

Based on the analysis and assessment of the factors affecting the growth model of Hanoi city in the period of 2008 - 2019 above, conclusions can be drawn on the current growth model of Hanoi. as follows:

(1) It can be seen that although there are factors changing in a positive direction, in general, the economic growth model of Hanoi is still appropriate, The transformation of the growth model in the coming time is is considered as the key to the realization of the goal of accomplishing the industrialization



and modernization of Hanoi.

(2) The aging and cumulative population is also decreasing due to the increasing environmental costs in the development process. The world is also changing, the shifts in global trade and investment models will be less conducive to export-driven growth and the industrial revolution 4.0. shaping and creating new risks and many other challenges.

The proportion of TFP contribution to Hanoi's growth is not stable due to a number of reasons.

Firstly, TFP's contribution to growth does not derive from within the TFP factor itself, but also depends on the efficiency of capital and labor in contributing to economic growth.

Secondly, the activities of scientific research and application of science and technology, especially high-tech science, are still low, thereby affecting the improvement in the contribution of TFP factor.

Thus, the contribution of the TFP factor to the city's growth is not really stable and tends to decrease, if Hanoi does not take drastic measures to promote research activities in the coming time deploying and applying high technology in production, the contribution rate of TFP factor is likely to drop below 50%. This shows that the trend of moving from a growth model in width to a growth model in depth in Hanoi is not really sustainable.

Therefore, Vietnamese cities, especially big cities that play a key role in the country's economic growth such as Hanoi and Ho Chi Minh City, Vietnam will have to choose new directions. It also means that it is imperative to adjust and change the current growth model if Vietnamese cities continue to be the engines of growth, making Vietnam a middle-income country by 2030 and a high-income country in 2045. However, in the context of this volatile and challenging world, how adjustments should Hanoi city make in the growth model direction? economic growth, and which factors need to be improved to achieve a modern economic growth model, suitable for the new era to build and develop Hanoi Capital into a driving force for the country's development.

## CHAPTER 4

### ORIENTATIONS AND SOLUTIONS TO BOOST URBAN ECONOMIC GROWTH IN VIETNAM

#### *4.1. Orientating economic growth model of Hanoi city until 2030.*

##### **4.1.1. Opinions about economic growth model**

(1). Economic growth is considered the most important factor for the successful construction of economic - social - environmental issues, social security ... of the city.

(2). Maximize all traditional resources such as financial resources (investment capital), knowledge (people, labor, science and technology) and promote the combination of urban specific factors to promote growth. economic growth and development of Hanoi city. In addition to efficiently exploiting potentials, advantages and maximizing internal resources, it is necessary to combine with external resources to efficiently use all resources to promote economic growth and development Capital Assembly.

(3). The model of urban economic growth should be interested in developing both in terms of quantity and quality of growth, in which people are considered as the center of development.

(4). Implement sustainable development, linking socio-economic development with economical use of natural resources and protection of the ecological environment. To closely combine socio-economic development with strengthening and consolidating national defense and security, ensuring political security and social order and safety.

(5) The model of economic growth in Hanoi city to 2030, with a vision to 2050, must be consistent with the national socio-economic development strategy, the planning of the Hanoi Capital region, the region. the Red River Delta and the northern key economic region;

(6) The economic growth model of Hanoi city is a growth model of a national economic engine, but still needs to preserve the traditional cultural identity of the nation. To bring into a full play and protect to the utmost traditional craft villages and historical relics of the thousand-year civilization capital.

Focus on improving the factors assessed above, combining building resources as inputs to adjust the economic growth model of Hanoi city in the coming time.

##### **4.1.1.1. Orientating economic growth model in Hanoi city**

*a. Developing the economic growth model of Hanoi city in the direction of the physical economic growth model, which is based on exploiting the economic efficiency of urban specific factors like spatial planning, urban infrastructure, architectural works, transportation system and infrastructure system, urban landscape. In addition to the factors of capital investment,*

labor, science and technology, these urban-specific factors are also an important input factor of the economic growth model. In which, some aspects are adjusted to bring into play the strength of urban specific factors as follows:

- + Urban spatial planning is not simply about having a structure with a beautiful horizontal urban structure, providing the best quality of life for urban residents, but it is necessary to focus and calculate. to economic indicators in urban spatial planning such as: Planning with population size of Hanoi, population density reaching as high as in populous cities in the world to create economic power. for urban areas, creating a labor market twice as large as the present.

- + Pay attention to the arrangement of functional areas (industry, tourism, services) to bring economic efficiency. Evaluate and analyze future economic trends of the city and surrounding areas, integrate the development of economic sectors in the urban area, plan specific directions, identify specific spaces for developed economic sectors.

- + Advancing urban land use norms, construction density and high land use coefficients to save land resources, avoid spreading urban development across the width. Housing development meets the needs of the population growth process.

- + Bold and encourage private individuals to auction land use rights, build skyscrapers, create more accommodation, offices for rent, commercial floors ... on the same unit area, exploit various positions in the building to make a profit for economic growth. Tax revenue increases with the height of buildings, skyscrapers will create huge revenue for urban governments to continue to invest, promote economic growth and development. Striving to 2030, Hanoi has at least 10 skyscrapers to generate a significant source of income for the urban government, and can confidently compete with other major cities and capitals in the world. about urban technical facilities.

- + Need to have specific regulations on the aesthetics, architecture and beauty of Hanoi city. A city of international standard and class cannot lack beauty in its architectural aesthetic, landscape, and urban art design. Especially for the capital Hanoi, it is the honor, the face of the country. Hanoi city needs to be built in the direction of beautiful, modern, civilized landscape architecture, open green spaces, beautiful, unique buildings, new, artificial wonders. Becoming a symbol of Hanoi city in the new era, the intellectual quintessence of the Vietnamese people, a testament to science and technology of construction, a convergence of excellent works of the country and the

world. but still do not lose the cultural identity of Hanoi capital. As such, Hanoi city will become one of the most beautiful and livable cities, attracting more international tourists than today, becoming a city ranked in the top cities with revenue. tourism is the highest in the world, contributing to promoting growth and strong transformation of the urban economic structure.

*b. Growth model turns into creative development and transformation*, in which the business is located at the heart of the innovation process. Hanoi needs to be the leading locality in the reform of administrative procedures.

*c. Growth model needs changing into growing based on boosting productivity*. To increase productivity, it is necessary to drastically improve all quality aspects of growth, including efficient resource allocation, improved quality of human capital, effective investment in infrastructure, and service delivery, as well as innovating and creating, developing human capital not only in education, but also in health care and basic services throughout the life cycle of the people as well as care. Elderly people and social protection ... so that it all results in increased productivity and improved quality of growth.

*d. Developing model of promoting digital economy*, applying scientific and technological achievements of 4.0 in economic reconstruction activities. promote digital transformation, develop new business methods and traditional non-contact services based on digital platforms, big data analytics and electronic payments, and use home work, online study and remote work, and make cashless payments...

*b. Developing model of growing green economy*, economical use of energy and resources. Moving from a growth model with negative effects on environmental protection and negative social impacts to a model of long-term sustainable growth with the goal of being friendly with the environment and for people.

*e. Growth model of safe business*. In the face of complicated epidemics in the world not only in 2020 but in the following years, Hanoi needs to do safe business, rearrange supply chains to focus more on the domestic market and diversify the market. foreign. Building an effective management and governance system and development

Solutions to boost economic growth in Hanoi city

#### ***4.1.2. Solutions to boost urban infrastructure of Hanoi city***

In order to maximize the urban-specific factors for the economic growth of Hanoi city, in the coming time, a considerable amount of investment capital should be spent to implement the following measures:

#### *4.1.2.1. Solution 1: Major reform of urban spatial planning method of Hanoi city.*

- Create new planning of Hanoi's space or adjusting the spatial planning of Hanoi capital. It is necessary to greatly reform the method of spatial planning, in which it is necessary to calculate and re-select the population size of Hanoi city to suit the size of the area and the urbanization rate, and at the same time should choose the Hanoi's population size is equivalent to that of other major cities in the world to create economic power for the city, creating a large labor market.

- Develop a uniform set of economic indicators in urban planning such as construction density, land use coefficient, floor area, building height, population density, economic density associated with the criteria. economy in terms of GDP created according to the planning plan, ... High construction density and land use coefficients to save land resources, avoid spreading urban development in width. Attaching importance to rational urban development according to height in order to optimize land use coefficient, economical use of land, preserve ecological environment and ensure food security, and bring the greatest revenue. for the municipality. Ensuring urban spatial planning is not merely a beautiful structure, horizontal functional zoning for the urban, providing the best quality of life for urban residents, but also promoting push and help optimize economic growth. To plan specific directions, identify specific spaces for economic development. Housing development meets the needs of the population growth process.

Make urban ecological planning into law, ensure urban development, limit the increase in construction land, reduce water gas, improve land and increase greenery land according to stages of development planning. ensure ecological safety, protect water sources, protect natural flows, develop sustainable urban areas. Take the main corridor of rivers, canals, along major roads, parks, large flower gardens, lakes, and agricultural lands; combining with flower gardens and green trees in residential areas to form an urban ecological system.

#### *4.1.2.2. Solution 2: Make official Hanoi's own regulations on beautifying the city, especially the two sides of the streets and architectural works.*

Make law and set out Hanoi city's own regulations on the beauty of the city, especially for architectural works. There should be specific regulations on the aesthetics, architecture and beauty of Hanoi city. A city of international standard and class cannot lack beauty in its architectural aesthetic, landscape, and urban art design. Especially for the capital Hanoi, it is the honor, the face

of the country. Hanoi city needs to be built in the direction of beautiful, modern, civilized landscape architecture, open green spaces, beautiful, unique buildings, new, artificial wonders. Becoming a symbol of Hanoi city in the new era, the intellectual quintessence of the Vietnamese people, a testament to science and technology of construction, a convergence of excellent works of the country and the world. but still do not lose the cultural identity of Hanoi capital. As such, Hanoi city will become one of the most beautiful and livable cities, attracting more international tourists than today, becoming a city ranked in the top cities with revenue tourism is the highest in the world, contributing to promoting growth and strong transformation of the urban economic structure.

Particularly, in addition to environmental sanitation and landscape factors, there should be sanctions in architectural design, specific regulations and legalization of the beauty of the city, especially for construction works on streets in Hanoi.

*4.1.2.3. Solution 3: Build skyscrapers, synchronically with transportation system and modern technological infrastructure.*

Functional division according to planning. Outside the boundaries of the old quarter, old quarter, heritage area to be preserved, planning new areas in which to boldly and encourage private individuals to auction land use rights, build skyscrapers, create to create many accommodation, offices for lease, commercial floors ... on the same unit area, exploiting many different positions in the building to create profits for economic growth. Tax revenue increases with the height of buildings, skyscrapers will create huge revenue for urban governments to continue to invest, promote economic growth and development. Striving to 2030, Hanoi has about at least 10 skyscrapers to generate a significant source of income for the urban government, solving the demand for accommodation, commercial offices and services for residents and businesses. in the city. At the same time, they can confidently compete with major cities and other capitals in the world in terms of urban technical facilities.

*4.1.2.4. Solution 4: Build up new and unique architectures, considering capital's symbol, attracting international tourists.*

Having solutions to generate greater revenue for the urban economy from the real estate market, from tourism development revenues and to attract tourists with beautiful and valuable architecture.

In addition to preserving and embellishing architectural works in the Old Quarter, preserving the aesthetic, landscape architecture and cultural

identity, traditional culture of the capital of Hanoi, in the coming time, Ha Noi needs to research and consider investing in the construction of beautiful and modern architectures, designed by Vietnamese people, eligible to be symbols of the city in the expanded scope, and at the same time as typical works. of the capital, to make Hanoi more beautiful, modern and civilized, worthy of being a model for the whole country in urban architectural planning, ensuring the aesthetics of the city.

In addition, these architectural works combine with the green space of the city including green corridors, green belts, green wedges and green buffers, urban parks, combined with river systems. hills, mountains, natural forests, agricultural areas ... form new artificial tourist areas of Hanoi, attracting strong tourism development, making great contributions to the capital's economic growth.

#### *4.1.2.5. Solution 5: Continuing conserving urban heritage and cultural characteristics to boost economic growth.*

It is essential to continue to invest in and preserve 5.175 relics of Hanoi associated with the cultural development of the capital and national cultural identity, promoting the tangible and intangible cultural values of the capital and the people. ethnic group, building an elegant and civilized Hanoi culture. Exploit heritage, architectural and cultural resources in the capital area to attract tourists, increase revenue for the urban government and promote economic development.

#### *4.1.2.6. Solution 6: Keep constructing housing systems and manage effectively real estate system.*

Implementing many urban housing reforms, in many forms, piloting and scaling up ... through the good operation of the financial market, land market, housing market, and housing settlement. in the society, diversify types of housing, mobilize many sources of capital, well solve the clearance, build technical - social infrastructure system for residential areas. Promote the development of 3 types of housing: affordable housing, public rental housing. Through speeding up the implementation of projects: renovating old condominiums, constructing resettlement areas, building large residential areas. Applying supporting policies: investment procedures, land policy, capital policy, civil status, employment settlement ...

#### *4.1.2.7. Slotion 7: Complete urban transportation system*

Gradually reduce the vehicles away from individuals according to the route. Considering the transport system a breakthrough field for development.

Diversified types of traffic: Airway, magnet train, railway (high-speed, normal ...), subway, waterways, high-speed road ...; Building a high-quality, multi-level and underground public transport system, with emphasis on space vehicles, with reasonable pick-up and down points, helping to reduce air pollution caused by emissions. the lowest level of toxicity generated in urban areas is annually. Connecting unified connection to form major traffic hubs, linking traffic hubs with commercial centers, creating a driving force to promote development of services, commerce ...; to unify ground traffic with underground traffic, manage and use underground space effectively.

#### **4.1.3. Solutions to promote the development of industries and fields in Hanoi city**

Including the solutions such as: Concentrating on restructuring the manufacturing industries in the city, Enhancing the innovation capacity of the business system, Implementing effective public investment restructuring, Developing and make good use of high-quality human resources, implement models of green economic development, protect the environment and respond to climate change; Building models of science and technology urban centers, smart cities: Using smart grid; low energy e-government, information and communication systems, Science and technology development.

#### **4.4 Proposals**

Proposing further studies to continue to study the impact of urban specific factors in a further direction.



## CONCLUSION

Orientation of the economic growth model of Hanoi city in the above directions is feasible, with scientific basis when improving the weaknesses, promoting the advantages of urban specific factors to improve the efficiency of socio-economic development, promoting economic growth.

From the research, the author has drawn the conclusion that, besides the traditional factors, the urban specific factors also have a huge impact and play an important role in the urban economic growth.

The thesis has made comments on the status of the above factors affecting urban economic growth, associated with the specific case of Hanoi city with its own unique position and identity. The author has discovered that the main reasons leading to Hanoi's economic growth have not been as expected.

The author has proposed 10 basic but important solutions to improve the traditional factors and urban specific factors affecting economic growth in Hanoi city. If these measures are synchronously implemented with high determination, the economic growth of Hanoi city will increase significantly, becoming a beautiful, livable city and a famous tourist city, tourism revenue ranks in the top compared to cities in the world.