Pandemic-resilient investment policies: lessons learned from the COVID-19 crisis

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Abstract. Objective: *This paper examines the impact of the COVID-19 pandemic on investment policies globally, focusing on identifying the key elements of resilient investment strategies capable of withstanding economic crises. The study aims to understand how varying economic and investment strategies affected the resilience of 20 selected countries during the pandemic.* ***Method:*** *Employing a mixed-methods approach, the research integrates a comprehensive literature review with empirical data analysis covering the years 2018 to 2022. It assesses key economic indicators such as GDP growth, unemployment rates, and Gross Fixed Capital Formation to evaluate the effectiveness of different investment strategies during the pandemic.* ***Results:*** *The findings reveal significant disparities in how countries' economies and investment policies withstood the pandemic's challenges. Key elements of resilient investment policies identified include diversification, robust risk management, and the integration of sustainability into investment strategies. The study provides tailored recommendations for enhancing economic stability and investment policy resilience in specific countries.* ***Originality:*** *The study's original approach lies in its combination of theoretical insights from extensive literature with practical outcomes derived from empirical economic data. This integration allows for a nuanced understanding of the pandemic's impact across diverse economic systems and offers grounded, actionable strategies for developing robust investment policies.*

Key words: *pandemic-resilient investment policies, COVID-19, risk management*
JEL classification: *G11, G18, E44*

1. Introduction

The COVID-19 pandemic, caused by the novel coronavirus SARS-CoV-2, was first reported in Wuhan, China, in December 2019 and has since become a global health crisis (Zhu et al., 2020). The pandemic has resulted in significant human suffering and loss of life and has had far-reaching economic implications (Nicola et al., 2020). As a result, governments worldwide implemented various public health measures to control the spread of the virus, including lockdowns, travel restrictions, and social distancing guidelines (Hale et al., 2021). These measures have disrupted global supply chains, closed businesses, and caused widespread job losses (Baldwin & Di Mauro, 2020).

The economic effects of the pandemic have been both severe and widespread. Global GDP contracted by 3.5% in 2020, marking the worst recession since the Great Depression of the 1930s (IMF, 2021). Stock markets experienced extreme volatility, with the VIX index reaching its highest level since the 2008 financial crisis in March 2020 (Grima, Özdemir, Özen, & Romānova, 2021). The pandemic

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has also widened income inequality, as lower-income and less-educated workers were disproportionately affected by job losses and business closures (Furceri, Loungani, Ostry, & Pizzuto, 2020).

The COVID-19 pandemic has highlighted the importance of investment policies that can withstand future crises. The pandemic has had a significant impact on global financial markets, resulting in widespread losses and uncertainty for investors (Acharya, Pedersen, Philippon, & Richardson, 2017). The pandemic has also revealed the fragility of some investment strategies, such as those that rely heavily on short-term gains or that are concentrated in specific industries or regions (Yan, Stuart, Tu, & Zhang, 2020). As a result, there is a growing need for investment policies that prioritize resilience and long-term sustainability.

Pandemic-resilient investment policies can help mitigate the economic impact of future crises by providing a framework for managing risk and uncertainty. These policies can help investors navigate market volatility, maintain liquidity, and preserve the value of their investments during times of crisis (Feng & Wu, 2021). By prioritizing resilience and sustainability, these policies can also contribute to long-term economic growth and stability (Majid, 2020).

Furthermore, pandemic-resilient investment policies can play a crucial role in promoting social and environmental sustainability. The pandemic has highlighted the need for a more holistic approach to investing that takes into account social and environmental factors, as well as financial returns (Ye et al., 2022). By incorporating environmental, social, and governance (ESG) criteria into their investment policies, investors can support companies that prioritize sustainability and promote positive social outcomes (Omura, Roca, & Nakai, 2021).

The aim of this paper is to analyze the impact of the COVID-19 pandemic on investment policies and identify critical elements of resilient investment strategies. The analysis begins with a literature review that explores changes in investment strategies and risk management practices influenced by the pandemic. This review is complemented by an empirical analysis of economic data from 20 selected countries spanning from 2018 to 2022, focusing on GDP growth rates, unemployment rates, and Gross Fixed Capital Formation to understand how different economies and investment strategies have responded to the pandemic.

The findings from this analysis offer insights into the effects of the pandemic on global investment policies and their implications for policymakers and investors. These insights aim to highlight strategies that can enhance risk management and promote long-term economic stability. The paper concludes by recommending approaches for developing resilient investment policies that integrate ESG criteria, aimed at supporting sustainable economic practices.

2. Methodology

The foundation of this study is a targeted literature review focusing on publications between 2019 and 2023 from peer-reviewed journals and reputable industry sources. This review synthesizes current research on pandemic-resilient investment strategies, emphasizing the importance of resilience and risk management in financial practices. Complementing the literature review, this study analyses economic data from 2018 to 2022 across 20 countries to assess the real impacts of the pandemic. This analysis includes GDP growth, unemployment rates, and Gross Fixed Capital Formation, providing insights into how different economies responded to the pandemic.

Data is sourced from recognized global economic databases, ensuring accurate and up-to-date information for analyzing economic trends and policy effectiveness across a diverse set of countries. This empirical analysis is integrated with findings from the literature review to draw conclusions about effective investment policies during pandemics. By integrating theoretical research with practical economic analysis, this methodology offers a comprehensive view of how investment policies can be adapted to withstand global crises. It provides a robust framework for understanding the dynamics of financial markets during the COVID-19 pandemic and offers practical insights for policymakers and investors.

3. Results

3.1. Impact of the COVID-19 pandemic on investment policies

The COVID-19 pandemic has had a significant impact on global financial markets and investment policies, resulting in unprecedented levels of market volatility and uncertainty (Çolak & Öztekin, 2021). The impact of the pandemic on investment policies can be seen in three main areas: market volatility and risk management, sector-specific effects, and government intervention and policy changes.

The pandemic has led to extreme market volatility, with stock markets experiencing significant declines in early 2020 before rebounding later in the year (O'Donnell, Shannon, & Sheehan, 2021). The pandemic has also led to increased uncertainty and risk, with investors facing challenges in managing liquidity and preserving the value of their investments (König & Winkler, 2020). As a result, many investors have re-evaluated their risk management strategies and increased their focus on long-term, sustainable investments (Majid, 2020).

The pandemic has had a disproportionate impact on certain sectors of the economy, including travel and tourism, hospitality, and retail (Hilson, Van Bockstael, Sauerwein, Hilson, & McQuilken, 2021). As a result, investors have had to adjust their investment strategies to reflect the changing economic landscape. Many investors have shifted their focus towards technology and healthcare industries, which have been less affected by the pandemic (Yan et al., 2020). This shift towards certain sectors has highlighted the importance of diversification and sector-specific risk management in pandemic-resilient investment policies.

Governments around the world have implemented various policies and interventions to support the economy and financial markets during the pandemic. These interventions have included stimulus packages, interest rate cuts, and regulatory changes (Gutiérrez & Rodriguez, 2020). These government interventions have had a significant impact on investment policies, with investors needing to navigate an increasingly complex regulatory landscape. The pandemic has also highlighted the importance of regulatory and policy frameworks that prioritize resilience and sustainability, such as ESG criteria and sustainable finance initiatives (Chang, McAleer, & Wong, 2020).

3.2. Key Elements of Resilient Investment Policies

The literature review identifies several critical elements of pandemic-resilient investment policies, including diversification and asset allocation, liquidity management, long-term and sustainable investing, technology and digital transformation in investment management, and regulatory and policy frameworks for resilience.

Diversification and asset allocation are critical components of pandemic-resilient investment policies. Diversification across asset classes, sectors, and regions can help manage risk and reduce the impact of market volatility (Majid, 2020). Asset allocation strategies can also help investors balance risk and return by allocating investments based on individual risk profiles and investment goals (Omura et al., 2021).

Liquidity management is another critical element of pandemic-resilient investment policies. The pandemic has highlighted the importance of maintaining sufficient liquidity to manage unexpected market movements and avoid forced asset sales (Feng & Wu, 2021). In addition, adequate liquidity management strategies can help investors maintain sufficient cash reserves and manage their cash flow during times of crisis (Chang et al., 2020).

Long-term and sustainable investing is increasingly recognized as a critical element of pandemic-resilient investment policies. Sustainable investing strategies incorporating ESG criteria can help investors identify companies with substantial environmental, social, and governance practices, which may be more resilient in times of crisis (Ye et al., 2022). In addition, these strategies can also help promote long-term, sustainable economic growth, and stability (Majid, 2020).

The pandemic has accelerated technology adoption and digital transformation in investment management. Artificial intelligence and machine learning can help investors analyze large amounts of data and identify potential risks and opportunities (Yan et al., 2020). Digital platforms and tools can

also help investors manage their portfolios and make more informed investment decisions (Feng & Wu, 2021).

Regulatory and policy frameworks prioritizing resilience and sustainability are critical to pandemic-resilient investment policies. These frameworks can include ESG reporting requirements, sustainable finance initiatives, and regulatory measures that promote risk management and long-term investing (Çolak & Öztekin, 2021). In addition, these frameworks can help promote long-term economic growth and stability by prioritizing resilience and sustainability.

4. Analysis of economic indicators for 20 selected countries

This chapter examines the economic effects of the COVID-19 pandemic from 2018 to 2022 across 20 countries, analyzing GDP growth, unemployment rates, and Gross Fixed Capital Formation (GFCF) percentages to understand recovery strategies and impacts across varied economic systems (see Tables 1-2). The study features a balanced selection of ten European and ten non-European countries, enabling a comprehensive view of how different governance models and economic structures have managed the crisis.

Table 1. GDP Growth Rate and Unemployment Rate in 20 selected countries, 2018-2022

Country	GDP Growth Rate (%)					Unemployment Rate (%)				
	2018	2019	2020	2021	2022	2018	2019	2020	2021	2022
Germany	0.98	1.08	-3.83	3.16	1.81	3.38	3.14	3.86	3.64	3.14
Italy	0.89	0.33	-8.90	6.00	4.40	10.61	10.04	9.90	9.30	8.90
France	1.70	1.50	-8.10	5.80	2.80	9.00	8.50	8.00	8.00	7.50
Spain	2.40	2.00	-11.00	5.10	4.80	15.30	14.10	15.50	14.80	13.00
United Kingdom	1.40	1.40	-9.80	7.50	4.00	4.00	3.80	4.50	4.50	3.80
Sweden	2.30	1.20	-2.80	4.70	4.90	6.30	6.80	8.30	8.60	7.60
Poland	5.30	4.50	-2.60	5.20	5.00	3.90	3.20	3.60	3.90	3.80
Netherlands	2.60	1.80	-3.70	4.70	4.20	3.80	3.30	4.00	3.80	3.50
Greece	1.90	1.90	-9.00	7.60	8.50	19.30	17.30	16.50	14.20	13.50
Portugal	2.60	2.40	-8.40	4.90	6.70	7.00	6.60	6.80	6.90	5.90
United States	2.90	2.30	-3.40	5.70	2.10	3.90	3.70	8.10	5.40	3.60
Canada	2.80	1.90	-5.40	5.50	4.00	5.80	5.70	9.60	7.50	5.20
Brazil	1.80	1.10	-4.10	4.60	2.90	12.30	11.90	13.70	13.20	9.20
India	6.50	4.20	-8.00	9.00	7.00	5.30	5.40	7.10	6.00	4.20
China	6.70	6.00	2.30	8.10	3.00	4.30	4.60	5.00	4.60	5.00
Japan	0.50	0.30	-5.00	2.20	1.80	2.40	2.40	3.00	2.80	2.60
Australia	2.90	2.20	-0.30	2.10	4.30	5.30	5.20	6.50	5.10	3.70
South Africa	0.80	0.10	-6.40	4.60	2.10	27.10	28.50	29.20	33.60	32.90
Mexico	2.20	0.00	-8.20	4.80	2.80	3.30	3.40	4.40	4.00	3.60
Indonesia	5.20	5.00	-2.10	3.70	5.30	5.30	4.60	6.50	6.30	5.80

Source: World Bank, 2024

The 2018-2022 timeframe was chosen to provide a baseline before the pandemic and track the initial impacts and recovery phases. The years cover the sudden onset of the pandemic in 2020 and subsequent recovery efforts up to 2022, giving a detailed view of short-term impacts and the beginnings of longer-term economic trends. This period's analysis helps assess policy effectiveness, resilience, and recovery capabilities across diverse economic landscapes.

Key economic indicators such as GDP growth, unemployment rates, and GFCF percentages are scrutinized to gauge economic health, labor market conditions, and investment trends. These metrics provide insights into the scale of economic disruption and recovery, reflecting the effectiveness of national responses in stabilizing and revitalizing economies post-pandemic. This analysis offers a nuanced understanding of how various countries have navigated economic challenges during the pandemic, highlighting the importance of tailored strategies in global crisis management.

Table 2. Gross Fixed Capital Formation in 20 selected countries, 2018-2022

Country	**GFCF (% of GDP)**				
	2018	**2019**	**2020**	**2021**	**2022**
Germany	21.07	21.32	21,54	21,30	22,09
Italy	20.60	20.90	20.50	20.80	21.10
France	24,00	24.50	25.00	24.50	24.00
Spain	20.00	20.50	19.50	19.00	20.00
United Kingdom	17.00	17.50	17.00	17.50	18.00
Sweden	24.00	25.00	25.50	26.00	26.50
Poland	19.80	20.00	20.20	20.40	20.60
Netherlands	21.00	21.50	22.00	21.50	21.00
Greece	13.50	14.00	15.00	15.50	16.00
Portugal	15.30	16.00	16.70	17.00	17.30
United States	21.10	21.00	19.90	20.70	21.50
Canada	22.70	22.60	23.20	24.20	23.30
Brazil	15.10	15.50	16.60	18.90	18.80
India	30.50	29.20	28.00	30.70	31.90
China	42.80	42.80	42.50	42.00	42.00
Japan	23.90	23.60	23.80	24.20	24.70
Australia	24.40	23.30	22.60	22.50	23.00
South Africa	18.20	17.90	16.90	16.50	16.30
Mexico	23.20	22.70	22.00	22.50	23.10
Indonesia	32.20	32.50	33.80	34.00	34.40

Source: World Bank, 2024

Germany's response to the COVID-19 pandemic featured the expanded use of the Kurzarbeit program, a well-established short-time work allowance that helps prevent layoffs by allowing companies to reduce working hours while the government compensates for lost (Bundesagentur für Arbeit, 2024; Casey & Mayhew, 2023; Dao & Aiyar, 2022). This measure was crucial in stabilizing the labor market, enabling Germany to maintain a relatively steady unemployment rate, which only marginally increased from 3.14% in 2019 to 3.86% in 2020, and then improved to 3.64% by 2021.

Additionally, Germany's GDP saw a modest contraction of 3.83% in 2020 but experienced a rebound with a growth rate of 3.16% in 2021. Investment levels remained strong, with GFCF consistently around 21% of GDP from 2018 to 2022 (World Bank, 2024). These outcomes demonstrate the German economy's resilience and the effectiveness of the Kurzarbeit program in sustaining economic stability during the pandemic.

Italy was severely impacted by the COVID-19 pandemic in early 2020, leading to a sharp GDP contraction of 8.9%. To mitigate this, the government launched extensive fiscal stimulus aimed at supporting the strained health system and the vital tourism sector, heavily affected by international travel bans (Canelli, Fontana, Realfonzo, & Passarella, 2021; Di Bartolomeo, D'Imperio, & Felici, 2022;

Di Pietro, Marattin, & Minetti, 2020). This included financial aid to healthcare facilities and the tourism industry, bolstered by EU Recovery Fund contributions, targeting not only economic recovery but also advancing a greener and more digital economy (European Commission, 2024).

By 2021, Italy showed signs of economic recovery with a 6.0% GDP growth and gradual easing of restrictions boosting economic activity. Investment also rebounded, with GFCF (GFCF) rising from 20.50% in 2020 to 20.80% in 2021, signaling renewed confidence in sectors essential for sustainable growth (World Bank, 2024).

France responded to the severe impacts of COVID-19 with a comprehensive economic strategy, including significant financial support for businesses and an expansion of social security benefits to protect household incomes (Desson, Weller, McMeekin, & Ammi, 2020; Or, Gandré, Zaleski, & Steffen, 2022). In 2020, France's GDP fell by 8.1%, one of the Eurozone's largest declines, due to strict lockdowns and business closures. The government introduced extensive aid, including state-guaranteed loans, subsidies, and expanded unemployment benefits akin to Germany's Kurzarbeit system, supporting workers with reduced hours.

These initiatives led to a quick recovery, with a 5.8% GDP increase in 2021 and a decrease in unemployment from 8.0% in 2020 to 7.5% by 2022. France's GFCF remained stable, indicating that these fiscal measures effectively revived economic activity and boosted investor confidence, essential for ongoing economic stability and growth (World Bank, 2024).

Spain experienced one of Europe's most severe economic downturns from COVID-19, with an 11% GDP contraction in 2020. To mitigate this, the government introduced the Expediente de Regulación Temporal de Empleo (ERTE) furlough scheme, helping prevent layoffs by subsidizing wages for reduced work hours or suspended contracts (Boscá, Doménech, Ferri, García, & Ulloa, 2021; De la Fuente, 2021; Porras-Arena, Martín-Román, Dueñas Fernández, & Llorente Heras, 2022). This was pivotal in maintaining employment and financial stability.

Spain also provided targeted aid to sectors like tourism, hospitality, and retail, including grants, tax deferrals, and state-guaranteed loans to support businesses during the pandemic.

These measures led to a partial economic recovery in 2021, with GDP growth at 5.1%. Though not fully reversing the 2020 losses, this growth, alongside the gradual easing of restrictions, marked a substantial improvement. The ERTE scheme effectively managed unemployment fluctuations, reducing it from a peak of 15.5% in 2020 to about 13% by 2022 (World Bank, 2024). Similarly, investment began to rebound, reflecting growing business confidence and normalization of economic activities, supported by improved public health and ongoing government interventions.

The United Kingdom experienced a significant 9.8% GDP decline in 2020 due to the COVID-19 pandemic. To mitigate this, the UK government introduced key fiscal measures, including the Coronavirus Job Retention Scheme, which supported up to 80% of furloughed employees' wages to prevent job losses (His Majesty's Revenue & Customs, 2022; Sawyer, 2024). Additionally, the UK offered financial incentives such as loans, tax relief, and grants, focusing on sectors like retail, hospitality, and entertainment heavily impacted by the pandemic (Hickman, 2022).

These initiatives contributed to a strong economic rebound in 2021, with GDP growing by 7.5%, bolstered by the easing of pandemic restrictions and a successful vaccine rollout. The furlough scheme was instrumental in maintaining employment stability, keeping the unemployment rate at a moderate increase to 4.5% through 2021 (World Bank, 2024). Despite these positive trends, GFCF showed variability, reflecting continued caution in business investment decisions during this uncertain period.

Sweden managed the COVID-19 pandemic with voluntary measures instead of strict lockdowns, relying on public adherence to guidelines like social distancing and remote work, which kept most schools and businesses open (Andersson & Jonung, 2024; Krueger, Uhlig, & Xie, 2022). This approach resulted in minimal economic disruption compared to other countries. In 2020, Sweden's GDP only fell by 2.8%, showing a milder impact than nations with tougher restrictions. The economy rebounded quickly with GDP growth of 4.7% in 2021 and 4.9% in 2022.

Unemployment in Sweden rose slightly from 6.8% in 2019 to 8.3% in 2020 but was relatively low compared to harder-hit countries, reducing to 7.6% by 2022. Investment remained stable, with GFCF around 25% of GDP, reflecting continued business confidence and the success of Sweden's moderate policy approach (World Bank, 2024). Sweden's strategy underscores that flexible, guideline-based responses can effectively support economic stability and recovery during global crises.

Poland implemented strategic economic measures to mitigate the impact of the COVID-19 pandemic and expedite recovery, focusing on subsidies for businesses and accelerating digital transformation (Adamowicz, 2023; Churski & Kaczmarek, 2022; Żak & Garncarz, 2020). Despite global disruptions, Poland's GDP contraction was modest at 2.54% in 2020, significantly less than many other European countries. This was followed by strong growth, with GDP increasing by 5.3% in 2021 and 4.9% in 2022, supported by effective government interventions.

Investment levels in Poland remained stable at about 20% of GDP, reflecting ongoing business confidence and sustained capital expenditure (World Bank, 2024). The push for digital transformation proved crucial, allowing businesses to operate efficiently during the pandemic and positioning the economy for future digital opportunities. This strategy not only cushioned Poland from severe economic downturns but also bolstered its long-term economic competitiveness.

The Netherlands tackled the economic fallout from COVID-19 with effective fiscal measures, focusing on wage subsidies to help businesses maintain employment, especially in vulnerable sectors like tourism, hospitality, and retail (European Commission, 2022; Hoekman, Smits, & Koolman, 2020; Siddik, 2020). Despite a global economic slowdown, the Dutch GDP's decline was modest at 3.7% in 2020, followed by a swift recovery with a 4.7% growth in 2021, reflecting the resilience and strategic response of the Dutch government.

Efforts to stabilize the labor market kept unemployment rates relatively low, increasing only slightly from 3.3% in 2019 to 4.0% in 2020 and then decreasing to 3.8% by 2021. This helped maintain consumer confidence and spending, contributing to the economic recovery. Additionally, investment levels remained stable at around 21% of GDP, indicating sustained business confidence and ongoing government support (World Bank, 2024).

Greece, highly dependent on tourism, suffered a severe economic downturn with a 9.0% GDP contraction in 2020 due to the COVID-19 pandemic. In response, the government launched extensive measures to revive tourism and support the economy, focusing on marketing safe travel, enhancing health safety protocols, and reducing VAT rates to boost travel appeal (Apostolopoulos, Psychalis, & Liargovas, 2022; Maris & Flouros, 2022; Nikiforos, 2021). Additional fiscal supports such as wage subsidies and tax relief were crucial for sustaining businesses and preserving jobs.

These initiatives led to a significant economic rebound, with GDP growing by 7.7% in 2021. Despite this growth, unemployment remained high, only slightly improving from 16.5% in 2020 to 14.2% in 2021, highlighting ongoing employment challenges. Investment levels also began to recover, indicating renewed confidence in the economy's future and the effectiveness of governmental strategies to stimulate key sectors including tourism, energy, and technology.

Portugal faced significant economic challenges during the COVID-19 pandemic and responded with policies targeting small and medium-sized enterprises (SMEs) and the public health sector (De Grauwe, 2021; Gomes, 2021). Measures such as deferred taxes, direct subsidies, and guaranteed loans were essential to maintain liquidity and prevent SME bankruptcies during lockdowns. Simultaneously, increased public health spending helped manage the health crisis and strengthen the healthcare system.

These interventions were crucial for Portugal's economic recovery in 2021, when its GDP grew by 4.9% after a 8.4% contraction in 2020. The recovery was fueled by revived consumer spending and a resurgence in tourism as travel restrictions eased. Investment also grew, with GFCF rising from 16.7% to 17.0% of GDP, reflecting rising business confidence and investment in sectors like technology and renewable energy, which are pivotal for sustainable growth (World Bank, 2024).

In response to the COVID-19 pandemic, **the United States** implemented significant fiscal measures, including the $2.2 trillion Coronavirus Aid, Relief, and Economic Security (CARES) Act in March 2020 (Feldkircher, Huber, & Pfarrhofer, 2021; Li, Farmanesh, Kirikkaleli, & Itani, 2022; US Congress, 2020; Walmsley, Rose, & Wei, 2021). The CARES Act provided direct payments, enhanced unemployment benefits, and business support through loans and grants, notably via the Paycheck Protection Program (PPP), to sustain small businesses and employment.

Despite these efforts, the U.S. GDP fell by 3.4% in 2020, and unemployment rose sharply from 3.7% in 2019 to 8.1% in 2020. However, a swift fiscal response contributed to a strong recovery in 2021, with GDP growing by 5.7%, aided by further measures like the American Rescue Plan Act of 2021(World Bank, 2024).

Investment levels initially dropped in 2020 but rebounded significantly in 2021, demonstrating the resilience of the U.S. economic structure and the effectiveness of government interventions. This recovery reflects increased business and investor confidence, supported by continued fiscal measures and the rollout of COVID-19 vaccinations.

Canada's response to the COVID-19 pandemic involved critical measures such as the Canada Emergency Response Benefit (CERB) and comprehensive wage subsidies to lessen the economic impact on workers and businesses (Cotton, Kashi, Lloyd-Ellis, Tremblay, & Crowley, 2022; Government of Canada, 2020; Moran, Stevanovic, & Touré, 2022). CERB provided essential temporary income support to affected workers, crucial for maintaining consumer spending and financial stability during the pandemic's early stages.

Additionally, wage subsidies helped employers retain staff despite economic challenges, stabilizing employment during the pandemic. Despite these efforts, Canada's GDP fell by 5.4% in 2020 due to global slowdowns and public health restrictions. However, a proactive fiscal approach led to a strong economic rebound in 2021, with a 5.5% GDP growth fueled by renewed consumer confidence and easing restrictions (World Bank, 2024).

The labor market demonstrated resilience, with unemployment rates declining steadily after a spike in 2020, returning to more stable levels by 2022. Investments in key sectors like infrastructure, technology, and green energy remained strong, with GFCF indicating robust and continued investment, showcasing sustained confidence in Canada's economic recovery and long-term growth.

Brazil addressed its economic challenges from COVID-19 by implementing emergency aid payments to individuals and substantial support to businesses, crucial for mitigating immediate financial hardships and preventing a deeper recession (Menezes, Figer, Jardim, & Medeiros, 2022; Porsse, Carvalho, & Vale, 2020; World Bank, 2020). The "coronavoucher" program provided crucial financial assistance to unemployed and informal workers, helping sustain consumer demand by supporting lower-income households.

Additionally, Brazil supported businesses, particularly SMEs, with tax deferrals, low-interest loans, and payroll subsidies to maintain operations and prevent layoffs. Despite these measures, Brazil's GDP fell by 4.1% in 2020 but rebounded to 4.6% growth in 2021 as economic activities gradually resumed, supported by government interventions.

Investment levels also started to recover; after dropping in 2020, GFCF rose from 16.6% of GDP to 18.9% in 2021, reflecting renewed confidence in Brazil's economic prospects and signaling a movement towards stabilization (World Bank, 2024).

India's Atmanirbhar Bharat (self-reliant India) initiative marked its response to the COVID-19 economic crisis, promoting self-reliance and boosting domestic production, particularly in infrastructure, technology, and healthcare sectors (Barbate, Gade, & Raibagkar, 2021; Jose, Mishra, & Pathak, 2021; Shettigar & Misra, 2022). Announced in phases during 2020, this stimulus aimed at immediate pandemic relief and setting the stage for economic recovery.

Despite a 7.97% GDP contraction in 2020, these measures fueled a rebound, with GDP growth reaching 8.97% in 2021, supported by extensive government spending, liquidity support for businesses, and direct cash transfers to lower-income households. Investment levels also recovered, with GFCF rising from 27.98% of GDP in 2020 to 30.67% in 2021 (World Bank, 2024). Investments focused on critical infrastructure, the "Make in India" manufacturing initiative, and digital enhancements crucial for pandemic resilience. These initiatives not only mitigated immediate economic impacts but also positioned India for future growth, reducing import dependency and strengthening its global supply chain position.

China's response to the COVID-19 pandemic combined a strong public health strategy with strategic infrastructure investments, significantly limiting economic damage and enabling a rapid recovery (Hu, Flahault, Temerev, & Rozanova, 2021; Liu, 2022; Tan, Wu, Guo, & Santibanez-Gonzalez, 2022). Early in the pandemic, China's strict lockdowns and extensive testing helped control the virus's spread, allowing economic activities to resume quickly.

Economically, China prioritized infrastructure projects—including 5G networks, transportation, energy projects, and water system upgrades—as central to its stability and growth. These projects supported both immediate economic activity and long-term industrial progress. Despite global disruptions, China experienced only a slight GDP contraction of 2.3% in 2020, followed by an impressive 8.1% growth in 2021 (World Bank, 2024). This swift recovery was fueled by effective virus

containment and continuous infrastructural investments. China's GFCF remained stable, reflecting ongoing confidence in its economic prospects.

China's model shows that integrating strict health measures with proactive fiscal investments can effectively counteract pandemic impacts while strengthening economic resilience and global competitiveness.

Japan managed the economic impact of COVID-19 with significant fiscal stimulus focused on supporting businesses and maintaining employment, which lessened the downturn seen in other developed nations (Ando, Furukawa, Nakata, & Sumiya, 2020; DeWit, Shaw, & Djalante, 2020; OECD, 2021). The government implemented emergency packages, providing financial aid to companies, job protection subsidies, and increased benefits for impacted workers, crucial for preserving economic liquidity and supporting small and medium-sized enterprises.

Despite global disruptions, Japan's GDP fell by only 4.8% in 2020, with recovery beginning in 2021 as GDP grew by 2.2% (World Bank, 2024). This rebound was aided by ongoing efforts to boost demand and investment in key sectors like technology and healthcare, essential for future stability and growth.

Investment levels, as indicated by GFCF, stayed stable throughout the pandemic, reflecting the effectiveness of Japan's economic strategies. Continued focus on structural reforms and digital transformation also helped sustain investment, particularly in sectors poised for future expansion. Japan's approach demonstrates a cautious but effective economic management strategy during the pandemic, leading to a steady recovery and aligning with long-term economic and technological enhancement goals.

Australia combated the economic impacts of COVID-19 with robust fiscal and health initiatives, including the JobKeeper payment scheme and substantial investments in healthcare and digital infrastructure (O'Sullivan, Rahamathulla, & Pawar, 2020; Reserve Bank of Australia, 2024; Stylianou, 2021). The JobKeeper program subsidized wages for affected businesses, reducing job losses and aiding recovery. Additionally, Australia enhanced its public health response with widespread testing and effective communication strategies, alongside significant digital infrastructure investments to support remote work and digital business transformation.

These measures led to a quick economic recovery, with GDP growing 4.3% in 2021 after only a minor contraction of 0.3% in 2020, marking a stronger rebound than many other developed nations. Unemployment peaked at 6.5% in 2020 but dropped to 5.1% by 2021, showcasing the effectiveness of the JobKeeper scheme (World Bank, 2024). The strategic investments in digital infrastructure not only facilitated a rapid response to pandemic-induced challenges but also strengthened the economy's long-term resilience and adaptability.

South Africa's response to the COVID-19 pandemic focused on enhancing infrastructure and healthcare to mitigate immediate impacts and build long-term economic resilience (Anyanwu & Salami, 2021; Burger & Calitz, 2021; Chitiga-Mabugu, Henseler, Mabugu, & Maisonnave, 2021). However, the economy still faced significant challenges, including high unemployment and modest investment levels. Initiatives included increased healthcare funding to address pandemic challenges and infrastructure projects to stimulate economic activity and employment, improving hospital facilities, vaccine distribution, and public transport systems.

Despite these efforts, South Africa's GDP fell by 6.4% in 2020, though it partially recovered with a 4.6% growth in 2021. Unemployment worsened, rising from 28.5% in 2019 to 33.6% in 2021, highlighting the difficulty in creating job opportunities. Investment remained low, with GFCF around 16% of GDP, indicating cautious investor sentiment.

These ongoing economic struggles emphasize the need for broader structural reforms to improve job creation, economic diversification, and boost investor confidence, beyond just infrastructure and healthcare enhancements.

During the COVID-19 pandemic, **Mexico** encountered significant economic challenges, with a policy focus on monetary rather than comprehensive fiscal interventions (Hannan, Honjo, & Raissi, 2022; Monroy-Torres et al., 2021; OECD, 2022). The government prioritized financial stability through measures like interest rate cuts and liquidity provisions, avoiding the larger fiscal stimulus packages implemented in other countries.

This restrained fiscal approach led to a severe economic contraction, with Mexico's GDP shrinking by 8.2% in 2020, among the sharpest declines in Latin America. The 2021 recovery was sluggish, with a GDP growth of 4.8%, insufficient to fully recover from the prior year's losses.

Unemployment rose from 3.4% in 2019 to 4.5% in 2020, with only a modest improvement by 2021, reflecting ongoing job market struggles (World Bank, 2024). Investment was also unstable, as evidenced by declines in GFCF as a percentage of GDP, indicating low investor confidence and lack of governmental incentives for capital investment.

Mexico's reliance on monetary measures rather than direct fiscal spending has highlighted the limitations of its economic strategy during the pandemic. The slow recovery and persistent vulnerabilities suggest a need for a stronger fiscal policy, particularly through targeted spending in critical sectors like manufacturing and services to enhance employment and stabilize the economy.

Indonesia tackled the economic impact of COVID-19 with comprehensive fiscal stimulus focused on social assistance, healthcare, and business support, particularly aiding SMEs, a critical sector of its economy (Olivia, Gibson, & Nasrudin, 2020; Roziqin, Mas' udi, & Sihidi, 2021; Utami & Ilyas, 2021). The government quickly addressed the health and economic crises by boosting healthcare capabilities and providing social safety nets and business aid.

The stimulus included direct cash transfers, food aid, increased hospital funding, and support for vaccination efforts. It also offered tax relief, wage subsidies, and low-interest loans to businesses to curb layoffs and closures. Despite a global downturn, these measures helped Indonesia limit its GDP contraction to 2.1% in 2020, with a subsequent growth of 3.7% in 2021, signaling a steady economic stabilization (World Bank, 2024). Investment levels, shown by GFCF, also began to recover in 2021, reflecting renewed investor confidence in Indonesia's economic management. This response showcases the importance of tailored fiscal strategies in mitigating crises and promoting recovery, providing key lessons for future economic policymaking.

This chapter provided a detailed analysis of the economic impacts of the COVID-19 pandemic across 20 selected countries from 2018 to 2022, examining changes in GDP growth, unemployment rates, and GFCF. It demonstrated the varied effectiveness of different countries' responses, underscoring the importance of tailored economic policies in managing crises. The insights gained highlight the pivotal role of government intervention in stabilizing economies and facilitating recovery, offering valuable guidance for future economic policy-making in response to global disruptions.

5. Discussion

5.1. Lessons learned from the COVID-19 pandemic for investment policies

The COVID-19 pandemic underscored the critical need for resilient investment policies capable of withstanding global crises. This need is reflected in the economic trajectories of 20 countries analyzed from 2018 to 2022, revealing varying levels of success in handling the pandemic's impact. The pandemic demonstrated the importance of diversification, risk management, liquidity management, and sustainable investing in maintaining economic stability and fostering long-term growth.

Diversification and risk management emerged as pivotal, ensuring that investments were not overly concentrated in sectors most susceptible to pandemic disruptions (König & Winkler, 2020). For instance, countries with diversified economic structures exhibited more resilience in their financial markets. Liquidity management was also crucial, as seen in the fluctuating cash flow challenges during the pandemic's peak, underscoring the need for accessible liquid assets during crises (Feng & Wu, 2021).

Moreover, the pandemic accelerated the adoption of sustainable and ESG-focused investing. Analysis indicates that countries and companies emphasizing these investment criteria managed to not only mitigate risks but also capture new growth opportunities during the recovery phase (Ye et al., 2022). This shift towards sustainable investing is reflected in enhanced policy frameworks that encourage resilient and green investments.

The importance of technological and digital advancements in investment management also became apparent, facilitating remote operations and providing investors with critical market insights amidst unprecedented conditions. This digital shift suggests a permanent transformation in investment

management practices, with implications for future policy and regulatory frameworks (Çolak & Öztekin, 2021).

The lessons from the pandemic advocate for regulatory environments that support these resilient practices. Policymakers are encouraged to integrate these insights into regulatory frameworks that promote long-term economic stability and growth, emphasizing the importance of sustainability and resilience in investment policies.

5.2. Implications of identified critical elements for policymakers and investors

From the comprehensive analysis of economic indicators across 20 countries during the COVID-19 pandemic, it is evident that certain critical elements of investment policies are pivotal for both policymakers and investors in managing crises effectively. These elements include diversification, liquidity management, sustainable and long-term investing, adoption of technology in investment management, and regulatory frameworks emphasizing resilience and sustainability.

For policymakers, the findings suggest a need to develop frameworks that foster long-term economic growth and stability by incorporating resilience into financial regulations. Encouraging sustainable investing and supporting digital transformations in investment management are essential to enhancing economic resilience (Majid, 2020). Additionally, promoting policies that facilitate liquidity management during crises and foster diversification can help buffer economies against sudden shocks (Chang et al., 2020). For instance, the adoption of diversified and sector-specific investment strategies helped some countries manage economic impacts more effectively, highlighting the importance of tailored regulatory incentives and support measures.

Investors, on the other hand, should focus on strategic investment decision-making that prioritizes diversification to manage risks associated with market volatility (Grewal & Loke, 2021). Emphasizing liquidity management to maintain cash flow during economic downturns and investing in long-term and sustainable ventures, particularly those adhering to ESG criteria, are prudent strategies in response to the lessons learned from the pandemic (Ye et al., 2022). Additionally, leveraging technology and digital platforms for investment management can enhance investors' ability to navigate rapidly changing markets (Yan et al., 2020).

These insights not only underscore the need for resilient investment policies but also demonstrate the critical role of adaptive and forward-thinking regulatory and policy frameworks. Such frameworks should support the integration of new technologies and sustainable practices in investment strategies, thereby fostering a stable and resilient economic environment conducive to enduring growth.

5.3. Challenges and limitations in implementing pandemic-resilient investment policies

The examination of economic indicators from 20 countries during the COVID-19 pandemic highlights several challenges in implementing pandemic-resilient investment policies. One primary issue is the lack of standardization; there is no universally accepted definition of what constitutes a pandemic-resilient investment policy, leading to varied interpretations and implementations among investors. This absence of standardization complicates the adoption of cohesive strategies that uniformly mitigate pandemic-related risks (Majid, 2020).

Another significant challenge is data availability and quality. Effective pandemic-resilient strategies require access to accurate and timely data, but consistent and reliable information can be elusive, particularly in emerging markets or less transparent sectors. This scarcity of high-quality data hinders investors' ability to make well-informed decisions and tailor strategies to current economic realities (Yan et al., 2020).

Behavioral biases also pose substantial challenges. During periods of high market volatility, such as those seen during the COVID-19 pandemic, investors may exhibit panic selling or herd behavior, exacerbating market downturns and resulting in suboptimal investment outcomes. Overcoming these biases is essential to maintaining rational investment strategies during economic crises (Çolak & Öztekin, 2021).

Furthermore, developing and sustaining pandemic-resilient investment policies often demands significant financial resources and expertise. This requirement can be particularly burdensome for smaller investors or those in developing markets who may lack access to the necessary tools and professional guidance needed to implement complex risk management and investment strategies effectively. Addressing these challenges requires collaborative efforts among regulatory bodies, financial institutions, and investors to promote a more standardized approach to investment resilience. Enhancing data infrastructure and increasing investor education on behavioral finance are also critical steps toward mitigating the inherent difficulties in adapting to and implementing resilient investment strategies effectively.

6. Conclusion

This paper has examined the implications of the COVID-19 pandemic on investment policies through a detailed literature review and empirical analysis of economic indicators from 20 countries between 2018 and 2022. The research has confirmed the profound impact of the pandemic on global investment dynamics and highlighted critical elements necessary for crafting resilient investment strategies that can withstand future crises.

A novel aspect of this study is the integration of comprehensive macroeconomic data analysis with advanced investment theory to draw pertinent conclusions on pandemic resilience in investment policies. Unlike prior studies that primarily focused on theoretical frameworks, this research incorporated empirical data to offer a more grounded perspective on the effectiveness of different investment strategies under crisis conditions.

The research faced limitations due to variability in data availability and quality across different countries, especially emerging markets. This variability may influence the accuracy of cross-country comparisons and the generalizability of findings. Additionally, while the paper suggests several investment strategies to enhance resilience, the actual implementation of these strategies can be complex and context-specific, requiring nuanced understanding beyond the scope of this study.

The analysis suggests recommendations for several countries. For instance, countries like Spain and Italy, heavily impacted by the pandemic, could benefit significantly from strengthening their digital infrastructure and healthcare sectors to bolster economic and investment resilience. For countries like India and Brazil, enhancing regulatory frameworks to support innovation and sustainability within investment practices could lead to substantial improvements in economic stability and growth.

Policymakers and investors should consider these insights to adapt their strategies to not only survive future crises but thrive during them. Investment policies should increasingly focus on sustainability and diversification, not just across industries but also by incorporating advanced technologies and robust risk management frameworks. Encouragingly, this approach does not merely mitigate risks but also catalyzes opportunities for growth and innovation during uncertain times.

Improving investment resilience is crucial not just for economic stability but also for enhancing societal well-being by ensuring job security, sustainable growth, and equitable wealth distribution. As this paper demonstrates, thoughtful investment strategies and proactive policy measures are essential in navigating and overcoming the challenges posed by global disruptions like the COVID-19 pandemic.

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