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Research article

FORECASTING ENTREPRENEURIAL AND EMPLOYABILITY OPPORTUNITIES IN THE UAE: A GOVERNMENT FINANCE ANALYSIS

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Abstract. This study aims to forecast future entrepreneurial and employability opportunities in the United Arab Emirates (UAE) through an analysis of Government Finance Statistics. Specifically, it examines the impact of transactions in non-financial assets, financial assets, and liabilities on the gross operating balance to identify potential areas for business growth. The research explores various business activities, including investments in non-financial assets, lending and borrowing, acquisition of financial assets, and the incurrence of liabilities. Using a time series analysis approach, this study employs quarterly data from 2012 Q1 to 2023 Q3 to estimate short- and long-term effects using an Autoregressive Distributed Lag (ARDL) model. The findings highlight significant future investment opportunities in non-financial assets, as well as in the lending and borrowing sectors. Additionally, the analysis of financial assets and liabilities reveals that while the incurrence of liabilities positively influences the gross operating balance, the acquisition of financial assets has a significant negative impact. Based on these findings, the study recommends that entrepreneurs and policymakers prioritise investments in non-financial assets and strategically manage liabilities to maximise economic opportunities. Furthermore, policymakers should introduce regulatory reforms to enhance the attractiveness of financial asset investments, ensuring a more positive contribution to the UAE's economic sustainability. Future research should further investigate the underlying factors contributing to the negative impact of financial asset acquisitions on the gross operating balance. Additionally, further studies should identify the most promising non-financial asset investment opportunities to support sustainable entrepreneurial growth in the UAE.

Keywords: non-financial assets; financial assets; entrepreneurship; employability; UAE; government finance; digitalisation; economic sustainability

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1. Introduction

The importance of Small and Medium Enterprises (SMEs) in international economies is well-documented, with SMEs accounting for over 95% of all companies worldwide [1]. In the United Arab Emirates (UAE), the Ministry of Economy has established a supportive and regulated ecosystem for entrepreneurship, characterized by an integrated framework designed to accelerate the growth of entrepreneurial ventures. The UAE government actively implements programs aimed at fostering growth and increasing the contribution of SMEs to the national GDP. This entrepreneurial ecosystem has been significantly strengthened through impactful federal-level decisions, such as permitting full foreign ownership across all sectors, the introduction of golden visas for entrepreneurs, and various other incentives and benefits [2]. The role of specialized free zones has been particularly instrumental in establishing a robust foundation for entrepreneurship in the UAE. Through these strategic measures, policymakers aim to increase the number of SMEs and enhance their contribution to the national economy [3].

Key indicators from the UAE Ministry of Economy (2024) further highlight the crucial role of SMEs in the UAE's economic landscape. Micro-enterprises constitute 70.9% of all companies, small enterprises make up 26.8%, and medium enterprises account for 2.3%. Furthermore, the SME sector contributed 63.5% to the UAE's non-oil GDP in 2020. Significant growth has also been observed in startup funding, which experienced a 37.5% average growth per investment in 2020, while the number of Emirati-owned companies increased by 10.2% in 2022 [2].

The UAE has gained international recognition for its rapid economic development, emerging as a regional hub for entrepreneurial ventures and employment opportunities [2]. However, the broader entrepreneurial and employability landscape in the UAE remains subject to ongoing discussion, influenced by various socio-economic factors and government policies. Proponents argue that the UAE's business-friendly environment, characterized by low taxation, a highly skilled expatriate workforce, and strong governmental support for startups, has fostered an ideal environment for entrepreneurship. Strategic initiatives such as the UAE Vision 2021 and the National Innovation Strategy emphasize technological innovation and economic diversification away from oil dependency, creating a conducive environment for new business ventures [4]. Furthermore, government finance statistics demonstrate substantial investments in infrastructure, education, and technology, all of which have contributed to strengthening the entrepreneurial ecosystem. The introduction of long-term residency permits for investors and entrepreneurs has further increased the UAE's attractiveness as a business destination [4].

Despite these favorable policies, critics highlight several structural challenges that moderate the optimistic view of entrepreneurial prospects in the UAE. Rising operational costs, stringent regulatory requirements, and a highly competitive market present significant barriers for SMEs. Additionally, the dominance of large multinational corporations and local conglomerates can overshadow smaller enterprises, limiting startups' ability to gain market share [5,6].

From an employability standpoint, there are divergent perspectives. While the UAE's labor market benefits from a highly diverse expatriate workforce, widely recognized for its broad range of skills and experiences, concerns persist about job security, wage disparities, and restricted career advancement opportunities for both expatriates and Emirati nationals.

Government statistics also reflect a strong emphasis on Emiratization—a policy aimed at increasing the participation of UAE nationals in the workforce [7-9].

Economic and social transformations, driven by globalization and technological advancements, have significantly influenced corporate practices and business dynamics by reshaping market structures, financial strategies, and employment patterns [10,11]. Public discourse surrounding the factors shaping corporate activities has intensified, with these factors broadly classified into micro (internal) and macro (external) categories. Micro-level factors pertain to firm-specific elements such as leadership, innovation, and financial management, whereas macro-level factors encompass broader economic, regulatory, and technological shifts at the national or regional level [12].

SMEs, as key economic drivers, play a central role in fostering innovation, job creation, and economic diversification. In the UAE, SMEs serve as catalysts for economic restructuring, contributing substantially to employment generation, cost-efficient production, and a diversified business environment. Notably, SMEs accounted for 63.5% of the UAE's non-oil GDP in 2020, reflecting their crucial role in national economic strategy [13].

From a financial performance perspective, profitability remains a fundamental indicator of corporate success. The Financial Accounting Standards Board (FASB) emphasizes in its "Statement of Financial Accounting Concepts No. 1" that financial reporting should facilitate the prediction of future earnings, enabling informed decision-making among investors and stakeholders [14]. Profitability not only guides decisions related to production, employment, and investment but also influences corporate sustainability and competitive positioning in global markets. Given the rising complexities of financial markets and increased competitive pressures, earnings management practices have emerged as a focal research area, particularly in the context of globalization and industrial competition [15].

A company's financial health serves as a proxy for its ability to manage assets effectively, enhance operational efficiency, fulfill obligations, and mitigate bankruptcy risks. Robust internal capabilities—including technological innovation, product quality enhancements, human capital development, and cost management—are fundamental to sustaining financial stability [16]. Economic conditions also exert a profound impact on corporate profitability, necessitating continuous monitoring and adaptive financial strategies [17]. To align corporate objectives with market dynamics, businesses must refine their financial assessment methods, particularly given the volatility of global markets and sector-specific risks. Financial ratio analysis is widely employed as a tool to evaluate financial conditions and predict profit trends across various industries [18]. While strong financial performance correlates with higher profit growth, weaker financial management may result in declining profitability, reduced investor confidence, and operational inefficiencies. For investors, executive managers, and board directors, profitability metrics are critical for shaping corporate policies, resource allocation, and long-term investment strategies [19].

Both industry-specific and macroeconomic factors—including technological advancements, regulatory frameworks, and competitive market forces—play integral roles in determining the profitability and expansion potential of entrepreneurial ventures. Financial and non-financial transactions, spanning multiple industries and asset classes, are directly linked to these

dynamics, making strategic asset allocation a pivotal consideration for entrepreneurs. Navigating these complexities effectively requires a nuanced understanding of financial trends, market demands, and policy interventions to optimize business performance and stakeholder value.

Against this backdrop, this study conducts a comprehensive analysis of the UAE's entrepreneurial and employability landscape, evaluating both opportunities and structural challenges in the investment ecosystem. By leveraging government finance statistics and sectoral data, the study examines the strategic role of financial and non-financial assets in shaping the UAE's economic trajectory. Additionally, it explores emerging opportunities for entrepreneurs and job seekers while providing insights for policymakers to enhance regulatory frameworks, foster sustainable economic growth, and optimize national investment strategies.

The paper is structured as follows: Section 1 introduces the entrepreneurial and employability landscape in the UAE, highlighting the role of financial and non-financial assets in economic development. Section 2 reviews the literature on the impact of these assets in fostering digital-driven economic growth and sustainable entrepreneurship. Section 3 outlines the methodology used to analyze government finance statistics and related data. Section 4 presents key findings, focusing on opportunities and challenges in the UAE's entrepreneurial and employability landscape, and discusses the implications of these findings for policymakers and business stakeholders. Finally, Section 5 concludes with recommendations for future research and practical applications, emphasizing strategic priorities for sustainable economic development.

2. Literature Review

2.1. Entrepreneurial Finance, and Ecosystems

Entrepreneurship has emerged as a vital driver of economic growth and innovation, particularly in today's dynamic global markets. As regions and economies increasingly focus on fostering entrepreneurial ventures, the concept of Entrepreneurial Ecosystems (EEs) has gained significant attention. Entrepreneurial ecosystems refer to interconnected networks of stakeholders—including entrepreneurs, investors, government agencies, and support organisations—that collectively facilitate the creation, growth, and sustainability of entrepreneurial ventures [20]. These ecosystems play a crucial role in shaping the opportunities and challenges faced by entrepreneurs, influencing regional economic development and innovation capabilities. However, the effectiveness of entrepreneurial ecosystems is highly dependent on the strategic allocation of government financial resources, the accessibility of capital, and the adoption of digital technologies that enhance operational efficiency and business scalability. The dynamics of entrepreneurial ecosystems vary significantly between advanced and emerging economies, reflecting differences in resources, governance structures, and stakeholder interactions [21].

Cao and Shi [22] provide a systematic review of EEs, highlighting the key dynamics that distinguish ecosystems in advanced economies from those in emerging markets. In advanced economies, well-established ecosystems benefit from abundant resources such as capital, talent, and infrastructure, which facilitate entrepreneurial activity. Emerging economies, however, often face significant resource constraints, which can hinder entrepreneurial growth. These constraints include limited access to financing, human capital, and robust infrastructure. In this

context, digital transformation serves as a critical enabler, allowing for the optimisation of financial resource allocation and improving access to alternative funding mechanisms such as digital lending platforms, crowdfunding, and blockchain-based financial instruments. The authors categorise the dynamics of EEs into three primary logics: interaction, resource, and governance.

Interaction logic focuses on the relationships between stakeholders in the ecosystem, such as entrepreneurs, investors, and government entities, emphasising the importance of collaboration for innovation and knowledge exchange. Unlike traditional industrial clusters, where knowledge is industry-specific, entrepreneurial ecosystems centre around more generalised business knowledge, which is critical for fostering innovation across sectors. The integration of digital tools within these ecosystems facilitates real-time data sharing, financial forecasting, and enhanced decision-making processes, further accelerating entrepreneurial activity.

Resource logic, on the other hand, views ecosystems as resource allocation systems, with entrepreneurs acting as key agents in mobilising critical resources such as labour, capital, and expertise. While advanced economies typically offer more accessible resources, emerging economies often struggle with scarcities that can constrain entrepreneurial initiatives. In emerging markets, access to capital and skilled labour is often limited, and infrastructure may be underdeveloped, presenting significant challenges to the growth of entrepreneurial ventures [20]. However, digitalisation has helped mitigate some of these limitations by enabling financial inclusion, improving efficiency in business operations, and reducing transaction costs through digital payment systems and automated financial services.

Moreover, emerging economies face institutional challenges that affect the development of entrepreneurial ecosystems. Governance logic highlights the coordination between public and private actors in creating a supportive environment for entrepreneurship. Effective governance structures are necessary to foster innovation, streamline regulations, and reduce barriers to entry for entrepreneurs. However, in many emerging economies, weak formal institutions and the reliance on informal networks, such as the guanxi system in China, can limit the scalability and success of entrepreneurial ventures [23].

Similarly, the work of Bonini and Capizzi [24] delves into the changing landscape of entrepreneurial finance, particularly the role of venture capital (VC) in the evolving ecosystem. Venture capital has traditionally been the dominant source of early-stage financing for high-growth ventures, providing not only capital but also mentorship, governance, and follow-on funding. However, the emergence of alternative financing mechanisms, such as crowdfunding, angel investors, and accelerators, over the past decade has challenged the conventional VC model. These alternatives often offer more flexibility, speed, and lower thresholds for investment, providing entrepreneurs with quicker access to capital. Moreover, the integration of digital financial platforms has facilitated the accessibility of these alternative mechanisms, further reshaping the entrepreneurial funding landscape. Crowdfunding, in particular, has disrupted the traditional VC space by allowing entrepreneurs to bypass financial intermediaries and raise funds directly from the public [25]. Despite the competition from these new funding sources, venture capital remains indispensable for later-stage investments, where its expertise in governance, deal structuring, and scaling businesses is critical.

Business angels also play a pivotal role by providing early-stage financing, typically filling the gap before institutional venture capital becomes involved. Angel investors offer not only financial support but also mentoring and industry-specific expertise that can be crucial for the success of nascent ventures [25]. The rise of digital investment platforms has expanded the reach of business angels, enabling cross-border investments and facilitating more dynamic capital flows into high-growth startups. Crowdfunding, meanwhile, provides a broader platform for both reward-based and equity-based fundraising, although it comes with its own set of challenges, including fraud risks and a lack of investor sophistication. The use of blockchain technology and smart contracts has been proposed as a means to enhance transparency and reduce risks associated with crowdfunding platforms. Ultimately, Bonini and Capizzi [24] argue that while the entrepreneurial finance ecosystem is evolving, venture capital will remain an essential component, particularly for its role in nurturing ventures from early stages to scalable enterprises.

Finally, entrepreneurial ecosystems are complex, co-evolving networks that facilitate the growth and sustainability of entrepreneurial ventures. While advanced economies benefit from resource-rich ecosystems, emerging markets face significant challenges in building effective ecosystems due to institutional voids and resource scarcities [20]. In this context, digital transformation serves as a key enabler, allowing emerging markets to overcome traditional barriers through fintech solutions, AI-driven investment analytics, and decentralised finance (DeFi) mechanisms. The evolution of entrepreneurial finance, particularly with the rise of alternative funding mechanisms, highlights the changing dynamics of venture capital and its continued importance in fostering high-growth ventures [24]. A summary of key studies in entrepreneurial finance and ecosystems is presented in Table 1. As these ecosystems continue to develop, the collaboration between public and private actors, coupled with digital financial innovation, will play a critical role in shaping the future of entrepreneurship.

Table 1. Studies in Entrepreneurial Finance and Ecosystems

Source	Methods	Results	Contribution	Limitations
Venture Capital (VC) and Entrepreneurial Finance				
[24]	Literature review and analysis of VC ecosystem changes	Venture capital faces increased competition from new funding sources but remains essential due to its unique competencies.	Highlights the shift in the entrepreneurial finance ecosystem and the enduring role of VCs despite challenges.	Lack of empirical testing for how VCs should adapt to coexist with alternative funding sources.
[26]	Historical analysis	Professionalization and institutionalization of VC in the U.S. since the 1940s.	Highlights how tax policy changes in the U.S. boosted the VC industry.	Focuses mainly on U.S. markets, lacks a comparative international perspective.
[27]	Panel data analysis	VC-backed firms show higher innovation rates and faster growth than non-VC-backed firms.	Establishes a strong link between VC involvement and firm performance in high-tech sectors.	Focuses mostly on high-tech sectors, ignoring other industries.
[28]	Quantitative data analysis	VC reputation significantly impacts	Demonstrates the importance of institutional and	Lacks specific case studies or regional breakdowns.

		global investment performance.	cultural differences in VC investing success.	
[29]	Descriptive and qualitative	Profiles of angel investors show differences between experienced and novice investors.	Provides a clearer understanding of the motivations and strategies of angel investors.	Needs more detailed longitudinal data on investor performance over time.
[30]	Empirical study	Contracts and exit strategies are crucial for VC success, with staged investments reducing risk.	Explores the role of contractual agreements and staged investments in mitigating information asymmetry.	Does not explore how these strategies adapt to different types of firms or industries.
[31]	Regression analysis	Active investors, particularly VCs, significantly contribute to firm governance and decision-making.	Highlights the hands-on role of VCs in influencing firm strategy and success.	Limited to developed markets, with little exploration of emerging market dynamics.
		Business Angels (BA)		
[32]	Case studies and surveys	Business angels play a key role in early-stage financing but operate in an "invisible" market.	Shows the importance of BANs (Business Angel Networks) in formalizing and structuring the angel investment market.	Limited focus on the long-term impact of angel networks.
[33]	Empirical research	BAs should form networks to close the early-stage financing gap.	Provides a framework for how BAs can become more structured through BANs.	Lacks an analysis of the scalability of BANs across different regions.
[34]	Empirical studies on funding gaps in early-stage finance	Identified a "primary funding gap" for early-stage start-ups; angels help fill the gap.	Provided critical insights into the funding gap issue and the role of business angels in early-stage finance.	Limited exploration of how VCs can collaborate with business angels to bridge the gap.
[35]	Regression discontinuity analysis of the impact of business angel organizations on start-ups	Showed positive effects of angel funding on start-up growth and survival, particularly outside the U.S.	Provided a method to quantify the impact of angel funding on start-ups.	Needs more cross-country comparisons to understand angel investing practices in different markets.
		Crowdfunding		
[36]	Quantitative analysis	Explores the dynamics of reward-based crowdfunding platforms.	Highlights the role of crowd size and the level of updates in campaign success.	Does not address equity-based crowdfunding in depth.
[37]	Theoretical exploration of crowdfunding's impact on entrepreneurial finance	Crowdfunding offers start-ups a way to raise capital without traditional financial intermediaries.	Highlighted the disruptive potential of crowdfunding in providing seed capital.	The long-term effects of crowdfunding on venture scalability and sustainability remain underexplored.

	Institutional Investors and Emerging Markets			
[38]	Analysis of institutional investor involvement in direct and co-investments	Increasing participation of institutional investors in direct and co-investments; pressure on traditional VCs.	Provided evidence on the rise of shadow capital and its role in reducing reliance on traditional VC models.	The impact of this trend on long-term venture success and how VCs might adapt is not fully addressed.
[39]	Theoretical framework of institutional voids	Institutional voids hinder firm performance in emerging economies.	Introduces the concept of institutional voids as a critical factor in entrepreneurial success.	Lacks specific policy recommendations for overcoming institutional voids in emerging markets.
[40]	Empirical study on Brazilian EE	Institutional constraints such as regulatory framework and market conditions.	Highlights the institutional constraints in Brazil's entrepreneurial ecosystem.	Lacks focus on specific solutions for overcoming these institutional challenges.
[41]	GEI methodology, empirical study	Lack of interaction between educational institutions and entrepreneurs.	Identifies education as a critical bottleneck in Brazil's ecosystem.	Does not explore how to improve the education-entrepreneurship nexus.
[42]	Conceptual study of suboptimal ecosystems	Informal institutions dominate entrepreneurial activities in emerging markets.	Explores the concept of suboptimal ecosystems and informal institutions.	Lacks empirical data on how informal institutions can be formalized.
[43]	Empirical study of Chinese science parks	Science parks as institutional intermediaries.	Highlights the role of science parks as intermediaries in bridging institutional voids.	Limited discussion on how these intermediaries can be replicated in other contexts.
[44]	Study of Start-Up Chile program	Start-Up Chile connects government funds to start-ups.	Demonstrates the role of government in supporting new ventures.	Focused on a single case, lacks cross-country comparison.

Source: Authors' research.

2.2. Employability

Employability has become an essential focus in contemporary education and workforce development, particularly with the advent of the Fourth Industrial Revolution (4IR), which has radically transformed the nature of work. Employability is typically defined as the set of skills, knowledge, and personal attributes that enable an individual to secure and maintain employment while also being able to navigate transitions in their career [45]. Over time, this definition has evolved, incorporating a broader understanding of lifelong learning, adaptability, and continuous professional development [46]. With rapid technological advancements, particularly in areas such as artificial intelligence (AI), machine learning, and automation, the demand for employability skills has shifted, requiring individuals to develop not only job-specific competencies but also the ability to adapt to new and unforeseen challenges in the workplace [47].

The 4IR, driven by these technological advancements, is reshaping industries and job markets on a global scale. As emphasized by the World Economic Forum, many current jobs are at risk of being replaced by automation, while entirely new job roles, which require different skill sets, are emerging. For individuals to remain employable in this evolving landscape, they need to cultivate critical 21st-century skills, such as complex problem-solving, critical thinking, creativity, people management, and emotional intelligence. These higher-order skills enable employees to adapt to both technological changes and shifts in organizational structures, ensuring they can continue to thrive in an unpredictable job market [48].

The gap between the skills that higher education institutions are teaching and the actual demands of the labor market is a central issue in employability discourse. Studies, such as that by Pauceanu et al. [47], reveal that there is often a significant mismatch between students' perceptions of the skills they need and what employers require. In the context of the UAE, the rapidly growing knowledge economy and the emphasis on global competitiveness make this gap even more pertinent. Pauceanu et al. [47] highlight that while students are aware of some key employability skills, such as emotional intelligence and coordination with others, they often underestimate the importance of skills like complex problem-solving, creativity, and decision-making. This disconnect calls for a more collaborative approach between universities and employers to ensure that students are better prepared for the 4IR job market.

One crucial concept that intersects with employability is career adaptability. Career adaptability refers to an individual's readiness and ability to navigate career transitions, whether anticipated or unanticipated, through proactive behaviors and resourcefulness. It encompasses four key dimensions: concern (planning for the future), control (self-discipline and self-governance), curiosity (exploring career opportunities), and confidence (solving problems related to career advancement). Research by Khalid and Ahmad [7] found a strong positive correlation between employability skills and career adaptability, particularly among UAE undergraduates. The study demonstrated that skills such as critical thinking, problem-solving, and creativity are significant predictors of career adaptability, thereby enabling graduates to better cope with the uncertainties of a dynamic labor market.

Universities play a critical role in equipping students with these essential employability skills. By incorporating practical training, such as internships and experiential learning opportunities, higher education institutions can help students build the capabilities necessary to succeed in an increasingly complex job market [49]. The UAE, in particular, is facing challenges in aligning its educational outcomes with labor market demands. Despite initiatives such as Emiratization, aimed at increasing the participation of Emirati nationals in the private sector, a skills gap persists, particularly in fields requiring advanced problem-solving and technological adaptability [50].

Lastly, employability in the Fourth Industrial Revolution hinges on individuals' ability to develop critical higher-order skills and their adaptability to a rapidly changing job landscape. Educational institutions and policymakers must work together to address the skills gap and prepare graduates for the challenges and opportunities presented by technological advancements. Cultivating career adaptability alongside technical and behavioral competencies is crucial to ensuring that the workforce remains resilient and competitive in the global economy.

A summary of key studies on employability skills and career adaptability is presented in Table 2.

Table 2. Employability Skills and Career Adaptability Studies

Source	Methods	Results	Contribution	Limitations
[46]	Conceptual Model	Emphasized skills, knowledge, and personal attributes	Introduced a practical model of graduate employability	Lacked empirical validation of the model
[51]	Conceptual Framework	Linked employability to proactive behavior and adaptability	Provided a psychological perspective on employability	Did not test the framework empirically
[52]	Empirical Study	Found disconnect between employers and students on employability skills	Highlighted the need for better alignment between education and employment	Limited to the UK context
[53]	Career Adaptability Scale (CAAS)	Developed the Career Adapt-Abilities Scale	Found career adaptability is a predictor of career success	Does not account for cultural differences in career adaptability
[48]	International Labor Studies	Identified key employability skills for IR 4.0	Highlights the global nature of employability skills in modern economies	Lacks focus on specific regions or countries like the UAE
[47]	Quantitative Study (Survey)	Found a gap between student perceptions and employer needs	Tested students' awareness of employability in 4IR	Focused on UAE; limited generalizability to other regions
[7]	Survey of 420 students	Positive relationship between employability skills and career adaptability	Highlights the role of IR 4.0 skills in enhancing career adaptability	Limited to undergraduate students in the UAE
[49]	Employer Survey	Identified a significant skills gap in UAE graduates	Highlights the mismatch between education and job market requirements	Focused on employer perceptions, lacking direct data from graduates

Source: Authors' research.

2.3. Hypotheses development

Entrepreneurship is a key driver of economic growth, playing a crucial role in fostering innovation, creating opportunities, and enhancing employability [54]. The capacity of financial and non-financial firms to expand, offer opportunities for entrepreneurs, and boost employability is shaped by several factors, including taxation, financial performance, corporate governance, and financial indicators. This section reviews studies that illuminate these factors and their effects on the growth and profitability of financial firms and sectors.

Bryant-Kutcher et al. [55] examine the impact of tax considerations on investment decisions, specifically focusing on the reinvestment of permanently reinvested earnings (PRE) in financial assets as a strategy to avoid United States repatriation tax. The study finds that firms employing this strategy tend to have lower PRE values, particularly those with excess cash. This suggests that firms can leverage tax-efficient investment strategies to enhance profitability and growth potential.

In the context of Indonesian manufacturing companies, Suprapti et al. [56] and Supardi [57] underscore the importance of financial performance in predicting future growth. Their research demonstrates that return on assets (ROA) and the current ratio positively influence earnings growth, highlighting that firms with stronger financial performance are more likely to experience growth. Thus, prioritising financial health can create opportunities for entrepreneurs and improve employability prospects.

The significance of effective corporate governance in enhancing firm value and profitability is highlighted by Gerged and Agwili [58], who focus on Saudi Arabia. The study shows that well-governed firms tend to achieve higher market value, suggesting that sound governance practices contribute to the growth and profitability of financial firms. This finding implies that fostering robust governance structures supports entrepreneurship and job creation.

Mardillasari et al. [59] emphasise the importance of managing financial indicators for the profitability of Islamic commercial banks in Indonesia. The study identifies key indicators such as the capital adequacy ratio (CAR), net interest margin (NIM), and market share as having a positive impact on profitability, while the operating expense to operating income ratio (BOPO) and non-performing financing (NPF) have a negative influence. Improving these financial indicators can significantly enhance the profitability of financial firms, thereby creating more opportunities for entrepreneurs and job seekers.

Alrjoub et al. [60] explore the influence of financial performance on earnings management behaviour within Jordanian financial companies. Their findings suggest that firms with strong financial performance are more likely to engage in earnings management. While such behaviour may raise ethical concerns, it also implies that maintaining a strong financial performance can enhance a firm's reputation, attracting entrepreneurs and increasing employability.

Tao et al. [61] investigate the resilience of financial and non-financial equity portfolios in Pakistan during the COVID-19 lockdown, finding that the prices of both financial and non-financial stocks adapted to external shocks. Their findings suggest that investing in these stocks provides individuals with an opportunity to grow their wealth, which may, in turn, stimulate entrepreneurial activity and employment generation.

Mendieta-Muñoz and Ossa [62] examine the profitability of financial and non-financial sectors in the United States economy, focusing on the impact of economic cycles. Their findings suggest that a deeper understanding of these cycles can help financial firms navigate challenges and seize opportunities for growth, thereby increasing employability across various sectors.

The reviewed literature highlights the complex interplay of factors influencing the growth and profitability of financial assets, firms, and sectors. Tax policies, financial performance, corporate governance, and key financial indicators all play essential roles in determining the ability of financial firms to expand, create entrepreneurial opportunities, and enhance employability. For policymakers, investors, and business leaders, understanding these factors is essential to designing strategies that drive sustainable economic development and job creation.

Non-financial firms, particularly small and medium enterprises (SMEs), are equally vital in driving economic growth through entrepreneurship and employability. This literature review examines the impact of both financial and non-financial factors on the profitability of SMEs and non-financial firms, identifying both positive and negative influences. Understanding these factors enables policymakers, entrepreneurs, and stakeholders to support the growth of non-financial firms, ultimately fostering economic development and job creation.

The literature reviewed suggests that specific financial factors, such as the management of tangible assets, financial capital operations, and debt levels, can negatively influence the profitability of SMEs and non-financial firms. For instance, Popa and Ciobanu [63], in their study on SMEs, highlight the importance of managerial decisions regarding investment, revealing that tangible assets have a significant negative impact on return on equity (ROE). Similarly, Wang [64] examines non-financial listed companies in China and finds a negative correlation between the scale of financial capital operations and profitability, suggesting that poor financial capital management can adversely affect financial performance. Furthermore, Mwangi et al. [65], who investigate the relationship between capital structure and the performance of non-financial companies listed on the Nairobi Securities Exchange, conclude that financial leverage has a statistically significant negative association with performance. This finding implies that an overreliance on long-term debt may constrain profitability, increasing financial vulnerability. In addition, Milošev [66] studies large non-financial firms in Serbia and identifies a negative influence of high debt ratios and capital structure on profitability, emphasizing that firms should exercise caution in managing debt to ensure sustainable financial performance.

Collectively, these studies demonstrate that certain financial factors, such as inadequate debt management, excessive tangible asset investments, and inefficient capital operations, can hinder the profitability of SMEs and non-financial firms. This underscores the critical importance of strategic financial management to ensure long-term viability and growth.

In contrast, other studies identify several positive factors, including moderate debt levels, firm size, operational efficiency, and corporate governance, that contribute to profitability. For example, Singapurwoko and El-Wahid [67] investigate non-financial companies listed on the Indonesia Stock Exchange and report a statistically significant positive impact of debt, firm size, and operational decisions on profitability. Similarly, Razaq and Akinlo [68], who study non-financial firms in Nigeria, find that profitability correlates positively with firm growth and size, emphasizing the role of effective expansion strategies in enhancing financial performance.

Moreover, research on the financial and non-financial profitability of firms across various regions and industries offers valuable insights into the drivers of firm value and profitability. For example, studies such as Cahya et al. [69] and Joel et al. [70], which examine 100 non-financial companies in Asia, demonstrate that dividend policy plays a crucial role in increasing firm value. These findings underscore the importance of implementing robust and well-structured dividend practices to enhance profitability and strengthen market positioning.

Research on the profitability and performance of non-financial firms across various regions offers critical insights. The study by Abbas Rizvi et al. [71] underscores the substantial decline in non-financial firm valuations in the EU due to the COVID-19 pandemic, emphasizing the

need for policy interventions to stabilize markets during global crises. In Pakistan, Farooq [72] presents mixed results regarding the impact of inventory turnover on profitability in the non-financial sector, suggesting a broader approach to financial management. In Indonesia, Supardi [57] identifies working capital, asset structure, and sales growth as key factors influencing profitability in the shipping industry, highlighting the risks associated with external capital dependence. Tailab [73] explores U.S. non-financial firms, finding that liquidity and firm size positively influence profitability, while leverage and growth negatively affect it, underscoring the complexity of financial strategies. Similarly, Kouser et al. [74] demonstrate a positive relationship between profitability and growth in Pakistani firms, with firm size negatively impacting performance, calling for balanced decision-making. Lastly, Özmen et al. [75] discuss the critical role of corporate savings in Turkey, where limited financial depth constrains investment, advocating for policies to boost corporate savings and stimulate economic growth. Collectively, these studies contribute to the ongoing discourse on optimizing profitability and fostering sustainable growth in non-financial sectors globally.

Further, research on entrepreneurship and employability opportunities within the Gulf Cooperation Council (GCC) countries, particularly in the UAE, reveals the complex interplay between financial dynamics, market risks, and business performance. These studies highlight the impact of global financial crises on sectors such as real estate, construction, and banking, demonstrating how economic downturns can severely affect liquidity, profitability, and investment efficiency. For instance, Al-Malkawi and Pillai [76] emphasize the sharp decline in performance metrics within the UAE's real estate and construction sectors post-2008. Al-Hadi et al. [77] show how market risk disclosures can mitigate under- and over-investment during economic distress. The evolving landscape of Islamic financial institutions is also explored by Alsartawi et al. [78], who highlight that Web 2.0 disclosures, particularly in content presentation, enhance firm value. Additionally, Aljifri and Ahmad [79] examine sector-specific valuation techniques in the UAE, reflecting the differing priorities between financial and non-financial firms. Jumaa [80] provides an analysis of the UAE insurance sector, focusing on the interplay between macroeconomic factors such as inflation and firm-specific metrics like growth in gross written premiums on profitability. Ibrahim [81] explores the relationship between financial risk and profitability in the UAE banking sector from 2003 to 2009, emphasizing the importance of internal performance metrics to maintain profitability amid uncertainty.

The importance of corporate governance and sustainability reporting is also evident in shaping firm performance. Al-Qudah and Houcine [82] and Khalifa [83] demonstrate that sustainability practices aligned with the United Nations Sustainable Development Goals (SDGs) positively influence economic performance and investor confidence [84]. Athari et al. [85] further reveal that sovereign environmental, social, and governance (ESG) practices have a non-linear impact on profitability in the banking sector, suggesting that while initial investments in ESG can enhance profitability, excessive focus on these areas may become counterproductive. In addition, the study by Dalwai and Salehi [86] on Oman's non-financial sector highlights the importance of business strategy and intellectual capital in mitigating bankruptcy risks and enhancing firm performance. Aljuwaiber [6] identifies nine key categories and 30 themes in MENA entrepreneurship studies, concluding that while research in this field has expanded, critical gaps remain. Addressing these gaps will be vital for fostering sustainable entrepreneurship and economic development in the region [87].

These findings underscore the nature of entrepreneurship and employability opportunities within the GCC region, particularly in light of financial, market, and governance challenges. The studies illustrate that economic crises, market risks, and sector-specific factors significantly influence business performance and investment efficiency. However, strategic measures such as corporate governance practices, sustainability reporting, and effective business strategies can mitigate risks and enhance firm performance. These insights are essential for policymakers, business leaders, and investors seeking to promote sustainable economic growth and capitalize on emerging opportunities in the GCC's dynamic business environment.

Moreover, the reviewed research offers a comprehensive analysis of entrepreneurship and employability opportunities, highlighting their critical role in driving economic growth and development across diverse global contexts. Suliman and Al Obaidli [88] focus on leadership's influence in fostering organisational citizenship behaviour in the UAE's Islamic banking sector, while Yaseen [5] critiques the systemic barriers faced by women entrepreneurs in the Arab world. Al Bakri [89] emphasises the role of organisational interfaces in promoting innovation within the GCC, while Battour et al. [90] identify emerging entrepreneurial opportunities in Halal tourism. Pacho [91] explores how effectuation principles aid opportunity exploitation in Tanzanian SMEs, while Hjeij [92] examines the heuristics used by tech entrepreneurs in the Middle East during opportunity evaluation. Alim et al. [93] analyse how opportunity recognition mediates the relationship between personal and environmental factors and SME performance in Bangladesh. Usman et al. [94] explore the role of open innovation in helping SMEs seize entrepreneurial opportunities, while Bui et al. [95] emphasise the importance of entrepreneurial well-being in opportunity recognition. Talukdar [96] highlights the financial and cultural barriers faced by female migrant entrepreneurs, and Alodwan et al. [3] propose strategies for youth entrepreneurship in the UAE. Niverba et al. [97] and Arshi et al. [98] investigate the challenges faced by Filipino overseas workers and the psychological factors contributing to entrepreneurial opportunity abandonment, respectively. Finally, Tripathi and Singh [99] examine the impact of digital transformation awareness on SME performance in Saudi Arabia. These studies collectively offer valuable insights into the complex dynamics of innovation, well-being, gender dynamics, and digital transformation in fostering entrepreneurship across various cultural and economic contexts.

The findings from these studies highlight the multifaceted nature of entrepreneurship and employability opportunities across diverse economic and cultural landscapes. Leadership emerges as a critical factor, particularly in the UAE's Islamic banking sector, where transformational leadership positively influences organisational citizenship behaviour [88]. This underscores the importance of leadership in cultivating a supportive environment for entrepreneurial activities. Gender dynamics also play a pivotal role in shaping entrepreneurial opportunities, as demonstrated by Yaseen [5] in the critique of systemic barriers faced by women entrepreneurs in the Arab world. The need for structural reforms and policy interventions to support female entrepreneurship is evident.

Innovation is another recurring theme, with Al Bakri [89] stressing the role of organisational interfaces in driving technological advancements in the GCC. This aligns with Usman et al. [94]'s findings on the importance of open innovation for SMEs, indicating that adaptive business models and innovation networks are essential for sustaining entrepreneurial ventures.

Moreover, Battour et al. [90] introduce the concept of Halal tourism, identifying it as a burgeoning market with significant entrepreneurial potential, particularly for Halal entrepreneurs seeking to capitalise on the growing demand for Muslim-friendly tourism services.

Social entrepreneurship is also highlighted, especially in urban contexts where it can address critical societal challenges, as noted by Klarin and Suseno [100]. This underscores the broader role of entrepreneurship beyond profit generation, emphasising its contributions to social development. The importance of well-being in entrepreneurial success, as explored by Bui et al. [95], adds another layer of complexity, highlighting that mental and emotional health are increasingly recognised as essential components for long-term entrepreneurial success.

Studies by Talukdar [96] and Niverba et al. [97] underscore the unique challenges faced by migrant entrepreneurs, particularly regarding financial and cultural barriers. These insights are essential for policymakers striving to promote inclusive entrepreneurship that accommodates diverse populations. Additionally, digital transformation plays a crucial role, as highlighted by Tripathi and Singh [99], who emphasise the need for skills development and government support to improve the performance of SMEs in Saudi Arabia. This underscores the growing importance of technological adaptability in modern entrepreneurship.

Research findings from various studies further elucidate the relationship between entrepreneurship, employability, and economic sustainability in the UAE and the broader GCC region. Forstenlechner et al. [101] address the challenges posed by the segmented labour market in the UAE, where most Emiratis work in the public sector, while the private sector is dominated by expatriates. This segmentation creates sustainability issues as the public sector becomes saturated, forcing policymakers to encourage Emiratis to pursue careers in the private sector. The reluctance to engage in private-sector employment limits entrepreneurial ventures among Emiratis. Griffin and Coelhoso [102] highlight the importance of equipping students with employability skills through internships. Their study reveals that, while students excel in communication, teamwork, and time management, critical thinking, self-management, and intercultural skills remain underdeveloped. These skills gaps present barriers to entrepreneurship, as they are essential for navigating the complexities of starting and sustaining businesses in a diverse and competitive market like the UAE.

The Fourth Industrial Revolution (4IR) adds complexity to employability and entrepreneurship in the region. Pauceanu et al. [47] highlight discrepancies between students' perceptions of employability skills and the actual demands of the labour market. As technology continues to reshape industries, students must adapt to new skill requirements. This adaptation is vital for fostering innovation and entrepreneurship, as technological advancements often create new business opportunities. Khalid and Ahmad [7] build on this by exploring the relationship between employability skills and career adaptability, finding that skills such as complex problem-solving, critical thinking, and creativity are not only essential for employability but also crucial for entrepreneurial success. Entrepreneurs must be able to adapt to changing market conditions and leverage new technologies, particularly in the UAE's rapidly evolving economic landscape.

Karam et al. [103] examine the issue of localisation, which has significant implications for both employability and entrepreneurship. Their study reveals that stereotypes and organisational socialisation experiences shape the employability and retention of Emirati employees in the private sector. Localisation challenges underscore the need for policies that focus not only on recruitment but also on retention and the development of transferable skills, particularly across sectors like entrepreneurship.

The literature reviewed demonstrates the complex interplay of financial and non-financial factors influencing the profitability of non-financial firms and sectors. Certain financial factors, such as tangible assets and debt management, can negatively affect profitability, while others, such as firm size, operational decisions, and corporate governance, can have positive effects. These findings highlight the importance of strategic financial management and governance practices in enhancing profitability and sustainability. The ability of non-financial firms or sectors to grow and create opportunities for entrepreneurs and employability is shaped by a combination of financial and non-financial factors. Policymakers and stakeholders must consider these factors when designing policies and strategies to support the growth of non-financial firms, fostering economic development and job creation.

This study proposes two hypotheses to empirically assess the relationship between asset transactions and the potential growth of entrepreneurship and employment in the UAE:

Hypothesis 1: *Transactions in non-financial assets have a significant and positive impact on fostering new entrepreneurial ventures and enhancing employability opportunities in the UAE.*

Hypothesis 2: *The development of transactions in financial assets significantly contributes to promoting entrepreneurial ventures and improving employability opportunities in the UAE.*

These hypotheses will be tested using long-term quantitative methods, analysing relevant economic and financial data to assess the potential impact of these transactions on entrepreneurship and employment growth in the UAE.

3. Methods

The study employs an Auto Regressive Distributed Lag (ARDL) model to forecast potential opportunities for entrepreneurs, which, in turn, enhance employability through investments in both financial and non-financial assets within the UAE economy. This is achieved by examining various factors influencing the gross operating balance (GOB), including transactions in financial and non-financial assets. The analysis aims to assess the UAE's capacity to expand its financial and non-financial sectors, thereby offering more opportunities for entrepreneurship and increasing employability. The study utilises quarterly data from Q1 2012 to Q4 2023, sourced from the UAE Government Finance Statistics (GFS) database, and seeks to develop a macroeconomic model at the national level.

Financial asset transactions and investments refer to capital allocation in financial instruments, with the expectation of returns through interest, dividends, or capital appreciation. These assets, typically more liquid, can be easily traded in financial markets. Common examples include stocks, bonds, mutual funds, certificates of deposit (CDs), government securities, and corporate

debt instruments [55,56]. Investments in financial assets predominantly generate opportunities in capital markets, particularly in sectors such as banking, insurance, and finance [59]. While these investments provide short-term liquidity and returns, their direct impact on the real economy is often limited, as they primarily benefit the finance and services sectors [62]. Though they can indirectly support employment by improving financial market conditions, their direct contribution to job creation is confined to specific sectors such as finance.

Conversely, non-financial asset project transactions and investments involve capital allocation in tangible and intangible assets that are essential for business operations, production, or service delivery but do not provide direct claims on future cash flows. Examples include investments in real estate, infrastructure projects, machinery and equipment, intellectual property, and natural resource development [67,74]. Non-financial asset investments directly impact the real economy by driving new business activities, infrastructure development, and production facilities [63,75]. These investments align with the UAE's sustainable development vision and create significant opportunities for entrepreneurship and economic diversification [73]. Additionally, non-financial asset investments have a profound and direct impact on employability, as infrastructure projects and real estate developments generate jobs in construction, operations, and maintenance [65,71]. Investments in machinery, technology, and intellectual property further enhance productivity, resulting in job creation across various sectors [68], [69].

In some cases, investments may span both financial and non-financial assets, employing strategies that balance short-term liquidity with long-term economic growth. Such a balanced approach fosters sustainable growth and portfolio diversification [58,66]. These strategies are particularly valuable in volatile markets, where combining financial and non-financial assets helps manage risk and promote economic stability [62].

This research examines the distinct contributions of financial and non-financial asset transactions and investments in fostering entrepreneurial opportunities and enhancing employability in the UAE. Using comprehensive data from the UAE Government Finance Statistics (GFS) database [2], we focus on key variables for both asset classes. For non-financial assets, we analyse total transactions in non-financial assets (TNONFA), net and gross investments in non-financial assets (INVNF), and net lending and borrowing (NETLB) to assess the development of non-financial asset transactions in the UAE. According to the International Monetary Fund (IMF, 2014), TNONFA provides a comprehensive overview of economic activity related to non-financial assets, which is crucial for evaluating the UAE's progress in developing sectors such as infrastructure, real estate, and industrial projects. INVNF reflects the intensity of capital investment in non-financial assets, which is essential for driving economic growth, diversification, and job creation in the UAE. NETLB, which offers insights into the financial sustainability of investments, indicates whether entities possess sufficient funds for their investment plans or need to rely on external financing.

For financial assets, we examine net acquisition of financial assets (NETAFA) and net incurrence of liabilities (NETINLB) as indicators of financial asset transaction development. NETAFA provides insights into the UAE's investment strategies in financial markets, demonstrating whether the country is actively increasing its financial assets and capitalising on opportunities in domestic and global markets. NETINLB, on the other hand, offers an

understanding of the UAE's borrowing trends, allowing for an assessment of whether the country is leveraging debt effectively for growth or focusing on reducing financial liabilities. Together, these variables provide a comprehensive view of the development of financial and non-financial assets in the UAE, which is critical for achieving the country's long-term economic objectives.

The study further explores the roles of financial and non-financial asset investments. Financial asset investments are assessed for their capacity to provide liquidity and capital, while non-financial asset investments are evaluated based on their tangible impacts on business operations, infrastructure development, and job creation. By distinguishing between these asset classes, we aim to highlight their unique contributions to the UAE's economic growth and development. Additionally, the gross operating balance (GOB) in the UAE's financial balance sheet is used as the dependent variable to measure the effects of various factors on economic growth and entrepreneurial opportunities. According to Suprapti et al. [56], profit represents the increase in assets over a period, attributed to productive activities that can be distributed to creditors, the government, and shareholders without affecting the core equity of shareholders. Through this analysis, the study seeks to provide a comprehensive understanding of how different asset classes influence entrepreneurial opportunities and employability in the UAE, emphasising the broader macroeconomic implications of these investments.

$$(\mathrm{GOB}) = \alpha_1 + (\mathrm{TNONFA})_t + (\mathrm{INVNF})_t + (\mathrm{NETLB})_t + (\mathrm{NETAFA})_t + (\mathrm{NETINLB})_t + \varepsilon_i \quad (1)$$

According to [104], researchers must first employ bound testing patterns to test the long-run relationship estimations and the ARDL co-integration method, which is based on the initial level according to the F-test value, before running long coefficients. This test examines the null hypothesis of no co-integration (H_0: β_0^i= β_1^i=0). In this study, two critical values were calculated from the bound test: the lower bound of the overall variables, I (0), and the upper bound, I (1). The F-statistics calculated were found to be greater than the upper critical values, indicating co-integration. If the t-values fall between the two critical bound values, the test is inconclusive; if they are lower than the critical value, there is no co-integration. The specific equation, where each variable follows the dependent variable, is demonstrated below.

$$\Delta \ln(\mathrm{GOB})_{t-1} = \alpha_0 + \sum_{i=1}^{p} \alpha_{1i} \Delta \ln(\mathrm{GOB})_{t-1} + \sum_{i=0}^{p} \alpha_{2i} \Delta \ln(\mathrm{TNONFA})_{t-1} + \sum_{i=0}^{p} \alpha_{3i} \Delta \ln(\mathrm{INVNF})_{t-1} + \sum_{i=0}^{p} \alpha_{4i} \Delta(\mathrm{NETLB})_{t-1} + \sum_{i=0}^{p} \alpha_{5i} \Delta(\mathrm{NETAFA})_{t-1} + \sum_{i=0}^{p} \alpha_{6i} \Delta(\mathrm{NETINLB})_{t-1} + \beta_1 \ln(\mathrm{GOB})_{t-1} + \beta_2 \ln(\mathrm{TNONFA})_{t-1} + \beta_3 \ln(\mathrm{INVNF})_{t-1} + \beta_4(\mathrm{NETLB})_{t-1} + \beta_5(\mathrm{NETAFA})_{t-1} + \beta_6(\mathrm{NETINLB})_{t-1} + \mu_i. \quad (2)$$

The short-run and error correction estimation equations combinations as follow:

$$\Delta \ln(\mathrm{GOB})_{t-1} = \alpha_0 + \sum_{i=1}^{p} \alpha_{1i} \Delta \ln(\mathrm{GOB})_{t-1} + \sum_{i=0}^{p} \alpha_{2i} \Delta \ln(\mathrm{TNONFA})_{t-1} + \sum_{i=0}^{p} \alpha_{3i} \Delta \ln(\mathrm{INVNF})_{t-1} + \sum_{i=0}^{p} \alpha_{4i} \Delta (\mathrm{NETLB})_{t-1} + \sum_{i=0}^{p} \alpha_{5i} \Delta (\mathrm{NETAFA})_{t-1} + \sum_{i=0}^{p} \alpha_{6i} \Delta (\mathrm{NETINLB})_{t-1} + \theta\, ECT_{t-1} \quad (3)$$

Equation (3) above represents the general speed of adjustment, while the Error Correction Term (ECT) equation is derived from the co-integration estimation model (1). These tests are primarily used to identify the dynamic long-term relationships between time series variables, a crucial aspect in economics.

In this study, the ARDL model analysis followed three stages outlined by [105]. Initially, variables were categorized and assessed using the unit root test. Subsequently, the co-integration relationships between variables were confirmed using the bound test. Finally, the ARDL model was applied to analyze and determine the relationships between the variables.
The researcher utilizes the Auto Regressive Distributed Lag (ARDL) approach, as proposed and explained by [104], for the analysis in this study. Unlike the traditional Johansen co-integration technique, which relies on a system of equations to estimate long-run relationships, the ARDL method employs a single reduced-form equation. The advantages of the ARDL approach include the following:

1. The ARDL and Granger Causality applications are innovative tools that help address issues associated with estimating short time series data.
2. The ARDL method does not require pre-testing of variables, making it applicable regardless of whether the underlying variables are I (0), I (1), or fractionally integrated, thereby reducing the complexity of determining the order of integration among variables.
3. The ARDL approach provides an error correction model (ECM) that integrates short-run dynamics with long-run equilibrium while preserving long-term information.
4. The ARDL method is more appropriate for small sample sizes, offering advantages over other analytical techniques [106].
5. The ARDL approach can effectively differentiate between dependent and independent variables.

Diagnostic tests, such as the Breusch–Godfrey test, were employed to test the null hypothesis of no autocorrelation, instead of the Durbin Watson test, which loses power with a lagged dependent variable. The Jarque and Bera tests were also utilized to test for normality, including skewness and kurtosis. Skewness and excessive kurtosis are determined by the weighted average of the squared sample moments [107]. The null hypothesis was tested using a chi-squared test with two degrees of freedom [108]. Heteroscedasticity was assessed by examining the incorrect assumption of no heteroscedasticity.

4. Results and Discussion

The Unit Root Test in Table 3 showed that all model variables were stationary at level, except for TNONFA, which was stationary at first difference, as determined by the Augmented Dickey-Fuller Test.

Table 3. Unit Root Tests

Variables	UAE	
	Augmented Dickey Fuller Test	
	Levels	First Differences
GOB	-4.05***	-
TNONFA	-1.73	-8.8***
INVNF	-5.54***	-
NETLB	-3.95***	-
NETAFA	-5.46***	-
NETINLB	-5.53***	-

Note: The H0 corresponds to no stationarity; the asterisks (***) indicate stationarity by 1%.
Source: Developed by the authors.

Using the ARDL approach, we conducted the bound test, the results of which are presented in Table 4. The findings indicate that the F-statistic values of the GOB model exceeded the upper bound at a 1% significance level, confirming the presence of significant co-integration relationships between the variables.

Table 4. Bound Test Rresults

Dependent Variable		F-statistics	10%		5%		1%	
			I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
UAE	GOB	11.04***	2.08	3	2.39	3.38	3.06	4.15

Note: *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. The null hypothesis signifies no co-integration. Critical values were sourced from [104].
Source: Developed by the authors.

Table 5 presents the estimated long-run model for the UAE balance, where the dependent variable is GOB (Gross Operating Balance), and the independent variables are TNONFA, INVNF, NETLB, NETAFA, and NETINLB.

Table 5. Long-run Estimated Model-UAE Balance

Dependent Variable	Independent Variables				
	TNONFA	INVNF	NETLB	NETAFA	NETINLB
GOB	0.06***	0.74***	0.90***	-0.22***	0.006***

Note: *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.
Source: Developed by the authors.

These results suggest that all independent variables have a statistically significant impact on the gross operating balance at 1% significant level. Specifically, increases in TNONFA, INVNF, NETLB, and NETINLB are associated with increases in GOB, while an increase in NETAFA is associated with a decrease in GOB. The high significance levels (1%) indicate a strong statistical confidence in these relationships.
The diagnostic test results for the UAE Gross Operation Balance long-run equilibrium model are presented in Table 6.

Table 6. Diagnostic Test Results GOB-UAE Model

GOB-UAE Model	
Test Statistic	**Probability F**
A: Normality	0.49>5%
B: Serial Correlation	0.35>5%
C: Heteroscedasticity	0.99>5%

Source: Developed by the authors.

The probability value (0.49) is greater than 5%, indicating that we fail to reject the null hypothesis of normality. This suggests that the residuals from the model are normally distributed, which is a positive indicator of the model's reliability.

Moreover, the serial correlation probability value (0.35) is greater than 5%, indicating that we fail to reject the null hypothesis of no serial correlation in the residuals. This suggests that there is no systematic pattern in the residuals, which is essential for ensuring the validity of the model.

Furthermore, the heteroscedasticity probability value (0.99) is greater than 5%, indicating that we fail to reject the null hypothesis of homoscedasticity. This implies that the variance of the residuals remains constant across observations, further strengthening the model's reliability.

Overall, based on these diagnostic tests, the UAE Gross Operating Balance long-run equilibrium model appears to be well-specified and reliable.

The lag order for the UAE model, determined by the Akaike Information Criterion with a restricted constant and no trend, is (1, 3, 3, 3, 3, 2, 3). Additionally, the Error Correction Model (ECM) coefficient was found to be negative and significant at the 1% level, confirming the presence of long-run relationships among the study variables in the UAE.

The adjusted R-squared value, which indicates the proportion of variance explained by the regression, suggests that the model accounts for approximately 99% of the total variation in the gross operating balance in the UAE.

The findings from the Unit Root Test indicate that while most variables were stationary at level, TNONFA required first differencing to achieve stationarity. This suggests that non-financial asset transactions exhibit a unit root in their original form, possibly due to structural breaks or long-term trends in the UAE's economic environment. The necessity of first differencing for TNONFA highlights the importance of considering economic policies that influence non-financial asset investments and their role in shaping financial stability [109].

The results of the ARDL bounds test confirm the existence of long-run relationships among the variables in the UAE Gross Operating Balance (GOB) model. The F-statistic exceeding the upper bound at a 1% significance level indicates strong co-integration, affirming that changes in independent variables such as TNONFA, INVNF, NETLB, NETAFA, and NETINLB have lasting effects on the GOB. This long-run association underscores the importance of sustained economic policies that promote both financial and non-financial investments to maintain economic balance [110].

From the long-run estimated model, all independent variables significantly impact the GOB at a 1% level. The positive coefficients of TNONFA, INVNF, NETLB, and NETINLB suggest that increased investments in these asset classes contribute to a higher gross operating balance. Conversely, the negative coefficient of NETAFA indicates that financial asset acquisition might divert resources away from operational balance, possibly due to liquidity constraints or opportunity costs associated with shifting capital into financial instruments. This suggests that while financial asset investments provide liquidity benefits, their impact on operational financial health should be carefully managed [111].

The diagnostic tests provide further validation of the model's reliability. The normality test suggests that the residuals follow a normal distribution, which is critical for ensuring the

robustness of statistical inferences. The absence of serial correlation in the residuals confirms that there are no systematic patterns that could distort predictions. Furthermore, the heteroscedasticity test results indicate constant variance across observations, reinforcing the model's consistency. Together, these diagnostic outcomes enhance confidence in the model's specification and reliability [112].

The lag order selection using the Akaike Information Criterion (AIC) suggests that different independent variables exhibit varying dynamic responses over time. This variation in lag structure highlights the complexity of economic interactions in the UAE, necessitating a nuanced policy approach. The presence of a significant and negative ECM coefficient further supports the existence of a long-run equilibrium, indicating that any short-term deviations in GOB are corrected over time. This aligns with the notion that the UAE economy adjusts to shocks in a predictable and stable manner, reinforcing the role of structural policies in mitigating economic volatility [113].

The adjusted R-squared value of approximately 99% indicates that the model explains nearly all variation in the GOB, suggesting a strong fit. While this high explanatory power is advantageous, it also warrants consideration of potential overfitting. Future research could explore additional exogenous factors or alternative estimation techniques to validate and refine these findings. Furthermore, incorporating external shocks such as global financial crises or oil price fluctuations could enhance the model's applicability in dynamic economic environments [114].

Overall, these findings have significant policy implications for economic planners and policymakers in the UAE. The results suggest that balancing investments across financial and non-financial assets is crucial for maintaining a stable gross operating balance. Strategies aimed at fostering long-term infrastructure development, while ensuring sufficient liquidity in financial markets, will be essential for sustainable economic growth. Additionally, continuous monitoring of financial and economic indicators will be necessary to adapt to evolving macroeconomic conditions and global market trends [115].

5. Conclusions

The results of this analysis provide valuable insights into enhancing entrepreneurial opportunities and increasing employability in the UAE. The study identifies significant relationships between various economic indicators and the gross operating balance (GOB), which serves as a key measure of economic health.

The positive coefficient for "Transactions in non-financial assets" (TNONFA) suggests that an increase in transactions involving non-financial assets can lead to a rise in the gross operating balance. This implies that policies promoting investments in non-financial assets, such as real estate, infrastructure, and other tangible assets, can contribute to economic growth and create opportunities for entrepreneurs, in line with previous studies [67,68,75]. In addition, the strong positive coefficient for "Net/gross investment in non-financial assets" (INVNF) highlights the importance of investment in non-financial assets for economic prosperity. Policies encouraging investment in infrastructure, technology, and other productive assets can stimulate economic activity, create jobs, and foster a conducive environment for entrepreneurship. Furthermore, the

coefficient for "Net lending/borrowing" (NETLB) also has a significant positive impact on the gross operating balance. This suggests that maintaining a balance between lending and borrowing is crucial for economic stability and growth. Policies that promote responsible lending practices and ensure access to finance for entrepreneurs can support economic development and job creation.

Conversely, the negative coefficient for "Net acquisition of financial assets" (NETAFA) indicates that an increase in the acquisition of financial assets may negatively impact the gross operating balance. This highlights the importance of prudence in financial decision-making and the need for policies that prioritise productive investment over speculative activities [59]. Additionally, the negative coefficient for NETAFA suggests that excessive acquisition of financial assets may have detrimental effects on the gross operating balance and, consequently, on economic opportunities for entrepreneurs. Policies that encourage a more balanced approach to investment, with a focus on productive assets and sectors, may be more conducive to economic growth and job creation. However, the coefficient for "Net incurrence of liabilities" (NETINLB) is positive but relatively small, aligning with previous studies [55,56,61,62]. This suggests that while incurring liabilities can stimulate economic activity and entrepreneurship, it should be approached cautiously to avoid excessive debt burdens.

Based on the results of the long-run estimated model for the UAE balance, several recommendations can be made for both new and existing entrepreneurs to enhance their opportunities and success. Entrepreneurs should consider investing in non-financial assets such as real estate, infrastructure, and other tangible assets. These investments can not only contribute to economic growth but also provide a stable foundation for business operations. Additionally, entrepreneurs should prioritise investments in assets that have the potential to generate long-term returns and contribute to economic development. Furthermore, they should manage their borrowing prudently to avoid excessive debt burdens. Responsible borrowing practices can help maintain financial stability and support business growth. However, caution should be exercised when investing in financial assets, with a focus on investments that align with long-term business goals. Entrepreneurs should adopt a balanced approach to liabilities, ensuring they can meet their financial obligations without compromising long-term financial health. By following these recommendations, entrepreneurs in the UAE can enhance their prospects for success and contribute to the overall economic growth and development of the country.

To further enhance entrepreneurial opportunities and increase employability in the UAE, policymakers should consider strategies that encourage investment in non-financial assets and support access to finance for entrepreneurs. By fostering a diverse and resilient economy, the UAE can create a more favourable environment for entrepreneurship and job creation, ultimately leading to sustainable economic growth and development [116,117]. Moreover, future research should focus on exploring the impact of policy interventions, conducting sector-specific analyses, comparative studies, longitudinal studies, and qualitative research to deepen understanding of the factors influencing entrepreneurial opportunities and employability in the UAE. Addressing these research gaps can contribute to the development of more effective policies and strategies for fostering entrepreneurship, increasing employability, and ultimately supporting sustainable economic growth and development in the UAE.

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