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The Role of Taiwan's Venture Capital Industry in the Development of Fintech Startups: Resource Provider, Risk Manager or Value Creator?

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ABSTRACT

Purpose:
This study investigates the multifaceted role of Taiwan's venture capital (VC) industry in the development of financial technology (Fintech) startups. Specifically, it examines the VC industry's contributions as resource providers, risk managers, and value creators throughout the various stages of a startup's lifecycle—from establishment to growth and eventual exit.

Design/methodology/approach:
A qualitative research methodology was adopted, employing semi-structured in-depth interviews with industry experts. This approach enabled a comprehensive exploration of how the VC industry supports Fintech startups during the stages of establishment, growth, and strategic exit, focusing on the provision of resources, risk management practices, and value creation activities.

Findings:
The research findings highlight that Taiwan's VC industry predominantly acts as a resource provider during the early stages of Fintech startups, offering critical support such as funding, industry connections, and strategic guidance. As startups transition to the growth stage, VCs take on the role of risk managers, mitigating potential risks through portfolio diversification, risk control measures, and active oversight. In the mature stage, the role of VCs evolves into that of value creators, where they contribute to startups' strategic goals and facilitate value realization through carefully planned exits and additional operational support. Collectively, these roles underscore the VC industry's pivotal involvement in fostering the development and success of Fintech startups.

Research limitations/implications:
This study is limited by its reliance on qualitative data from expert interviews, which may not fully capture the breadth of VC practices across sectors or regions. Future research could include quantitative analyses or comparative studies to provide broader insights. Despite these limitations, the findings offer valuable perspectives on the strategic functions of VCs in supporting Fintech ecosystems.

Originality/value:
This study contributes to the limited body of literature on the role of venture capital in Fintech startup ecosystems, with a specific focus on Taiwan. By delineating the distinct roles of VCs across different stages of startup development, the research offers a novel framework for understanding how VCs drive innovation, mitigate risks, and enhance value creation. These insights are particularly relevant for policymakers, entrepreneurs, and investors aiming to optimize the impact of venture capital on the Fintech industry.

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1. Introduction

In the era of digital tech soar, financial technology (Fintech) is a disruptive innovation that has gradually replaced the traditional financial service model. In recent years, the development of global financial technology startups has been

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very active, showing a trend of rapid growth (Guild, 2017; Lee and Shin, 2018; Chemmanur et al., 2020; Kolokas et al., 2022). This situation also has the same occurred in Taiwan. According to statistics from the Taiwan Financial Supervisory Commission R.O.C(Taiwan), as of early 2025, there were more than 100 Fintech start-ups in Taiwan. Among them, payment, debit and credit, investment, insurance and other application fields were the most active.

In addition, the financing of these new companies has also shown a rapid growth trend, and the capital market has begun to pay attention to these emerging companies (Teigland et al., 2018; Imerman and Fabozzi, 2020; Langley and Leyshon, 2021). Financial industry of Taiwan has begun to cooperate with technology startups and launch various financial technology products and services to enhance their competitiveness. Therefore, Taiwan has also seen the emergence of some new financial technology startups with international influence. Furthermore, Taiwan also is the first country in the world to establish a Financial Regulatory Sandbox as a special law. In the foreseeable future, as the application of financial technology becomes more and more widespread, Taiwan's financial technology industry will have more exciting development.

Taiwanese Fintech startups are committed to applying emerging technologies to the financial sector. The technologies of artificial intelligence, big data, blockchain and other technologies are applied to creating advantages in the financial industry and further improving the efficiency and convenience of financial services. At the same time, the security of financial services will be further improved. The ecosystem of financial technology industry in Taiwan is gradually improving. In addition to new startups, many large financial institutions have also begun to emphasize the development of financial technology. These financial institutions actively cooperate with technology companies and jointly launch more innovative financial products and services. The government through relevant institutions such as the Financial Supervisory Commission actively promotes the development of Fintech and provides relevant support and assistance. The financial technology innovation experimental plan and financial technology innovation competition promoted by the government encourage financial institutions and technology start-ups to work together to launch more innovative financial services. At the same time, the rapid development of Taiwan's venture capital industry has provided more financial support and investment opportunities for Fintech start-ups. These venture capital industries through investment in new startups, provide financial support and industrial experience, and help them grow faster (Gomber et al., 2018; Lee and Shin, 2018; Imerman and Fabozzi, 2020).

The technological development areas of Taiwan's Fintech startups cover many different directions and application areas. It mainly includes digital payment system, blockchain technology, artificial intelligence technology, insurance technology, big data analysis, financial cloud computing and financial IoT technology. Digital payment has always been one of the important directions in the field of financial technology. It has gradually emerged in Taiwan in recent years and has achieved certain achievements. Several digital payment companies of Taiwan have successfully developed a variety of convenient payment tools, allowing consumers to complete payments more conveniently. Blockchain technology is also one of the hot topics in the financial technology field in recent years. Blockchain technology can help financial institutions realize decentralized financial transactions, and can improve the transparency and security of transactions. Taiwan's Fintech startups are also actively developing digital asset trading platforms and blockchain payment platforms based on blockchain technology applications. Artificial intelligence technology can help financial institutions conduct more precise risk assessment and customer analysis, and improve the efficiency and accuracy of financial operations. Many financial technology startups are using machine learning, natural language processing and other technologies to develop financial services with intelligent judgment capabilities, such as risk assessment, customer service, wealth management, etc.

Insurance technology is also one of the emerging directions in the field of financial technology, which can help insurance companies achieve more assessment for intelligent risk and product design. Fintech start-ups in Taiwan have also begun to actively explore the application of insurance tech, such as digital insurance platforms or smart insurance platforms. Fintech start-ups can also use big data technology to conduct risk assessment, behaviour analysis, investment decisions, ...etc. Many Fintech start-ups have moved their infrastructure to the cloud, using faster and more elastic methods to deploy and maintain applications. In addition, financial technology startups can use IoT technology to provide smarter and more convenient financial services, such as automated claims settlement, smart home insurance, etc.

Taiwanese government is actively committed to supporting the operation and development of new financial technology startups. In 2018, the Taiwanese government established the Fintech Development Bureau under the Financial Supervisory Commission, which is responsible for assisting the development of new Fintech companies and providing services such as policy planning, financial support, legal consultation, and international cooperation. The Taiwan government has launched a series of innovation and entrepreneurship investment programs, such as the "Innovation and Entrepreneurship Incubation Accelerator", "Innovation and Entrepreneurship Incubation Base", "Taiwan Innovation Investment and Incubation Fund", etc., and provide financial technology start-up companies with initial funding, software and hardware facilities, professional guidance and other supports.

The Taiwan government is also actively promoting policies related to the development of financial technology, such as enlarging the conditions for establishing online banks and opening up applications for virtual banks to create a more friendly environment. The government also organizes many financial technology-related activities, exhibitions and forums to provide communication opportunities for financial technology startups and professionals. In addition, the government also provides financial support to financial technology startups through various subsidy measures to promote their research and development capabilities and product innovation. Government of Taiwan hopes to

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cultivate more outstanding financial technology startups through policies, investment, support, etc. The purpose is to promote the upgrading of the financial industry and enhance Taiwan's competitiveness in the international financial technology market. The support of policy planning is indeed helpful for the development of financial technology startups (Teigland et al., 2018; Haddad and Hornuf, 2019). In 2018, the Financial Supervisory Commission and Taiwan Financial Services Roundtable (TFSR) established Taiwan's first "financial technology innovation park", FintechSpace, and brought together domestic and foreign financial technology industries, government agencies and academic circles to create a co-creation environment which is suitable for the development of financial technology and promote Fintech co-creates an ecosystem.

In recent years, Taiwan's venture capital industry has actively invested in new financial technology startups and provided appropriate support and assistance. The market requirement of Fintech market has continually increased. With the advancement and popularization of technology, more and more people have chosen to use technology to simplify financial transaction processes and improve the efficiency and convenience of financial services. Fintech startups can create innovative financial products and services to satisfy the market's demand for Fintech (Imerman and Fabozzi, 2020; Langley and Leyshon, 2021; Zarrouk, El Ghak and Bakhouche, 2021). Fintech start-ups in Taiwan often employ innovative technologies such as blockchain, artificial intelligence, and big data analytics. These technologies can not only improve the efficiency and convenience of financial services, but also improve the security and reliability of financial transactions (Lee and Shin, 2018). The application of these technologies enables financial technology startups to provide better financial services, thereby attracting more customers and investors (Chemmanuret al., 2020; Imerman and Fabozzi, 2020). The development of the financial technology industry has great potential and attractiveness, and has a high return on investment (ROI) (Guild, 2017). As the Fintech industry continues to grow, the market share and revenue of Fintech start-ups are also increasing. These factors have attracted more and more venture capital institutions to invest in new financial technology startups (Galvin et al., 2018; Teigland et al., 2018; Kolokas et al., 2022).

The purpose of this paper is to explore the role of venture capital industry of Taiwan in the development of Fintech. Specifically, the aim of it is to understand whether the venture capital industry plays the role of resource provider, risk manager or value creator, and explores the contributions and challenges of the venture capital industry in these roles. The research hopes to collect rich data on this topic through in-depth interviews with experts and further analyse the data to answer the research questions. Ultimately, the research aims to provide new insights regarding the role of the venture capital industry in the Fintech sector, giving a useful reference for industry and academia.

2. Review of Literature

2.1 How Financial Technology subverts the Rules of the Game in the Traditional Financial Industry

Fintech represents the evolution and collision of technology applications in financial services. Financial services and technology are closely integrated with each other, and this combination brings disruptive impacts and synergies. Financial institutions are partnering with Fintech startups through investments or strategic partnerships. The average transaction scale of venture capital investment in financial technology is also growing, especially in Asia, which is almost twice the global average (Galvin et al., 2018). Chemmanur et al. (2020) discuss the potential sources of value creation by Fintech startups for existing financial intermediaries. Fintech start-ups can provide a superior customer experience in various consumer finance areas, which may be a source of value creation. Lee and Shin (2018) pointed out that financial technology brings a new paradigm in which information technology drives innovation in the financial industry. Fintech has been touted as a disruptive innovation that can shake up traditional financial markets.

It is undeniable that financial technology has subverted the rules of the traditional financial industry. Basole and Patel (2018) pointed out that the integration of financial technology into financial services is causing huge disruption to the entire financial industry. A series of start-ups are rapidly splitting the services provided by traditional financial institutions, ushering in new cooperation models and the shifts of major power. Basole and Patel (2018) simultaneously also pointed out that the global distribution of financial technology activities is extremely uneven, due to diversified investments and acquisitions which are mainly led by traditional financial institutions and venture capital firms. Svensson, Udesen and Webb (2019) pointed out that the financial ecosystem is being transformed through new financial technologies. As the ecosystem shifts, the basis on which all roles are considered legitimate is also changing. Traditional financial companies and Fintech start-ups seek the feasibility of alliances among potential partners to meet their respective needs. Langley and Leyshon (2021) indicated that the development of financial technology has had a global impact on mankind. In the northern hemisphere, the development of financial technology is widely claimed to be transforming banking and provides digital financial services to the unbanked in the southern hemisphere. The development process of Fintech has gone through three processes: re-intermediation, merger and capitalization. The potential imagining of Fintech has also triggered an intensive capitalization process, such as the platform receives potential investment from venture capital, private equity funds, and important potential investment from banks and large technology companies.

Government departments and traditional financial institutions in various countries take a very serious attitude towards the problems and challenges brought about by the rapid development of financial technology. Taking Fintech developments in Kenya, India, and China as the subject of research, Guild (2017) pointed out that these services, when

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combined with corresponding government policies and supervision and regulatory frameworks, have the potential to extend financial services to millions of underserved populations, and break new ground in the way of financial transactions. Successful adoption of Fintech to increase financial market inclusion is highly dependent on competent supervision and regulatory oversight. Goo and Heo (2020) pointed out that in order to overcome the regulatory obstacles in the financial technology industry, the mechanism of supervision and regulatory sandbox is adopted. Supervision and Regulatory sandboxes help create a Fintech ecosystem. The adoption of supervision and regulatory sandboxes has had a very positive impact on the growth of Fintech venture capital. Regulatory sandboxes may play a crucial role in removing regulatory uncertainty and increasing the flow of venture capital into the Fintech venture capital ecosystem. Imerman and Fabozzi (2020) proposed a framework of Fintech ecosystem to classify various types of innovations taking place in financial services. This study uses this ecosystem concept to point out various areas of potential value for investors in this field.

2.2 Issues in the Venture Capital Industry's Investment in Financial Technology

The revolution of interdisciplinary Fintech has let all areas of financial services to have been touched by technology power. This trend brings new entrepreneurship, unfettered innovation, and huge interest in investment from venture capital firms (Gomber et al., 2018). Cumming and Schwienbacher (2018) found that Fintech venture capital is more prevalent in countries with relatively weak regulatory enforcement and lack of major financial centers following the financial crisis. The venture capital industry in different countries has significantly different enthusiasm for investing in financial technology projects. Haddad and Hornuf (2019) examined the influence of economic and technological factors on entrepreneurs building Fintech startups. The result of the study has found that the number of Fintech startups will increase in countries with good economic development and easy access to venture capital. The harder it is for companies to get loans, the higher the number of Fintech startups is in the country. Haddad and Hornuf (2019) also pointed out that the formation of new financial technology startups does not have to rely on opportunities; positive policies can influence the emergence of this new industry.

The study of Khan et al. (2021) found that the venture capital industry benefits from advances in information and communication technology because information and communication technology promotes entrepreneurship and alleviates agency problems in venture capital transactions. The research results show that information and communication technology penetration and the digital economy have a significant and positive impact on early-stage, late-stage and overall venture capital investment. In addition, unsecured loans of bank moderate the influence of the digital economy on venture capital. Zarrouk, El Ghak, and Bakhouche (2021) examine various Fintech level and ecosystem-specific factors as determinants of Fintech startup success and survival. The study finds that the availability of resources, especially through venture capital, is very important to the success and survival of Fintech development of microenterprises. However, financial barriers, the supervision and regulatory environment, and legal issues have a detrimental effect on facilitating the creation and growth of Fintech startups.

Kolokas et al. (2022) explore the growth phenomenon of Fintech entrepreneurship globally and the effect of entrepreneurial ecosystems in various countries on the development of Fintech startups. The study pointed out that venture capitalists have a more active impact on financial technology entrepreneurship than banks, but they need to reach a certain scale of financial technology entrepreneurship in a country then to play a positive role. Venture capital and credit markets can be substitutes for each other in some cases, especially in countries where Fintech entrepreneurship is more developed. However, the praise that financial technology receives from capital markets and investors is not necessarily reflected in the offering price at the time of IPO.

Salerno, Sampagnaro and Verdoliva (2022) study the relationship between Fintech IPOs and the short-term performance of offering prices. The study found that IPOs of Fintech companies are more likely to be undervalued than similar non-Fintech companies. These results were confirmed by taking into account unobserved factors and identify a positive relationship between Fintech IPOs and undervaluation higher offering price.

3. Methodology

3.1 Semi-structured Expert In-depth Interview Method

The research question of this study is to explore the relationships and trade-offs between the role of the venture capital industry in the financial technology sector, namely, the roles of resource provider, risk manager and value creator. In order to answer this question, this study chose semi-structured in-depth interviews as a research method to understand the venture capital industry's actual experience and opinions in financial technology investment. Semi-structured in-depth interview is a powerful qualitative research method that is often used to explore subjective opinions and experiences rather than to measure or verify statistical hypotheses. Through this method, researchers can obtain expert insights and experiences and discover new patterns and trends, which can help improve understanding and knowledge of the research object (Hollings et al., 2014; Ahlin, 2019).

In this method, researchers use interviews with experts to gain an in-depth understanding of their views on specific research issues, and allow experts, according to their own experiences and descriptions, explain and describe in details (Kallio et al., 2016; Creswell and Creswell, 2017). In this study, the researchers conducted interviews with multiple venture capitalists in order to understand how they view their role in the financial technology field and how they weigh the relationship among the three roles of resource provision, risk management, and value creation. We

design a detailed interview guide including open-ended questions and prompting questions to help the expert explore the topic in depth. At the same time, researchers can audio-record, record, and analyse interviews to obtain abandon information about the role of the venture capital industry in the financial technology field. Researchers can obtain affluent materials through semi-structured in-depth interviews to understand how venture capitals balance various roles in practice, and provide practical suggestions and guidance for future venture capitals.

3.2 Research Steps

When conducting research on semi-structured expert in-depth interviews, we followed the following research steps.

Step 1: Determining the research purpose and research questions

The purpose of this study is to explore the role of Taiwan's venture capital industry in the development of Fintech startups. Research questions could involve: What role does the venture capital industry typically play in investing in Fintech startups? How do these roles affect the development of Fintech startups?

Step 2: Selecting interview subjects

This study presets an expert interview list and selects the experts to be interviewed based on their actual experience and expertise. The interviewees for this study include investment managers in the venture capital industry, founders of new financial technology startups, and industry experts.

Step 3: Designing semi-structured interview questions

Researchers need to design semi-structured interview questions according to the research questions to guide the interviewees to conduct in-depth discussions on the research questions. When designing questions, researchers need to pay attention to the openness and depth of the questions, as well as the logic and relevance between the questions.

Step 4: Conducting expert interviews

Researchers need to conduct face-to-face interviews with interviewees and conduct in-depth discussions and discussions based on designed questions. During the interview process, the researcher needs to pay attention to listening and guiding the interviewee, and record the interview content.

Step 5: Record and analyse the interview content

After completing the interview, the researcher needs to properly maintain the interview recordings or notes and transcribe the interview content. The transcribed text data needs to be analysed, and similar opinions can usually be inducted together through coding, and then further be inducted into themes or patterns. When analysing interview content, researchers need to hold openness and objectivity and avoid over-interpretation and bias.

Step 6: Write the research results and analysis

After completing the analysis, the researcher needs to write the results to become a research result and analysis report. The report includes descriptions of interviewees, interview results, discussions and conclusions. The analysis of results should be clear, well-structured, and provide sufficient details to allow the reader to understand the research process and results.

4. Results and Analysis of Semi-structured In-depth Interviews with Experts

4.1 Expert Interview List

When conducting in-depth interviews, the interviewed experts on the list of are very important. It is necessary to ensure that the interviewees are experts with relevant professional knowledge and experience and can provide rich insights and experience. This study is mainly introduced its research topic through professional groups and business organizations to relevant experts, and asks them to provide opinions and suggestions. In the end, 12 interviewed experts came from venture capital (VC), Fintech start-ups (FT) and traditional finance (THI), as shown in Table 1.

Table 1: Semi-structured In-depth Interviewed Experts

Number	Encoding	Industry	Job Title	Seniority	Reason for Selection
1	VC-1	Venture capital industry	Risk Management Manager	16 years	Has accumulated many years of experience in the field of venture capital and has unique insights into risk control
2	VC-2	Venture capital industry	Investment Manager	10 years	Rich venture capital experience in the financial technology field
3	VC-3	Venture capital industry	Deputy General Manager	20 years	Have extensive experience in the field of investment banking and have a keen sense of the operation and changes of financial markets
4	VC-4	Venture capital industry	Investment Manager	18 years	Has extensive experience in the field of investment banking and has participated in the financing projects of several financial

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					technology companies
5	VC-5	Venture capital industry	Chief Investment Officer	20 years	Have extensive investment experience in the financial technology field
6	FT-1	Fintech start-up company	Chief Financial Officer	30 years	Possess extensive financial expertise and experience, and have in-depth insights into the development trends of financial technology
7	FT-2	Fintech start-up company	General Manager	18years	He once founded a financial technology company and has profound experience in the entrepreneurial process and challenges.
8	FT-3	Fintech start-up company	Risk Management Expert	25years	Have in-depth research and practice on risk management, and have unique insights into the risk control of financial technology.
9	FT-4	Fintech start-up company	Technical Director	13years	Have in-depth understanding and research of financial technology technologies and products
10	TFI-1	Traditional financial industry	Head of Banking Digital Department	15years	Long-term attention to the development of the financial technology field, with relevant professional knowledge
11	TFI-2	Traditional financial industry	Deputy General Manager of Bank	35years	Rich experience in the financial industry and deep understanding of the impact and opportunities of financial technology
12	TFI-3	Traditional financial industry	Senior Researcher	15 years	Conducted in-depth research in the field of financial technology and has unique insights into industry development

Source: Compiled by this study.

4.2 Question Outline for Semi-structured Expert Interviews

Based on the research purpose and preliminary questions, the researchers selected appropriate experts to conduct in-depth interviews. Before conducting an in-depth interview with experts, the questions need to be reviewed to ensure that the questions are clear and unambiguous and lead the expert to answer questions about the research topic. Compiling interview outline is an important step for preparing the interview to ensure that the questions are complete and systematic. The outline should include open-ended questions and in-depth questions, and compiled according to the research question. When conducting expert interviews, researchers also need to be flexible in adjusting questions in order to gain deeper insights and information. Firstly we let experts to express their opinions and experiences freely, and then restricted the questions to a specific range in order to obtain more specific answers. Table 2 shows the nine-item question outline for the in-depth interviews with experts in this study.

Table 2: Question Outline for In-depth Interviews with Experts

Number	Question Type	Interview Question Outline
1	Taiwan recent development of financial technology	Please briefly talk about the opportunities and limitations of Taiwan's Fintech start-ups in recent years.
2	The relationship between the venture capital industry and Fintech startups	How do you view the role of Taiwan's venture capital industry in the development of new Fintech startups?
3	The relationship between the venture capital industry and Fintech startups	What challenges or pressures may Taiwan's venture capital industry face in the development of new financial technology startups?
4	The role of the venture capital industry in Fintech startups	What advantages does Taiwan's venture capital industry have in providing resources to new financial technology startups when comparing with traditional financial institutions? Or are there any restrictions?
5	The role of the venture capital	In terms of risk management, what strategies has the Taiwan venture capital industry adopted to reduce risks? What are the challenges?

	industry in Fintech startups	
6	The role of the venture capital industry in Fintech startups	What experience or strategies does Taiwan's venture capital industry have in helping new financial technology startups add value?
7	The role of the venture capital industry in Fintech startups	How do you think Taiwan's venture capital industry should balance resource provision, risk management, and value creation?
8	Cooperation model between venture capital industry and financial technology startups	What conditions should Fintech startups strengthen when looking for venture capital partners?
9	Cooperation model between venture capital industry and financial technology startups	In the future, in terms of the development of new financial technology startups, what direction do you think Taiwan's venture capital industry should develop?

Source: Compiled by this study.

During the interview, it needs to briefly introduce self and the purpose of the research, and confirm whether the interviewee agrees to audio or video recording. According to the interview outline, questions are asked in sequence and the interviewees are given sufficient time to answer. At the same time, further questions or discussions are guided based on the responses of the interviewees. After the interview, the audio or video content is transcribed into text format, organized and analysed. This can be done through labelling, classification, induction, etc.

4.3 Main Interview Content and Analysis

As shown in Table 2, there are 9 items in the question outline of in-depth interviews with experts in this research. Certainly, during the interview process, we tried our best to guide the interviewed experts to express their views and opinions on these questions. The following is a summary of the essential parts of the content of the interviewed experts.

4.3.1 Opportunities and Limitations for the Development of Taiwan's Financial Technology Startups in Recent Years

In Taiwan, the development of the financial technology industry has gradually become the focus of attention from all walks of life since 2015, and has also become an important policy for the government to promote digital economy and innovation. Promoted by such policies, financial technology startups have developed a variety of products and services. Various attempts to integrate financial services and technology have improved customer experience and convenience. The following are the results of the integration and analysis of the opinions of the interviewed experts.

> *As far as opportunities for financial technology startups are concerned, firstly, in response to global digitalization and intelligence trends, the integration of the financial industry and the technology industry has become a trend. (VC-1-1, VC-5-1, FT-1-1)*

> *In Asian, the market is huge, and in Taiwan, in order to respond the requirement of Asia market, it has also developed differentiated financial technology startups increasing Taiwan's competitive advantages. (VC-4-1, FT-2-1, FT-4-1, TFI-1-1)*

> *The Taiwan government has also developed a series of policies and measures to encourage the development of financial technology including Fintech-related regulations and funding subsidies, helping new financial technology startups solve difficulties in the implementation process, at same time, also increasing the development potential of the financial technology industry. (VC-2-1, FT-1-1, TFI-2-1, THI-3-1)*

However, Fintech startups also face some limitations.

> *The development of financial technology requires cooperation with traditional financial institutions such as banks, but traditional financial institutions are slow to respond and tend to have a conservative attitude towards new technologies. (VC-1-1, VC-3-1, TFI-2-1)*

> *The development of Fintech startups requires a large amount of capital investment. However, Taiwan's investment culture is relatively conservative and it is not easy to invest in Fintech startups with higher risks. (FT-1-1, FT-2-1, TFI-1-1, THI-3-1)*

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The laws and regulations involved in financial technology startups are relatively complex, and how to comply with the regulations is also a big challenge. (VC-2-1, FT-3-1, TFI-2-1)

Due to the relatively rapid development of the financial technology industry, financial regulatory authority of Taiwan, therefore, is also confronted with corresponding challenges in establishing and adjusting the regulatory framework. (VC-4-1, FT-2-1, FT-4-1, THI-3-1)

The financial technology industry also needs to establish good cooperative relationships with traditional financial institutions to achieve resource sharing and complementation. This is also another important challenge faced by the development of new financial technology companies. (VC-5-1, FT-3-1, THI-3-1)

Fintech start-ups are facing opportunities and challenges in Taiwan. Policy support from government and industrial integration will be the key to the development of Fintech start-ups. However, as the country and industry attach more importance to and invest in Fintech, and as Fintech-related regulations continue to promote and improve, we believe that the development prospects of Fintech startups of Taiwan are still very promising.

4.3.2 The Role of Taiwan's Venture Capital Industry in The Development of Fintech Startups

The venture capital industry of Taiwan plays multiple roles in the development of new Fintech startups. First of all, venture capitalists can act as resource providers to provide supports for start-ups in terms of capital, contacts, technology, marketing, and management, and to promote the rapid growth of start-ups. Secondly, venture capitalists are also risk managers, who evaluate and control risks on the business models, products, and market prospects of start-up companies to avoid losses caused by investment failures. Finally, venture capitalists are also value creators. They can not only create wealth, but also provide strategic guidance and experience sharing to help start-ups achieve their business goals and long-term value. The followings are the results of the integration and analyses of the opinions of the interviewed experts.

With the rapid development of the financial technology industry, venture capital investors have begun to focus on investing in new financial technology startups, and promote the development of the entire industry. (VC-1-2, FT-2-2, FT-3-2, FT-4-2)

In addition to providing financial support, venture capital investors also provide rich industrial resources and experience, and use these resources to help new startups grow rapidly. (VC-2-2, VC-5-2, FT-1-2, TFI-1-2)

The venture capital industry will also transfer their experience and resources from other companies to Fintech start-ups and provide valuable advice and guidance to assist them in better development and growth. (VC-1-2, VC-3-2, FT-3-2)

Investment and support of the venture capital industry can also bring more opportunities to new financial technology startups, such as guidance on market positioning, business models and strategic directions to further create value. (VC-2-2, VC-5-2, FT-1-2, TFI-1-2)

However, venture capitalists also face some limitations when investing in Fintech startups.

The relevant laws and regulations of the financial technology industry are relatively complicated, and venture capitalists need to spend more time and energy on risk assessment and legitimate preparation. (VC-1-2, VC-4-2, FT-3-2, TFI-3-2)

The financial technology industry has a high entry requirement that needs more professional knowledge and technical support, and puts forward higher requirements for the technical capabilities of venture capitalists. (VC-2-2, FT-1-2, TFI-2-2)

It is difficult to predict the market demand and development process of new financial technology startups; therefore, the risk management capabilities of the venture capital industry have met the higher demand.

(VC-3-2, FT-2-2, FT-4-2)

The market competition in the financial technology industry is fierce, and requires new startups to have strong operating capabilities and market competitiveness, which also increases the investment risks of venture capital investors. (VC-4-2, FT-2-2, TFI-3-2)

Fintech start-ups need to invest a lot of resources in their operations, including technology, manpower, and capital. These resource requirements will also be a challenge in investment decision-making and management. (VC-3-2, VC-5-2, TFI-3-2).

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4.3.3 Challenges or Pressures that Taiwan's Venture Capital Industry Faces in Investing in Fintech Start-Ups

Investing in Fintech start-ups in the venture capital industry is a high-risk and high-reward activity, and venture capital industry faces relatively larger challenges and pressures and requires corresponding professional knowledge and resources to ensure the success of the investment. The following are the results of the integration and analyses of the opinions of the interviewed experts on this topic.

The Fintech market exists highly competitive both in Taiwan and globally, with innovative companies contenting for market share and customers. (VC-1-3, VC-5-3, FT-1-3, FT-3-3, TFI-1-3)

As more investors and capital enter the field of financial technology, new financial technology startups of Taiwan are facing increasingly fierce market competition. This makes investors need to be more careful in choosing the companies that they will invest in, as only successful companies can bring back rewards. (VC-3-3, VC-4-3, FT-4-3, TFI-3-3)

Before launching their products and services, Start-up companies have a deeper understanding of market needs and trends, and, during the development of products and services, companies focus on innovation and quality which can let them stand out. t (VC-1-3, VC-5-3, FT-2-3, TFI-1-3, TFI-2-3)

The area that Fintech startups often get involved requires considerable technical and professional knowledge. For the venture capital industry, this can be a challenge in finding teams and management with appropriate technical capabilities. (VC-3-3, FT-1-3, FT-3-3, TFI-2-3)

Fintech startups must comply with corresponding laws and regulations, especially in terms of financial supervision and personal privacy protection. This has also brought corresponding pressure to the investment and management of the venture capital industry. (VC-2-3, VC-4-3, TFI-1-3)

Taiwan's regulatory agencies are also constantly paying attention to the development and impact of new financial technology startups and taking measures to ensure their robustness and sustainability. This may increase the challenges and pressure for some Fintech startups to obtain licensing and compliance. (VC-1-3, VC-5-3, FT-2-3)

Fintech startups are usually high-risk, high-reward investments, which brings higher risks and uncertainties to the venture capital industry. (VC-2-3, VC-3-3, FT-3-3, TFI-2-3, TFI-3-3)

The venture capital industry needs to invest a lot of money and resources when investing in Fintech startups. The sourcing and distribution of these resources also require corresponding challenges. (VC-1-3, VC-4-3, FT-2-3, FT-4-3)

Since Fintech startups often rely on technology and data, information security and privacy protection are also important challenges. Fintech startups need to ensure the security of their systems and data and comply with relevant data privacy regulations and standards to build trust and maintain user satisfaction. (VC-2-3, FT-1-3, FT-4-3, TFI-3-3)

4.3.4 Compared with Traditional Financial Institutions, the Advantages or Limitations of Taiwan's Venture Capital Industry for Fintech Startups

Taiwan's venture capital industry has the following advantages in providing resources to financial technology startups compared with traditional financial institutions.

Compared with traditional financial institutions, the venture capital industry usually takes higher risks and is willing to invest in innovative Fintech fields. However, due to regulations and regulatory restrictions, traditional financial institutions usually only invest in relatively mature projects. For higher projects, you will be more cautious. (VC-1-4, VC-3-4, VC-5-4, FT-1-4, TFI-1-4)

The venture capital industry has higher risk tolerance and professional knowledge, and can have a deeper understanding of the business and technology of Fintech start-ups, and provide more flexible resources and support to help companies grow. (VC-1-4, VC-4-4, FT-2-4, FT-3-4, TFI-3-4)

Investors in the venture capital industry usually have experience and professional knowledge in related industries and can provide financial technology startups with advice and assistance in product design, business models, market development, etc., and help new startups further expand their markets. (VC-1-4, VC-3-4, FT-1-4, TFI-1-4)

The venture capital industry can help start-up companies integrate resources, such as assisting companies in recruiting senior management personnel, developing partnerships, establishing business cooperation, etc., which is very important for start-up companies. (VC-2-4, VC-5-4, FT-3-4, TFI-3-4)

Another advantage of Taiwan's venture capital industry compared to traditional financial institutions in providing resources is that it is more flexible and highly professional. Due to the diverse business models and technology products of Fintech startups, traditional financial institutions are often unable to fully understand and evaluate their value, and therefore have limited willingness and ability to provide resources. (VC-2-4, VC-4-4, FT-4-4, TFI-2-4)

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However, Taiwan's venture capital industry still faces some restrictions when investing in Fintech startups.

When Taiwan's venture capital industry invests in Fintech start-ups, it is limited by the source and amount of its own funds. It may not be able to invest a large amount of funds to support the development of start-ups, which limits the development of new start-ups in terms of market expansion and other aspects. (VC-3-4, VC-5-4, FT-1-4, FT-4-4)

The resource scale of the venture capital industry is relatively small and the funds and resources provided are limited, so it needs to be more cautious in investment and support decisions. (VC-1-4, VC-4-4, FT-2-4, TFI-1-4)

The nature of venture capital investment in the venture capital industry determines that it must obtain considerable returns within a limited time. Therefore, the allocation of resources may be more focused on companies that can grow quickly and make profits, while for innovative or risky financial technologies Startups can be conservative. (FT-2-4, FT-3-4, TFI-2-4, TFI-3-4)

When Taiwan's venture capital industry invests in new financial technology startups, it needs relevant professional talents to conduct evaluation and investment. However, compared with foreign venture capital industries, the total number of talents in Taiwan still needs to be improved, and it will have a greater impact on investment decisions. (VC-2-4, VC-3-4, FT-2-4, TFI-2-4)

The laws, regulations, regulatory risks and other issues involved in financial technology startups are relatively complex. Regarding the actual application of financial technology, the attitudes and policies of Taiwan's relevant government ministries tend to be conservative. (VC-3-4, VC-4-4, FT-4-4, TFI-1-4)

4.3.5 Risk Management Strategies and Challenges in Taiwan's Venture Capital Industry

Taiwan's venture capital industry faces multiple risks when investing in Fintech startups, and therefore needs to implement effective risk management strategies to ensure investment returns and reduce investment risks. Integrating the opinions of interviewed experts, Taiwan's venture capital industry usually adopts the following strategies in terms of risk management.

Before making an investment decision, the venture capital industry will strictly evaluate and monitor potential investment targets to ensure that the company has feasibility, market opportunities and a stable business model. After investment, the venture capital industry will continue to monitor the company's operating conditions and financial performance, and adjust investment strategies in a timely manner to reduce risks. (VC-1-5, VC-5-5, FT-1-5, TFI-1-5)

Taiwan's venture capital industry will conduct sufficient research and due diligence before investing to understand the new startup's products, market, customers, competitors, team, etc. By understanding the company's business model, the venture capital industry can better assess risks and opportunities and provide targeted recommendations. (VC-2-5, VC-3-5, FT-3-5, FT-4-5, TFI-2-5, TFI-3-5)

The venture capital industry usually spreads funds into multiple different targets to reduce risk. This diversified investment strategy can reduce the risk of a single target, and at the same time improve the return of the entire investment portfolio. (VC-1-5, VC-3-5, VC-5-5, FT-1-5, TFI-1-5)

In addition to capital investment, the venture capital industry will also provide counseling and support to help companies improve operational efficiency and risk management capabilities. The venture capital industry may provide support in business model optimization, legal advice, marketing and talent recruitment. (VC-1-5, VC-4-5, VC-5-5, FT-3-5)

In terms of risk management, Taiwan's venture capital industry also conducts risk management by establishing business relationships, in-depth understanding of the business model of start-up companies, and supervising corporate governance. Establishing business relationships can help start-ups achieve their business goals and add value by providing them with business advice, market expansion, and resource integration after investment. (VC-2-5, VC-4-5, FT-2-5, FT-3-5)

Taiwan's venture capital industry also attaches great importance to the governance supervision of start-up companies, so as to ensure that there will be no risks or violations in the company's operations. This includes establishing a good corporate governance structure, setting up an independent board of directors and board of supervisors, formulating a suitable internal control system, strengthening financial management and risk control, etc. (VC-3-5, FT-1-5, FT-2-5, FT-4-5, TFI-3-5)

However, Taiwan's venture capital industry also faces some challenges or obstacles in terms of risk management.

Compared with foreign venture capital industries, Taiwan's venture capital industry has a relatively small demand for risk management talents, so the number of relevant professionals is relatively small. (VC-1-5, VC-4-5, FT-3-5, TFI-1-5, TFI-2-5)

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The operating environment and market of start-up companies are changing rapidly, and risks are constantly emerging and changing. The venture capital industry needs to continuously improve its awareness of risks and ability to cope with market challenges and changes. (VC-2-5, VC-5-5, FT-4-5, TFI-2-5)

Some venture capital industries may overemphasize short-term returns and ignore the long-term investment value of risk management, which will also pose certain challenges to risk management. (VC-2-5, VC-4-5, FT-2-5, FT-4-5, TFI-3-5)

Taiwan's venture capital industry also needs to pay more attention to and strengthen the governance and risk control of new startups to protect the rights and interests of investors. (VC-3-5, FT-1-5, FT-2-5, TFI-2-5)

4.3.6 Taiwan's Venture Capital Industry's Strategies to Help New Financial Technology Startups Increase Value

Taiwan's venture capital industry can provide various support and assistance in assisting financial technology startups to increase their value and help them achieve long-term goals and strategies for innovation and development. The following is a summary and analysis of the opinions of interviewed experts on this issue.

The venture capital industry often has rich investment experience and industry knowledge, and can help Fintech start-ups solve problems and increase value through professional guidance and consultation. (VC-1-6, VC-3-6, FT-1-6, FT-4-6, TFI-1-6)

The venture capital industry not only provides funds, but also provides companies with vision and strategies, assisting companies in formulating long-term plans, formulating market strategies, and integrating various resources. (VC-1-6, VC-4-6, VC-5-6, FT-3-6)

The venture capital industry can assist in the establishment of an industrial ecosystem, promote cooperation and exchanges between different industries, and enhance the integration and innovation of products and services. Through close cooperation and communication, the venture capital industry can have a deeper understanding of the company's needs and problems, and provide more appropriate assistance and suggestions. (VC-2-6, VC-5-6, FT-1-6, TFI-1-6, TFI-2-6)

The venture capital industry can provide resource support, including human, financial, technical and market support, to help Fintech start-ups achieve growth and development. (VC-1-6, VC-3-6, FT-2-6, FT-3-6, TFI-3-6)

The venture capital industry can assist Fintech start-ups to build their brand image, enhance the popularity and market position of their products and services. The venture capital industry can also help companies obtain more resources and support and increase their competitiveness in the market by establishing good relationships with all walks of life. (VC-2-6, VC-5-6, FT-1-6, FT-2-6, FT-4-6, TFI-3-6)

Through industry events and seminars, we will strengthen communication and network building, and assist Fintech startups to expand their markets and find cooperation opportunities. (VC-2-6, VC-4-6, VC-5-6, FT-3-6, TFI-1-6)

Furthermore, Taiwan's venture capital industry usually provides services such as public relations activities and assistance in applying for government resources to help new financial technology startups increase their market value.

Venture capital companies can assist financial technology startups in planning promotional activities, product launches and other public relations activities, and invite media, investors, industry experts, etc. to participate to increase the company's exposure and reputation. (VC-1-6, VC-3-6, VC-4-6, FT-2-6, FT-4-6, TFI-2-6)

Venture capital firms can also assist Fintech start-ups to apply for government resources, such as innovation and entrepreneurship grants and R&D plans from the Ministry of Science and Technology. These resources can help Fintech start-ups reduce R&D costs, improve technology and market competitiveness, thereby increasing company value. (VC-2-6, VC-4-6, VC-5-6, FT-4-6, TFI-2-6)

4.3.7 The Balance Between Resource Provision, Risk Management and Value Creation in Taiwan's Venture Capital Industry

When the venture capital industry invests in new financial technology startups, it usually provides support in terms of capital, human resources and network resources. These resources can help startups grow faster and expand market share. Investing in Fintech startups is relatively risky. The venture capital industry needs effective risk management. These risks include market risk, technology risk and management risk. The venture capital industry usually sets investment goals as companies that can create value. Therefore, the venture capital industry needs to help companies achieve value creation while ensuring their own return on investment. The following summarizes expert opinions on how the venture capital industry can strike a balance among resource provision, risk management and value creation.

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The venture capital industry can reduce the risk of a single investment by establishing a diversified investment portfolio. The venture capital industry can also ensure that each project in its portfolio can earn good returns through continuous supervision and management. (VC-1-7, VC-2-7, VC-5-7, FT-1-7, TFI-1-7)

The venture capital industry needs to carefully consider the risks and returns of each investment project, and conduct adequate assessment and monitoring before investing. When making investment decisions, the venture capital industry needs to balance resource provision, risk management, and value creation to ensure the long-term success of its investment strategy. (VC-1-7, VC-4-7, FT-4-7, TFI-3-7)

The venture capital industry needs to pay close attention to the development trend and market changes of the financial technology industry, and adjust its investment strategy and investment portfolio based on in-depth insights into the industry to ensure that it can maintain its competitiveness in this fast-growing industry. (VC-2-7, VC-4-7, FT-1-7, TFI-3-7)

Over-investment may cause new startups to lose momentum, and may also cause the venture capital industry to lose investment returns. The venture capital industry needs to determine the scale of investment based on the actual needs and development status of new startups. (VC-1-7, VC-3-7, TFI-1-7)

The resources provided should meet the needs of new startups and truly help them improve efficiency and create value. (VC-2-7, FT-1-7, FT-4-7, TFI-2-7)

Balancing the roles of resource provider, risk manager, and value creator is an important issue that Taiwan's venture capital industry needs to consider when investing in Fintech startups. Balance and adaptation need to be achieved through thorough market research, risk assessment and business planning. (VC-1-7, VC-4-7, FT-2-7, FT-3-7, TFI-2-7)

The venture capital industry can choose different roles based on its own advantages and market needs. In actual operation, the venture capital industry usually provides different supports and services based on the company's development stage and needs to maximize value creation. (VC-2-7, VC-3-7, VC-5-7, FT-3-7, TFI-3-7)

If the venture capital firm lacks the relevant expertise and skills, then playing the role of risk manager may be a more suitable choice. If the venture capital firm is good at marketing and brand building, it may be more suitable to play the role of value creator. If a venture capital firm has a large amount of resources, such as financial resources, human resources, etc., then it may be more advantageous to play the role of resource provider. (VC-3-7, VC-5-7, FT-3-7, FT-4-7, TFI-3-7)

Therefore, Taiwan's venture capital industry needs to consider its own situation when investing in Fintech start-ups, and balance resource provision, risk management, and value creation. Play different roles at different stages of investment. They can balance these aspects through diversified investment portfolios, risk assessments, active partnerships, professional management consulting and guidance. They should also be aware of changes in markets and technology, as well as the latest developments in risk management and value creation, in order to continue creating value and generating returns for investors.

4.3.8 Conditions for Cooperation between Financial Technology Startups and Venture Capital

When the venture capital industry invests in Fintech start-ups, it needs to comprehensively consider multiple conditions and factors to determine whether it is worth investing in. Investors should balance the three aspects of resource provision, risk management and value creation to achieve long-term returns and value. However, the conditions for cooperation between Fintech start-ups and venture capital are likely to be a two-way mutual evaluation process. The following is a summary and analysis of the opinions of interviewed experts on this issue.

The team of a Fintech start-up company should have rich industry experience and technical capabilities. Investors will evaluate the team's capabilities and past experience to determine whether it has the ability to solve problems and innovate. So, to determine if they have the ability to successfully launch a product or service. (VC-1-8, VC-3-8, VC-5-8, FT-3-8, TFI-3-8)

Fintech startups should develop products or services that address existing market needs. Investors need to evaluate whether the solution proposed by the startup solves an existing market problem and whether the market needs such a solution. (VC-1-8, VC-4-8, VC-5-8, FT-1-8, TFI-1-8, TFI-3-8)

The technology of Fintech startups should be competitive. Investors evaluate technology for uniqueness and implementability to determine whether it can successfully launch a product or service. If the product lacks innovation, or if it faces stiff competition, the VC may consider the investment risk too high. (VC-1-8, VC-5-8, FT-1-8, FT-3-8, TFI-1-8)

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Fintech startups should have sustainable business models. Investors need to evaluate whether a company's business model is viable and capable of generating substantial profits within a set period. (VC-1-8, VC-3-8, VC-4-8, FT-2-8, TFI-1-8, TFI-2-8)

Investors need to assess the size of the market to determine whether the company can gain a sufficient share of the market. If the market size is too small, or the prospects are not clear enough, venture capital may choose not to invest. (VC-2-8, FT-1-8, FT-3-8, FT-4-8, TFI-2-8)

Investors consider the current financing needs of Fintech startups as well as their future funding needs. Investors evaluate whether the company needs more capital to support its long-term growth and whether it can attract more investors. (VC-2-8, VC-3-8, FT-2-8, TFI-3-8)

Venture capital typically evaluates the financial health and growth potential of Fintech startups. If the company is financially unstable or lacks sufficient growth potential, venture capital investors may choose not to invest. (VC-2-8, VC-4-8, FT-1-8, FT-2-8, FT-4-8, TFI-2-8)

The cooperation attitude and cultural matching between venture capital and Fintech start-ups are also very important. Collaboration can be difficult if the values and cultures of the two parties do not match. (VC-3-8, VC-5-8, FT-4-8, TFI-3-8)

Taken together, team capabilities and expertise, industry prospects and market size, product innovation and competitive advantages, technical level, business model, financial status and growth potential, financing needs, cooperative attitude and cultural match. These conditions and factors may affect the evaluation of investment cases.

4.3.9 Future Development Direction of Taiwan's Venture Capital Industry and Fintech Startups

The cooperation between Taiwan's venture capital industry and financial technology startups has begun to take shape and has achieved concrete results and investment returns. However, in the face of the future development of new technologies and competition from international financial technology companies, Taiwan's financial technology industry needs to continue to work hard to increase competitiveness and profitability. The venture capital industry also needs to step up its pace to understand industry trends and create potential investment opportunities. The following is a summary and analysis of the opinions of interviewed experts regarding the future development direction of Taiwan's venture capital industry and financial technology startups.

The field of financial technology is very broad, including payment, lending, investment, insurance and other sub-fields. The future venture capital industry can conduct in-depth research on these sub-fields and strengthen investment in innovative technologies. (VC-1-9, VC-4-9, FT-1-9, FT-4-9, TFI-2-9, TFI-3-9)

In terms of technology, the venture capital industry needs to continuously learn and grasp the development trends of emerging technologies in the field of financial technology, and consider whether the technology has a competitive advantage and sustainability in investment decisions. (VC-1-9, VC-5-9, FT-2-9, FT-3-9, TFI-1-9)

With the development of technologies such as blockchain, artificial intelligence, and the Internet of Things, the venture capital industry also needs to pay attention to the application and impact of these technologies in financial technology and look for investment opportunities. (VC-2-9, VC-4-9, FT-1-9, TFI-1-9)

In the development of new financial technology startups, Taiwan's venture capital industry should focus on innovation capabilities, industry depth, and diversity of investment targets, conduct risk management, and balance roles such as resource provision, risk management, and value creation to ensure that it can achieve success in the future. Consistently achieve a good return on investment. (VC-2-9, FT-1-9, FT-2-9, TFI-3-9)

In addition to investment, the venture capital industry can also provide more coaching services, such as business model design, market promotion, talent introduction, etc. These services can help Fintech startups better respond to market changes and improve their competitiveness. (VC-3-9, VC-4-9, FT-4-9, TFI-3-9)

The financial technology field needs more industry-university cooperation to promote technology innovation and application. The venture capital industry can play a greater role in this regard, such as cooperating with universities, research institutions, etc. to promote technology transfer and joint research and development. (VC-1-9, VC-5-9, FT-3-9, FT-4-9)

Fintech startups also need to strengthen their core competitiveness, continue to innovate, explore new business models, improve the quality of products and services, and provide better returns for the venture capital industry. (VC-2-9, VC-5-9, TFI-1-9)

In the future, the development direction of Taiwan's venture capital industry and Fintech startups will be interrelated and mutually reinforcing. The venture capital industry needs to continue to improve investment strategies, improve risk control capabilities, and provide more comprehensive support and resources for financial technology startups to help them achieve long-term and stable development. (VC-1-9, VC-3-9, FT-2-9, TFI-2-9, TFI-3-9)

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With the development of global financial technology, there are more and more opportunities in the international market. After all, the scale of Taiwan's financial market is still not enough to support the development of Fintech start-ups. The venture capital industry can help new financial technology startups further explore the international market, such as providing market intelligence, cooperation opportunities, etc., to accelerate their internationalization process. (VC-3-9, VC-5-9, FT-3-9, TFI-2-9)

5. Conclusion and Recommendations

This paper uses semi-structured expert in-depth interviews as a research method to explore the role that Taiwan's venture capital industry plays in the development of new financial technology startups. Taiwan's venture capital industry plays a variety of roles, resource provider, risk manager and value creator. This depends on factors such as the venture capital firm's investment strategy, risk appetite, and business model. When Taiwan's venture capital industry invests in new financial technology startups, the most important roles from the initial stage to the growth stage are resource providers and risk managers. Venture capital firms can provide resources such as capital, expertise, network connections and industry experience to help Fintech startups develop and grow. Moreover, the risks in the financial technology field are higher than in other fields, and venture capital companies should have a full understanding of the risks to minimize them and ensure investment returns. When Fintech startups gain a foothold in business, R&D results or revenue. Venture capital firms should look for investment opportunities that bring the greatest value to their portfolios and assist startups in achieving their business goals and long-term growth.

The research results also show that venture capital firms can increase their influence and chances of success in Fintech startups by balancing their roles in resource provision, risk management, and value creation. When VCs are able to provide appropriate resources to de-risk Fintech startups and help them create value, VCs may build closer relationships between investors and startups, thereby increasing success rates and rate of return. Therefore, venture capital firms should balance these three roles based on the specific needs and market trends of Fintech startups to achieve maximum value and benefits. At the same time, venture capital firms can adopt more flexible investment structures, such as providing longer-term investments or creating larger investment funds, to better support the development of Fintech startups. VCs can enhance their capabilities by building stronger professional teams and networks, for example by collaborating with academic institutions, industry leaders and government agencies. Additionally, venture capital firms can stay sharp by studying market trends and technological developments to better understand the industry and individual company needs. These recommendations may help venture capital firms better fulfill their roles in Fintech startups and better support the development of these companies.

Future research can expand the scope of the study to other countries or regions to explore the differences in the role of the venture capital industry in financial technology startups in different regions. It is also possible to explore the changes in the role of the venture capital industry in different stages of financial technology startups, and the possible impact on the role of the venture capital industry due to the characteristics of different stages. Future research can also explore the operation mode and strategy of the venture capital industry in different fields.

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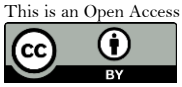

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The Role of the European Union and Subsidized European Programs in Promoting Regional Development in the Peloponnese Region and in the Manufacturing Sector

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ABSTRACT

The European Union plays an especially significant role in promoting regional development, competitiveness in the Member States, innovation, and a range of strategic funding initiatives. Over the last 20 years, the Peloponnese region in Greece has benefited significantly from these programmes, particularly in the manufacturing sector.
This work aims to demonstrate how European funding programs have significantly contributed to the transformation of the manufacturing sector in the Peloponnese, fostering innovation, sustainability, and competitiveness. By channeling resources into higher value-added activities, encouraging entrepreneurship, and supporting technological upgrades, these programs have generated measurable economic and social benefits.

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1. Introduction

The manufacturing industry remains one of the most dynamic drivers of national economic development, as it is directly linked to value-added production, job creation, and the strengthening of competitiveness. In Greece -and particularly in the Peloponnese Region-manufacturing has long been a key pillar of economic activity. However, the sector has faced persistent challenges over the last two decades, including the pressures of globalization, the financial crisis, and the disruptive effects of the pandemic.

Against this backdrop, co-financed European Union programs have played a decisive role in restructuring and modernizing the regional manufacturing base. Beyond providing financial support, these programs have enabled firms in the Peloponnese to adapt to global competition while laying the groundwork for long-term regional growth.

2. Theoretical Framework

Manufacturing industries are industries that transform goods, but they also involve the repair and installation of industrial equipment and subcontracting work for third parties. The industrial manufacturing sector, as well as the metals and packaging sectors, are largely affected by globalization and the economic downturn in Europe, while emerging markets pose new challenges in terms of competition and opportunities for growth.

The manufacturing industry is a key sector in many national economies and contributes to the creation of sustainable growth. At the same time, it is a sector that is sensitive to domestic and external impacts that lead to fluctuations in the business cycle. In recent years, the manufacturing industry has undergone rapid changes. Rapid technological developments and globalization processes create new types of goods and services, and new types of business models for their delivery.

The evolution of the manufacturing sector can be explained by Schumpeter's concept of creative destruction, where innovation drives structural change and renewal. Competitiveness is framed by Porter's Diamond Model, emphasizing the interaction of factor conditions, demand, and firm rivalry in shaping regional strengths. From a regional development perspective, Romer's Endogenous Growth Theory stresses the role of knowledge and innovation as

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drivers of long-term growth. These perspectives together provide a focused framework for analyzing how European funding has supported industrial transformation and competitiveness in the Peloponnese.

3. The manufacturing sector in Greece and in the Peloponnese

At a time when the Greek economy is recovering and showing a slow but steady growth trend, the Greek manufacturing sector is attempting to recover from the effects of the pandemic and return to growth, facing fundamental development challenges. The future of the manufacturing sector in Greece depends on businesses that are willing to embrace and adapt to both sustainable development and digital challenges. Market data has shown that the industrial manufacturing sector in particular must transform existing business models, work environments, values, processes, and technologies to remain competitive and thrive in an ever-changing world, while maintaining its value (KPMG, 2023).

The Institute for Economic & Industrial Research (IOBE 2020) Study attempts to quantify the multiplier effect of manufacturing activities on the Greek economy. More specifically, it measures the direct, indirect, and induced impact of the manufacturing sectors on the economy in terms of GDP, employment, and contribution to tax revenues. Despite the downward trend in the share of manufacturing in the Greek economy, which until 2016 was only 8.8% of its total gross value added, the multipliers remain significant. More specifically, 31% of Greek GDP (almost 55 billion euros) comes from manufacturing. For every €1 of manufacturing value added, a total of €3.1 is created in the Greek economy. Around 31.3% of total employment in Greece can be related to manufacturing (1.24 million employees). For every €1 million in turnover in manufacturing, around 22 new jobs are created, while for every new job created in manufacturing, a total of 3.5 jobs are created in other sectors of the economy. More than 250 thousand jobs in the wholesale and retail trade and around 150 jobs in the primary sector are essentially financed by the manufacturing sectors. Thus, even after a long and deep recession, the multipliers of manufacturing in the Greek economy remain significant.

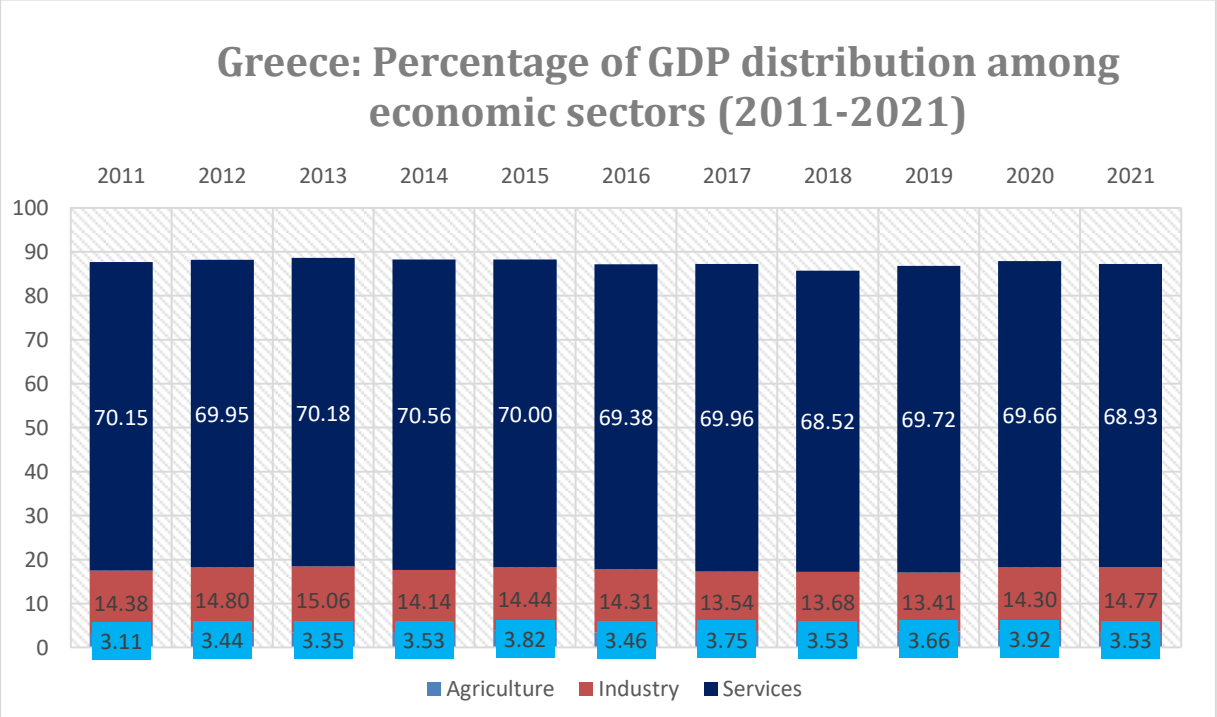

Figure 1. Greece: Percentage of GDP distribution among economic sectors (2011-2021)
Source: Statista (2024)

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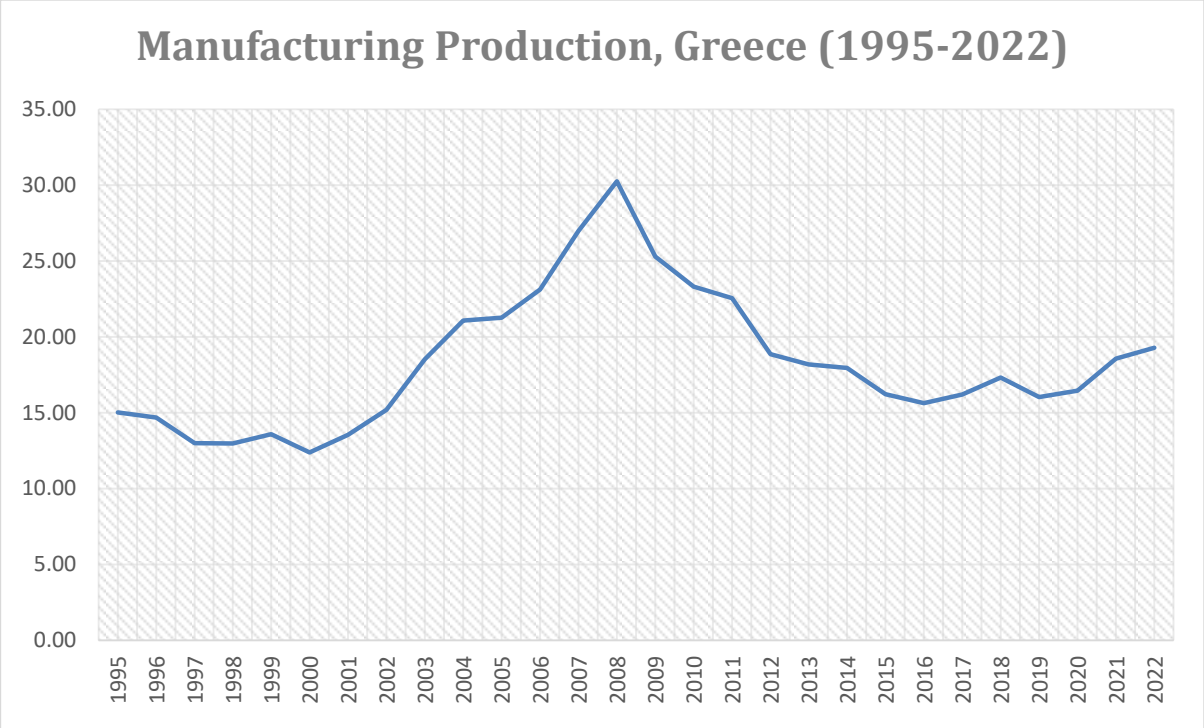
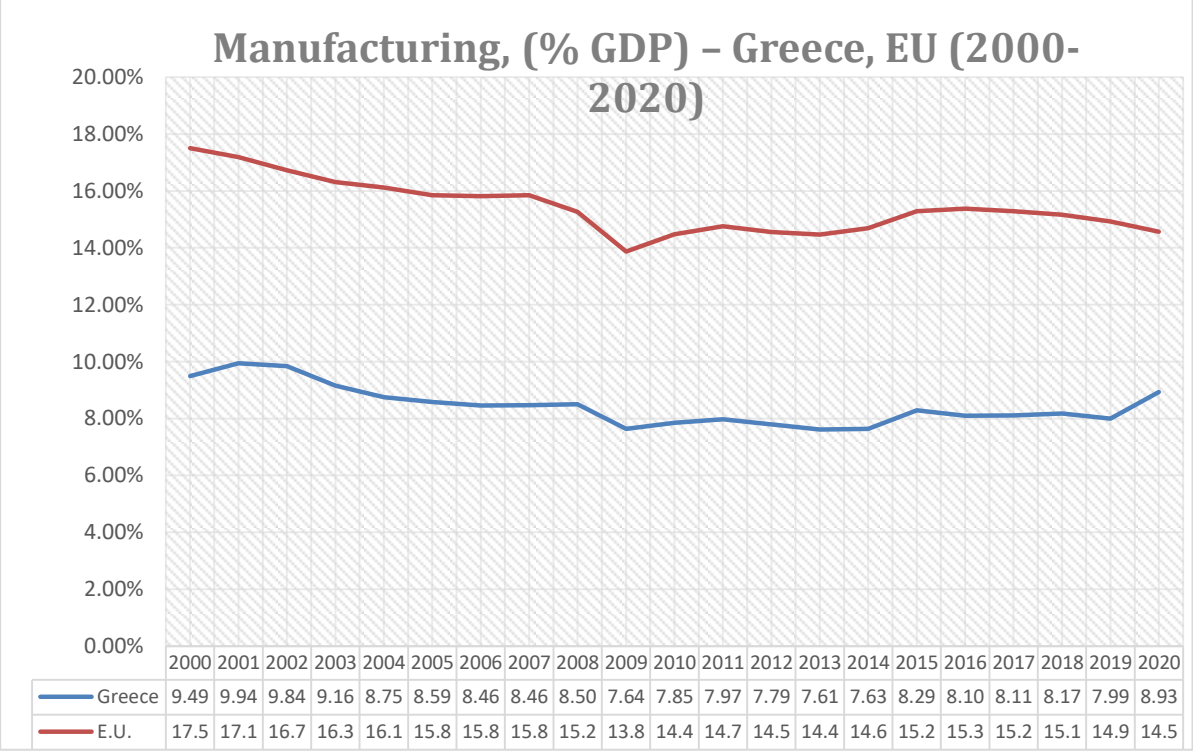


Figure 2. Manufacturing Production, Greece (1995-2022)
Source: Macrotrends (2023)

The manufacturing sector in Greece, despite its smaller share in the economy compared to the European average, continues to play a key role and has a significant impact, both in terms of economic production and social cohesion, due to strong multiplier effects.



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Greece	9.49	9.94	9.84	9.16	8.75	8.59	8.46	8.46	8.50	7.64	7.85	7.97	7.79	7.61	7.63	8.29	8.10	8.11	8.17	7.99	8.93
E.U.	17.5	17.1	16.7	16.3	16.1	15.8	15.8	15.8	15.2	13.8	14.4	14.7	14.5	14.4	14.6	15.2	15.3	15.2	15.1	14.9	14.5

Figure 3. Manufacturing sector in Greece and in EU countries (2000-2020)
Source: World Bank (2025)

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Between 2000 and 2022, the Peloponnese Region attracted significant foreign and domestic investments (32% of Greek FDI) due to its proximity and good highway/railway transport connection with Athens, advanced infrastructure networks, and natural resources. As a result, larger companies in the petcoke and refined petroleum products, and metal products sectors are based in the prefecture of Corinth.

In the rest of the Peloponnese Region, the most important sectors in terms of employment are food and beverages, wood and cork products, and other non-metallic mineral products. In addition, Megalopolis is the second most important center of electricity production in Greece. The total gross value added of the Peloponnese Region rose by 21.7% from 5.56 million euros to 6.77 million euros, compared to a corresponding increase of 21.6% nationwide from 121.09 million euros to 147.23million euros. The average contribution of the Peloponnese manufacturing sector is 4.46% of GDP.

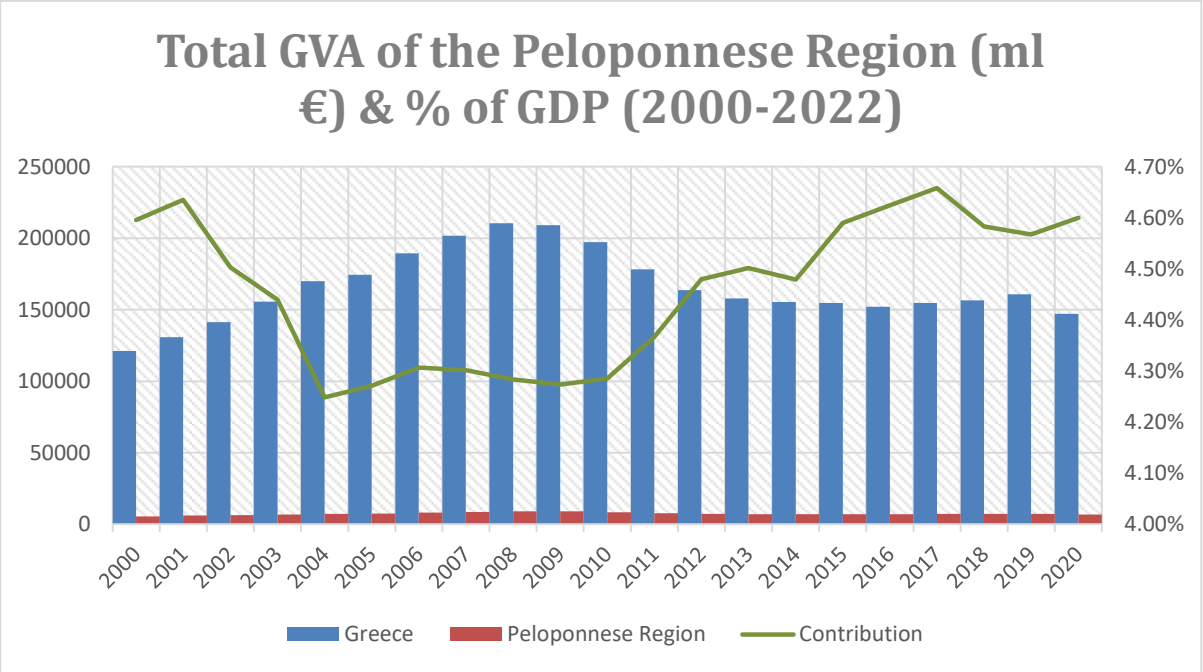

Figure 4. Total Gross Value Added of the Peloponnese Region (ml €) (2000-2020)
Source: ELSTAT (2025)

4. Contribution of Subsidized European Programs

The main objective of this research is to investigate the contribution of the programs to the economy, through the implemented approved investment proposals submitted during the period under review, 2000-2020. The secondary research objective is to examine the requirements created through the incentive to obtain additional points to approve a proposal, setting parameters such as energy saving, environmental protection, and elements of innovation in the production and administrative process.

Evaluating the European Union's financial programs, the study focuses on major European Regional Support Programs, such as the 3rd Community Support Framework (CSF) (2000-2006), as well as the National Strategic Reference Frameworks (NSRF) (2007-2013) and (2014-2020). The findings show that by supporting the main objectives of these funding programs, the actors involved can enable sustainable social and economic development in the poorest European neighborhoods, seeking to achieve the average prosperity of the European Union.

More specifically, the NSRF Programs in the manufacturing sector target the following fields (EPAnEK, NSRF 2014-2020):

- Enhancing the competitiveness of Greek businesses in the domestic and international markets through investments.
- Moving manufacturing activity towards sectors and products with higher added value.

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- Development of opportunity entrepreneurship and establishment of new businesses in the manufacturing sector.
- Strengthening the role of manufacturing services in the production system, focusing on investment plans to strengthen the presence of Greek manufacturing companies in the domestic and international market.
- Development of new products or product diversification towards high-value-added sectors with a focus on the upgrading, standardization, and certification of Greek products.
- Improving the business base in sectors that are lagging or operating under outdated forms of entrepreneurship.
- Development of innovation and new technologies.
- Maintaining existing jobs and creating new jobs in the businesses being established.

5. Conclusion

The findings highlight that European support functions as a catalyst for regional development, with strong multiplier effects on employment, GDP, and social cohesion. Policy implications focus on the prioritization of targeted investments that enhance innovation capacity, digital transformation, and environmental sustainability. Future programmes should continue to address the specific needs of the region, while ensuring that the manufacturing sector remains a key driver of economic growth. Ensuring continuity of funding while adapting to emerging challenges will allow the Peloponnese and similar regions to strengthen competitiveness and maximize their role in national and European growth strategies.

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Assessing the Causal Link Between Human Capital and GDP in Southern European Countries

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ABSTRACT

Purpose:
The purpose of this study is to empirically evaluate if there is a causal relationship between human capital and GDP in four southern European countries—Portugal, Italy, Greece, and Spain—that have been severely affected by the 2008 financial crisis.

Design/methodology/approach:
The analysis begins by analyzing the order of integration of the time series under examination to determine the optimal method for determining the presence of causal links. Given that the order of integration varies by country, the Toda-Yamamoto (1995) approach was used. Annual data were employed for the human capital index and real GDP.

Findings:
The empirical analysis results indicate that the relationship between economic growth and human capital varies substantially among countries. Specifically, no causal relationship was identified in Portugal and Spain, whereas a causal relationship is observed only from GDP to human capital in Italy. In Greece, human capital appears to Granger cause economic growth.

Research limitations/implications:
The observed differences in causal linkages may reflect the economic structures, education systems, and policies in each country.

Originality/value:
The study contributes to the existing literature by demonstrating that each country's economic and political factors have a unique impact on human capital effectiveness.

1. Introduction

This study aims to empirically test the theory of human capital. Human capital is widely recognized as a key driver of sustainable and long-term economic development. We typically use the term "human capital" to describe the health, skills, and experience of individuals, as well as their educational background. It is evident that these factors have the potential to impact on both employee productivity and the overall economy. Several empirical studies have been conducted to explore the correlation between human capital and economic growth. The authors of these studies used various indicators, such as years of schooling, enrollment rates, and government spending on education, to measure the stock of human capital.

Studies in the literature yield conflicting results, showing the intricate nature of human capital. For instance, Musila and Belassi (2004) discovered a positive correlation between education spending and economic growth, although they note that simply increasing spending is not enough; effective management of resources by the government is also needed. Hage et al. (1988) argue that the positive effect of education on economic growth necessitates the existence of a minimum level of educational program standardization. Sylwester (2000) asserts that while public education expenditure positively correlates with future economic growth, its immediate impact may be adverse.

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Men's secondary and higher education has a positive correlation with economic growth, while women's education has no effect, according to Barro's (2001) analysis of the factors influencing economic growth in a panel of 100 countries. This suggests that many countries underutilize women's human capital. Cohen and Soto (2007) highlight the importance of data in reducing measurement error and offer further confirmation of the macroeconomic impacts of human capital. Lim et al. (2018) estimate expected human capital as a measure of health and education, and they found that quicker economic development is linked to larger improvements in predicted human capital.

Asteriou and Agiomirgianakis (2001) identify a cointegrating relationship between education, as indicated by enrollment rates in primary, secondary, and tertiary education, and GDP per capita. They conclude that education Granger causes economic growth, except for tertiary education, where reverse causality is found. Garafas et al. (2022) also find a positive correlation between GDP and Greek enrollment rates over the long term, but they do not find evidence that education Granger causes economic growth. However, they uncover that GDP Granger causes general secondary education.

The current analysis empirically explores the relationship between human capital and economic growth in four southern European countries—Portugal, Italy, Greece, and Spain—known pejoratively as the P.I.G.S. countries due to their poor economic performance during the 2008 crisis. The primary goal of this study is to determine whether increases in human capital Granger cause economic growth in these economies. As these countries have long struggled with core concerns such as public debt, labor markets, and productivity, they have come to reflect for many the much-discussed "two-speed Europe" aspect. Many of these issues have been addressed; however, the split between the North and South of Europe remains a relevant framework for comparative analysis.

In this light, these countries have displayed notable variations in their economic performance in recent years, making them intriguing candidates for studying the influence of human capital on economic growth. According to Puig and Sanchez (2018), Portugal and Spain, although part of the same P.I.G.S. group, encountered distinct challenges and adopted different approaches. In Italy, De Meulemeester and Rochat (1995) found no causal relationship between higher education and economic development. However, Bronzini and Piselli (2009) discovered that human capital has a significant impact on productivity across Italian regions.

In Portugal, Teixeira and Fortuna (2003) identified a positive link between human capital and total factor productivity. Obradovic and Lojanica (2016) used the Toda-Yamamoto approach and discovered that, in the short run, tertiary education causes GDP per capita. Also, Garafas et al. (2020) used the Toda-Yamamoto approach and argued that human capital has a beneficial impact on economic growth in Greece.

This study aims to contribute to the literature by investigating the discrepancies in the relationship between human capital and economic growth in the four countries under consideration. The empirical analysis is presented in the following section, while the concluding remarks of the study can be found in the final section.

2. Empirical Analysis

The current analysis begins by examining the order of integration of the series to determine the most suitable approach for investigating the existence of causal linkages. Afterward, it is demonstrated that the human capital index and the real GDP series are integrated to varying degrees for each of the countries examined. Despite surplus lag concerns, the Toda-Yamamoto (1995) approach is extensively used to handle mixed integration orders and minimize biases. Considering integration orders, the Toda-Yamamoto approach is more favorable for the current investigation. Garafas et al. (2020) conducted research identifying varying degrees of integration between the human capital index and the GDP growth rate in Greece and ultimately selecting the Toda-Yamamoto (1995) approach as the most suitable method to test causality. The present study expanded their research to encompass the other southern European countries.

To summarize, the following procedures were carried out: The series' order of integration is initially verified using the augmented Dickey-Fuller (ADF) test and subsequently cross-checked using the Phillips-Perron (PP) test. When in doubt, the correlograms were visually examined. For each country, a two-variable VAR model was employed, with the real GDP and human capital index expressed in logarithms. The optimal lag length was determined using the information criteria, and the model's dynamic stability was assessed. Furthermore, the residuals were examined, and the LM test was implemented to assure serial independence. Following the Toda-Yamamoto (1995) approach and setting m as the maximum order of integration, an augmented VAR model was applied, with m additional lags for each variable added to each equation of the VAR model. The Wald test was then conducted to

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determine Granger non-causality, without incorporating the coefficients for the m lags. As a result, a rejection provides evidence for the existence of Granger causality.

The empirical analysis utilized annual time series data from 1950 to 2019, with the exception of Greece, where the available data was from 1951 to 2019. Data were retrieved from the Penn World Table (PWT) version 10.01 (Feenstra et al., 2015). The human capital index is based on years of schooling and returns to education, while real GDP is expressed at constant 2017 national prices.

Starting with Portugal, the unit root tests make it clear that the human capital index is I(2) and that real GDP is most likely I(1). In the case where an intercept is included, the GDP series appears to be stationary according to the PP test (see Table 1). Nonetheless, both cases confirm that the series exhibits varying degrees of integration, with the maximum order of integration being m = 2.

Table 1. Unit Root Test Results for Portugal

	p-values					
	H_0: Series has a unit root					
	ADF			PP		
	None	Intercept	Intercept and trend	None	Intercept	Intercept and trend
LGDP_PRT	0.9995	0.0535	0.9859	1.0000	0.0024	0.9848
D(LGDP_PRT)	0.0713	0.0001	0.0000	0.0018	0.0001	0.0000
LHC_PRT	0.8979	0.8149	0.5001	1.0000	0.9506	0.7487
D(LHC_PRT)	0.2893	0.2144	0.5203	0.2851	0.1813	0.4713
D(LHC_PRT,2)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

LGDP = Log of Real GDP, LHC = Log of Human Capital Index

As determined by the FPE, AIC, SC, and HQ information criteria, two lags were chosen as the appropriate number of lag lengths. The inverse roots of the characteristic AR polynomial were analyzed to assess the model's stability. The VAR model is regarded as stationary due to the fact that all of its roots lie within the unit circle. Additionally, the residual serial correlation LM test confirmed the absence of residual autocorrelation.

To test for Granger non-causality, the Wald test is used without accounting for the coefficients for m lags. The data in Table 2 show that there are no causal relationships.

Table 2. VAR Granger Causality/Block Exogeneity Wald Tests, Portugal

Dependent variable: LGDP_PRT			
	Chi-square	df	Prob
LHC_PRT	2.894040	2	0.2353
Dependent variable: LHC_PRT			
LGDP_PRT	0.777810	2	0.6778

Based on the unit root test results (see Table 3), it appears that the log of real GDP in Italy is non-stationary I(1), except in the case where we assume the presence of a constant. Nevertheless, a careful examination of the

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correlograms reveals that the autocorrelations do not rapidly decay to zero as the lag length increases, suggesting that the series cannot be considered stationary. Based on the results, it is clear that the human capital index log is I(2). The optimal number of lag lengths was determined to be two due to the information criteria FPE, AIC, SC, and HQ. Furthermore, all roots fall within the unit circle, and the residuals show no signs of serial correlation, as confirmed by the LM test.

Table 3. Unit Root Test Results for Italy

	p-values					
	H_0: Series has a unit root					
	ADF			PP		
	None	Intercept	Intercept and trend	None	Intercept	Intercept and trend
LGDP_ITA	0.9337	0.0000	0.9808	1.0000	0.0000	0.9803
D(LGDP_ITA)	0.0748	0.2475	0.0000	0.0017	0.0001	0.0000
LHC_ITA	0.4880	0.3330	0.5251	1.0000	0.8880	0.9337
D(LHC_ITA)	0.5451	0.7351	0.9003	0.5429	0.6951	0.8920
D(LHC_ITA,2)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

LGDP = Log of Real GDP, LHC = Log of Human Capital Index

The Wald test, at a significance level of 5%, suggests a marginal acceptance of the hypothesis that human capital does not cause GDP**.** However, the inverse direction of causality—from GDP to human capital—is evident (see Table 4).

Table 4. VAR Granger Causality/Block Exogeneity Wald Tests, Italy

Dependent variable: LGDP_ITA			
	Chi-square	df	Prob
LHC_ITA	5.799027	2	0.0550
Dependent variable: LHC_ITA			
LGDP_ITA	7.147903	2	**0.0280**

For Greece, the unit root test results (see Table 5) indicate that the log of real GDP should be defined as a non-stationary I(1) series, unless we assume the existence of an intercept, in which case it could be claimed to be a stationary I(0) series. Nevertheless, the latter case is not supported by visual inspection of the correlograms. The results reveal that the human capital index should be a non-stationary I(2) series. Correlograms provide more support for this argument. As a result, the series appear to be integrated in varying degrees.

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Table 5. Unit Root Test Results for Greece

	p-values					
	H_0: Series has a unit root					
	ADF			PP		
	None	Intercept	Intercept and trend	None	Intercept	Intercept and trend
LGDP_GRC	0.9604	0.0057	0.9010	0.9976	0.0189	0.9742
D(LGDP_GRC)	0.0198	0.0005	0.0000	0.0006	0.0002	0.0000
LHC_GRC	0.9481	0.6358	0.0028	1.0000	0.0081	0.0004
D(LHC_GRC)	0.0407	0.1210	0.3814	0.0405	0.1210	0.3724
D(LHC_GRC,2)	0.0000	0.0000	0.0353	0.0000	0.0000	0.0000

LGDP = Log of Real GDP, HC = Log of Human Capital Index

Based on the LR, FPE, AIC, and HQ information criteria, three lags were determined to be optimal. The VAR model is considered stationary since all of its roots lie within the unit circle. Furthermore, the residual serial correlation LM test demonstrated the absence of residual autocorrelation. The Wald test is then conducted, excluding the coefficients for the m lags to test Granger non-causality. The findings indicate that human capital Granger causes GDP in Greece.

Table 6. VAR Granger Causality/Block Exogeneity Wald Tests, Greece

Dependent variable: LGDP_GRC			
	Chi-square	df	Prob
LHC_GRC	12.00510	3	**0.0074**
Dependent variable: LHC_GRC			
LGDP_GRC	1.232936	3	0.7451

When it comes to Spain, the time series of the logarithm of GDP appears to be integrated of order 1, I(1), unless the constant is included, in which case it becomes stationary, I(0). Visual analysis of the correlograms clearly disproves the claim of the series being stationary. For the human capital index, the cases "none" and "intercept & trend" suggest that it primarily follows an I(2) pattern; but "intercept" appears to follow an I(1) pattern. However, the correlograms clearly indicate that it should be classified as I(2).

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Table 7. Unit Root Test Results for Spain

	p-values					
	H_0: Series has a unit root					
	ADF			PP		
	None	Intercept	Intercept and trend	None	Intercept	Intercept and trend
LGDP_ESP	0.9999	0.0286	0.7208	1.0000	0.0003	0.7208
D(LGDP_ESP)	0.0001	0.0000	0.0000	0.0001	0.0000	0.0000
LHC_ESP	0.9975	0.9096	0.3287	1.0000	0.9985	0.0388
D(LHC_ESP)	0.5897	0.0236	0.1788	0.5897	0.0234	0.1834
D(LHC_ESP,2)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

LGDP = Log of Real GDP, HC = Log of Human Capital Index

After considering the LR, FPE, AIC, and HQ information criteria, it was determined that five lags were optimal. Nonetheless, there is autocorrelation in the model's residuals. To address this issue, the lag length of the VAR model is extended to seven. The residuals exhibit no autocorrelation, and all roots are contained within the unit circle. According to the Wald test results, there is no significant evidence of Granger causality when excluding the coefficients for the m lags (see Table 8).

Table 8. VAR Granger Causality/Block Exogeneity Wald Tests, Spain

Dependent variable: LGDP_ ESP			
	Chi-square	df	Prob
LHC_ ESP	11.88171	7	0.1045
Dependent variable: LHC_ ESP			
LGDP_ ESP	3.614525	7	0.8230

3. Conclusions

The current study first identifies the varying orders of integration between the GDP and the human capital index for each of the so-called P.I.G.S. countries. This fact necessitates Toda-Yamamoto's (1995) methodology to investigate the causal relationships between the preceding series.

The analysis did not reveal any causal relationship that was significant for Portugal. GDP appears to be unaffected by human capital in Italy; however, an inverse causal relationship between GDP and human capital was established. Human capital was found to Granger cause GDP in Greece, as was the case in the research conducted by Garafas et al. (2020), who discovered that human capital Granger causes economic growth over a slightly different time span. Lastly, no statistically significant causal relationship between the two variables was identified for Spain. In general, the findings indicate that the causality of the relationship between economic growth and human capital is not consistent across the countries examined and is contingent upon the national context and characteristics of each economy, such as the educational system and policies applied in each country.

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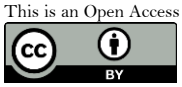

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Internal Auditing in Public Administration (Hellenic Court of Audit) According to the International Standards on Auditing. The Abrogation of Preventive Control and the Budgetary Independence.

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ABSTRACT

This study investigates the evolution of internal auditing within the Greek public administration, with a specific focus on Local Self-Government Institutions (LSGIs) and the role of the Hellenic Court of Audit. It examines the transition from traditional preventive financial control toward a model of ex-post auditing grounded in fiscal autonomy, transparency, and accountability, in alignment with International Public Sector Accounting Standards (IPSAS). The paper underscores the legal context, structures, and functionalities of the changes based on the Law 4270/2014 and the Presidential Decree 54/2018 that aims at strengthening the reforms in the public secto accounting and accrual basis, IFRS. The main focus is made on the change of the last line of control, and the general impact on the local authorities. The implication drawn from this is that decentralisation of financial management has employed potentials as well as challenges; the variation demonstrate that the administrative preparedness for the LSGIs implementation is crucial. The study concludes that the effective implementation of these reforms depends on enhancing internal control systems, standardizing reporting procedures, and fostering a governance culture rooted in professionalism and public accountability. The research contributes to the discourse on public sector modernization and offers insights into the alignment of national auditing frameworks with international standards to support transparent and efficient public financial management.

1. Introduction

Over the recent past, there has been a growing emphasis on the development of auditing practices in the public administration to enhance on ways of increasing efficiency within this civil servant dominated sphere of the economy (Grossi et al., 2023; Mattei et al., 2021). The Greek public sector, for a long time has been experiencing an elaborate and bureaucratic practice of auditing with certain precautionary driven organized financial supervisory system, transforming now towards the category of the international standards of auditing (Gkouma & Filos, 2022).

Since the onset of the global financial crisis in 2010, numerous governments have implemented austerity policies and reduced public expenditure, despite the increasing societal demand for improved and expanded public services (Pollitt, 2010). Within this context, the pressure to contain public spending while enhancing the efficiency and effectiveness of public sector operations has grown considerably (Pollitt & Bouckaert, 2004). As part of the broader effort to modernize and improve public administration, mechanisms of administrative oversight—both in the form of conventional compliance audits and more advanced performance audits—have attracted growing scholarly and professional interest (Torres et al., 2016). The rationale for public sector auditing is rooted in the reliance of governments on extensive bureaucracies to execute policy faithfully and competently. This creates a classic principal-agent dilemma, necessitating robust oversight mechanisms over the executive apparatus, or in other words, public administration.

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To address these challenges and minimize mismanagement risks, many countries have established Supreme Audit Institutions (SAIs) tasked not only with ensuring the legality of governmental expenditures but increasingly with assessing their efficiency and, more recently, their effectiveness as well (Blume & Voigt, 2007). In Greece, the corresponding SAI is the Hellenic Court of Audit (HCA), or *Elegtiko Synedrio,* which functions as a Supreme Court with jurisdiction over the legality and regularity of financial activities undertaken by public sector entities. Its staffing structure includes both judges, who typically have a background in law, and auditors, primarily trained in economics. The HCA operates under the judicial audit model—also referred to as the Napoleonic model—and its core function has historically been to conduct external audits that focus on compliance with legal and accounting standards (Kontogeorga, 2012).

In the broader debate on public sector reform, external audits have been widely recognized by both academics and professionals as essential tools for improving state operations, particularly in times of fiscal constraint (Reichborn-Kjennerud, 2013). Moreover, contemporary institutional scholarship increasingly emphasizes the significance of user-centered perspectives in the design and impact of external audits (Arthur et al., 2011; Morin, 2001). Traditionally, such audits can follow two primary approaches: pre-audits (preventive or ex-ante audits), which occur before or during expenditure execution, and post-audits (repressive or ex-post audits), which are conducted after the financial transaction is completed. Notably, the HCA stands alone among European SAIs in maintaining the preventive audit function. This model focuses solely on legality, without integrating performance auditing practices. Under this system, public sector bodies must submit payment orders for prior authorization by HCA commissioners. If the expenditure is deemed lawful, it is approved; if irregularities are identified, the request is returned without validation (Kontogeorga, 2016).

However, beginning in 2013, the HCA initiated a strategic reform agenda aimed at redefining its institutional mission, as presented in the Proceedings of the 19th Plenary Session of the Court held on October 30, 2013 (HCA, 2013). This agenda introduced a transition toward post-audit mechanisms, particularly targeted audits focused on high-interest areas of public spending. Additionally, recent legislative changes—effective as of January 1, 2019—have abolished the requirement for pre-audits, marking a significant institutional shift. These reforms align the HCA with international best practices by mandating the application of International Standards of Supreme Audit Institutions (ISSAIs). Nonetheless, the Court has acknowledged that the operationalization of ISSAIs remains at an early stage due to the absence of a formal audit regulation tailored to these standards (HCA, 2016). The initial targeted audits conducted between 2014 and 2016 are regarded as foundational efforts within a longer-term process aimed at improving risk analysis and oversight of public entities. In this vein, the HCA's strategic planning now envisions a gradual expansion of post-audit activities within a more targeted and risk-based audit framework, ensuring that significant public sector institutions are evaluated periodically and systematically.

The purpose of this paper is to critically examine the institutional transformation of internal auditing in Greece, with an emphasis on the role of the Hellenic Court of Audit in the context of these recent reforms. Focusing particularly on the abolition of preventive control and the incorporation of international auditing standards, this study analyzes the implications of these changes for transparency, accountability, and fiscal governance in Local Self-Government Institutions. By investigating the challenges and prospects of this transition, the paper aims to contribute to the broader discourse on public financial management reform and the alignment of national auditing practices with global standards.

2. Chapters

2.1 Chapter 1: The Institutional Framework and Evolution of Internal Auditing in Greek Public Administration

The current framework of public sector accounting and financial reporting in Greece reflects a complex and fragmented system shaped by its administrative structure and historically varied accounting practices. Under Law 3871/2010[1], the term "Public Sector" encompasses both General Government and Public Enterprises. The General Government is further divided into Central Government, Local Government Authorities (Municipalities and Regions), and Social Security Organizations, each with distinct responsibilities and accounting obligations. These institutional divisions are mirrored in the heterogeneity of financial reporting standards: different Presidential Decrees govern the accounting practices of each category, such as P.D.15/2011[2] for the Central Administration and P.D.315/1999[3] for Local Government, with varying accounting bases ranging from modified cash to accruals. This lack of uniformity has resulted in divergent charts of accounts and limited compatibility between financial data across entities, thus hindering the development of consolidated financial statements for the general government sector.

The budgeting process in Greece follows a cash-based system, primarily applied to the State Budget, which is prepared annually by the Central Government and excludes entities such as public hospitals, social security institutions, and local authorities, all of which operate under independent budgets. The budget functions not only as a fiscal planning instrument but also as a mechanism for resource allocation, accountability, and performance

[1] Law 3871/2010. Financial Management and Accountability. Government Gazette 141/A'/17-8-2010.

[2] Presidential Decree 15/2011. Content and timeline of the adoption of Double-Entry Modified Cash Basis of Accounting. Government Gazette 30/A'/2-3-2011.

[3]Presidential Decree 315/1999. Content and timeline of the Chart of Accounts for Local Administration Organizations. Government Gazette 302/A'/30-12-1999

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evaluation. Despite its centrality, the budgeting process coexists with the General Accounting System and the Public Accounting System, which operate in parallel and are based on different informational and procedural logics. Furthermore, all public sector entities must maintain a Commitments Register to report outstanding liabilities, contributing to a broader attempt to capture financial obligations more accurately.

A significant step toward harmonization with international practices was the issuance of Presidential Decree 54/2018[4], which introduced a unified accounting framework based on accrual accounting principles inspired by the International Public Sector Accounting Standards (IPSAS). This decree mandates the use of a common chart of accounts for all General Government entities and prescribes a new set of standardized financial statements, including the Statement of Financial Position, Income Statement, Cash Flow Statement, Statement of Changes in Equity, and accompanying notes. Additional reports, such as the Fiscal Report and the Budget versus Actual Statement, aim to enhance fiscal transparency and facilitate better evaluation of public sector performance. The financial statements under P.D.54/2018 were to be implemented in full by 2023, signifying a major transition from previously sector-specific standards.

These reforms are part of broader public financial management efforts aligned with fiscal consolidation goals and enhanced transparency, as supported by initiatives like the TRANSPARENCY program and the modernization of public administration through digital tools (e.g., SYZEFXIS, electronic document systems, and digital signatures) (Chytis et al., 2020). The implementation of IPSAS is expected to lead to multiple benefits: improved clarity and comparability of financial statements, enhanced trust among stakeholders, more rational resource management, and greater alignment with private sector practices. Furthermore, adopting IPSAS contributes to accurate financial reporting, better asset and cash management, and a strengthened auditing framework grounded in international standards. Although Greece remains in the early stages of IPSAS adoption, these initiatives collectively represent a critical shift toward a more cohesive, accountable, and transparent public sector financial environment (Chytis et al., 2020).

The fragmentation of accounting standards and reporting practices across the Greek public sector has historically posed significant challenges not only for financial oversight but also for the consistent application of internal auditing procedures (Gkouma & Filos, 2022). On the one hand, the currently horizontal structure of the audit authorities and the independence of the Hellenic Court of Audit has met significant challenges to exert the central control over decentralized structures like, municipalities or regions. These have prevented horizontal reconcilability and comparability of the financial statement data and also vertical integration, thus restraining potential of internal Audit for evaluation of the overall present and past financial compliance efficiency and performance. The effort to adopt International Public Sector Accounting Standards (IPSAS) through P.D.54/2018 represents not only an administrative and technical upgrade but also a structural precondition for the evolution of internal auditing practices in line with international norms (Gkouma & Filos, 2022).

In this light, the reorganization of financial reporting is directly linked to the modernization of the internal audit system and the wider objective of ensuring fiscal transparency and accountability across all levels of government (Gkouma & Filos, 2022). To Local Self-Government Institutions, which are often termed as under-resourced and experiencing institutional limitations, there is a challenge and a potential in the transition to unified accrual-based accounting as well as the use of the standardized financial statements. While it requires significant funds in staff education, system creation and modifications to processes, it also paves the way for high quality, risk-based auditing approaches that would in turn contribute greatly to data-driven decision-making in related governments and policies.

The alignment of accounting practices with IPSAS thus serves as an enabling condition for strengthening internal control frameworks and redefining the role of audit authorities, particularly as the public administration moves toward the abolition of preventive control and the enhancement of budgetary autonomy (Gkouma & Filos, 2022).

2.2 Chapter 2: International Auditing Standards and Their Application in the Greek Local Government Sector

The implementation of international accounting standards within the public sector is driven by a range of factors that collectively aim to enhance transparency, comparability, and accountability in financial reporting. This section delves into the principal drivers of such adoption, emphasizing their relevance in strengthening decision-making processes, fostering accountability mechanisms, evaluating the broader impact of public sector operations, and aligning national practices with global reporting standards (Knechel & Salterio, 2016).

A fundamental impetus behind the adoption of international standards lies in the pursuit of greater transparency and comparability in public financial information. Given the public sector's critical function in economic activity and its management of public funds for essential services and infrastructure, the provision of clear and accessible financial reports becomes essential. Transparent reporting allows stakeholders—including citizens, investors, and policymakers—to form an accurate assessment of a public entity's fiscal position and performance. This clarity ensures responsible governance and supports the sound management of public resources (Kotak, 2019). By aligning with internationally recognized accounting frameworks, public institutions can ensure uniformity in the recognition, measurement, and disclosure of financial data. Consequently, such alignment enhances the comparability of financial statements across various public entities and jurisdictions, thus facilitating more informed and consistent evaluations by stakeholders (Li & Moumen, 2020).

[4] Presidential Decree 54/2018. Specifications and timeline of the Chart of Accounts of the General Government. Government Gazette 103/A'/13-06-2018

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Equally significant is the role of international accounting standards in reinforcing public sector accountability. Public entities are entrusted with the stewardship of public funds and must provide credible and standardized accounts of their financial conduct. The adoption of these standards imposes clear, consistent reporting obligations, thereby ensuring the integrity, completeness, and transparency of financial disclosures (Moura & Rodrigues, 2016). In this way, stakeholders can hold public institutions accountable for their financial practices, which in turn bolsters public trust and supports institutional legitimacy. Moreover, such transparency enables effective oversight by auditors, regulatory bodies, and the broader public, thereby promoting the prudent use of public resources (Lantto, 2019).

Another important dimension of adopting international accounting standards is their capacity to support the evaluation of the broader economic, social, and environmental impact of public sector activities. Contemporary standards increasingly incorporate frameworks that extend beyond mere financial metrics to include sustainability and social responsibility considerations (OECD, 2019). Instruments such as the International Integrated Reporting Framework and Sustainability Reporting Guidelines guide public entities in disclosing non-financial information, including environmental initiatives and social outcomes. These disclosures allow stakeholders to form a more holistic understanding of the public sector's societal footprint and policy impact, encouraging sustainable practices and fostering a more comprehensive basis for governance and planning (Lantto, 2019).

Finally, international harmonization is a strategic objective underpinning the adoption of such standards, especially in an era of global interdependence. As economies and financial systems become increasingly interconnected, consistency in financial reporting across borders is essential (Parker & Guthrie, 2018). International accounting standards facilitate this alignment by offering a common framework for financial reporting, thus enabling comparability across jurisdictions. This harmonization simplifies the exchange of financial data, reduces barriers to international investment, and enhances cooperation among public sector entities and regulatory authorities.

In summary, the shift toward international accounting standards in the public sector reflects a multidimensional reform agenda aimed at improving financial management, governance integrity, and the quality of information available for public decision-making. These standards contribute to enhanced transparency, support the enforcement of accountability, promote the evaluation of non-financial impacts, and enable international comparability. Collectively, these objectives contribute to a more reliable, responsive, and globally aligned public financial reporting environment (Lantto, 2019).

2.3 Chapter 3: The Abolition of Preventive Control and the Shift Toward Fiscal Autonomy

The shift in the audit architecture of the Greek public sector, particularly as it concerns the abolition of preventive control exercised by the Hellenic Court of Audit, represents a profound transformation in the relationship between central auditing authorities and Local Self-Government Institutions (LSGIs). This reform that was legislatively discussed in Article 31 of Law 4270/2014 and then suspended until January 2020 due to implementational concerns effectively aims at shifting from an ex-ante system of financial control towards an ex-post one (Gkouma & Filos, 2022). Essentially it is a consequent development toward fixing greater level of autonomy in Independent budgeting by various organizations of public sectors including municipal being an authority and other regional units, besides the plea for efficient and most pertinent fiscal accountability. The implications of this change are manifold and invite scrutiny not only in terms of technical readiness but also in relation to broader governance outcomes—namely, transparency, institutional accountability, and the quality of democratic oversight.

Preventive control, as traditionally carried out by the Hellenic Court of Audit, involved the pre-authorization of specific financial obligations and expenditures by public entities before the actual disbursement of funds (Kontogeorga, 2018). While this mechanism has been intended to ensure the element of legal compliance and procedural formality, this has been an effective hindrance on financial adaption with the public procurement processes and procedures restricting the LSGIs strategic adaptability in responding to local demands. The whole idea of doing away with this system means that LSGIs are now required to come up with better ways that can enable them to ensure that legality of their spending decisions is equal to the efficiency with which they are implemented (Kontogeorga, 2018). This decentralization of financial control has brought about a change in auditing philosophy from the proactive one, where auditors aim at preventing lapses in financial propriety, to the reactive kind whereby the auditors' main function is to assert to the correctness of the financial records of an entity once transactions have been carried out there is a need for greater levels of internal control, audit readiness, and risk-based financial planning at the local government level.

However, this reform raises significant concerns regarding institutional readiness and the capacity of LSGIs to fulfill their enhanced responsibilities under a framework of fiscal autonomy. Many local authorities in Greece face considerable constraints in terms of administrative resources, technical infrastructure, and specialized personnel (Pitoska et al., 2020). This is because having no internal audit system and weak financial control mechanisms can lead to mismanagement, irregularities and sometimes even corruption. This is particularly important in the case of the municipalities, where internal control systems have not been developed or integrated in decision-making processes to the optimum extent. These changes also mean that thus the abolition of preventive control requires systematic provisions for building up institutional capacity, training of staff, and setting up checklists in line with the international best practices.

At the same time, the new audit model necessitates a cultural shift in public sector governance. Transparency can no longer be understood solely as the result of top-down oversight, but must be embedded in the internal processes and value systems of LSGIs (Pitoska et al., 2020). Public accountability must be reinforced through improved reporting systems, citizen engagement, and enhanced roles for municipal councils and audit committees.

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Therefore, the departure from preventive control should be viewed not just as a technical shift but as an invitation to build the culture of governance and compliance based on trust of the executive staff, professionalism and self-regulation of the institutions. Altogether, the main logical conclusion regarding the abolition of preventive control as the imperative for the Greek audit system to move to the modern world is that it should be complemented by the change in the competence, infrastructural support, and ethical readiness of the local government institutions.

3. Conclusions

The present study has examined the evolving framework of internal auditing in the Greek public sector, with particular emphasis on Local Self-Government Institutions (LSGIs), through the lens of international standards and the ongoing reforms led by the Hellenic Court of Audit. Thus, the analysis has indicated some trends from the traditional and centralized approaches of preventive control toward the ex-post accountability, fiscal decentralization, and modern auditing that complies with the principles of transparency, measurable comparisons, and the overall integrity of governance. This transformation is not cosmetic and not even confined to a process change; it is of a paradigm nature in terms of its implications to how public financial management is defined, delivered, and assessed.

The implementation of International Public Sector Accounting Standards (IPSAS), the introduction of Presidential Decree 54/2018, and the planned abolition of preventive control reflect a coherent, albeit ambitious, trajectory toward harmonizing Greece's public sector auditing with global best practices. However, it is crucial to note that this study shows that institutional, technical, and cultural issues still remain in place at the level of LSGIs indicating that many of them face temporal and human resource constraints, weak internal controls, and fragmented organizational reporting systems. These reforms cannot be fully driven by legislative accomplishments but the critical factors include adequate training of provincial leaders, revamping of operation systems and creating an accountability environment.

Ultimately, the Court of Audit's evolving role as a promoter of financial integrity—rather than a controller of daily transactions—signifies a maturing of Greece's public financial architecture. However, this maturation process must remain sensitive to the asymmetries within the public sector and must be supported by robust oversight, citizen participation, and institutional cooperation. Thus, this study reconfirms that audit reforms are not simply tools of control but constructs of democracy that can help to build trust, increase effectiveness, and enhance permanence of the civil service.

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Contribution of European Programs to Development – Competitiveness – Innovation and Generally to the Economy for the Region of Peloponnese Over the Last 20 Years in the Field of Manufacturing

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ABSTRACT

This research analyzes the contribution of European programs regarding the enhancement of innovation and competitiveness for manufacturing in the Peloponnese Region for the last 20 years. It touches on the relationship between NSRF programs and the funding provided to local manufacturing businesses, as well as the impact of changes on sustainability and development. Particular emphasis is placed on assessing how these programs contribute to improving production, promoting technological innovation and enhancing competitiveness at international level. The research focuses on strategies adopted by companies to utilize financial tools to modernize as well as the challenges they face in applying new technologies for sustainable development requirements. In this context, the role of the Structural Funds in reforming industrial production and their contribution to the long-term development of the region is examined. The results of the survey aim to continue the economic development of the Peloponnese Region and emphasize the need to enhance sustainability, growth and innovation, with the main objective of consolidating competitive dynamics in manufacturing industry.

The European Union plays a very important role in promoting regional development, competitiveness in the Member States, innovation and a number of strategic financing initiatives. Over the last 20 years, the Peloponnese region in Greece has benefited significantly from these programs, particularly in the manufacturing sector. This paper aims to examine the contribution of European programs to the economic transformation and development of the Peloponnese, focusing on the manufacturing industry of the region.

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1. Introduction. The Framework for European Integration and Regional Development

European integration has been recognised for many years as a mechanism for promoting economic cohesion, but also for reducing disparities between regions. The European Union's structural policies are carefully designed to support regions lagging behind in development, thus ensuring that all Member States can benefit from the social and economic advantages of their membership of this Union. These policies are mainly implemented through European, Structural and Investment Funds (ESIF), which include various financial instruments aimed at strengthening social, economic and territorial cohesion (European Commission, 2021).

1.1 Objectives and Structure of European Funding Programmes

The aim of European funding programmes is to promote economic growth by improving infrastructure and enhancing the competitiveness of small and medium-sized enterprises, as well as promoting innovation and sustainable development. These programmes are structured in multiannual frameworks with very specific objectives and funding allocations for different periods. Among these frameworks are the so-called Community Support Frameworks (CSFs) for the National Strategic Reference Frameworks (NSRF), which provide a strategic direction and the financial resources necessary for regional development initiatives (European Commission, 2020).

It is a foundation for economic growth due to its significant contribution to GDP, employment and exports. In the context of the Peloponnese, manufacturing was decisive for economic growth, but also for job provision. However,

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this sector has faced many challenges over the years, such as economic recessions, pressures for globalization and the need for technological methods and advances. European programs have been crucial to address these challenges, providing the necessary financial support and promoting an environment conducive to competitiveness and innovation (Behun et al., 2018). The Peloponnese is a historically important and strategically located region in southern Greece, while it has unique economic and developmental characteristics. It is known for its agricultural production. The region has taken very important steps in diversifying its economic base. With manufacturing emerging as a key sector, the region's development strategy has been largely supported by European programs, where they have provided significant funding to improve innovative initiatives and infrastructure (Kyriakopoulos, 2023).

This paper examines the impact of European programs on the Peloponnese manufacturing sector over the last 2 decades. It analyses the contribution of these programs in terms of developing infrastructure to support SMEs, innovation and developing human capital with environmental sustainability. The analysis is based on data and case studies from different regional units of the Peloponnese, thus highlighting specific projects and their results.

2. Significance of the Study

Understanding the impact of European programs on regional development is very crucial for different reasons. Initially, it provides information on the effectiveness of the European Union's policies and financial mechanisms in achieving their objectives. Secondarily highlights best practices but also successful strategies, which can be applied to other regions and sectors. It also underlines the importance of continued support for regional development initiatives, especially for regions facing economic challenges.

3. European Programmes and Structure

CSF and NSRF: For support and economic development in the regions, European and Investment Funds are key tools. They can provide the necessary financial support to strengthen infrastructure.

The role of the CSFs: The first CSF in 1989-1993 focused on improving infrastructure and led to the first steps towards economic cohesion. In 1994-1999, due to growth, tackling economic and social inequalities began. The third CSF in 2000-2006 saw major projects aimed at enhancing competitiveness, while the 4th NSRF, which covered the years 2007-1013 and 2014-2020, focused on innovation, sustainable development and integration into the European economy.

4. Impact on the Peloponnese

Studies

The funds given by the European Union to upgrade the region's infrastructure, such as transport networks, which are essential for the supply chain, as well as improved roads, which are of general utility. All these features greatly facilitated the site and reduced costs for developers. Small and medium-sized enterprises in the Peloponnese region (Fletcher et al., 2021) received very significant support through loans, but also grants, which aimed to enhance competitiveness through innovation, but also entrepreneurship. In 2007-2013, the Competitiveness Programme had critically significant funding for projects related to modernisation and expansion. A focus was placed on innovation, which led to many investments in research and development; Creation and innovation have encouraged collaboration between universities and industries and this has led to the creation of new products and processes that enhance the competitive advantage for the region. They were invested through training programs for the local workforce in skills needed to be applied in a modern production environment. The European Union has placed considerable emphasis on vocational training and education, while at the same time helping to reduce unemployment. To improve productivity (Behun et al., 2018). Programs aimed at improving environmental sustainability to support the uptake of green technologies in manufacturing contributed not only to reducing environmental impact, but also to positioning. Businesses in positions that comply with the strictest regulatory requirements of the European Union.

Regional Unit of Argolis:

Under the Competitiveness and Entrepreneurship Programme 2007 – 2013, 134 project proposals were submitted with a total budget of 159.7 million euros. Of these, 71 projects were approved, thus significantly enhancing local manufacturing capacities (Kyriakopoulos, 2023).

Regional Unit of Arcadia:

Arcadia benefited from significant support from the European Union with the submission of 193 proposals to the same programme, but focusing on upgrading infrastructure and industry. This had strengthened the region's economic resilience and growth prospects.

Regional Unit of Corinthia:

Corinthia has achieved the highest absorption rate of European Union funds among the Peloponnese regions with 391% in some programmes, showing effective utilisation of available resources for economic development.

Regional Unit of Laconia:

Manufacturing in distress has seen significant cases particularly in terms of project completion, with 85 projects successfully completed under the Regional Operational Programme for SMEs (PwC Greece, 2022).

Regional Unit of Messinia:

Focuses on innovation and modernization, with the support of the European Union, implementing numerous projects aimed at improving competitiveness and expanding the market.

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4.1 Regional Impact Analysis

The funds disbursed by the European Union led to an unprecedented economic growth for the Peloponnese region, new businesses were established, while existing ones were expanded and have created many new jobs, thus significantly reducing unemployment rates and strengthening local economies (European Commission, 2021). The European Union, following targeted investments, has enabled manufacturers to enhance competitiveness that they had through advanced technologies, modernizing their activities and managing to improve the quality of their products. They expanded their market domestically and internationally and increased production efficiency. The programmes support research and development activities to lead to the creation of new products and services. This innovation strengthened the manufacturing sector, but also contributed to the region's overall economic resilience (Xie, Jiang, & Han, 2020). Complementary, the programmes have important social ones. And environmental benefits. Green technologies and sustainable practices significantly reduce the environmental footprint in the manufacturing sector. The emphasis on human resource development improves skills in a local workforce. And it leads them to better employment prospects with higher living standards (Li, Li, & Ren, 2018).

5. Detailed Contribution of Programs

1. Competitiveness and Entrepreneurship Programme (2007-2013): This programme aimed to enhance the competitiveness of Greek SMEs through investments in innovation, internationalisation and modernisation. The success of the program in the Peloponnese is evident through the large number of approved projects, but also through the substantial financial support provided (Jarsulic, 2021).

2. Competitiveness, Entrepreneurship and Innovation Programme (2014-2020): Building on the success of the previous programme, this programme continued to support SMEs in the Peloponnese, providing significant funding for innovation and technological progress. This programme emphasised the importance of environmental sustainability but also energy efficiency, which was aligned with the wider objectives of the European Union (Povolná & Švarcová, 2017).

3. Research – Creation – Innovation Programme: This initiative has been crucial in promoting collaboration between academics and industry. By supporting research projects and innovative ventures, the program facilitated the development of new technologies and products, thus enhancing the competitive advantage of the region.

5.1 Future Prospects

The ongoing programmes of the European Union for the period 2021 – 2027, continue to build on previous successes with new initiatives, which adapt to the evolving needs of the manufacturing sector. The aim of the modern manufacturing programme is to enhance the competitiveness of existing manufacturing SMEs and support the establishment of new ones, with a particular focus on innovation and market internationalisation with a focus on promoting sustainable business practices. This programme supports projects related to waste management, energy efficiency and the development of green products. Energy efficiency for SMEs aims to improve the energy efficiency of manufacturing processes, helping SMEs reduce costs and comply with European Union energy standards (Rutledge & Mayorga, 2022).

6. Conclusions

European programs play a critical role in transforming the manufacturing sector in the Peloponnese region, provide financial support and promote a culture of innovation and sustainability, where these programs have enabled significant economic growth. The region continues to leverage funding from the European Union and is well positioned to achieve further growth and competitive advantage in the global market (Fletcher, McNamara, & Wyatt, 2021). The lessons learned and the successes achieved in the Peloponnese can serve as a model for other regions wishing to reap the benefits offered by the European Union through integration and support. It focuses on innovation, sustainability and competitiveness, while it can continue to thrive and contribute significantly to Greece's economic growth. Future programmes should continue to address the specific needs of the region, while ensuring that the manufacturing sector remains a key driver of economic growth (Behun et al., 2018). In conclusion, the European Union's commitment to regional development through various funding programs has a profound impact on the Peloponnese, the region's ability to innovate and adapt is the answer to global challenges, which has been significantly strengthened by these programs, placing it in continuous success in the coming years. As Bulgaria prepares to receive similar support. the experience of the Peloponnese can provide valuable knowledge and best practices to maximize the benefits of European Union funding (European Commission, 2021).

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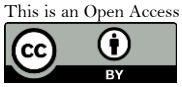

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