Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 10, No. 4, 501-511
2026
Publisher: Learning Gate
DOI: 10.55214/2576-8484.v10i4.12713

The impact of foreign direct investment on local economic growth in Vietnam: A case study of Thai Nguyen province (1993-2024)

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Abstract: This research examines the relationship between foreign direct investment (FDI) and local economic growth in Thai Nguyen Province, Vietnam, during the period 1993-2024. Using a case study approach and descriptive statistical analysis based on secondary data, the research reviews realized FDI capital, FDI structure by investment partner and economic sector, and GRDP growth in the province over time. The findings show that FDI has played an important role in expanding social investment, accelerating industrialization, restructuring the local economy, promoting exports, and supporting employment creation. The most visible turning point occurred after 2013, when large-scale investment by Samsung and related supporting firms significantly increased FDI inflows and industrial output. However, the results also indicate that fluctuations in FDI growth were much stronger than fluctuations in GRDP growth, suggesting that the contribution of FDI to economic growth, while positive, was uneven and its spillover effects remained limited. The research provides empirical evidence from a long-term provincial case and offers policy implications for improving the quality, efficiency, and sustainability of FDI attraction in Vietnam.
Keywords: *Economic growth, Foreign direct investment, GRDP, Thai Nguyen province, Vietnam.*

1. Introduction

FDI is considered a crucial driver of economic growth, especially for developing and emerging economies worldwide. Through capital investment, technology transfer, enhanced management skills, and participation in global value chains, FDI contributes to increased productivity, job creation, and the structural transformation of national economies. Therefore, attracting and effectively utilizing FDI has become a central focus in the development strategies of many countries and localities.

Since the implementation of the comprehensive Doi Moi (Renovation) policy at the end of 1986, with its open economic policies, FDI has increasingly played a vital role in promoting economic growth and establishing a general economic model for Vietnam during the transition to socialism. Along with the rapid development of the national economy, localities and economic regions have become important economic units as investment attraction and implementation are increasingly decentralized. Differences in institutional quality, infrastructure, human resources, and industrial structure across localities have led to uneven impacts of FDI on economic growth, underscoring the need for in-depth empirical studies at the provincial level.

Thai Nguyen province is a typical example of a locality that has undergone significant changes thanks to FDI since 1993. In recent years, Thai Nguyen province has attracted an increasing number of foreign investment projects, especially in the processing and manufacturing industries, contributing to increased investment capital, expanded exports, job creation, and improved income for workers. These transformations have helped Thai Nguyen become an important industrial center in the midland and mountainous region of Northern Vietnam. Simultaneously, the economic growth of Thai Nguyen province has created favorable conditions for continued FDI attraction, demonstrating the potential for a reciprocal relationship between FDI and economic growth.

History: Received: 4 February 2026; Revised: 26 March 2026; Accepted: 30 March 2026; Published: 17 April 2026
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Although numerous empirical studies have investigated the relationship between FDI and economic growth in Vietnam, most have focused on the national level or on a few large, developed cities, such as Hanoi, Ho Chi Minh City, Hai Phong, and Da Nang. Empirical evidence at the provincial level over a long period remains limited, especially for localities undergoing rapid industrialization, such as Thai Nguyen. Furthermore, the extent and effectiveness of FDI's contribution to local economic growth remain a subject of debate, as the positive impact of FDI may depend on the absorption capacity, the structure of the sectors attracting FDI, and the degree of integration with the domestic economic sector.

Against this background, this study analyzes the relationship between FDI and economic growth in Thai Nguyen Province during 1993-2024, using gross regional domestic product (GRDP) as the main indicator of local economic growth. The study aims to clarify the scale, direction, and limitations of FDI's contribution to local development and to propose policy implications for improving the effectiveness of FDI attraction in the future.

2. Literature Review

Previous research generally reports a positive relationship between FDI and economic growth, although the magnitude and transmission mechanisms differ across countries and sectors. Nguyen [1] found a two-way relationship between FDI and economic growth across provinces and cities in Vietnam. Khaliq and Noy [2], using sectoral data for Indonesia, reported that FDI had a positive effect at the aggregate level, but this effect was not uniform across sectors. Behname [3] found a positive and significant impact of FDI on economic growth in Southern Asia. Mehic et al. [4] also showed that FDI positively affected economic growth in Southeast European countries. Hong [5] reported a positive effect of FDI on economic growth in China. In the ASEAN context, Kieu et al. [6] concluded that FDI promoted economic growth, while Tu [7] and Thu [8] found that FDI contributed positively to Vietnam's economic growth in both the short and medium term.

This research suggests that FDI can promote growth by supplementing investment capital, creating jobs, increasing labor productivity, facilitating technology transfer, and expanding export capacity. However, the benefits of FDI are not automatic. They depend on absorptive capacity, sectoral allocation, institutional quality, domestic enterprise linkages, and the ability of local economies to internalize spillover effects. Therefore, in addition to measuring the scale of FDI inflows, it is necessary to examine the structure and local embeddedness of FDI to assess its developmental impact more accurately.

3. Research Methodology

This research uses a case study approach for Thai Nguyen province in Vietnam to analyze the relationship and impact of FDI on local economic growth, measured through GRDP indicators during the period 1993-2024.

Data collection methods involve secondary data, including registered and implemented FDI capital, FDI structure by industry and investment partner, and GRDP growth data for Thai Nguyen province over the years. The main sources are the Thai Nguyen Provincial Statistical Yearbook, the Thai Nguyen Provincial Statistics Office, and official reports and documents from Vietnamese state management agencies.

Qualitative research methods are used to systematize the theoretical basis of the relationship between FDI and economic growth; to synthesize, analyze, and compare research results from both domestic and international sources related to FDI's impact. This study examines the FDI attraction policy and economic development process of Thai Nguyen province. The method clarifies FDI's role and impact mechanisms on economic growth, as well as factors influencing FDI's effectiveness in the local context.

The research uses descriptive statistics to analyze trends in FDI and GDP over different periods. Tables and charts are constructed to visually illustrate the relationship between FDI and economic growth in Thai Nguyen province, thereby concluding the extent and stability of FDI's impact on GRDP.

4. Theoretical Background

In reality, the purpose of FDI investors is not limited to seeking short-term profits, but rather to maximizing long-term benefits, expanding into new markets, achieving cost efficiency, securing resources, acquiring strategic assets, and leveraging institutional and policy advantages. FDI investors have the right to make independent investment, production, and business decisions and are solely responsible for profits and losses, without being influenced by political or other constraints. FDI activities are not only linked to the movement of capital but also to the transfer of technology, knowledge, and management experience, while simultaneously creating new markets for both the investor and the recipient. Today, foreign direct investment is often associated with the international business activities of multinational corporations. Many factors, including the economic institutional environment, educational level, quality of socio-economic infrastructure, urbanization, and macroeconomic stability, influence the relationship between FDI and economic growth. The economic institutional environment refers to the policy mechanisms for management and administration, as well as a country's economic legal system. A transparent economic management mechanism with reasonable investment incentives, along with a transparent economic legal system that aligns with market mechanisms and international practices, will significantly impact a country's ability to attract investors. The role of human capital, or human resources, in economic growth is often measured by educational attainment. A high level of education will create a skilled management team and a highly skilled technical workforce with a strong work ethic, meeting the demands of a highly competitive and technologically advanced economy. Economic infrastructure, such as transportation systems, irrigation, water supply, and drainage, airports, ports, and social infrastructure, including healthcare, education, cultural, and public facilities, if well-designed, will create favorable conditions for attracting investment, increasing economies of scale, and reducing costs in trade and exchange of goods. Therefore, it is a crucial factor in a country's attractiveness to foreign investors. Most FDI investors are more interested in countries with high urbanization rates, due to the advantages these regions offer: well-developed infrastructure, a high-quality workforce, the ability to adapt to new cultures, easy access to political communication channels, and greater security and safety during the investment and business process. Macroeconomic stability, such as moderate inflation and stable interest rates and exchange rates, is also an important factor in attracting foreign direct investment (FDI). This stability will help investors proactively develop and implement long-term, sustainable production and business plans, contributing to economic growth. In fact, the higher an economy's economic stability, the greater its ability to attract investment and the greater the benefits from FDI.

Foreign direct investment (FDI) can impact the economy across all sectors, including economic, cultural, and social. In developing countries, especially poor ones, the main expectation of attracting FDI is economic growth, with five primary impacts.

Firstly, FDI supplements capital for socio-economic development, thereby increasing national budget revenue. FDI flows naturally augment social investment capital, leading to the establishment of large multinational corporations and businesses, expanding and developing production and business on a large scale, and contributing to economic growth. Particularly in developing countries, which often have low capital accumulation rates, FDI is considered a crucial source of capital to supplement domestic investment aimed at economic growth. In Vietnam, most FDI enterprises produce and process export goods, accounting for over 70% of annual output and thus contributing significantly to the country's exports [9].

Secondly, FDI is one of the important factors driving a positive shift in the recipient country's economic structure. Currently, the participation of the FDI sector in many industries and fields, especially the concentration of FDI capital in the processing and manufacturing industry, high-tech agriculture, and some other industries, has created a breakthrough in productivity and product quality.

This is an important factor promoting the shift in the industrial-agricultural economic structure towards modernization, especially by diversifying agricultural products and increasing the value of exported agricultural products. This helps Vietnam reduce its dependence on agriculture and increase production value. On the other hand, industrial parks and export processing zones invested in by FDI have promoted urbanization and built modern infrastructure, creating a foundation for sustainable development.

Thirdly, FDI helps the host country develop human resources, create jobs, and raise workers' incomes. The FDI sector provides job opportunities for millions of workers. According to the General Statistics Office of Vietnam, the results of the Labor - Employment Survey in the fourth quarter of 2020 showed that the FDI enterprise sector created jobs for 4.88 million workers, accounting for over 21.9% of the total salaried workforce (22.2 million people) in Vietnam [10]. This number accounts for a significant share of the labor force in the enterprise sector, reflecting the FDI sector's important role in job creation in Vietnam. Industries that employ large numbers of workers in the FDI sector include manufacturing and assembly, especially in electronics, textiles, and footwear. Besides directly creating jobs, the FDI sector also indirectly creates jobs for many workers through supporting industries and other businesses within the supply chain of FDI enterprises, such as transportation, logistics services, and machinery maintenance and repair services, all of which are thriving, thereby creating more job opportunities for workers.

Fourthly, FDI creates a bridge for technology and engineering, giving poorer countries the opportunity to access more advanced technology, facilitating technology transfer, promoting knowledge dissemination, and improving management skills and labor skills. On the other hand, FDI enterprises often bring advanced technology and production processes, thereby requiring domestic suppliers to improve product quality and production standards, contributing to raising the skill level and competitiveness of domestic enterprises, thus promoting the modernization of the country, increasing social labor productivity, and ultimately contributing to overall economic growth. In reality, not all countries achieve this goal. Some localities attract a significant amount of FDI but fail to achieve the goal of technology and technical transfer. Another impact is that FDI may increase investment capital for the economy, but its contribution to growth is low. These impacts are considered failures of FDI-attraction policies or failures to fully utilize and waste this resource from an economic-growth perspective.

Fifthly, foreign direct investment promotes regional economic cooperation. FDI enterprises are often concentrated in industrial parks or key economic regions. This leads to the development of satellite businesses in surrounding areas, creating a positive spillover effect on the economy and employment. This impact is considered to indirectly contribute to changing the economic structure and labor ecosystem in each host country's locality. However, to maximize these benefits, policies are needed to encourage the development of supporting industries and enhance the capacity of domestic enterprises.

Besides the positive impacts mentioned above, FDI also has negative impacts that limit economic growth. This stems from FDI investors' goal of maximizing profit. Therefore, if countries and localities directly receiving FDI do not strictly manage FDI activities in accordance with international practices, this can easily lead to situations in which foreign direct investment enterprises manipulate, evade taxes, engage in transfer pricing, disrupt domestic markets, and cause losses of national revenue. On the other hand, FDI investors are often concerned with immediate benefits and pay little attention to long-term benefits. Therefore, if resource use is not planned rationally, it will lead to resource depletion, environmental pollution, water degradation, soil degradation and erosion, increased greenhouse gas emissions and air pollution, and pressure on biodiversity.

5. Results and Discussion

In the early 1990s, Vietnam's economy began to open up and attract FDI following the enactment of the Foreign Investment Law in 1987. Thai Nguyen, as an industrial province in the North, served as a gateway for socio-economic exchange between the northern mountainous region and the northern delta

ISSN: 2576-8484
Vol. 10, No. 4: 501-511, 2026
DOI: 10.55214/2576-8484.v10i4.12713

of Vietnam. In 1993, a joint venture project for coal mining and processing between Nui Hong Coal Company (Vietnam) and the South Korean Coal Industry Corporation (Korea) was implemented in Thai Nguyen province. This was one of the first FDI projects to lay the foundation for industrial development and to attract foreign investment in the province.

Recognizing that attracting investment is a key task and a crucial solution for the socio-economic development of Thai Nguyen province, the Provincial Party Committee, the Provincial People's Council, and the Provincial People's Committee have directed relevant departments, agencies, and localities to implement comprehensive solutions to improve the investment environment, make it attractive, provide information, promote potential, and invite investors to invest in projects in the province. Thanks to effective investment attraction efforts and support for businesses, Thai Nguyen has achieved significant success over the years.

Before 2010, Thai Nguyen province focused on developing transportation infrastructure, considering it a breakthrough and a crucial prerequisite for attracting investment and socio-economic development. In reality, the upgrading and construction of many new transportation routes, along with open and transparent investment attraction policies, have directly impacted the investment environment of Thai Nguyen, making the locality a bright spot in the northern midland and mountainous region with strong economic growth and attracting foreign direct investment (FDI) among the top provinces and cities in Vietnam.

As of 2024, Thai Nguyen province has attracted investment from 15 countries and territories, notably South Korea, China, Hong Kong, Singapore, Taiwan, and Japan. Among them, South Korean investors account for the highest proportion in both the number of investors and the total registered investment capital (Table 1).

Table 1.
Licensed foreign direct investment by investment partner in Thai Nguyen Province (cumulative projects still in effect as of December 31, 2024).

Investment Partner	Number of licensed projects (Project)	Registered capital (Mill. USD)
Korea	121	9.566.7
China	38	229.3
Taiwan (China)	4	8.2
Japan	4	139.2
Singapore	12	503.5
Germany	7	95.9
Malaysia	1	10.0
Hong Kong (China)	26	332.7
India	1	0.02
Seychelles	1	5.0
Italia	1	16.7
Thailand	1	23.1
America	1	4.1
Canada	1	4.0
Slovakia	1	0.04
Total	220	10.938.4

Source: Thai Nguyen Province Statistical Yearbook 2024

Statistics from Table 1 show that, as of 2024, out of 220 licensed projects, 121 were from South Korea (55%), with a total registered capital of US$9,566.7 million (87.45%), focusing on electronics manufacturing, components, and supporting industries. The scale and expansion rate of Samsung Group (South Korea) in Thai Nguyen are key factors driving growth and creating a ripple effect across other South Korean businesses. From the investor's perspective, high technical and management standards, large-scale operations, and frequent investment expansion are key factors that drive South Korean suppliers to locate nearby to reduce logistics costs and improve technical compatibility. In Thai Nguyen province, the provincial government has proactively prepared industrial land and support services to attract projects requiring high technical expertise and vocational training capabilities. This includes cooperation with universities, colleges, vocational schools, and traditional industrial sectors to help workers easily adopt new technologies. Furthermore, Thai Nguyen province has proactively implemented specific investment promotion activities in South Korea, most notably a seminar in Suwon (South Korea) in October 2023, aimed at directly promoting the province's image to Korean investors, in conjunction with national trade and investment promotion channels and economic diplomacy support. These activities have contributed to increasing the awareness and interest of Korean businesses in investment opportunities in Thai Nguyen province [11]

To achieve such results, the Party Committee and People's Committee of Thai Nguyen province have implemented policies to attract investors, such as implementing planning work by industry, field, and locality to orient investment toward localities and fields that align with local potential and development advantages, and to ensure sustainable development requirements.

Thai Nguyen province has set a direction for selectively attracting investment projects in the area, while encouraging investment attraction aligned with planning and economic restructuring policies, focusing on large economic groups with modern technology and ensuring compliance with environmental protection standards. Local policies are being strongly implemented to achieve this direction, including: Firstly, linking investment attraction with administrative procedure reform, effectively implementing the one-stop mechanism in carrying out investment procedures to gradually improve the investment environment to be open, friendly, and transparent; secondly, regularly engaging in dialogue with investors to promptly support and resolve difficulties and obstacles in the investment and business activities of enterprises, especially in compensation and land clearance; thirdly, encouraging investment attraction in the fields of agriculture, processing, and consumption of agricultural and forestry products. Fourth, focusing on investing in technical infrastructure connecting roads, water supply and drainage, stable electricity supply, and communication systems to support investors; fifth, increasing investment in education, training, and vocational training, encouraging and supporting vocational training, prioritizing training human resources to serve the development of key economic sectors, and training workers to supply industrial parks and clusters; sixth, providing vocational training for rural youth and building and developing a highly skilled technical workforce in key industries, fields, and products with advantages in the province.

5.1. Regarding the Scale of Foreign Direct Investment (FDI) in the Period 1993-2024

Thai Nguyen is considered to have made the best use of its advantages and created breakthroughs in attracting FDI capital. After more than 30 years of attracting investment, the FDI-funded economic sector has developed rapidly, becoming an important part of the economy and contributing to the socio-economic development of Thai Nguyen province, in particular, and the country as a whole. The scale of FDI implementation in Thai Nguyen province from 1993 to 2024 is shown in Table 2.

Table 2.
Implementation of foreign direct investment in Thai Nguyen province during the period 1993 – 2024.

Year	FDI implemented (Million USD)	% of total social investment	Year	FDI implemented (Million USD)	% of total social investment
From 1993 -2009	369.5	-	2017	16.31	59.55
2010	2.9	5.12	2018	387.2	46.47
2011	2.69	3.6	2019	386.02	29.97
2012	20.65	1.7	2020	366.01	36.3
2013	3.386.75	39.9	2021	111.3	40.2
2014	3.163.18	74.1	2022	320	40.04
2015	200.45	76.58	2023	274	37.25
2016	131.85	59.08	2024	614.4	42
Total phase 1993-2024				9.735.1	-

Source: Thai Nguyen Provincial Statistics Office and calculations by the authors.

Table 2 shows that FDI in Thai Nguyen province has been increasing annually and accounts for a large share of total social investment. From 1993 to 2024, FDI capital into Thai Nguyen province reached US$9,735.1 million, averaging US$304.22 million annually.

Before 2010 (1993-2009), Thai Nguyen had 40 FDI projects with a total implemented investment capital of US$369.5 million. In 2015, the province had 119 FDI projects with a total implemented capital of US$7,146.3 million. Among these, the Samsung Group's investment project in Yen Binh Industrial Park is noteworthy, with a registered capital of approximately US$6.38 billion. As of the end of 2020, the province had 212 foreign investment projects with a total implemented capital of US$8,415.7 million.

Notably, FDI attraction to Thai Nguyen province only increased significantly from 2013 onwards, driven by the Samsung high-tech complex in Yen Binh Industrial Park. In 2013, Samsung Electronics Group commenced construction of a US$2 billion high-tech complex in Thai Nguyen, focusing on the production and assembly of mobile phones and other high-tech products, with a designed capacity of approximately 100 million products per year. The Samsung project became the first billion-dollar project in Thai Nguyen province. The land clearance process and construction time were rapid, and the investment area was large, covering approximately 200 hectares. After one year of investment, by early 2014, the project's first factory, specializing in the production of mobile phones and components, entered the trial and final production stages, attracting a large number of workers and driving a dramatic increase in industrial production value compared to the previous period. Samsung Group's projects have contributed to the remarkable progress of Thai Nguyen province and made it a bright spot in attracting foreign direct investment. While at the end of 2012, before Samsung Group's investment, Thai Nguyen ranked 44th out of 63 provinces and cities nationwide in attracting FDI, by December 2013, the province had risen to 17th after two Samsung Group projects were granted investment licenses. As of September 30, 2016, the province had licensed 116 FDI projects, ranking 10th out of 63 provinces and cities. With a long-term strategy and innovative thinking, Thai Nguyen is emerging as an attractive destination for both domestic and foreign investors. By early 2024, Thai Nguyen ranked 10th among 63 provinces and cities nationwide in attracting FDI. Along with Samsung, many other South Korean investors have invested in Thai Nguyen province. These investment projects have directly become important links in Samsung's value chain; these companies participate in the production of components to create complete smart electronic products such as phones and computers bearing the Samsung brand, originating in Thai Nguyen and exported to markets around the world.

Samsung's investment of billions of USD in Yen Binh Industrial Park in 2013 created a ripple effect, with hundreds of projects continuing to invest in Thai Nguyen. Typical examples include the Nui Coc Lake National Tourist Area project, the urban development project on both sides of the Cau River, and other FDI projects supporting Samsung's investment in the industrial park. These FDI projects have helped transform Thai Nguyen from a province primarily reliant on metallurgy and mining into one focused on high-tech and supporting industries.

The increase in FDI projects has brought significant benefits to the socio-economic development of Thai Nguyen province. Besides the substantial increase in investment capital for the local budget, the foreign-invested sector has made a crucial contribution to exports. Before 2000, exports from the FDI sector accounted for a small share of Thai Nguyen province's total exports. However, since 2001, exports from this sector have contributed to the province's total export value and have continued to increase. Specifically, the export value of the FDI sector has increased significantly, from 9.17% (2006-2010) to 96.38% (2011-2015) and reaching 95% (2016-2020) of the total export value of Thai Nguyen province. In 2024, the export value of the foreign investment sector accounted for 97.3% of the province's total export value. Exported goods have also become more diverse. Before 2014, Thai Nguyen province's exports mainly consisted of garments, paper, various types of tea, ore, and iron and steel products. Since 2014, with the stable operation of Samsung Group's projects and supporting businesses, export items have included various types of mobile phones and phone components, as well as tablets. With these results, Thai Nguyen is currently one of the six provinces with the largest export volume in Vietnam, after Ho Chi Minh City, Bac Ninh, Binh Duong, Bac Giang, and Hai Phong.

** FDI investment structure by economic sector*

Table 3.
Licensed foreign direct investment in Thai Nguyen Province by economic sector (cumulative valid projects as of December 31, 2024).

	Number of projects licensed (Projects)	**Total registered capital (Million US dollars)**	***In the total registered capital (%)***
Processing and manufacturing industry	187	10.772.7	98.484
Agriculture, forestry, and fisheries	2	7.0	0.063
Water supply, waste management, and wastewater treatment.	2	34.5	0.32
Build	5	7.2	0.065
Wholesale and retail sale, repair of automobiles, motorcycles, scooters, and other motor vehicles.	9	7.4	0.067
Accommodation and food services	2	10.6	0.096
Real estate business	7	97.5	0.89
Other service activities	6	1.63	0.015
Total	220	10.938.4	100

Source: Thai Nguyen Provincial Statistics Office and calculations by the authors.

The structure of FDI capital by economic sector, with cumulative realized value as of December 31, 2023, is shown in Table 2. Table 2 indicates that FDI capital was invested in three manufacturing and service sectors in Thai Nguyen province. The majority of FDI capital was concentrated in the processing and manufacturing industry, accounting for 89.96% of the total registered capital. The FDI structure by sector suggests that FDI mainly invests in the assembly and processing of consumer goods for export within the processing and manufacturing industry, resulting in low added value and, therefore, a limited contribution to economic growth.

* The relationship between FDI and GRDP growth in Thai Nguyen province

FDI and GRDP growth in each locality are closely related and mutually influential. Foreign direct investment (FDI) increases social investment capital, thereby promoting economic growth. Conversely, economic growth creates conditions and incentives to attract and absorb foreign direct investment (FDI). However, in the short term, the interaction between FDI and GDP growth often does not follow the aforementioned rules because there are time lags between investment and the production of goods and services.

Table 4.
Growth of FDI and GRDP in Thai Nguyen province during the period 2010-2024.
Unit: % compared to the previous year

Year	**Realized FDI capital (%)**	**GRDP (%)**	**Year**	**Realized FDI capital (%)**	**GRDP**
2010	-81.29	10.41	2018	2.275	10.44
2011	-7.24	8.69	2019	-0.3	9.00
2012	667.7	5.11	2020	-5.18	4.24
2013	16.310	6.04	2021	-69.6	6.51
2014	-6.6	29.65	2022	187.5	8.59
2015	-93.66	33.21	2023	-14.38	5.56
2016	-34.22	16.35	2024	124.2	6.22
2017	-87.64	12.75			

Source: Thai Nguyen Provincial Statistics Office and calculations by the authors.

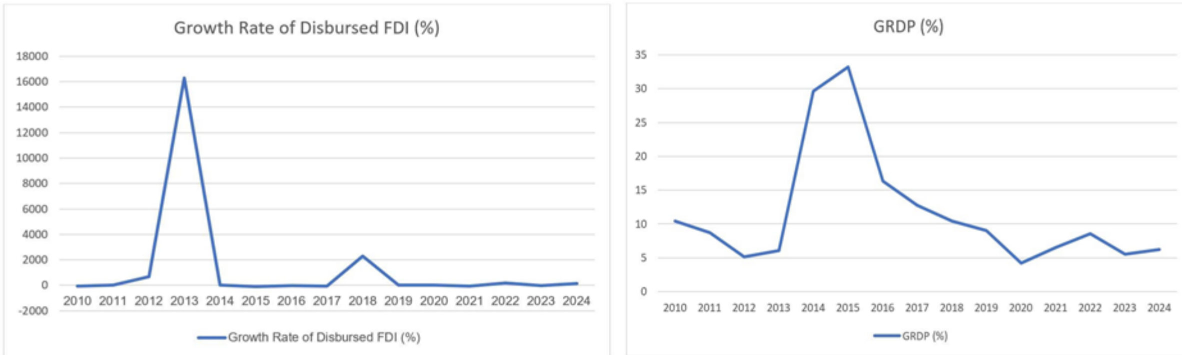

Figure 1.
Annual growth rates of realized FDI and GRDP in Thai Nguyen Province, 2010-2024 (% per year).
Source: Thai Nguyen Provincial Statistics Office and calculations by the authors - (Data in Table 3).

Table 3 and Figure 1 show that, during the period 2010-2024, the growth of foreign direct investment (FDI) in Thai Nguyen province was "uneven," inconsistent, and unstable throughout the period. There were years with exceptionally strong positive growth, such as 2013, with a 16,310% increase, and 2018, with a 2,275% increase. This increase was due to Samsung Group's investment from 2013, which led to rapid development and a significant contribution to the province's GRDP. Conversely, there were years with relatively low FDI growth, such as 2015, which saw a -93.66% increase due to key investments in the preceding two years (2013-2014). In 2021, there was a -69.6% decrease due to the impact of the COVID-19 pandemic, leading to a decline in foreign direct investment in the province.

(Table 3 and Figure 1) Meanwhile, GRDP growth has been relatively stable, with only minor fluctuations, except for 2014-2016, when Samsung Group's investment caused a sudden surge in the province's gross domestic product. Even amid the COVID-19 pandemic, GRDP growth in 2020 reached 4.24%, and in 2021, it reached 6.51%, higher than the previous national growth rate.

5.2. Results and General Observations

Thus, during the period 2010-2024, FDI growth in Thai Nguyen province was unstable, fluctuating significantly from -93.66% to +16,310%, while GRDP growth remained relatively stable. Throughout this period, 2010-2024, GRDP growth fluctuated from 4.24% (2020) to 33.21% (2015). In some years, FDI growth was very high, but GRDP growth was not commensurate. Conversely, in many years, FDI decreased significantly, but GDP growth remained high and stable. This shows that FDI has a significant impact on the province's GRDP growth in the medium term due to its strong, breakthrough effect in attracting large-scale investment corporations to the province, as seen in the 2013-2014 period. However, it has little impact on long-term GRDP growth, despite negative effects on socio-economic development, such as the Covid-19 pandemic in 2020-2021. This demonstrates that the province's economic development is stable and balanced, with strong FDI absorption and management capacity, limited dependence on FDI, high and sustainable GDP growth, a suitable economic structure, and a solid endogenous foundation.

Analysis of the impact of FDI on GRDP in Vietnam during 2010-2024 shows that FDI fluctuates in the same direction as GRDP and has a low impact on GRDP. This confirms that FDI is volatile, with large discrepancies in FDI growth rates over the years, while GRDP growth has been stable. Furthermore, in this period, FDI in direct manufacturing sectors accounted for over 90% and contributed to GRDP growth, but mainly focused on assembly, processing of consumer goods, and exports, resulting in low added value. The remaining investment went into other sectors such as real estate, healthcare, and education, which did not directly contribute to GRDP growth. In practice, it has also been observed that for many years, FDI growth was negative, but GRDP growth remained relatively high (Table 3).

6. Conclusion and Policy Implications

Through qualitative and quantitative analysis and evaluation of the relationship between FDI and GRDP during 2010-2024, it was found that FDI's impact on the province's GRDP growth was low. However, this impact is only relative, as GRDP growth is also influenced by many other important factors such as public investment, private investment, credit growth, technology transfer, and increased social labor productivity. In addition, FDI contributes to GRDP growth by promoting the development of supporting industries, creating jobs, and increasing export goods. In the future, Thai Nguyen will continue to implement preferential policies to attract deeper FDI, aiming for efficiency, sustainable development, and green development. To enhance the effectiveness of FDI and actively promote economic growth, the following solutions should be considered in the coming period:

Firstly, implement a policy to attract FDI that prioritizes large-scale projects applying high, core, modern, and environmentally friendly technologies, with high added value and the ability to accelerate social labor productivity. In particular, information technology projects linked to applied research and development should be prioritized as a driving force and have a ripple effect on socio-economic development within and outside the industrial park project area. Simultaneously, attract FDI projects in supporting industries, focusing on those serving Samsung Group and other electronics corporations; and attract mechanical engineering, manufacturing, and automotive production and assembly industries, along with supporting industries serving these sectors.

Secondly, encouraging FDI enterprises to transfer technology to domestic enterprises will create momentum for the country's industrialization and modernization, laying the groundwork for accelerating economic development. FDI is not merely capital; it also includes technology, production techniques, and advanced management methods. In the case of Thai Nguyen, absorbing and transferring new technologies and production techniques from abroad is an urgent requirement to accelerate the province's economic growth. Therefore, in addition to implementing a policy to attract FDI that prioritizes projects applying high-tech, core, and modern technologies, it is necessary to implement a system to encourage FDI enterprises to transfer advanced production technologies and management methods to local enterprises on the basis of harmonizing interests, ensuring mutual benefit, and creating conditions for local enterprises to gradually develop and reach the level of FDI enterprises.

Third, continue researching and evaluating market potential and investment partners, building documents and databases to serve investment promotion, and strengthening activities to publicize and introduce the investment environment and policies.

Fourth, improve the workforce's skills. The era when Vietnam attracted FDI based on its cheap, unskilled labor is over. The current trend is shifting towards attracting FDI into projects that apply high-tech and modern technologies and have high intellectual content. This requires a team of skilled managers and highly qualified technical workers who can adapt to modern production technologies. In light of these changes, the Vietnamese government and Thai Nguyen province need to implement policies to support the vocational education and training system, fostering collaboration between businesses and vocational training institutions, universities, especially those within the province, in combining theoretical and practical training. Emphasis should be placed on training human resources in high-tech and new technologies to meet the high-quality labor demands of the economy, particularly those in the FDI sector.

Fifth, review and adjust FDI-attracting policies in light of new and volatile global economic conditions stemming from the COVID-19 pandemic, the Russia-Ukraine conflict, and surging inflation across many countries. Continue to reform administrative procedures, simplify and publicize processes for FDI investment, ensure uniformity of procedures at the local level, and promptly address obstacles in licensing and adjusting investment certificates, creating favorable conditions for FDI investors.

Sixth, encourage FDI enterprises to strengthen connections with local domestic enterprises, creating favorable conditions for domestic enterprises to link production development, apply new technologies, and participate in regional and global production networks and value chains. At the same time, strengthen investment promotion activities and create favorable conditions for FDI investors to access the information they are interested in in an official, quick, and accurate manner, helping investors easily choose and decide on investments.

Funding:
This research was partially funded by the TNU- University of Sciences under the Grant Number: CS2023-TN06-21.

Transparency:
The author confirms that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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