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A CRITICAL REVIEW OF PRECAUTIONARY SAVINGS AND THEIR IMPLICATIONS FOR KEYNESIAN STIMULUS DURING COVID-19

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ABSTRACT

During the Coronavirus Disease 2019 (COVID-19) crisis, policymakers relied on Keynesian-economic stimulus package (ESP) to help economic agents survive economic stagnation. However, the precautionary savings phenomenon may negatively impact ESP effectiveness over time, according to the precautionary savings theory and the permanent income hypothesis, which are largely underexplored in the literature. Consequently, this study undertakes an examination of how unprecedented non-pharmaceutical interventions (NPIs) induced by the pandemic have triggered precautionary savings. A critical review and several methodology strategies were employed, and the results highlighted that NPIs-driven economic uncertainties, future employment and long-term income expectations, perceptions of ESPs as temporary relief, structural financial constraints, and resultant behavioural shifts are the key factors behind the emergence of precautionary savings behaviour and determining the impact of precautionary savings on the demand transmission mechanism of Keynesian-ESPs. This finding introduces a credibility-consumption gap, where ESPs were perceived as temporary or insufficient relative to long-term economic threats driven by NPIs. As a result, individuals rationally chose to accumulate savings rather than increase consumption due to the increased marginal utility of saving. These findings prompt practitioners to recalibrate standard Keynesian theories and traditional consumption models to incorporate behavioural economics, expectation management, and marginal utility shifts under uncertainty. This recalibration extends the precautionary savings theory and the permanent income hypothesis by integrating macroeconomic, psychological, and policy insights in the context of the COVID-19 crisis and ESP. Policymakers should implement predictable, sustained, and transparently communicated fiscal measures, including income supports, employment guarantees, wage subsidies, and accessible credit. Limitations and recommendations for future research are provided.

Keywords: COVID-19, economic stimulus package, permanent income hypothesis, precautionary savings theory, Keynesian theories.

INTRODUCTION

During the Coronavirus Disease 2019 (COVID-19) crisis, prolonged non-pharmaceutical interventions (NPIs) led to severe negative impacts on economic agents[1], for example, increases in job losses, bankruptcies, and defaults on mortgages and loans, which affected social welfare and economic well-being (Organisation for Economic Co-operation and Development (OECD), 2020; OECD, 2021). In this light, economic stimulus package (ESP) was mainly targeted at the economic agents who are the major beneficiaries of ESP allocation, by granting wage subsidies, tax exemptions, and cash transfers (International Monetary Fund, 2020). In Figure 1, the Economic Stimulus Index (ESI) reflects the scale of fiscal interventions during the pandemic, with consistent values in the highest categories highlighting substantial support. In contrast, variability in the values of the lowest categories suggests an uneven distribution over time. A divergence in saving behaviours was also observed in Figure 2: countries with low pre-pandemic real saving rates (RSR) showed declining savings, whereas those with high RSRs saw increases, revealing the important role of liquidity constraint in assessing saving behaviour during the pandemic.

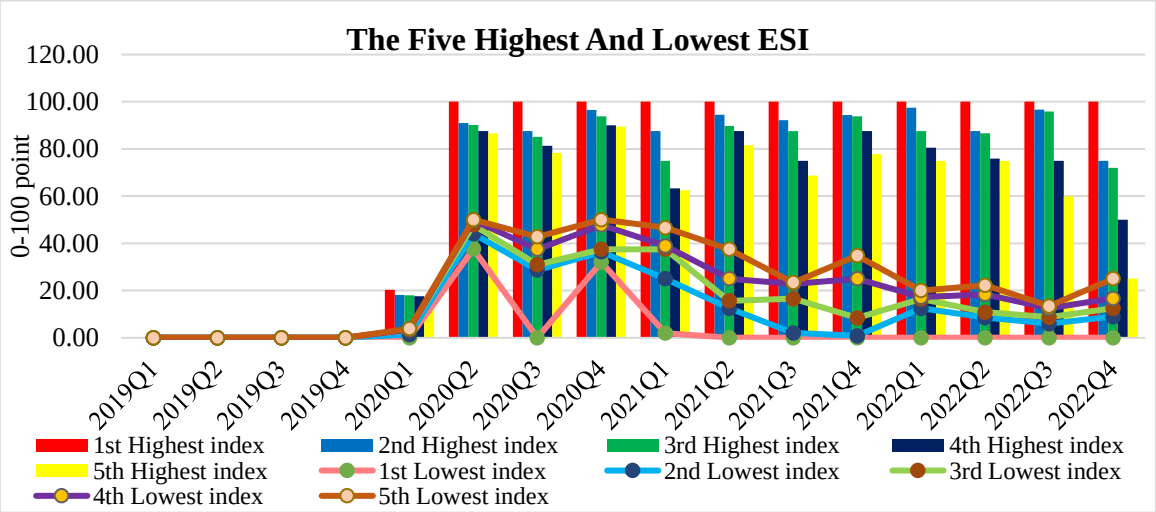
Several studies have suggested that strict and prolonged NPIs contributed to precautionary savings behaviour among economic agents during the pandemic (Allen & Rebillard, 2021; Attinasi et al., 2021; Demary et al., 2021; Soyres et al., 2023). Remarkably, the economic stagnation caused by the unprecedented COVID-19 outbreak differs from previous financial crises, such as the Global Financial Crisis of 2008, during which there were no nationwide lockdown policies and business activities continued as usual. As a result, the precautionary savings phenomenon did not attract enough attention from policymakers or the academic literature, while most reports and empirical studies merely suggested a hypothetical precautionary savings behaviour without assessing its key factors during the pandemic. Notably, this phenomenon has challenged Keynesian theories and may lead to repercussions for the standard fiscal multiplier of Keynesian-ESP (Dynan, 1993; Jappelli & Pistaferri, 2010).

To date, there appears to be a gap in the literature exploring how precautionary savings behaviour may hinder the effectiveness of Keynesian-ESP through aggregate demand channel during the pandemic, with significant evidence, as it has resulted in an increasing lack of confidence among creditors in the government's creditworthiness and accountability (Horton & El-Ganainy, n.d.). Therefore, this study poses two research questions: (1) What are the key factors determining the outbreak of the precautionary savings phenomenon during the COVID-19 crisis? and (2) What are the key factors determining the impact of precautionary savings behaviour on the demand transmission mechanism of Keynesian-ESP during the COVID-19 crisis? Both questions will be addressed in this study by performing a critical review with theoretical basis of precautionary savings theory and the permanent income hypothesis. This study highlights for practitioners and policymakers the importance of understanding individuals' psychological status and perceptions of uncertainty in achieving the objectives of fiscal policy today, while enhancing government credibility, borrowing terms, and government-creditor relationships by proposing a robust monitoring and evaluation framework to assess fiscal balance.

[1] Households and businesses.

Figure 1

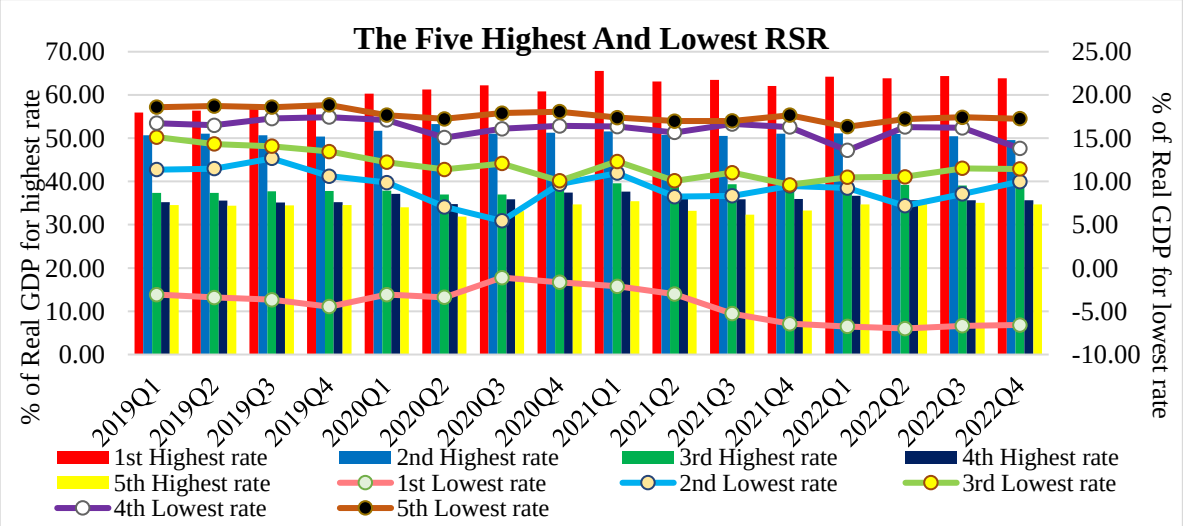
Trends of The Five Highest And Lowest ESP Distributions Among The Selected 42 Countries[2] From 2019 Q1 To 2022 Q4



Source: Oxford Coronavirus Government Response Tracker (2022)

Figure 2

Trends of The Five Highest And Lowest Aggregate Savings Among The Selected 42 Countries From 2019 Q1 To 2022 Q4



Source: OECD iLibrary[3] (2025)

[2]Austria, Australia, Belgium, Brazil, Canada, Chile, Colombia, Costa Rica, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, South Africa, Spain, Sweden, Switzerland, Turkey, the UK, and the US.

[3] The OECD iLibrary is an online library that provides access to the publications, working papers, and datasets of the OECD. OECD iLibrary is the knowledge base of the OECD's analysis and data and offers a reliable platform with award-winning standards, encompassing books, papers, and statistical content. Scholars benefit significantly from the platform's capacity to access high-quality, globally standardized statistics across various economic and social subjects. The OECD also has a rigorous quality control process in place to ensure that its data is accurate and up-to-date.

LITERATURE REVIEW

Keynesian Economics Theory

Keynesian Economics Theory, which John Maynard Keynes initiated in the 1930s in response to the Great Depression (1929-1939), is a macroeconomic theory that emphasizes the influential impact of government intervention in recovering from an economic depression instead of market forces by increasing government spending and lowering taxes to boost aggregate demand, which can lead to a rise in economic activity, full employment, and price stability. There are two fundamental principles held by Keynesian theories: aggregate demand is the most important determinant in improving economic growth instead of aggregate supply with the tool of expansionary fiscal policy—and it should be acceptable even if it results in huge government debt; private consumption and investment are the main driving forces of economic growth during a depression and can be stimulated by the ESP. Keynes unfolds his criticism of excessive savings behaviour, as it reduces the amount of money circulating in the economy and exacerbates a recession (Keynes, 1936).

Besides, Keynes highlights that ESP can improve both aggregate output and income levels, whereby households and businesses will consume and invest more, respectively, while the resulting increase in GDP is expected to be larger than the initial amount of allocated ESP, vice versa. Likewise, the magnitude of the fiscal multiplier of ESP is linked with the marginal propensity to consume (MPC) for households and the marginal efficiency of capital (MEC) for businesses: consumer spending generates income for businesses to invest in the types of machinery and equipment, raw materials, employees' wages, and so on, which in turn employees consume their income again in the market, and the cycle keeps repeating (Clarke, 2022). Keynesian theories argue that a decline in private consumption leads to a decrease in aggregate demand, which can worsen a depression through a corresponding drop in production and increased layoffs. In this regard, the precautionary savings phenomenon can be considered a drag on economic growth, challenging the assumption of a consistent and steady consumption function—a key element of Keynesian theory (Keynes, 1936).

This is evident in the qualitative analysis by Abbass et al. (2022), who demonstrate that the NPIs imposed by the Pakistan government negatively affect aggregate demand during the pandemic, causing a decrease in private consumption and an increase in the saving rate among Pakistanis. Hence, ESP would help to mitigate the economic depression to some extent, according to Keynesian theories. However, in contrast, Bajra et al. (2022) underline that people were unwilling or unable to consume the ESP in the current quarter among 49 (37 OECD + 12 non-OECD) nations from 2020 Q1 to 2021 Q1, due to long-lasting NPIs and concluded that the conventional Keynesian theory underlying ESP failed to demonstrate its effectiveness in boosting short-term economic growth. Moreover, Prusty and Gupta (2022) indicate that in the short run, Keynesian theories are no longer applicable to ESP distributions for reviving economic downturns, particularly during the enforcement of lockdown policies, based on merely two quarters.

Precautionary Savings Theory

Leland (1968) formulated the precautionary savings theory in the 1960s and argued that individuals would make more precautionary savings, implying that they would save more rather than spend more when they anticipate increased uncertainties in the future. In a public health emergency, increased uncertainties regarding the crisis's development and thus diminished economic prospects further amplify the tensions among households and businesses, which can be expressed by a low MPC and MEC, respectively. In addition, long-lasting declines in employment and investment levels may lead

to low materialism, influenced by hysteresis: an ease in human and physical capital accumulation may permanently reduce aggregate supply, productivity levels, and thus aggregate output levels (Ferrero et al., 2022). For example, Jin et al. (2021) adhere to the core assumptions proposed by Leland in their theoretical framework while minimizing the conceptual gap in precautionary savings theory from Choi et al. (2001), Leland (1968), and Menegatti (2001) by making an interdisciplinary study across the fields of epidemiology and psychology.

On the other hand, Schneider and Sellner (2022) emphasize that consumers will make excessive savings when they have sufficient money to save, associated with an expectation of a higher unemployment rate in the future, under uncertain economic prospects. They addressed the theoretical and conceptual gaps identified by Lugilde et al. (2017) by considering savings sufficiency and the expectation of future unemployment as predictors of precautionary savings. Likewise, Ferrero et al. (2022) state that uncertainties regarding the pandemic's evolution and low economic prospects promote anxiety among households and businesses, which decrease their MPC and MEC, respectively, while increasing their precautionary savings. Particularly, individuals would reduce current spending when they have negative expectations of future employment and wages, while businesses would reduce or stop current investment when they expect low demand for their products in the market and undesirable balance sheets in the future.

In addition, the findings of Christelis et al. (2020) highlight that precautionary saving is the mediating variable between the worry over financial consequences and consumer spending, compared to worry over personal health risk during the COVID-19 pandemic, as the negative income shock causes reduced consumption and diminishing of positive MPC in response to a positive income shock. In this sense, they predicted that the drop in consumption would continue unless the government issued larger fiscal support. Furthermore, the findings of Borowski and Jaworski (2023) suggest that economic uncertainty, income uncertainty, the strictness level of lockdown policies, and the severity of the pandemic are key factors influencing household saving behaviour.

Permanent Income Hypothesis

The permanent income hypothesis is a theory of individual saving that was primarily introduced by Milton Friedman in the 1950s. According to the theory, individuals make their spending decisions based on their expected long-term income rather than their current income. This theory posits that individuals have a stable and long-term income that is influenced by their human capital, including their education level, skills, and experience. In light of this assumption, people are assumed to save a portion of their current income to smooth their consumption over time, thereby maintaining a relatively stable standard of living and utility throughout their lifetime. Besides, the permanent income hypothesis posits that changes in income perceived as permanent will have a greater impact on consumption than changes perceived as temporary, such as a one-time bonus or an unexpected windfall, as people adjust their spending based on their expected permanent income rather than their current income (Friedman, 1957).

The permanent income hypothesis is a crucial framework for understanding a key factor underlying the precautionary savings phenomenon and can help elucidate its impact on ESP. If economic agents perceive that the implemented NPIs—especially workplace closures—will have long-term effects on their permanent income, they may intend to save a greater share of the ESP as a precautionary step to adjust their consumption patterns smoothly during a prolonged period of uncertainty. Likewise, suppose economic agents expect ESP to be a short-term measure, insufficient to address long-term

economic uncertainties. In that case, they may exhibit precautionary savings behaviour, as this one-off cash injection does not significantly increase their expected permanent income. As a result, they may decide to save a significant portion of the received ESP instead of spending it, which diminishes the prompt effect of ESP on aggregate demand. However, it remains unclear whether the rapid drop in current income caused by NPIs is influential enough to reduce the expected lifetime income of economic agents during the pandemic, as it depends on individual perceptions—a factor lacking evidence in the literature—and the theory does not address this explicitly.

In a similar vein, Carroll (2009) incorporates precautionary savings theory into the theoretical structure of the permanent income hypothesis by claiming that individuals would make more precautionary savings when facing uncertainty about their future income, which in turn decreases their MPC derived from expected permanent income while addressing the theoretical gaps of Deaton (1991) and Friedman (1957) by providing a formal treatment of how uncertainty influences MPC. Apart from that, the permanent income hypothesis is supported by empirical evidence from Carroll (2009) and Cashin and Unayama (2016), which suggests that individuals base their consumption decisions on expected permanent income rather than on current income. Cashin and Unayama (2016) reported that increases in value-added tax (VAT) in Japan served as a permanent income shock in the long term during 2014, as households expected that their future disposable income would be lower due to tax increases, and thus reduced their spending significantly, in alignment with the permanent income hypothesis. Nonetheless, they acknowledged limitations in generalizability to the world, endogeneity, measurement error due to self-reported consumption data, heterogeneity, and the relatively short time horizon.

This remains a controversial area due to conflicting evidence. Weil (1990) claims that this hypothesis does not account for income uncertainty and the need for people to make excessive savings to safeguard themselves against unpredicted income shocks. He introduces a modified version of the permanent income hypothesis that incorporates the role of precautionary savings and states that the empirical evidence on savings behaviour is better than the standard hypothesis. In other words, people will make excessive savings during periods of heightened income uncertainty, even if their long-term income remains constant. Similarly, Fama (2021) reported that the permanent income hypothesis does not account for realistic factors, as individuals do not always have perfect foresight or the ability to accurately forecast their future income, and may have liquidity or borrowing constraints during a pandemic, which increase the difficulty of consumption smoothing over the lifetime. Hence, he recommends that the effectiveness of ESP during a pandemic depends on different factors, including the size and timing of the ESP, the extent of liquidity and borrowing constraints, and the degree of uncertainty surrounding future income.

Empirical Review

This section synthesizes existing research findings across different contexts that are related to the research area of this study.

Spurious Relationship Between ESP And Economic Growth Under NPIs

Deb et al. (2021) obtained three major findings about ESP among 52 nations from January 1 to December 31, 2020: ESP announcements had a significant negative relationship with economic activity and market confidence while having a significant inverse relationship with the monthly unemployment rate and sovereign credit default swap spreads; on average, the magnitude of ESP's fiscal multiplier was higher for developed nations that have lower government debt; and the

effectiveness of emergency lifeline ESPs, like credit guarantees and loans to business and household, in recovering economic growth was especially higher during periods of stricter NPIs and low individual mobility while demand-boost ESPs, like tax deductions, direct cash transfers, and unemployment insurance, were more effective during periods of relaxed NPIs and lesser supply restrictions. On account of that, they minimized the conceptual and empirical gaps of Nickel and Tudyka (2014), Ramey and Zubairy (2018), Romer and Romer (2010), and Yang, Fidrmuc, and Ghosh (2015) by taking the initiative to identify the effectiveness and magnitude of different types of ESP announcements in reviving the economic fallout during the COVID-19 crisis.

Apart from that, Deb et al. (2022) reported that targeted fiscal measures helped prevent the long-term scarring effects of NPIs on the economy by focusing on vulnerable sectors and labour markets across 50 nations from January 1 to June 2020. Elgin et al. (2020) discovered that economies with larger ESP were more likely to experience smaller drops in GDP growth during the pandemic, while the targeted ESP to households and firms were found to be more effective in decreasing the economic impact of the pandemic based on data from 166 countries as of March 31 2020. Abbass et al. (2022) demonstrated that the benefits of ESP distribution, such as wage subsidies, cash transfers, and tax cuts, could be amplified by promoting surplus demand for consumer products among Pakistani households while simultaneously reducing their private savings. As a result, this expansionary fiscal policy improved aggregate demand in Pakistan, attracting businesses to invest more actively and thereby boosting national production and employment levels. Besides, Mustaffa et al. (2021) examined the impact of the COVID-19 outbreak on GDP and private consumption in Malaysia from January 1 to September 30 2020. Still, they did not account for the moderating role of ESP.

In contrast, Prusty and Gupta (2022) noted that 23 different types of monetary and fiscal stimulus policies exhibited an insignificant but positive relationship with economic growth in India from August to September 2020. This was due to recipients' risk aversion, as they preferred to save more rather than spend or invest. They made several contributions toward bridging the conceptual and empirical gaps identified by Ataguba (2020), Barua (2021), Kanitkar (2020), and McKibbin and Fernando (2021) by exploring the effects of monetary and fiscal stimulus measures on India's economic recovery during the pandemic. Bajra et al. (2022) highlighted that the economic support index[4] (ESI) had an insignificant relationship with real GDP growth, but this nexus became significantly negative after including the interacting term between the Stringency Index[5] (SI) and ESI while controlling for gross fixed capital formation growth and balance of payments, using the fixed effect model (FEM). However, there were possibilities of high multicollinearity and distorted estimates due to the joint inclusion of the interaction term and its component variables in the same regression equation, which suggests a more recent sample period for future research. They addressed a methodological gap in empirical studies by applying a unique approach to measuring SI and ESI.

[4] Economic support index (ESI) is a composite index that combines two economic indicators which are income support and debt or contract relief to measure the government's response level in implementing fiscal policies for households. Data on income support is measured based on the highest common value of policy nationwide or statewide, without taking into account any variations in policies across different states or cities of a nation (Hallas et al., 2020).

[5] Stringency index (SI) is a compound index that determines the strictness of NPIs imposed by governments in response to the COVID-19 pandemic. SI is based on a 9-point scale that ranges from 0 to 100, with higher scores implying higher strictness of NPIs. The index is composed of nine indicators that capture various aspects of government response, which are school closures, workplace closures, restriction of public events, bans on public gatherings, closures of public transportation, stay-at-home orders, restrictions on internal movement, restrictions on international travel, and public information campaigns (Hale et al., 2021).

Negative Relationship Between Precautionary Savings Or Uncertainty And ESP Under NPIs

Crossley et al. (2021) stated that the MPC of one-time income payments received by households in the United Kingdom declined in July 2020 during the COVID-19 outbreak, compared to pre-pandemic periods, while they increased their savings during the pandemic in anticipation of future economic uncertainty. They suggested that the drop in MPC may have been caused by increased uncertainty and declining confidence about future income and economic prospects while claiming that the rise in savings and private transfers may be a signal of self-insurance, whereby households attempt to safeguard themselves against future income shocks. They bridged the empirical gaps of Bunn et al. (2018), Drescher et al. (2020), and Jappelli and Pistaferri (2020) by providing a detailed and timely analysis of household consumption behaviour and the particular mechanisms driving changes in consumption patterns during the pandemic. Besides, Cassese et al. (2023) highlighted that during the pandemic, wealthier households with lower MPCs preferred to engage in precautionary and forced savings in Italy from approximately 2020 Q1 to 2022 Q4 while emphasizing that the unequal distribution of savings and the concentration of wealthier households' financial activities in investment rather than consumption slowed economic recovery. Despite various fiscal interventions, the asymmetric burden of inflation, coupled with the slow spending response of households with high savings, contributed to sluggish post-pandemic consumption growth.

Moreover, Borowski and Jaworski (2023) asserted that the provision of fiscal assistance amidst the COVID-19 pandemic can be considered fundamental to the recovery process in the post-pandemic period, due to the fact that accumulated savings during the pandemic shock may be utilized to finance pent-up demand in 16 European Union countries from 2020 Q1 to 2020 Q4. They tackled the empirical gaps of Hunt et al. (2021), Jordà et al. (2022), and Mody et al. (2012) by assessing a broad range of economic and behavioural determinants of household saving behaviour during the COVID-19 crisis and exploring the role of economic uncertainty in shaping this behaviour while acknowledging the study's limitations, such as the short observation period, omission of economic agents' behaviour, and low generalizability to the global context. In addition, Christelis et al. (2020) reported that worry about financial consequences had a significant negative relationship with MPC among six European nations from April to October 2020. They addressed the empirical gaps identified by Bunn et al. (2018), Christelis et al. (2019), and Chronopoulos et al. (2020) by demonstrating different MPCs for positive and negative income shocks across six European nations via individual-specific channels, while also identifying the determinants of consumption.

Methodological Review

Deb et al. (2021) demonstrated that ESP announcements have a significant positive relationship with the stock market prices, industrial production, the Purchasing Managers Index, and the OECD Composite Leading Indices while also showing a significant inverse relationship with the monthly unemployment rate and sovereign credit default swap spreads, by using a structural vector autoregressive (SVAR) model. They addressed the methodological and contextual gaps of Auerbach and Gorodnichenko (2012, 2016), Benmelech and Tzur-Ilan (2020), Mertens and Ravn (2014), and Ramey and Zubairy (2018) by adopting a larger sample country with daily ESP data, as well as by identifying ESP's both announcement and imposition. In the following year, Deb et al. (2022) reported an inverse relationship between the amount of ESP (as a percentage of GDP) and nitrogen dioxide emissions, as determined by a vector autoregressive model, while controlling for the SI.

Furthermore, Elgin et al. (2020) incorporated fiscal policy, monetary policy, and exchange rate policy into the measurement of the COVID-19 Economic Stimulus Index (CESI). They demonstrated that

CESI has a significant positive relationship with GDP per capita using pooled ordinary least squares (OLS) regression, while controlling for the median age of the population, COVID-19 infection rate, hospital beds per thousand people, current health expenditures as a percentage of GDP, and SI. Additionally, Borowski and Jaworski (2023) explored that the structural general government balance has a significant negative association with forced savings of disposable income, by employing a random effects model, controlling for the SI and new COVID-19 deaths per million people, using survey data from the European Value Study and the World Value Survey. At the same time, they acknowledged that their chosen proxies for economic uncertainty and income uncertainty did not fully capture the complexity of both variables. Likewise, Cassese et al. (2023) outlined that the share of gross savings in gross household disposable income has a negative relationship with real GDP and real consumption, as demonstrated through statistical, graphical, and comparative analyses using a distributional approach, while considering the effects of income level and inflation rate.

Apart from that, the paper of Prusty and Gupta (2022) declared that monetary policies and other fiscal measures aimed at labour and land regulations, taxation and subsidies, and major financial aid to firms had an insignificant association with quarterly real GDP by interviewing 250 respondents through an online survey, whereby they addressed the methodological gaps of Boone (2020) and Papadamou (2020) by implementing structural equation modelling (SEM) during the post-lockdown period. Likewise, Christelis et al. (2020) found that worry about financial consequences had a significant negative relationship with monthly non-durable spending, as surveyed in a consumer expectations survey of 10,000 households. Likewise, Crossley et al. (2021) determined the MPC in response to unexpected income shocks using a difference-in-differences method, comparing changes in consumption behaviour among individuals who faced job losses or reduced working hours with those who did not face such shocks. By surveying 10,975 respondents, their probit regression results showed that a change in employment status significantly reduced individuals' MPC from received income payments while increasing their liquid assets as precautionary savings, controlling for age, gender, household size, employment status, income, inflation rate, and interest rate.

Synthesis of Literature

The literature review identifies several key factors contributing to the outbreak of the precautionary savings phenomenon during the COVID-19 crisis. The Keynesian theories suggest that during recessions, increased government spending via ESPs boosts consumption and investment. However, the effectiveness of ESPs is undermined when households save rather than spend due to fear and uncertainty, which disrupts the expected multiplier effect. This behaviour challenges the Keynesian assumption of a stable consumption function, as shown by Bajra et al. (2022) and Prusty and Gupta (2022), who found that even generous ESPs failed to raise short-term consumption due to long-lasting NPIs. The precautionary savings theory, grounded in Leland (1968), explains this behaviour as a response to future uncertainty. Factors like expected unemployment, income volatility, and declining consumer confidence were found to drive people toward saving more and spending less. Empirical studies by Ferrero et al. (2022) and Schneider and Sellner (2022) support this, showing that fear of job loss and income instability reduced households' MPC and increased saving.

The permanent income hypothesis further clarifies that individuals base their consumption on expected long-term income. When ESPs are perceived as temporary, and NPIs are seen to impact permanent income, people tend to save rather than spend the fiscal support received during the pandemic. This finding is consistent with those of Carroll (2009) and Cashin and Unayama (2016), who emphasized that temporary income boosts are less likely to stimulate economic activity

significantly. In contrast, Deb et al. (2021) highlighted that ESP announcements declined economic activity and market confidence. Nonetheless, Weil (1990) argues that individuals will insist on making excessive savings during periods of heightened income uncertainty, even if their permanent income remains stable. Empirically, studies such as Cassese et al. (2023), Crossley et al. (2021), and Deb et al. (2021) confirm that uncertainty, income risk, and lockdown stringency led to a rise in precautionary savings and a decline in consumption, thereby weakening the impact of ESPs. Fama (2021) further suggests that ESP effectiveness depends on the individuals' liquidity constraints and access to information and credit during the pandemic. Hence, the economic, psychological, and policy-driven factors, or known as structural conditions and behavioural adaptations, seemingly determine precautionary saving behaviour during pandemic, which are NPIs-driven economic uncertainties, future employment and long-term income expectations, perceptions of ESPs as temporary relief, structural financial constraints, and resultant behavioural shifts.

Methodologically, the reviewed studies employ a diverse array of quantitative approaches—ranging from SVAR models to pooled OLS regressions and distributional analyses—to capture the nuanced relationships between ESPs, savings, and economic outcomes. While these models provide valuable insights, this study acknowledges the methodological constraints, including measurement errors, short time horizons, and issues of endogeneity and multicollinearity.

Theoretical Gaps

Despite the successes of Bajra et al. (2022) and Prusty and Gupta (2022) in exploring the limitations of Keynesian Economics Theory as applied to ESP, this claim still requires further substantiation and validation due to the constraints posed by limited and inconclusive evidence. With this aim in mind, this study presents precautionary savings theory and the permanent income hypothesis, arguing for the impact of precautionary savings behaviour on the effectiveness of Keynesian-ESP during the pandemic. In doing so, it extends the study of John Maynard Keynes into the contexts of ESP and COVID-19. Simultaneously, this study aims to identify the key factors that contributed to the outbreak of the precautionary saving phenomenon during the pandemic through a critical review.

The permanent income hypothesis has been widely used in economic theory to explain how individuals make spending decisions in response to changes in their permanent income. However, a theoretical gap exists in the literature regarding the influence of the permanent income hypothesis on the effectiveness of Keynesian-ESP during the COVID-19 outbreak. To address this gap, this study proposes an integration of precautionary savings theory with the permanent income hypothesis to explain the possibilities of increased marginal propensity to save and decreased MPC and MEC triggered by ESPs (Dynan, 1993; Jappelli & Pistaferri, 2010), due to permanent income disturbances, which may result in the diminished marginal and total utilities of consumption and investment derived from ESPs by using a critical review. In light of this, this study extends the empirical studies of Carroll (2009), Cashin & Unayama (2016), Fama (2021), Friedman (1957), and Weil (1990) by incorporating the permanent income hypothesis and precautionary savings theory into the contexts of ESP and COVID-19.

Empirical Gaps

A close correlation[6] has been reported between high uncertainty or poor economic prospects, private consumption, and precautionary savings during the COVID-19 outbreak by several investigators. Work in this area is extensive, but it primarily focuses on general consumption, placing less emphasis on the potential impact of precautionary savings behaviour on the effectiveness of Keynesian-ESP in stimulating economic growth and investment during the pandemic. Therefore, further research is necessary to deepen the understanding of this issue. Therefore, to tackle the empirical gaps of Borowski and Jaworski (2023), Cassese et al. (2023), Christelis et al. (2020), Crossley et al. (2021), Ferrero et al. (2022), Jin et al. (2021), and Schneider and Sellner (2022), this study extends the prior studies of Friedman (1957) and Leland (1968) by proposing the impact of precautionary savings behaviour on the demand transmission mechanism of Keynesian-ESP during the COVID-19 crisis based on precautionary savings theory and permanent income hypothesis while also aiming to explore the key determinants among several key variables by using a critical review.

METHODOLOGY

This review synthesizes a broad range of empirical and theoretical studies, including journal articles and working papers published between 1936 and 2023. A systematic literature search was conducted using databases such as Scopus, Web of Science, Journal Storage (JSTOR), ScienceDirect, and Google Scholar. Keywords employed included combinations of: “precautionary savings,” “Keynesian stimulus,” “COVID-19 fiscal policy,” “marginal propensity to consume,” “economic uncertainty,” and “non-pharmaceutical interventions.” Boolean operators (e.g. “precautionary savings” and “COVID-19” and “Keynesian stimulus”) and inclusion filters (e.g., publication in peer-reviewed sources, relevance to fiscal policy and economic behaviour, global focus, English language) were used to refine search results. Literature published between 2020 and 2024 was prioritized to capture the most recent empirical evidence and theoretical advancements within the contexts of both COVID-19 crisis and ESP, though seminal theories (Keynesian theories, precautionary savings theory, and permanent income hypothesis) from earlier decades were consulted to establish foundational knowledge and theoretical grounding. However, studies published prior to 2020 were also included where relevant, particularly those offering insights into precautionary savings behaviour or income expectation (e.g. Carroll, 2009; Cashin & Unayama, 2016; Weil, 1990). Priority was given to studies that have clearly defined methods, theoretical grounding, and valid empirical techniques. Contradictory findings and theoretical critiques were deliberately retained to facilitate critical synthesis.

Conversely, literature solely focused on monetary policy interventions, non-economic aspects of the pandemic (e.g., public health or medical treatment), or theoretical perspectives unrelated to consumption and saving behaviours were also excluded. Besides, articles lacking empirical data or theoretical grounding, such as opinion pieces, media commentaries, and anecdotal reports, were excluded to maintain academic rigour. Moreover, articles were initially screened based on title and abstract to exclude irrelevant topics. Subsequently, full-text reviews were conducted to assess the depth of methodological contribution and the theoretical or empirical alignment with this study’s scope. To systematically capture and compare the diverse body of literature on Keynesian-ESP and precautionary savings during the COVID-19 pandemic, a structured data extraction matrix was developed. For each study, this study recorded the authorship, publication year, country or regional

[6] Correlation measures the extent to which changes in one variable are associated with changes in another variable. On top of that, it does not capture causation like relationship.

context, and study period. The theoretical framework underpinning each work was noted alongside the specific methodological approach. Likewise, this study also documented each study's principal findings and limitations or research gaps. Following extraction, empirical review was thematically categorized to reveal patterns and tensions across the literature by clustering empirical works into two broad themes: (1) Spurious relationship between ESP and economic growth under NPIs; (2) Negative relationship between precautionary savings or uncertainty and ESP under NPIs.

EVALUATION RESULT AND DISCUSSION

On one hand, empirical findings from Abbass et al. (2022), Deb et al. (2021, 2022), and Elgin et al. (2020) support the Keynesian assumption that ESPs can effectively mitigate economic downturns by boosting aggregate demand, especially when targeted and implemented during relaxed NPIs. These studies draw on relatively large country samples (except Abbass et al., 2022) and observe positive fiscal multipliers, reductions in unemployment, and increases in consumption and investment, consistent with the Keynesian proposition that higher disposable income leads to greater MPC. In contrast, numerous studies challenge these claims with significant evidence—the theoretical foundation laid by Leland (1968), and the evidence of Bajra et al. (2022), Borowski and Jaworski (2023), Cassese et al. (2023), Christelis et al. (2020), Crossley et al. (2021), Ferrero et al. (2022), Jin et al. (2021), Prusty and Gupta (2022), and Schneider and Sellner (2022) argue that the important role of precautionary motive or risk aversion in assessing the efficacy of Keynesian-ESP under heightened uncertainty induced by the COVID-19 crisis due to increased savings.

Moreover, Friedman (1957) posits that individuals base consumption on expected long-term income, leading them to save rather than spend when ESPs are perceived as temporary while NPIs are viewed as affecting permanent income (Carroll, 2009; Cashin & Unayama, 2016; Deb et al., 2021; Weil, 1990). Fama (2021) adds that the effectiveness of ESPs also depends on individuals' liquidity constraints and access to credit and information during the pandemic. Collectively, this critical review identified that the heightened economic uncertainties driven by NPIs, low permanent income and future employment expectations, perceptions of ESPs' temporariness, significant financial constraints, and resultant behavioural shifts as the key factors of precautionary savings behaviour's outbreak, while these factors simultaneously undermined the demand transmission mechanism of Keynesian-ESP during the pandemic.

Beyond the finding of Bajra et al. (2022), who provide a global perspective by adopting global datasets, most studies utilize smaller or more localized samples. Yet, their findings are strengthened by deeper behavioural insights and theoretical consistency with the precautionary savings and permanent income paradigms, particularly under conditions of heightened uncertainty and stringent NPIs. These studies benefit from their ability to observe the behavioural mechanisms through which heightened risk aversion, fear of job loss, and pessimistic future income expectations curtail MPC, thereby weakening the demand-side transmission of ESP. Besides, several studies acknowledged their methodological limitations, such as limited observation periods, unobserved behavioural factors, or proxy measurement biases, thereby enhancing the credibility of their conclusions (Bajra et al., 2022; Borowski & Jaworski, 2023; Cashin & Unayama, 2016).

In terms of internal validity, most studies controlled for confounding variables such as NPIs, demographic and healthcare-related variables, and macroeconomic factors (e.g., Borowski & Jaworski, 2023; Elgin et al., 2020), applied sound research designs—ranging from multivariate statistical and causal modelling to linear and non-linear regression models (e.g., Crossley et al., 2021;

Deb et al., 2021, 2022), and ensured measurement accuracy using validated macroeconomic indicators and large-scale surveys (e.g., Cassese et al., 2023; Christelis et al., 2020), which have more interpretability power compared to the qualitative analysis of Abbass et al. (2022). Temporal order was clear in longitudinal designs (Borowski & Jaworski, 2023; Deb et al., 2021, 2022), and efforts to reduce bias were evident in the use of large and representative samples. Regarding external validity, population validity was reinforced through multi-country data (Deb et al., 2021, 2022; Elgin et al., 2020). Ecological validity was reflected in how closely the studies mirrored real-world economic and policy environments; for instance, Elgin et al. (2020) constructed the CESI to quantify the comprehensive effect of fiscal, monetary, and exchange rate policies, while Cassese et al. (2023) and Crossley et al. (2021) explored real household consumption and savings behaviour under uncertainty.

While this study has assessed the rise of precautionary savings from economic, psychological, and institutional perspectives during the pandemic, this critical review reveals a potential temporal mismatch: although governments enacted ESPs early in the crisis, economic agents' behavioural responses—particularly shifts toward precautionary savings—were neither immediate nor uniformly reactive. Rather, they seemingly evolved over time, influenced by the structural conditions and behavioural adaptations. This suggests that the efficacy of ESPs may not only depend on the size, timing, and targeting of transfers but also on the perceived durability and credibility of policy over time. In other words, when economic agents anticipate an early withdrawal for fiscal policy and long-term implementation of NPIs in the future, they may interpret even generous ESPs as insufficient to offset the long-lasting uncertainty brought by NPIs, thereby increasing rather than decreasing their savings. Similarly, if the credibility of the government was ever questioned due to breaches of policy commitments and a lack of time consistency regarding ESPs and NPIs in the past, it would have amplified the extent of precautionary savings behaviour. This argument introduces a credibility-consumption gap, where the consistency of ESP provisions that are not perceived as credible over the medium term inadvertently intensifies precautionary motives among economic agents, reducing the fiscal multiplier of ESP, particularly the MPC, due to increased savings, especially among liquidity-constrained or risk-averse groups.

Empirical evidence (e.g., Bajra et al., 2022; Prusty & Gupta, 2022) illustrates that, in high-uncertainty environments, the marginal utility of saving outstrips that of consumption or investment, undermining the Keynesian demand transmission mechanism, where stimulus funds accumulate on balance sheets rather than circulating through goods and services markets. In such conditions, the classical marginal utility calculus shifted: the psychological security and future risk mitigation offered by savings provided greater utility than immediate consumption. This shift undermined the predictive validity of consumption smoothing and intertemporal choice theories, as economic agents no longer optimized their utility by spreading consumption but instead recalibrated their strategies to prioritize financial resilience. This phenomenon exposes a deeper theoretical limitation: traditional consumption models—anchored in the theories of consumption smoothing, intertemporal choice, and utility maximization—assume stable income expectations and rational foresight, which do not hold under crisis conditions marked by the heightened economic uncertainty, low permanent income and future employment expectations, perceptions of ESPs as temporary relief, significant financial constraints, and resultant behavioural shifts. As this study shows, individuals recalibrated utility-maximizing strategies by deferring consumption in favour of self-insurance through savings, thereby breaking the assumed continuity of consumption smoothing and diminishing the immediate effectiveness of ESPs.

CONCLUSION AND IMPLICATIONS

Based on the synthesis of empirical evaluations and theoretical insights discussed, this study concludes that the effectiveness of ESPs during the COVID-19 crisis cannot be understood solely through the lens of traditional Keynesian assumptions. While several large-scale studies affirm that ESPs positively influenced economic growth during the pandemic—manifesting through reductions in unemployment and increased consumption—these findings are largely conditional on optimal policy design and implementation contexts, such as periods of relaxed NPIs. In contrast, a substantial body of research rooted in the precautionary savings theory and permanent income hypothesis challenges this narrative, offering robust evidence that the heightened economic uncertainties driven by NPIs, low permanent income and future employment expectations, perceptions of ESPs' temporariness, significant financial constraints, and resultant behavioural shifts spurred significant precautionary savings behaviour, thereby undermining the fiscal multiplier of ESPs especially MPC and the demand transmission mechanism of Keynesian-ESP during pandemic. In this light, the precautionary savings behaviour is not an anomaly but a rational and forward-looking response shaped by structural conditions and behavioural adaptations, indicating a temporal asymmetry between the deployment of fiscal stimulus and evolving expectations.

Evidence from studies employing rigorous methodologies (e.g., SVAR and SEM models) and real-world behavioural data reveals that when ESPs were perceived as temporary or insufficient relative to long-term economic threats driven by NPIs, individuals rationally chose to accumulate savings rather than increase consumption due to increased marginal utility of saving during the pandemic. This suggests a critical gap between policy objectives and behavioural responses—a credibility-consumption gap —due to structural conditions and behavioural adaptations. From a theoretical perspective, this study calls on practitioners, especially academia, to recalibrate standard Keynesian theories and traditional consumption models, such as the theories of consumption smoothing, intertemporal choice, and utility maximization, by incorporating behavioural economics, expectation management, and marginal utility shifts under uncertainty to better account for heterogeneous responses and enhance the predictive power of fiscal multiplier models. From a policy perspective, the findings advocate for stimulus designs that are not only economically sufficient but also psychologically credible and temporally aligned with evolving household expectations. Transparent, consistent, and forward-looking policy communication is essential to reduce precautionary motives and thus restore the marginal utility of consumption and investment. Such theoretical and practical adaptations are essential for bridging the credibility-consumption gap by enhancing the resilience of economic policy frameworks and realigning fiscal timing with behavioural cycles in future systemic disruptions.

Furthermore, the identified key factors of the precautionary savings phenomenon and their impact on the demand transmission mechanism of Keynesian-ESPs in this study also extend the existing frameworks of precautionary savings theory and the permanent income hypothesis by integrating macroeconomic, psychological, and policy insights in the context of the COVID-19 crisis and ESP. Likewise, these theoretical implications include the verification of the permanent income hypothesis's core assumption, where economic agents have seemingly evaluated their current income with equal weight to their expected lifetime income during the pandemic. In terms of policy implications, the findings of this study suggest that policymakers should design predictable and sustained income support programs to alleviate uncertainty and stabilize lifetime income expectations during crises. In addition, enhancing income certainty through employment guarantees, wage subsidies, and targeted job creation in pandemic-resilient sectors can directly address fears of future job loss. Fiscal

interventions should be tailored to the financial realities of liquidity-constrained households through direct transfers, extended unemployment benefits, and accessible credit mechanisms. These strategies, collectively, can reshape behavioural responses by aligning short-term relief with long-term security, reducing the marginal utility of saving under uncertainty, and reactivating the MPC.

However, these conclusions are tempered by several limitations within the existing literature. First, empirically, most studies focus on high-income countries or aggregate national panels (e.g., Borowski & Jaworski, 2023; Christelis et al., 2020), leaving low- and middle-income economies—where informal sectors dominate and social safety nets vary—underresearched. Second, there is a methodological gap in reliance on short time horizons (typically within year 2020), which may obscure dynamic effects; future work should exploit longer panels to capture evolving saving and consumption responses. Third, the geographical and contextual scope remains narrow: beyond Pakistan and India, little is known about the interplay of Keynesian-ESPs and precautionary savings in Association of Southeast Asian Nations or Sub-Saharan African contexts, nor sectoral differences between households, small and medium-sized enterprises, and larger firms; future research should adopt subgroup or regional disaggregation to exploit within-unit variation with finer micro-level data. Fourth, temporal dynamics—particularly the transition from acute lockdowns to recovery phases—are seldom traced beyond early-pandemic windows, underscoring the need for longitudinal studies that follow economic behaviour into post-pandemic normalization.

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