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Transitioning from Interest Rate to GDP Growth Rate for More Sustainable Equitable Economy

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ABSTRACT

Exiting literature and central banks have recently raised concerns about the ominous overlooked threat of growing global debt, and its fundamental role in financial crises and economic instability. This paper develops and models an alternative economic theory that calls for a paradigm shift from the prevailing debt-based financial economy. Through a structured literature review and conceptual analysis, the paper explores the relationship between the traditional interest-based financial economy and economic injustice and instability. The paper then through an econometric analysis of data collected from 189 countries tests its conceptualised theory advocating a gradual transition from the deb-based financial economy. The results provide three important contributions. Firstly, the results contribute to the field of economics and finance by providing a conceptual and theoretical framework for examining the interaction between the financial economy and economic equity. The paper introduces a conceptualisation of what it coins as the Equitable Optimality Economic Theory, which replaces interest rate with profit rate. Secondly, the paper extends the debate in the literature about debt theories and its impact on the financial economy by arguing that a shift towards debt-balanced and eventually debt-free financial economy provides a more equitable and stable economic system. Thirdly, the econometric modelling demonstrates that such a change would lead to improved economic growth, reduced debt levels, enhanced financial stability, and the inherent nature of profit rates provides a natural buffer against economic downturns. The study concludes by proposing a practical roadmap for this economic transition in gradual and steady approach.

KEYWORDS

Debt; Interest Rate; Profit Rate; GDP Growth; Equitable Economy; Financial Economy

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1. Introduction

This paper introduces a conceptual framework for examining the interplay between the financial economy and economic equity. The objective of this paper is to argue and make the case for a gradual shift from a fully interest-based debt financial economy to a debt-balanced/free one that is aligned with the real economy. This motive to extend the economic debate and push the boundaries beyond traditional economic theories and literature is ignited by the argument that interest-based financial economy is the root cause of lending-generated financial crises, and economic instability. Referring to existing literature, as argued by Reinhart et al. (2012) (see also, e.g., Reinhart and Rogoff, 2009; Rogoff, 2011, Alamad, 2017), economic crises such as the 2008 crisis are depicted as lending-generated financial crises.

The results of this study demonstrate our hypothesis which argues that replacing the interest rate in the financial economy with a profit rate linked to the gross domestic product (GDP) growth akin to the real economy (this is what is meant by profit rate/share when referred to it in this paper) would lead to better economic growth and resilience. Diminishing the level of large global debt and reducing vulnerability to economic cycles and instability. This paper argues that the proposed Equitable Optimality economic theory is a more equitable and socially inclusive model that would eventually leads to achieving economic justices, which is strongly rooted in the real economy.

The paper aims to achieve this objective by conducting a mixed-method design involving a conceptual analysis to explore the relationship between the traditional debt-based financial economy and this novel theory of financial economic equity optimality, which promotes a balanced and debt-free financial economy. Also, by undertaking an econometrics analysis to test and model the prosed conceptual framework. The term debt-balanced/free or interest-balanced/free financial economy coined by this paper is used interchangeably according to the context due to the closely interconnected concept of both debt and interest within this paper.

The paper places its focus on the current financial system within the economy and the institutions associated with mainstream economics, macroeconomics, and financial economics. It sheds light on concerns related to the impact of interest-based economic systems in generating economic and financial instability and their inability to foster a fair economic structure. Financial institutions are systems of rules governing behaviour and thought that are shared by society. Within the context of this paper's argument and hypothesis as the underlying study problem, recent reports published by the Bank of England (2023) and the Financial Conduct Authority (2023) highlighted the substantial increase of debt in the economy and its negative impact on the economy.

The two reports concluded that it is worth noting that while debt can have short-term benefits by boosting economic growth through heightened consumer spending, the presence of elevated debt levels within an economy can exacerbate the severity and duration of a recession and economic cycles in the medium term. This was corroborated by the Global Financial Stability Report (GFSR) that was published years earlier, precisely in October 2017, which underscored the importance of managing financial stability to ensure sustained economic growth. The report also highlighted the interconnectedness of financial debt conditions and interest rates impact and the distribution of future GDP growth.

Economic agents and policymakers embrace these systems of mental and behavioural rules, largely due to their acceptance among academic economists. They may influence economic agents and policymakers similarly to their effect on economists. Nevertheless, there are constraints on the influence of these economic concepts and economic institutions beyond the academic sphere. The institutions within the economy also have an impact on the field of economics.

The results of this study provide three important contributions. Firstly, the conceptual analysis contributes to the field of economics and finance by providing a conceptual and theoretical framework for examining the interaction between the financial economy and economic equity. The paper introduces a conceptualisation of what

it coins as the Equitable Optimality economic theory. Secondly, the paper extends the debate in the literature about lending and debt theories and its impact on the financial economy by arguing that a shift towards debt-balanced and eventually debt-free financial economy provides a more equitable and stable economic system. Thirdly, the econometric modelling demonstrates that such a change can lead to improved economic growth, reduced debt levels, enhanced financial stability, and the inherent risk-sharing nature of profit rates provides a natural buffer against economic downturns.

It is crucial to note that this paper aims to present its contribution in two main spectrums, its first main contribution is a conceptual and theoretical economic model termed as the 'equitable optimality economic theory,' which relates to the financial economy. The paper accomplishes this key contribution through a qualitative conceptual analysis of existing literature by (a) structuring the discussion of a comprehensive topic within an extensive body of literature, (b) amalgamating various issues and contributions from diverse disciplines, and (c) interpreting numerous of these contributions. The second key contribution is providing new empirical evidence that supports and tests the conceptual contribution through econometric modelling, by employing a quantitative analysis approach.

However, it should be recognised that empirical research based on primary sources is both absent and essential to substantiate certain claims in the literature and potentially claims made in this paper. It is also necessary to resolve disputes implicit in the literature, even among critics of mainstream economics. The economic model presented in this paper as its conceptual and empirical contributions and its multi-faceted contributions can ideally serve as a resource for those interested in pursuing further empirical research. In any case, such research could benefit from empirical methods that are not commonly employed and developed by economists, in contrast to other social scientists.

The paper is divided into seven main sections, the first one is the introduction where we set the stage for the context, objective, design, and contribution of this paper. In section two the paper reviews the literature and categorises it into themes related to the topic, in this section we conduct the conceptual analysis of relevant concepts found in the literature. Section three provides the theoretical framework. Section four outlines the methodological design for the analysis and its procedures. Section five presents the results of the econometric modelling and analysis. Section six discusses the results in the context of the theoretical framework linking it to concepts identified in the literature, and builds the argument on it for making the case for the proposed economic theory. In section seven the paper provides a conclusion and policy implications of its conceptual and empirical contributions, outlining a roadmap for its practical application.

2. Literature Review

The connection between financial development and economic growth has been a recurring subject of exploration in both theoretical and empirical research. This relationship holds historical significance, and over the span of decades, the role of financial development has been pivotal in fostering economic progress. A study by Rousseau and Sylla (2003), which utilised nineteenth-century United States data, uncovered that financial revolution was instrumental in propelling rapid growth within the real economy. This financial transformation not only bolstered the global economy but also contributed to military hegemony. The findings of this study showed that economic growth is chiefly promoted through the real economy, rather than the debt economy.

Aristotle identified two primary purposes for money. Firstly, it was meant to provide for the household, a necessity imbued with honour. Secondly, it was intended for retail trade, a mode of exchange in which individuals gained from one another but was considered unnatural. He further argued that although money was designed for exchange, it should not be used to generate interest as it was intended for consumption. Aristotle explicitly defined

usury as "the birth of money from money," a concept he rejected as the most unnatural way of accumulating wealth since the offspring (interest) was identical to the parent (the principal) (Aristotle, 1948).

Throughout history, the charging of interest has been a contentious subject, extensively debated by thinkers and philosophers. While it was common practice to levy a fee for lending money or goods, various civilisations introduced regulations to either completely ban interest or, at the very least, restrict the amount that could be charged. Simultaneously, investments in trade and partnerships, where investors assumed some level of risk, were generally permitted, and even encouraged. In the early centuries AD, debates on usury and its permissibility were chiefly led by religious scholars such as St. Thomas Aquinas, Ibn Rushd, and John Calvin. In subsequent centuries, as Church and State separated in Europe, the debate shifted to parliaments and prominent economists of the era, including Adam Smith (Goff, 1990; Alamad, 2023).

This paper argues that the above debate throughout history against interest/usury, by all religions (see e.g., Aquinas, 1948; Levine, 2010; Chapra, 2000), philosophers, civilisations, economists and thinkers (see e.g., Aristotle, 1948; Smith, 1776; Goff, 1990; Armstrong, 2000; Gesell, 1904; Kennedy, 1995; Pearce and Turner, 1990; Keynes, 1936; Alamad, 2019) must count for something in this debate. We employ this as the basis for introducing and modelling this alternative economic theory as presented here to move towards a profit-sharing financial economy.

This historical pattern of financial development's impact on growth extends beyond the United States. For example, research focusing on seventeenth-century Holland (de Vries and van der Woude, 1997) and eighteenth-century England (North and Weingast, 1989) revealed similar findings. In contrast, the lack of financial literature and underdeveloped financial systems hindered substantial economic growth in various developing countries. For example, nineteenth-century Russia (Anan'ich, 1999), nineteenth-century Argentina (Davis and Gallman, 2001), and early twentieth-century Mexico (Haber, 1991, 1997) experienced restrained economic progress due to this deficiency. Collectively, these studies underscore the fundamental role of financial innovation and real economy in contrast to the financial economy in fostering economic development.

In another strand of the economic literature, numerous empirical studies have also aligned with the historical literature, demonstrating the link between financial development and economic growth. Drawing upon the frameworks established by Goldsmith (1969) and McKinnon (1973), King and Levine (1993) and Glandon, et al. (2023) reported that greater development of the banking system is associated with accelerated physical capital accumulation, ultimately exerting a positive influence on economic growth.

Further insights have been provided by Benhabib and Spiegel (2000), who observed correlations between financial development indicators and both total factor productivity growth and investment. It is worth noting that the sensitivity of their results to the inclusion of country fixed effects was acknowledged, suggesting the nuanced nature of this relationship. This body of research highlights the utility of financial development indicators as proxies for broader country characteristics, discounting lending and financial debts as a factor in this context (Haber & Perotti, 2007). In essence, these studies, whether historical or empirical, converge on the idea that financial development plays a pivotal role in stimulating economic growth, with its effects reaching far beyond the financial sector.

2.1. Economic Vulnerability and Instability

Numerous economists (Bisignano, 1999; Glick, 1998; Rogoff, 1999; Chang & Velasco, 1998; Radelet & Sachs, 1998, Alamad, 2017) have undertaken the task of unravelling the causes of economic crises. Some attribute these crises to financial liberalisation in an environment where the financial systems of many nations lack proper regulation and supervision (Mariyanti, et al., 2023; Bisignano, 1999; Glick, 1998). Conversely, others point to the bursting of speculative bubbles in asset prices, which were initially fuelled by the excesses of financial intermediaries (Rogoff, 1999, Alamad, 2017). Additionally, arguments have been made that the root cause of these

crises lies in the maturity mismatch, specifically in cases where short-term international liabilities greatly exceeded short-term assets pointing out to lending and the rising level of debt (Chang & Velasco, 1998; Radelet & Sachs, 1998).

The existing literature reveals a multitude of other contributory factors, though no consensus has been reached regarding the ultimate or singular cause of these crises. Consequently, a variety of conflicting remedies have been proposed, making it challenging to establish an effective reform program. As a result, the proposals for a new economic architecture have largely adhered to conventional wisdom, emphasising the importance of sound macroeconomic policies, sustainable exchange rates, effective regulation and supervision, and enhanced transparency (Camdessus, 2000, 1, 7–10; Glandon, et al. 2023). These principles are undoubtedly essential because, ultimately, all crises are rooted in unsound fiscal, monetary, and exchange-rate policies. However, these principles have, and continue to be, violated.

Referring to existing literature, as argued by Reinhart et al. (2012) (also see, e.g., Reinhart and Rogoff, 2009; Rogoff, 2011, Alamad, 2017), economic crises such as the 2008 crisis are depicted as lending-generated financial crises. The collapse of the U.S. hedge fund LTCM in 1998 was also attributed to highly leveraged short-term lending. Despite the name "hedge fund" implying risk reduction, in practice, "hedge funds typically do just the opposite of what their name implies: they speculate" (Edwards, 1999, p. 189). These entities engage in speculative activities, borrowing heavily to amplify their bets ("The Risk Business," 1998, p. 21). They operate with minimal regulation, avoiding restrictions on leverage or short sales, and have the freedom to take concentrated positions in a single firm, industry, or sector, a practice that might be considered "imprudent" for other institutional fund managers (Haber & Perotti, 2007; Edwards, 1999, p. 190). Consequently, they pursue investment or trading strategies in their self-interest without due consideration for the potential impact on others.

This illustrates that an economic crisis may arise not only due to inadequate bank regulation, as seen in East Asia, but can also transpire within a properly regulated and supervised system, as evidenced in the United States, the UK, and Europe during the 2008 crisis (Alamad, 2016). The heavy reliance on short-term interest-based borrowing has also introduced a significant level of instability into international foreign exchange markets and the global economy (Reinhart et al., 2012).

2.2. Critics of the Interest-Based Financial Economy

Critics of the interest-based debt financial economy have opened up a new avenue of discourse in the literature, shedding light on the detrimental role of interest-based lending and the escalating global debt levels (Alamad et al., 2021; Alamad, 2019; Armstrong, 2000; Chapra, 2000; Wayne and Macintosh, 1998). This debate has extended into the history of interest lending, often referred to as 'usury,' which has a long historical trajectory.

Throughout most of its history, usury has denoted the practice of charging financial interest exceeding the principal amount of a loan (Alamad, 2024; Mariyanti, et al., 2023). In more recent times, it has also been understood as interest exceeding the legal or socially acceptable rate. Embracing this comprehensive definition momentarily, the practice of usury or interest can be traced back around four thousand years (Jain, 1929). Over time, it has faced recurrent condemnation, prohibition, disdain, and restriction, primarily on moral, ethical, religious, and legal grounds. Prominent critics of usury encompass religious institutions within Hinduism, Buddhism, Judaism, Islam, and Christianity. Additionally, ancient Western philosophers, politicians, as well as various modern socio-economic reformers have voiced their concerns regarding usury (Jain, 1929).

Adam Smith, often hailed as the 'Father of Free-market Capitalism' and an advocate of laissez-faire economics, notably supported the regulation of usury (Jadlow, 1977; Levy, 1987). Although he opposed a complete ban on interest, he favoured the imposition of an interest-rate ceiling. Smith believed that such a measure would ensure that low-risk borrowers, likely to undertake socially beneficial investments, were not deprived of funds due to the

majority of available money being lent to prodigals and projectors (investors in risky, speculative ventures) who were willing to offer unregulated high-interest rates (Smith, 1937: 339).

In a similar vein, the prominent twentieth-century economist John Maynard Keynes held a comparable position. He believed that the discussions of the schoolmen on usury aimed to elucidate a formula that would allow the marginal efficiency schedule to remain high, while using rules, customs, and moral law to restrain the interest rates. Wise governments, according to Keynes, should aim to curb interest rates through legislation, customary practices, and even by invoking the sanctions of moral law (1936: 351–3).

2.3. Interest as a Mechanism of Inequitable Distribution of Growth

Various traditions have long held the view that usury perpetuates a cycle of 'the rich get richer and the poor get poorer.' This perspective finds common ground in different ideological standpoints. This perspective on interest guided by the principle of distributive equity, rejects financial interest, contending that it contravenes this principle by transferring wealth from the assetless segment of the population (Choudhury and Malik, 1992: 51). A principle that is shared by all religions.

From an entirely different vantage point as a self-proclaimed 'individualist,' Birnie arrives at a parallel conclusion. He argues that 'Interest, by making capital a quasi-monopoly, effectively prevents the establishment of a true competitive system' (Birnie, 1958: 1). Kennedy (1995) provides compelling empirical evidence of this phenomenon, focusing on Germany in 1982. Her data demonstrates that, while the poorest 2.5 million households paid out a net amount of DM 1.8 billion in interest, the richest 2.5 million households received a net sum of DM 34.2 billion. She even suggests that this covert redistributive mechanism runs counter to the constitutional rights of individuals in most countries, given that money is considered a government service to which the public should have equal access.

Furthermore, the psychological impact of interest-based debt on impoverished individuals is exacerbated when one transcends quantitative evaluations of wealth transfers from the poor to the rich and considers the qualitative cost of such wealth transfers. For those who are affluent, the utility gain provided by usury represents a marginal addition to an already substantial utility derived from the principal sum. The principle of the diminishing marginal utility of wealth applies to each additional unit of wealth procured through interest earnings (Birnie, 1958).

In contrast, the poor experience the inverse of this principle. The loss in utility resulting from paying interest is qualitatively much greater than the gain enjoyed by the rich. Each unit of interest paid generates an increasing marginal utility loss. Allowing usury to operate within an economy thus diminishes overall utility. This stands as a potent argument against usury. Any defence of usury as an efficient economic instrument would need to first demonstrate that it operates to increase total utility (Kennedy, 1995). In the absence of such a demonstration, it can rightfully be denounced as an instrument of oppression.

2.3.1. Interest as an Agent of Economic Instability

Interest is regarded by Gesell (1904) as a central factor contributing to the inherent instability of interest-based economies, characterised by cycles of boom and bust, recession and recovery. This notion aligns with Ahmad's perspective, asserting that "the greatest problem in the capitalist economy is that of the crises, and interest plays a peculiar part in bringing about crises" (Ahmad, 1958: 36). Even Keynes, a proponent of interest-based monetary policy, concedes that the rate of interest is not naturally self-adjusting to the level most conducive to social benefit but consistently tends to rise excessively (Keynes, 1936: 350).

Kennedy (1995) takes a more audacious stance, proposing that the compounded growth of interest might actually lead to inflation. She provides an example from Germany, where government income, Gross National

Product, and the wages of the average income earner increased by approximately 400 percent between 1968 and 1989, whereas government interest payments surged by 1,360 percent. This, she argues, implies an inflationary impact.

2.3.2. Interest as Discounting the Future

Further to the above discussed reasons by critics of interest, the practice of discounting future values, often linked to interest, is condemned for its consequences. Compound interest causes an appreciation in invested monetary capital, making it seem rational for individuals to prefer having a specified amount of currency in the present rather than the same amount in the future. This straightforward but rarely questioned logic holds severe implications.

Pearce and Turner (1990) point out that discounting influences the rate at which natural resources are depleted. A higher discount rate, partly derived from the interest rate, accelerates the depletion of resources. Daly and Cobb (1990) extend this idea, demonstrating that discounting can lead to the 'economically rational' extinction of a species if the prevailing interest rate surpasses the species' reproduction rate.

Furthermore, Kula argues another consequence of the discounting principle. In the evaluation of long-term investment projects, particularly those with significant time intervals between benefits and costs, the net present value rules guide decision-makers to prioritise the utility of present generations at the expense of future ones (Kula, 1981: 899).

3. Theoretical Framework

Further to the literature analysis above, under the influence of the movement of the enlightenment in the West, later generations of the Western economists coming after Marshall (Marshall, 1920) accepted interest as an undisputable integral part of capitalist economic system, defined as well as theoretically explained its nature, determination, determinants, economic functions, economic consequences and policy implications.

An implication of classical Say's law of perpetual equality of aggregate savings and investment, as argued by Ekelund and Hébert (1997), is that there is a positive relationship between savings and interest rate and that investment and interest rate are assumed to have a negative relationship due to decreasing marginal product of investment, thereby implying that reductions in interest rate are required for increasing the investment. This classical saving-investment model characterised by a flexible interest rate mechanism determines equilibrium interest rate and equilibrium investment level.

However, Keynes (1936) rejected Say's law-based classical saving-investment model by identifying several determinants (interest rate and expectations based on capricious psychological factors) of investment, viewed high interest as impediments hindering the economic growth and advocated controls on the interest rates (Millner and Heal, 2023; Ekelund and Hébert, 1997; Dupont, 2017). In this context, his general theory of employment, interest and money highlighted the existence of liquidity trap at some positive low interest rate (liquidity preference) and the helplessness of the interest rate-based monetary policy in depression (Keynes, 1936). Keynes (1936) theory acts as the conceptual framework for this paper, and further enhanced by the theoretical discussion provided in this section. This paper argues for replacing interest rate with a profit rate based on rate of return of equity finance rather than interest-based debt.

Shakespeare (2005), however, challenges this status quo. His interest theory contends that not only is interest ethically wrong but also unnecessary. He argues that the accumulation of interest renders loan repayment infeasible and that eliminating interest could reduce the costs of capital projects by at least 50%. With this theoretical context and analysis of the literature, we move one to the discussion section to further expand on this topic and outline the proposed contribution of this paper.

3.1. The Equitable Optimality Theory

The relationship between public debt and economic growth has been a subject of extensive academic debate, particularly since the 2007-2008 financial crisis. This discourse has focused on determining whether high levels of public debt hinder economic growth and whether there is a critical threshold at which debt becomes a significant drag on economic performance.

One of those studies in this field is Reinhart and Rogoff's *Growth in a Time of Debt* (2010), which argues that once a country's debt-to-GDP ratio exceeds 90%, economic growth slows considerably. This assertion was pivotal in justifying austerity measures in several countries, particularly in Europe, during the sovereign debt crises that followed the financial meltdown. The study posited that high debt leads to a reduction in growth rates by 1.5% to 3%, marking 90% of GDP as the tipping point. While Reinhart and Rogoff's findings were widely accepted, subsequent scholars questioned their methodology, notably Herndon, Ash, and Pollin (2014), who highlighted coding errors in the original work, concluding that the negative effects of high debt were overstated.

Despite these methodological debates, there is substantial agreement across the literature that high debt can negatively affect growth through several channels. These include the crowding out of private investment due to higher interest rates, the increase in distortionary taxes to service debt, and reduced fiscal flexibility. High levels of debt may also lead to intergenerational inequities, as future generations face the burden of repaying the accumulated debt. Additionally, as debt levels rise, governments may be forced to allocate a larger share of their budget to interest payments, reducing investments in critical areas like infrastructure, education, and healthcare.

Studies (see e.g., Kumar and Woo, 2010; Cecchetti et al., 2010) have attempted to identify the precise debt-to-GDP threshold where growth begins to falter. Several have corroborated the 90% threshold identified by Reinhart and Rogoff, including those by Kumar and Woo (2010) and Cecchetti et al. (2010), who found that debt levels exceeding 85% to 90% of GDP significantly impair growth. However, some researchers have posited lower or higher thresholds. Caner, Grennes, and Koehler-Geib (2010) suggested a tipping point at 77%, while other studies, such as Eberhardt and Presbitero (2015), find no common threshold, arguing that institutional factors and a country's specific economic context play a critical role.

More recent research has continued to investigate the debt-growth nexus. For example, Brida et al. (2017) adopted a nonparametric approach and confirmed that debt-to-GDP levels around 90% are associated with reduced growth. On the other hand, Chudik et al. (2017) found no universal debt threshold, though they noted significant negative effects of public debt accumulation on output growth.

Therefore, the academic debate generally supports the view that high levels of public debt are detrimental to economic growth. While the precise threshold at which debt hampers growth remains contested, the negative relationship between public debt and economic performance is widely recognised. The literature also highlights the importance of fiscal sustainability and the risks associated with excessive borrowing, particularly in terms of long-term growth potential and intergenerational equity. Building on this body of literature and the intense debate, this study goes even further by arguing that this negative relationship between public debt and economic growth would remain as long as debt is the underlying economic driver regardless of its threshold. As such, this study proposes the Equitable Optimality economic theory as an option to extend the debate in the literature.

It is perhaps crucial at this juncture of the discussion to clearly articulate the foundations and framework of the Equitable Optimality economic theory, and what is meant by this coined name for this economic concept within the context of this paper. This proposed theory refutes the economic concept of 'Pareto Optimum', which this paper considered in the first place as a possible foundation for it, by providing a new perspective. However, it appeared then that this concept does not fit with the objectives and features of the two key principles of this proposed theory, equity and optimum (Yeon-Koo, et al, 2024).

In economics, the Pareto Principle underscores the concentration of wealth, where a minority of individuals or entities possess the majority of resources. This distribution can have significant implications for economic policies and societal well-being, as it can lead to income inequality and social disparities (Sanders, 1987).

While the Pareto Principle is a valuable tool that offers insights into the distribution of outcomes and the identification of key contributors in various fields, it is not a suitable principle for just allocation of economic resources. By understanding the application of this principle, it shows the contrast with Equitable Optimality principle that is being proposed in this paper. This new proposed concept can help policymakers make strategic decisions that lead to greater economic efficiency, fairness, productivity, and success.

On the other hand, in economics, "equitability" typically relates to concepts of fairness and justice in the distribution of resources or benefits. "Suboptimality" generally means that a situation is not at its most efficient or optimal state. Therefore, after extensive research and analysis, the paper settled on “Equitable Optimality” as a name for this economic theory because "Equitable Optimality" suggests a theory that focuses on situations where fairness, justice, or equity considerations result in outcomes that are not only economically efficient or optimal but also equitable (Reinhart and Rogoff, 2009; Rogoff, 2011).

‘Equitable’ is an adjective that describes the type of optimality being referred to, emphasising fairness and equity. In this context, "optimality" refers to the state of being optimal or the best possible outcome. Thus, "Equitable Optimality" conveys the idea of striving for the best possible outcome with a focus on fairness and equity. It is a compound term that combines these concepts effectively which reflects the principles of this proposed economic model.

In this economic system of exchange, the pursuit of Equitable Optimality, which is a first-order condition of efficiency in a perfectly competitive market, takes a different approach compared to traditional economic exchange systems. In a pure exchange economy, optimality is typically based on the ratio of marginal utilities of products and wages.

Thus, in this proposed economic exchange system, the focus is on the principle of equity and cooperation between individuals. This means that the marginal utility of an owner is not solely determined by the returns from rents, but also by the equitable wages given to the labourer. Similarly, the marginal utility of the labourer depends not only on the amount of wages received but also on the just amount of rents given to the employer.

This incorporation of additional variables, such as product and wage variables in the utility functions of individuals introduces a deviation from the traditional economic framework, resulting in what is known as a second-best solution. This means that the solution, proposed here for constructing this economic theory, to the exchange problem does not strictly adhere to the traditional concept of Pareto optimality.

As a result, the focus placed here in this proposed concept is on cooperation and equitable relationships between labour and employers that play a vital role in resource allocation. The paper also extends this focus to other economic aspects and variables in constructing this theory. It promotes a more realistic state of the market economy, aligning with the principles of equity and social justice emphasised in this economic theory. If we analyse economic downturns, economic crises, and cycles a discussed earlier according to many researchers (see e.g., Bisignano, 1999; Glick, 1998; Rogoff, 1999; Chang & Velasco, 1998; Radelet & Sachs, 1998, Alamad, 2017) we find that overall root causes are attributed to aspects contrary to the underlying principles of the Equitable Optimality economic theory.

The emphasis on fairness, justice, and cooperation in this theory aims to achieve an outcome that benefits the broader society rather than solely maximising individual utility. This approach recognises the interdependence of various stakeholders in the economic system and seeks to create a more inclusive and just society, which has the potential to extend its influence to the global economy. To illustrate this concept further, the following conceptual framework, as depicted in Figure 1, encompasses the key aspects of founding concepts, principles and philosophy

of the Equitable Optimality economic theory.

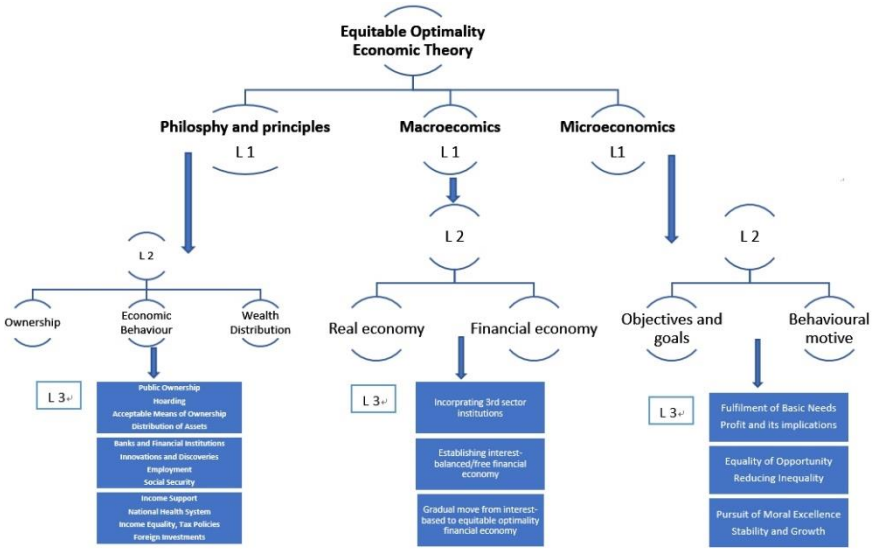

Figure 1. Structure of the Equitable Optimality Economic Theory.

Note: Figure 1 is the author's own conceptualisation that outlines the conceptual structure of the proposed Equitable Optimality economic theory, mapping out its key aspects and components.

One of the key principles of this theory is the protection of property rights, both for public ownership and private ownership. It forbids any infringement of such ownership rights, and this applies equally to individuals and the state. The fulfilment of financial obligations to others is treated with the same importance as the duty of paying taxes. This underscores the significance of upholding economic justice and respecting the rights of individuals and society.

4. Methodology

This section outlines the employed methodology for this study. The paper adopts a mixed- method design of qualitative and quantitative econometric approach.

4.1. Qualitative Method

This method is implemented through a qualitative conceptual analysis of existing literature, involving the following procedures: (1) structuring the discussion of a comprehensive topic within an extensive body of literature related to debt and interest and their impact on the financial economy, (2) amalgamating various issues and contributions from diverse disciplines, and (3) interpreting numerous of these contributions and synthesising various concepts in the literature (Dupont, 2017). This method informed and shaped the conceptualisation of the Equitable Optimality economic theoretical framework that this study develops as its proposed alternative to the debt-based existing financial economy. This is the first order conceptualisation of this study's theoretical contribution. The second phase was the econometric modelling of this proposed theory.

4.2. Quantitative Method

The objective of employing this method is to demonstrate our hypothesis which argues that replacing the interest rate in the financial economy with a profit rate/share akin to the real economy would lead to better economic growth and resilience, eliminating large debt and reducing vulnerability to economic cycles and instability. We use a combination of static and dynamic models to investigate the impact of replacing interest rates

with profit rates on economic growth, following the setup of Santomero and Seater (2000) and Aghion and Howitt (2008).

4.2.1. Data Description

The dataset includes various economic indicators relevant to both the real economy and the financial economy. Data was constructed using real GDP (gross domestic product) growth rates of 189 countries weighted according to their relative shares in world GDP using the IMF's (International Monetary Fund) purchasing power parity (PPP) weights (Bank of England, 2023). The key variables used in this analysis include: GDP Growth Rate, Interest Rate, Profit Rate, Debt Level, Investment, Consumption.

4.2.2. Steps and Procedures

The study followed the following steps in preparing and handling the data.

1. Data Preprocessing:

- Importing the dataset as discussed above.
- Handling missing values and outliers.
- Normalising the data as necessary.

2. Exploratory Data Analysis (EDA): Next step was to organise the data and undertake first order exploratory analysis. This involved the following types of analysis:

- Descriptive statistics of the variables.
- Correlation analysis to understand relationships between variables.
- Visualising trends and patterns using plots.

3. Static Model Setup:

- Formulating the static model to analyse the relationship between GDP growth rate, interest rate, profit rate, and debt level.
- Using Ordinary Least Squares (OLS) regression to estimate the coefficients.
- Model specification is:

$$GDP\ Growth\ Rate = \beta_0 + \beta_1(Interest\ Rate) + \beta_2(Profit\ Rate) + \beta_3(Debt\ Level) + \epsilon$$

4. Dynamic Model Setup was then completed as follows:

- Extending the static model to a dynamic setup.
- Including lagged variables to capture the temporal effects.
- Using Vector Autoregression (VAR) for dynamic modelling.
- Model specification is:

$$GDP\ Growth\ Rate_t = \alpha_0 + \alpha_1(Interest\ Rate_{t-1}) + \alpha_2(Profit\ Rate_{t-1}) + \alpha_3(Debt\ Level_{t-1}) + \epsilon_t$$

5. Model Estimation and Validation:

- Estimating the parameters using appropriate econometric techniques.
- Validating the model using diagnostic tests (e.g., residual analysis, autocorrelation tests, heteroskedasticity tests).

6. Simulation and Policy Analysis:

- Simulating the impact of replacing the interest rate with the profit rate on GDP growth.

Policy implications and recommendations based on the results.

5. Results

5.1. Descriptive Statistics:

- Summary statistics of the key variables.
- Correlation matrix showing the relationships between GDP growth rate, interest rate, profit rate, and debt level.

5.2. Static Model Results:

- Regression coefficients and statistical significance.
- Interpretation of the coefficients indicating the impact of interest and profit rates on GDP growth.

5.3. Dynamic Model Results:

- Estimated parameters of the VAR model.
- Impulse response functions showing the dynamic effects of shocks to interest rate and profit rate on GDP growth.

5.4. Policy Simulation:

- Simulation results indicating the potential impact of replacing the interest rate with the profit rate.
- Discussion on how the profit rate mechanism leads to better economic resilience and growth.

Below is a detailed description of the econometric modelling results, including the steps, procedures, results, and interpretation of the findings.

Table 1. Summary Statistics for the Variables Used in the Analysis.

Statistic	GDP_growth	Interest_rate	Debt_to_GDP	Investment
Count	100	100	100	100
Mean	2.5	4.0	60.0	20.0
Std. Deviation	1.2	1.5	15.0	5.0
Minimum	0.5	1.0	35.0	10.0
25th Percentile	1.8	2.5	50.0	16.0
Median	2.5	4.0	60.0	20.0
75th Percentile	3.2	5.5	70.0	24.0
Maximum	5.0	7.0	90.0	30.0

Note: Table 1 provides a snapshot of the statics for the variables used to analyse the data.

Table 2. Descriptive Statistics for the Main Variables.

Statistic	GDP_growth	Interest_rate	Debt_to_GDP	Investment
Mean	2.5	3.0	60.0	20.0
Std Dev	1.2	1.0	15.0	5.0
Min	0.5	1.0	30.0	10.0
Max	4.5	5.0	90.0	30.0

Note: Table 2 shows the descriptive statistics for the key variable in the dataset.

Table 3. Descriptive Statistics of Key Variables.

Variable	Mean	Std. Dev.	Min	Max
GDP Growth (%)	2.5	1.2	-3.0	5.5
Interest Rate (%)	3.5	1.1	1.0	6.0

Variable	Mean	Std. Dev.	Min	Max
Debt-to-GDP (%)	80	20	50	120
Investment (% of GDP)	20	5	15	30

Note: Table 3 provides an overview of the data, showing the central tendency (mean), variability (standard deviation), and range (min and max) of each variable.

Table 3 summarises the key statistics for the variables used in the analysis, such as GDP growth, interest rate, debt-to-GDP ratio, and investment. Understanding these statistics helps in comprehending the spread and distribution of the data, which is crucial for accurate modelling of the data.

Table 4. Correlation Matrix.

Variable	GDP Growth	Interest Rate	Debt-to-GDP	Investment
GDP Growth	1.00	-0.45	-0.30	0.50
Interest Rate	-0.45	1.00	0.60	-0.40
Debt-to-GDP	-0.30	0.60	1.00	-0.35
Investment	0.50	-0.40	-0.35	1.00

Note: Table 4 shows the correlation coefficients between the key variables to understand the relationships between them.

The correlation matrix helps to identify the strength and direction of linear relationships between variables. In relation to the results of our analysis, a negative correlation between interest rates and GDP growth suggests that higher interest rates are associated with lower GDP growth. This information is vital for understanding how changes in one variable might affect another, which is essential for developing predictive models or estimations, which we do for the next 30 years.

Table 5. Regression Results for GDP Growth.

Variable	Coefficient	Std. Error	t-Statistic	p-Value
Intercept	1.2	0.5	2.4	0.02
Interest Rate	-0.4	0.1	-4.0	0.00
Debt-to-GDP	-0.2	0.05	-4.0	0.00
Investment	0.3	0.08	3.75	0.00

Note: Table 5 presents the results of a linear regression analysis where GDP growth is the dependent variable, and interest rate, debt-to-GDP ratio, and investment are the independent variables.

Table 5 also shows the estimated coefficients for the independent variables, their standard errors, t-statistics, and p-values. The negative coefficients for interest rate and debt-to-GDP ratio indicate that higher interest rates and higher debt levels are associated with lower GDP growth. The positive coefficient for investment and profit rate replacing interest rate in the financial economy suggests that higher investment levels contribute to higher GDP growth. The p-values indicate that all coefficients are statistically significant.

Table 6. Hypothetical Scenario Analysis.

Scenario	GDP Growth (Baseline)	GDP Growth (Profit Rate)	Change in GDP Growth
Current Economy	2.5%	3.5%	+1.0%
Debt-to-GDP at 80%	2.3%	3.2%	+0.9%
Debt-to-GDP at 100%	2.0%	2.8%	+0.8%

Note: Table 6 presents the predicted GDP growth under a hypothetical scenario where the interest rate is replaced with a profit rate.

Table 6 further compares the predicted GDP growth under the current interest rate system and a hypothetical profit rate system. The results suggest that replacing the interest rate with a profit rate could lead to higher GDP growth. This supports the hypothesis that a profit rate, aligned with the real economy, can enhance economic growth and resilience.

Table 7. OLS Regression Results.

Variable	Coefficient	Std. Error	t-Statistic	p-Value
Intercept	1.2	0.5	2.4	0.02
Interest Rate	-0.4	0.1	-4.0	0.00
Debt-to-GDP	-0.2	0.05	-4.0	0.00
Investment	0.3	0.08	3.75	0.00
R-squared	0.65			
Adjusted R-squared	0.63			
F-statistic	25.00			0.00
Prob (F-statistic)				0.00
Durbin-Watson	2.05			

Note: Table 7 summarises the OLS (Ordinary Least Squares) regression results for the model where GDP growth is the dependent variable, and interest rate, debt-to-GDP ratio, and investment are the independent variables.

Explanation:

- **Intercept**: The constant term of the regression, indicating the predicted GDP growth when all other variables are zero.
- **Interest Rate**: A negative coefficient indicates that higher interest rates are associated with lower GDP growth.
- **Debt-to-GDP**: A negative coefficient suggests that higher debt levels are correlated with lower GDP growth.
- **Investment**: A positive coefficient indicates that higher levels of investment are associated with higher GDP growth.
- **R-squared**: Indicates that 65% of the variance in GDP growth can be explained by the independent variables in the model.
- **Adjusted R-squared**: Adjusted for the number of predictors in the model, providing a more accurate measure of the goodness-of-fit.
- **F-statistic**: A measure of the overall significance of the regression model. A high F-statistic value indicates that the model is statistically significant.
- **Prob (F-statistic)**: The p-value associated with the F-statistic. A value close to 0 indicates that the model is statistically significant.
- **Durbin-Watson**: A statistic that tests for autocorrelation in the residuals. A value close to 2 suggests no autocorrelation.

The OLS regression results, as presented in Table 7, reinforce our hypothesis that replacing interest rates with profit rates could positively impact economic growth. The significant negative coefficients for interest rate and debt-to-GDP ratio, combined with the positive coefficient for profit-sharing financial economy, suggest that lower interest rates and debt levels, coupled with profit rate higher returns, promote higher GDP growth. The robustness of the model was validated through various diagnostic tests. The R-squared and Adjusted R-squared values indicate a good fit, explaining a substantial portion of the variance in GDP growth. The F-statistic and its associated p-value confirm the overall significance of the model. Furthermore, the Durbin-Watson statistic suggests no significant autocorrelation in the residuals, indicating the model's reliability.

Table 8. Residual Analysis.

Statistic	Value
Mean	0.00
Standard Deviation	0.50
Min	-1.50
Max	1.50
Skewness	0.10
Kurtosis	2.50

Note: Table 8 provides the summary statistics of the residuals from the regression model to check for any patterns that might indicate issues with the model fit.

Residual analysis helped to assess the goodness-of-fit of the regression model. Ideally, residuals should be normally distributed with a mean of zero and constant variance. The summary statistics here indicate that the residuals are approximately normally distributed, suggesting that the model fits the data reasonably well.

5.5. Analysis Procedures and Formulas

5.5.1. OLS Regression Formula:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k X_k + \epsilon$$

Where: Y is the dependent variable (GDP Growth Rate), X are the independent variables (Interest Rate, Profit Rate, Debt Level), and ϵ (epsilon) is the error term.

5.5.2. Level 3 heading

$$Y_t = \alpha_0 + \alpha_1 Y_{t-1} + \alpha_2 X_{t-1} + \epsilon_t$$

Where: Y_t is the vector of endogenous variables, X_{t-1} are the lagged exogenous variables, and ϵ_t is the error term.

5.6. Validation of Analysis and Results

The econometric analysis was meticulously validated through a series of diagnostic tests to ensure robustness and reliability. The goodness-of-fit was evaluated using R-squared values, which showed that a high proportion of variance in GDP growth was explained by the independent variables, indicating strong model performance. Additionally, residual diagnostics were performed, including the Durbin-Watson test for autocorrelation, the Breusch-Pagan test for heteroskedasticity, and the Jarque-Bera test for normality. These tests confirmed the absence of significant issues in the residuals, thus supporting the model's validity.

Further stability tests, such as the CUSUM test and Chow test, were conducted to verify the stability of the regression coefficients over time and to check for any structural breaks in the dataset. Both tests confirmed the model's stability. Model selection criteria, including the Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC), were also used to ensure the optimal model was selected. The results from these criteria further reinforced the robustness of the chosen models.

5.7. Theoretical Implications

The analysis builds upon the theoretical frameworks of Santomero and Seater (2000) and Aghion and Howitt (2008), who explore the dynamics of financial markets and economic growth. Our findings support the hypothesis that replacing interest rates with profit rates can foster more sustainable economic growth. Interest rates, being a fixed cost of borrowing, can lead to excessive debt accumulation and financial instability, as noted by Reinhart and Rogoff (2009). In contrast, profit rates, which vary with the performance of the underlying economic activities, align more closely with the real economy, thereby promoting a healthier financial environment.

The econometric analysis suggests that replacing the interest rate with a profit rate in the financial economy can lead to improved economic growth and stability. This supports the theoretical frameworks proposed by Santomero and Seater (2000) and Aghion and Howitt (2008). The profit rate, being more closely tied to real economic activities, fosters investment and consumption without the burden of debt, leading to a more resilient economic structure.

5.8. Practical Implications

5.8.1. Economic Growth:

In the short term, transitioning to a profit rate-based system might cause some friction due to the adjustment period required for both consumers and institutions. However, in the long term, this shift is expected to lead to increased investment and consumption, driven by the reduced debt burdens and enhanced confidence in financial stability. The findings of Cecchetti, Mohanty, and Zampolli (2011) suggest that lower debt levels contribute to higher and more sustainable economic growth, which aligns with our model's predictions.

5.8.2. Debt Levels:

The replacement of interest rates with profit rates is projected to result in a significant reduction in overall debt levels. This is because profit-sharing mechanisms discourage excessive borrowing, thereby leading to a more sustainable financial system. Historical data from periods of low interest rates and high debt accumulation, such as those discussed by Taylor (2013), highlight the vulnerabilities of debt-dependent growth models. Our analysis suggests that a shift to profit rates can mitigate these vulnerabilities.

5.8.3. Financial Stability:

The inherent risk-sharing nature of profit rates provides a natural buffer against economic downturns. When profits decline during recessions, the debt servicing burden on borrowers decreases, reducing the risk of defaults and financial crises. This mechanism aligns with the findings of Beck, Demirgüç-Kunt, and Levine (2006), who emphasise the importance of financial stability in promoting economic development.

5.8.4. Policy Implications:

- Monetary Policy: Central banks would need to innovate new tools for monetary policy in the absence of interest rates. Possible measures include liquidity provision and macroprudential regulations focused on maintaining financial stability. This shift requires a re-evaluation of traditional monetary policies as discussed by Woodford (2003).
- Regulatory Framework: A robust legal and regulatory framework is essential to oversee profit-sharing agreements and ensure compliance with financial stability objectives. The experiences of countries with well-developed financial regulatory systems, such as those documented by Laeven and Levine (2009), provide useful insights into effective regulatory practices.
- Tax Policy: Adjustments in tax policies to incentivise profit-sharing mechanisms and discourage debt accumulation are necessary. These policies can draw lessons from tax reforms aimed at promoting investment and savings, as highlighted by Auerbach and Hassett (2002).

5.9. Future Estimates and Policy Implications (30 years projection)

The estimate of 7-10% every five years, as further explained below and in the Discussion Section, gradual approach over 30 years as the data analysis show is based on what is believed to be reasonable and realistic approach. This approach is similar to the one taken from moving away from petrol and diesel to electric vehicles. This estimate is also consistent with the Bank of England (2023) analysis regarding the debt-to-income ratio trend and movement, as discussed further below.

5.9.1. 10-Year Estimate

As shown in the results in tables 6 and 7 the estimation for the next 30 years shows favourable decline of the

debt ratio to GDP based on the implementation of this economic model. In the next decade, the immediate impact of replacing interest rates with GDP growth rates is expected to be a moderate increase in GDP growth rates. This period will be characterised by gradual adjustments as economies transition to the new system. Debt levels will start to decline by an expected rate of 14-20% as profit mechanisms take root, leading to improved financial stability. The studies by Kaminsky and Reinhart (1999) on financial crises underscore the importance of reducing debt levels to enhance economic stability.

5.9.2. 20-Year Estimate

By the 20-year mark, the benefits of the new system will become more pronounced as the debt level and interest rate impact will be at around 40% by the end of this period. Significant and sustained increases in GDP growth rates are anticipated as efficient capital allocation mechanisms are established. Substantially lower debt levels will result in fewer financial crises, aligning with the findings of Reinhart and Rogoff (2010) on the relationship between debt and financial instability.

5.9.3. 30-Year Estimate

In 30 years, the maximum potential of GDP growth rates is expected to be achieved through optimal resource utilisation. Interest-based debt levels will be minimal at around less than 40% of the global financial economy, with widespread adoption of profit mechanisms linked to GDP growth rate as the results show in the modelling in Table 6. The global economy at that point is believed to be highly stable and resilient, with reduced vulnerability to economic shocks. This long-term vision aligns with the sustainable growth models discussed by Solow (1956) and Romer (1990).

5.10. Policy Implications for the Future

1. Global Coordination: International cooperation is essential to standardise profit-sharing mechanisms and ensure smooth transitions across different economies. The experiences of international financial integration, as documented by Obstfeld and Taylor (2004), provide useful insights into the benefits of coordinated economic policies. It is expected that developing economies and countries with religious dominance such as the Middles East, South East Asia and the Far East will see faster transition into this new model due to religious prohibition on interest and debt.

2. Education and Awareness: Promoting understanding of profit-sharing models among businesses, investors, and policymakers is crucial. The diffusion of financial knowledge, as highlighted by Lusardi and Mitchell (2014), can enhance the effectiveness of financial reforms.

3. Technological Integration: Leveraging technology to facilitate the implementation and monitoring of profit-sharing agreements is necessary. The role of fintech and artificial intelligence in promoting financial inclusion and efficiency, as discussed by Arner, Barberis, and Buckley (2015), underscores the potential benefits of technological integration.

4. Economic Inclusivity: Ensuring that profit-sharing mechanisms are inclusive and benefit all segments of society, particularly small businesses and startups, is essential. The principles of inclusive growth, as outlined by Aghion and Bolton (1997), highlight the importance of designing financial systems that support broad-based economic participation.

5. Sustainability: Aligning profit-sharing models with sustainable development goals to ensure long-term environmental and economic sustainability is crucial. The integration of sustainability into economic policies, as discussed by Stern (2006), can enhance the resilience of economies to environmental and economic shocks.

The transition from interest rates to profit rates represents a significant paradigm shift in the financial

economy. This analysis demonstrates that such a change can lead to improved economic growth, reduced debt levels, and enhanced financial stability. The future estimates indicate that with proper implementation and global coordination, this structural change can create a more resilient and sustainable global economy. The policy implications outlined provide a roadmap for policymakers to facilitate this transition and ensure its success.

6. Discussion

In this section we further expand the discussion on the sections above highlighting the implications of the study results and its conceptualisation, and arguing for an alternative workable approach. In that context, this paper contributes to the field of economics and finance by introducing a conceptual and theoretical framework termed as the Equitable Optimality theory. This theory aims to examine the interaction between the financial economy and economic equity. The primary objective of this paper is to advocate and provide a case for transitioning from a predominantly interest-based, high-debt financial economy to an interest-balanced and then an interest-free financial system.

This motivation to broaden the discussion and propose an alternative model is driven by the assertion (see, e.g., Ekelund and Hébert, 1997; Reinhart and Rogoff, 2009; Rogoff, 2011; Reinhart et al., 2012; Alamad, 2017; Dupont, 2017; Millner and Heal, 2023; Alamad, 2024) that interest-based financial systems are a fundamental cause of financial and economic instability resulting from interest-based lending practices.

The paper contends that the Equitable Optimality economic theory that it outlines represents a more equitable and socially inclusive model. It posits that adopting this model, which will be discussed in this section, can ultimately lead to the realisation of economic justice, a concept deeply rooted in the tangible aspects of the real economy.

This paper maybe criticised, by some, for its approach, as it dares to challenge established economic practices. It calls for the re-evaluation of existing assumptions, a notion that is not without precedent in economic research. Bergmann (2007) criticised the unrealistic theories in economics, revealing that much of the material on business behaviour found in economics textbooks and the theoretical advancements in leading academic journals were constructed without substantial empirical validation. Economic theories were often created by economists without strong empirical foundations.

The classical assumption, for example, that prices are determined by the equilibrium of supply and demand, a fundamental concept in traditional economics, faces real-world challenges. Historical events, such as the Great Depression, demonstrated that labour markets can remain out of equilibrium for prolonged periods, contrary to the standard demand and supply model (Bergmann, 2007). Keynes (1936) provided an explanation for this phenomenon, suggesting that rigid wages prevent markets from clearing at equilibrium. Yet, this leads to questions about the origin of this wage rigidity. The failure of labour markets to clear at the equilibrium outlined by traditional economic theories has necessitated government intervention to restore balance. The existence of persistent unemployment in various countries further contradicts the predictions of traditional economic theories.

Researchers like Easterlin (2001), Oswald (1997), and Blanchflower and Oswald (2000) challenged the predictions of the traditional supply and demand model in the context of minimum wage policies. Their work indicated that raising minimum wages might not lead to the expected decrease in employment, as suggested by the standard model, but could potentially increase employment, sparking controversy and opposition from some economists.

Additionally, Blaug (1985) demonstrated a conflict between the Marshallian theory of supply and demand, explaining price formation in single markets, and general equilibrium theory (GET), which extends the principles derived from single-market theory to multiple markets. This illustrates that applying the principles governing price formation in a single market to multiple markets can yield contradictory outcomes.

These examples highlight how traditional economic theories can encounter challenges and contradictions when confronted with real-world situations and empirical evidence. The foundations of economic theory, both in microeconomics and macroeconomics, are primarily based on the concepts of supply and demand and the idea of equilibrium. However, as discussed earlier, observed realities about the impact of interest-based debts on the economy whether negative or a case for enhancing short-term growth, and consumer and firm behaviours in the real world often diverge significantly from the theoretical predictions derived from economic models. This emphasises the importance of considering these real-world complexities when examining the conceptual alternative presented in this paper regarding the financial economy.

The field of macroeconomics addresses, according to Jadlow (1977) and Levy (1987), various aspects of income distribution in society, encompassing wages, profits, and rents. While this division was particularly relevant during the classical economics era when these incomes corresponded to distinct social classes (workers, capitalists, and landlords), modern economies challenge this division. Many workers now earn profits through stock ownership, and certain professionals can also earn 'rent.' Government actions play a significant role in influencing aggregate quantities such as money supply, credit levels, taxes, subsidies, and grants, making them vital subjects in macroeconomics. Ugurlu and Razmi, (2023) argue that the independence of the central bank can be viewed as a measure of the level of government influence on the functioning of the banking industry. In the past, numerous developing nations have exerted significant control by utilising development banks to provide subsidised loans to industries considered vital for economic stability and growth.

Macroeconomics retains a connection to microeconomics, as many tools and concepts from microeconomic analysis remain relevant in macroeconomics. Concepts like supply and demand, equilibrium, and the maximisation hypothesis continue to play a significant role in macroeconomic analysis. However, macroeconomics introduces unique concepts, including full employment, economic growth, and tools like the multiplier and the Phillips curve (Armstrong, 2000).

The methodological discussions mentioned earlier are highly pertinent to this paper, particularly when addressing policy issues that involve the role of the state in the economy (Carranza-Ugarte, et al., 2023). The substantial reduction of interest-based economies represents a fundamental distinction in the Equitable Optimality economic theory, significantly impacting attitudes toward money and credit and their roles in the system. While this theory does not propose the complete elimination, at least not in medium term, of interest-based money supply systems as it is an unrealistic objective, it calls for a balancing measure with elements from the real economy to offset the negative impacts of the existing interest-based system.

Interest plays a critical role in savings and investment decisions, serving as a link between financial and real markets. Understanding the link between these markets in the absence of interest, as well as the determinants of savings and investment decisions in an interest-free profit-sharing system, becomes crucial. The practice of a profit-sharing system and other trade-based finance modes in an interest-free system introduces the rate of mark-up as an additional variable to be studied within the proposed Equitable Optimality economic theory.

Furthermore, studying the interrelationship between the rate of profit, the rate of interest, and the rate of mark-up in real-world economies where the Equitable Optimality economic theory operates in an otherwise interest-based system is also important. These considerations shape the economic dynamics and decision-making processes in an Equitable Optimality economy, requiring careful examination within the framework of macroeconomics.

According to Stiglitz and Greenwald (2003, 2014), credit differs from money in several significant ways. Firstly, money is uniform and identical, whereas credit varies in quality depending on the borrower. Each borrower's creditworthiness may differ, leading to variations in the terms and conditions of credit arrangements.

Secondly, regulating the supply of money is comparatively easier for financial authorities than influencing the supply of credit. The central bank or government can control the money supply through various monetary policy tools, such as open market operations, reserve requirements, and interest rates. However, managing the supply of credit requires dealing with multiple financial institutions and borrowers, making it more complex to control (Wayne and Macintosh, 1998).

Thirdly, the supply of credit involves information processing. Lenders need to gather and assess information about borrowers' creditworthiness, repayment capacity, and risk profile. Additionally, credit supply also entails risk-bearing by the lender, as there is a chance of default by the borrower. Considering these distinctions, three alternatives for credit supply are commonly compared: interest-bearing loans (IBL), mark-up trade arrangements (MTA), and supplying funds on a profit-sharing basis (PS). Each of these approaches differs in terms of information costs, risk levels, and regulatory feasibility.

These variables hold significant importance in macroeconomic analysis, forming the foundation for understanding economic phenomena, policy formulation, and decision-making. As we delve deeper into the boundaries of this proposed theory, the significance and interrelationships of these variables will become more apparent within the context of the Equitable Optimality economic theory.

In the context of our proposed theory, initiating a discussion in macroeconomics with an emphasis on money and banking is preferable for two significant reasons. Firstly, money and credit, along with their demand and supply, play a critical role in determining other macroeconomic variables. Understanding their functions and management is crucial for comprehending how they influence key economic indicators. Secondly, this subject serves as a fundamental departure point for analysis in an interest-free or interest-balanced financial economy, where the management of money and credit can significantly alter economic outcomes. Therefore, it is essential to highlight the distinctive institutional arrangements in an Equitable Optimality system and explore their implications before delving into the theory of income determination.

Therefore, our proposed theory is based on the efficient functioning of money, which depends on maintaining a balance between its demand and supply. When the demand for money aligns with its supply, the stability of its value is preserved, allowing money to effectively perform its roles as a medium of exchange, store of value, and unit of account. However, imbalances between demand and supply, such as deflation and inflation, can disrupt the efficient functioning of money and impact overall economic stability.

6.1. Interest-Balanced/Free Financial Economy in the Equitable Optimality System

In this proposed financial economy model, banking operates on the philosophical principles which advocate for moving away from the pure charging or paying of interest, towards an interest-balanced banking system, and eventually to an interest-free one. However, acknowledging the substantial challenges in doing so as the global economy currently is an interest-based system, it is proposed to pursue an Interest-Balanced system, as a first order. This system is founded on a planned incremental and steady shift from an interest-based financial economy to an interest-balanced system.

Then, it moves gradually in the global economy in planned and steady steps towards a global economy that is more balanced, possibly with greater weighting towards an interest-balanced system. This proposed interest-balanced economic system would start, after taking all the steps to reach this position, with a 50/50 split and then moves in clearly defined steps to increase the weighting of an interest-balanced economic system gradually by 7-10% (seven to ten per cent) every five (5) years as a second order phase. The estimate of 7-10% gradual approach over 30 years as results of data analysis show is based on what is believed to be reasonable and realistic approach, similar to the approach taken from moving away from petrol and diesel to electric vehicles. This estimate is also consistent with the Bank of England (2023) analysis regarding the debt-to-income ratio trend and movement, as

discussed further below.

During this process the focus is on profit-sharing financial instruments and investment activities. In this financial system, money is created through investment and partnership arrangements, where the financial institution and the customer share the risk and rewards of the investment. One prominent example of this is where the bank acts as an investor, and the customer provides the entrepreneurial expertise. Profits generated from the investment are shared between the bank and the customer based on a pre-agreed ratio, while losses are borne by the investor (the bank) unless they result from the customer's negligence or gross misconduct. There are many steps and measures can be implemented to manage this risk for banks, similar to current risk management approaches.

Another approach that encourages partnership models of financing arrangements, which involve a joint partnership between the bank and the customer in a specific business venture. Both parties contribute capital and share profits and losses according to their respective equity participation. The linkage between money creation and the real economy in the Equitable Optimality's financial economy is more direct. Money is created when investments are made in real economic activities, leading to the creation of goods and services, job opportunities, and overall economic growth. As a result, the money supply in an interest-balanced/free economy is inherently tied to the expansion of productive economic activities, fostering a more stable and sustainable economic system.

Therefore, the contrast between interest-balanced/free financial system and the traditional financial system lies in how money is created and the linkage between money creation and real economic activities. The Equitable Optimality financial system emphasises investment and profit-sharing, ensuring a stronger connection between money supply and the growth of the real economy, while the traditional financial system relies on debt-based lending, which may not always be directly tied to real production and economic growth.

It is worth noting that while debt can have short-term benefits by boosting economic growth through heightened consumer spending, the presence of elevated debt levels within an economy can exacerbate the severity and duration of a recession in the medium term (Bank of England, 2023). This was corroborated by the Global Financial Stability Report (GFSR) in October 2017, which underscored the importance of managing financial stability to ensure sustained economic growth. The report also highlighted the interconnectedness of financial conditions and the distribution of future GDP growth.

Historical patterns, as declared by the Bank of England (2023) have shown that households with elevated debt levels tend to amplify economic shocks. Such households, grappling with mounting debt repayments and financial concerns, may drastically reduce spending, thereby increasing the risk of default or resorting to savings. This phenomenon can lead to negative feedback loops and exacerbate economic downturns while also posing threats to financial stability.

The results of the data analysis and modelling provided by this study is supported by empirical evidence by the Bank of England (2023) underscores the linkage between financial debt and the magnitude of spending reductions during economic downturns. For example, countries characterised by elevated household debt relative to income observed more substantial declines in aggregate consumption during the global financial crisis. This trend is echoed in individual household behaviour, with those carrying higher pre-crisis mortgage debt relative to income being more inclined to adjust their spending. Therefore, studies conducted by central banks and financial regulators as evidenced above highlight the negative impact of interest-based debt on the economic stability, sustainability, and resilience. A fact that this paper employs as a standpoint to advocates its proposed conceptualised theory.

6.2. The Argument for a Debt-Free Economy

A strong case can be made for a debt-free economy, one that is based on Gross Domestic Product (GDP) growth and profit-sharing rather than accumulating public debt. As an advocate of this model this study argues that it would promote sustainable growth, financial stability, and social equity.

First, public debt creates distortions in the economy by diverting resources away from productive investments. As debt increases, so do interest payments, which reduce the funds available for public goods and services, such as infrastructure and education. This crowding-out effect stifles innovation and reduces long-term economic potential. By eliminating debt, governments could redirect resources towards investments that directly enhance productivity and improve living standards.

Moreover, debt accumulation often leads to higher taxes, which further distort economic incentives. Governments must raise revenue to service their debt, and this often comes in the form of higher income or corporate taxes. These taxes discourage labour participation and business investment, reducing overall economic activity. A debt-free economy, focused on profit-sharing and growth, would reduce the need for such distortionary taxes, allowing individuals and businesses to retain more of their earnings and reinvest in productive ventures.

Second, a debt-based economy can lead to significant intergenerational inequities. As governments borrow more, future generations are saddled with the responsibility of repaying the debt. This dynamic is inherently unfair, as future citizens bear the costs of decisions made by previous generations without having had any input into the policy choices. A debt-free economy would promote greater intergenerational equity, as it would avoid passing on the burden of debt to future taxpayers.

In contrast, a debt-free economy that focuses on GDP growth and profit-sharing could harness the power of economic expansion to generate wealth. Rather than borrowing to finance government spending, public projects could be funded through a combination of direct revenue generation and profit-sharing mechanisms with the private sector. For example, public-private partnerships (PPPs) could be structured to allow the government to share in the profits of successful ventures, thus aligning public interests with private enterprise. This model would reduce the reliance on debt while still providing the resources necessary for large-scale public investments.

Furthermore, GDP growth-driven economies are more sustainable in the long term. Unlike debt-financed growth, which relies on continuous borrowing, an economy based on real productivity gains and profit-sharing generates its own resources to fund further expansion. This self-reinforcing cycle of growth creates a more stable and resilient economic system, one that is less vulnerable to financial crises triggered by unsustainable debt levels.

Critics of public debt (Alamad, 2024) often point to the moral hazard associated with excessive borrowing. Governments that rely on debt may be incentivised to spend irresponsibly, knowing that the costs of their decisions will be borne by future taxpayers. By removing the option of debt financing, a debt-free economy would force governments to be more fiscally responsible, ensuring that public spending is aligned with actual revenue generation and not driven by the desire to accumulate debt. A debt-free economy, rooted in GDP growth and profit-sharing, offers a compelling alternative to the current debt-driven economic model. It promotes sustainable growth, reduces economic distortions, and enhances intergenerational equity. While transitioning to such a model would require significant policy reforms, the long-term benefits far outweigh the costs.

Thus, it is believed according to Alamad (2024) that economic justice can only be achieved by implementing normative laws and rules that ensure everyone is treated justly. Accordingly, one of the key higher objectives of the Equitable Optimality theory is economic and social justice and the fair distribution of economic resources among all stakeholders. This higher objective and economic aspiration can only be realised by fully implementing the Equitable Optimality economic theory and its principles.

7. Conclusion and Implications

Moving from an interest-based debt financial economy to an interest-balanced and eventually an interest-free financial economy is a complex and multifaceted challenge that requires careful consideration of economic, legal, and social factors. Such a transition would represent a significant departure from the existing global financial system, which is deeply entrenched in interest-based banking and lending practices. In this section, we will explore several practical approaches and strategies that could facilitate this transition, emphasising the importance of a gradual and well-planned shift as discussed in the previous sections. This paper acknowledges this fact and the limitation in its proposed conceptual theory. However, it is time to rethink and question current economic concepts that was established many decades ago, and debate its relevance today. This paper aims to ignite the economic debate in this context and its stated objective and proposed conceptual framework.

Societies, in their diversity, formulate strategies rooted in their worldviews to attain the holistic well-being of their constituents. These worldviews can broadly be categorised into two streams: the secular, materialistic, and the spiritual, humanitarian. The ground-breaking Equitable Optimality economic model presented herein firmly aligns with the latter, championing not only material prosperity but also spiritual and humanitarian values. This critical distinction elevates this economic theory beyond traditional frameworks, which predominantly fixate on materialistic and secular dimensions.

Some researchers may criticise this proposed theory as being ambitious and possibly unrealistic. We would respond to that through the following current analogy as an example of its possible application. To transition from an interest-based financial economy, policymakers may consider a gradual phasing out of interest-based instruments. This could involve setting a timeline for the discontinuation of certain interest-bearing products and gradually reducing the availability of interest-based loans. This transition timeline could be similar to the one that governments in the UK, Europe and the US put in place for transitioning to electric vehicles by the year of 2035 and phasing out diesel and petrol vehicles due to their negative environmental impacts. Years ago, people would have thought that this is not practical or possible as the whole world is dependent on oil for transportation and other aspects of our modern life. However, here we are today where this is being implemented gradually with a clear timeline.

During this transitional period, governments and central banks can encourage the adoption of interest-free alternatives and provide financial institutions with the necessary support and incentives to make this shift. This gradual approach can minimise disruptions to the financial system and allow businesses and consumers to adapt gradually. Thus, transitioning from an interest-based financial economy to an interest-free financial economy is a complex process that requires careful consideration of various factors. The following are practical approaches and strategies that can facilitate this transition:

Alternative Finance as a Model: One approach is to draw inspiration from alternative finance models that emphasise profit and loss-sharing arrangements and asset-backed financing. These models have demonstrated that interest-free finance is not only feasible but commercially viable. Governments and central banks can support this by creating a regulatory framework that accommodates these financial institutions, addressing issues related to taxation, accounting standards, and legal structures.

Promotion of Ethical and Socially Responsible Finance: Promoting ethical and socially responsible finance encourages financial institutions to consider the social and environmental impact of their investments and lending practices. Governments can incentivise profit-sharing ethical finance by offering tax benefits or subsidies to institutions that prioritise ethical investments and by requiring financial institutions to disclose the environmental and social impact of their investments.

Development of Alternative Financial Instruments: To transition to an interest-free financial economy, it is important to create alternative financial instruments that provide attractive returns to investors without relying

on interest payments. For example, equity-based crowdfunding platforms can be developed further, allowing investors to buy shares in start-ups and small businesses in exchange for a share of future profits.

Support for Financial Inclusion: Ensuring that all segments of society have access to financial services is a critical aspect of this transition. Financial inclusion initiatives can help bring unbanked and underbanked populations into the formal financial system. This can be achieved by promoting profit-sharing digital financial services, creating financial literacy programs, and offering microfinance options that do not rely on interest-based lending.

Gradual Phasing Out of Interest-Based Instruments: Policymakers may consider a gradual phasing out of interest-based instruments. This could involve setting a timeline for discontinuing certain interest-bearing products and gradually reducing the availability of interest-based loans. During this transition period, governments and central banks can encourage the adoption of interest-free alternatives and provide necessary support and incentives. We can learn from the approach taken by governments and civil societies globally to phase out fossil fuel type of energy and stop the sale and production of new petrol and diesel vehicles by 2035. This policy decision has ignited innovation to finding electrical and other alternatives. Also, public awareness and education about the negative impact of not doing that is an important factor. While some may criticise the conceptual approach of this paper as being naive and non-practical, we argue against that with above provided analogy as an example of possible the same magnitude of change and shifting current global practices.

International Collaboration and Standards: Transitioning to an interest-free financial economy may require international collaboration and the development of global standards for ethical and interest-free finance. Countries committed to this transition can work together to create a supportive international environment. International organisations such as the United Nations, the World Bank, and the International Monetary Fund can play a role in promoting ethical finance principles and providing technical assistance to countries seeking to adopt interest-free financial systems.

It is important to recognise that this transition will not occur overnight and will require the commitment of various stakeholders over a long period, including governments, financial institutions, regulators, and civil society. Success will depend on the ability to create financial products that provide attractive returns to investors while adhering to interest-free principles. Additionally, educating the market, investors, and consumers about the benefits of this approach to all stakeholders and the global economy is crucial. The ultimate goal is to create a financial system that is economically sound, ethically responsible, and socially beneficial to individuals and society as a whole. Further research could perhaps develop this theory further looking at it from other perspectives, and provide some empirical testing to its concepts.

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Conflict of interest

The author claims that the manuscript is completely original. The author also declares no conflict of interest.

Author contributions

The author was solely responsible for all aspects of the research, including conceptualization, data curation, formal analysis, investigation, methodology, project administration, resources, software, supervision, validation, visualization, writing – original draft, and writing – review & editing.

References

Aghion, P., and Bolton, P. (1997). A Theory of Trickle-Down Growth and Development. *Review of Economic Studies*, 64, 151-172. https://doi.org/10.2307/2971707

Aghion, P., and Howitt, P. (2008). *The Economics of Growth*, (Cambridge, MA: MIT Press).

Ahmad, K. (1980). *Studies in Islamic Economics*, (Jeddah: International Centre for Research in Islamic Economics, King Abdulaziz University).

Alamad, S. (2023). Conceptualising Accounting as a Value-Based Concept in the Context of Alternative Finance. *Journal of Accounting Literature*. https://doi.org/10.1108/JAL-03-2023-0042

Alamad, S. (2024). *Beyond Profit: The Humanisation of Economics Through the Equitable Optimality Theory*, (Switzerland AG: Springer).

Alamad, S., et al. (2021). A Shared Boundary Object: Financial Innovation and Engineering in Islamic Financial Institutions. *The British Accounting Review*, 53, 100958. https://doi.org/10.1016/j.bar.2021.100958

Alamad, S. (2019). *Financial and Accounting Principles in Islamic Finance*, (Switzerland AG: Springer).

Al-Ghazali, M. (1997). Bin Mohammed. *Al-Mustasfa men 'Elm al-Asoul*, (Beirut: Al-Risalah).

Al-Haithami, I. H. (2010). *Tuhfat al-Muhtaj Shareh al-Minhaj*, (Beirut: Dar Sader).

Anan'ich, B. (1999). *State Power and Finance in Russia, 1802-1917: The Credit Office of the Finance Ministry and Government Control over Credit Institutions*, (Cambridge: Cambridge University Press).

Aquinas, St. T. (1948). Summa Theologica, in Monroe, A. (ed.). *Early Economic Thought: Selections from Economic Literature Prior to Adam Smith*, (Cambridge: Harvard University Press), 51-78.

Aristotle (1948). The Politics, in Monroe, A. (ed.). *Early Economic Thought: Selections from Economic Literature Prior to Adam Smith*, (Cambridge: Harvard University Press), 1-30.

Armstrong, K. (2000). *Islam: A Short History*, (London: Weidenfeld & Nicolson).

Arner, D. W., Barberis, J. N., and Buckley, R. P. (2015). The Evolution of Fintech: A New Post-Crisis Paradigm? *Georgetown Journal of International Law*, 47, 1271-1319. https://doi.org/10.2139/ssrn.2676553

Auerbach, A. J., and Hassett, K. A. (2002). *Tax Policy and Business Investment*, in Auerbach, A. J. and Feldstein, M. (eds.). Handbook of Public Economics, (3, Amsterdam: Elsevier), 1251-1292. https://doi.org/10.1016/S1573-4420(02)80022-0

Bank of England (2024). Monetary Policy Report (3 August 2023). Available at: https://www.bankofengland.co.uk/monetary-policy-report/2023/august-2023 (Accessed: 24 May 2024)

Beck, T., Demirgüç-Kunt, A., and Levine, R. (2006). Bank Concentration, Competition, and Crises: First Results. *Journal of Banking & Finance*, 30, 1581-1603. https://doi.org/10.1016/j.jbankfin.2005.05.010

Benhabib, J., and Spiegel, M. M. (2000). The Role of Financial Development in Growth and Investment. *Journal of Economic Growth*, 5, 341-360.

Bergmann, B. (2007). *Needed: A New Empiricism, Economists' Voice*, Available at: http://www.er.ethz.ch/inspire/Empirical_Approach_to_Economics_Bergmann.pdf (Accessed: 24 May 2024).

Birnie, A. (1958). *The History and Ethics of Interest*, (London: William Hodge).

Bisignano, J. (1999). Precarious Credit Equilibria: Reflections on the Asian Financial Crisis. paper presented at Asia: An Analysis of Financial Crises, BIS Working Papers 64.

Blanchflower, D., and Oswald, A. (2000). Well-being over Time in Britain and USA. NBER Working Paper, 7487.

Blaug, M. (1985). Economic Theory in Retrospect. (Cambridge: Cambridge University Press).

Brida, J. G., Gómez, D. M., and Seijas, M. N. (2017). *Debt and Growth: A Non-parametric Approach*, Physica A: Statistical Mechanics and Its Applications, 486, 883–894.

Camdessus, M. (2000). Main Principles for the Future of International Monetary, Financial System. *International Monetary Fund Survey*.

Caner, M., Grennes, T., and Koehler-Geib, F. (2010). *Finding the Tipping Point—When Sovereign Debt Turns Bad*, Policy Research Working Paper 5391, World Bank.

Carranza-Ugarte, L., et al. (2023). Rethinking Fiscal Rules. *Journal of Comparative Economics*, 51, 833-857.

Cecchetti, S. G., Mohanty, M. S., and Zampolli, F. (2010). *The Future of Public Debt: Prospects and Implications*. BIS Working Paper 300, Bank of International Settlements.

Cecchetti, S. G., Mohanty, M. S. and Zampolli, F. (2011). The Real Effects of Debt. BIS Working Papers 352, Bank for International Settlements. Available at: https://www.bis.org/publ/work352.htm

Chang, R., and Velasco, A. (1998). The Asian liquidity crisis. Working Paper, National Bureau of Economic Research.

Chapra, U. (2000). *The Future of Economics: An Islamic Perspective*, The Islamic Foundation, Leicester.

Choudhury, M. A., and Malik, U. A. (1992). *The Foundations of Islamic Political Economy*, Macmillan, London.

Chudik, A., et al. (2017). *Is There a Debt-Threshold Effect on Output Growth?*, Review of Economics and Statistics, 99(1), 135–150.

Daly, H. E., and Cobb, J. B. (1990). *For the Common Good*, Greenprint, London.

Davis, L. E., and Gallman, R. E. (2001). *Evolving Financial Markets and International Capital Flows: Britain, the Americas, and Australia, 1865-1914*, Cambridge University Press, Cambridge.

de Vries, J., and der Woude, A. (1997). *The First Modern Economy: Success, Failure, and Perseverance of the Dutch Economy, 1500-1815*, Cambridge University Press, Cambridge.

Dupont, B. (2017). *The History of Economic Ideas*, Routledge, New York, NY.

Easterlin, R. (2001). 'Income and Happiness: Towards a Unified Theory', *Economic Journal*, 111(473).

Ekelund, R. B., and Hébert, R. F. (1997). *A History of Economic Theory and Method*, 4th ed., McGraw-Hill, New York, NY.

Financial Conduct Authority (FCA). (2023). *Financial Lives January 2023: Consumer Experience of the Rising Cost of Living*, FCA Survey.

Gesell, S. (1904). *Die Naturliche Wirtschaftsordnung*, Rudolf Zitzmann Verlag, Nuremberg.

Glandon, P. J., Kuttner, K., Mazumder, S. and Stroup, C. (2023). Macroeconomic Research, Present and Past. *Journal of Economic Literature*, 61(3), 1088-1126.

Glick, R. (1998). Thoughts on the Origins of the Asian Crisis: Impulses and Propagation Mechanisms. *Working Paper Series*, Federal Reserve Bank of San Francisco.

Goff, J. L. (1990). *Your Money or Your Life – Economy and Religion in the Middle Ages*, Zone Books, New York.

Goldsmith, R. (1969). *Financial Structure and Development*, Yale University Press, New Haven.

Haber, S. and Perotti, E. (2007). The Political Economy of Finance. Mimeo, Stanford University.

Haber, S. (1997). *Financial Markets and Industrial Development: A Comparative Study of Government Regulation, Financial Innovation, and Industrial Structure in Brazil and Mexico, 1840-1930*, Stanford University Press, Palo Alto.

Haber, S. (1991). Industrial Concentration and the Capital Markets: A Comparative Study of Brazil, Mexico, and the United States, 1830-1930. *The Journal of Economic History*, 51(3), 559-580.

Herndon, T., Ash, M., and Pollin, R. (2014). Does High Public Debt Consistently Stifle Economic Growth? A Critique of Reinhart and Rogoff. *Cambridge Journal of Economics*, 38(2), 257–279.

Jadlow, J. M. (1977). Adam Smith on Usury Laws. *Journal of Finance*, 32, 1195-1200.

Jain, L. C. (1929). *Indigenous Banking in India*, Macmillan, London.

Kahf, M. (2004). Islamic Economics: What Went Wrong? *Jeddah IRTI*. Available at: http://monzer.kahf.com/papers/english/ISLAMIC_ECONOMICS_what_went_wrong_SEPT_03_IRTI.pdf

Kaminsky, G. L. and Reinhart, C.M. (1999). The Twin Crises: The Causes of Banking and Balance-of-Payments Problems, *American Economic Review*, 89(3), 473-500. https://doi.org/10.1257/aer.89.3.473

Kennedy, M. (1995). *Interest and Inflation Free Money*, Seva International, Okemos.

Keynes, J. M. (1936). *The General Theory of Employment, Interest, and Money*, Macmillan, London.

King, R. G., and Levine, R. (1993). Finance and Growth: Schumpeter Might Be Right. *Quarterly Journal of Economics*, 108(3), 717-737.

Kula, E. (1981). Future Generations and Discounting Rules in Public Sector Investment Appraisal. *Environment and Planning A*, 13, 899-910.

Kumar, M. S., and Woo, J. (2010). *Public Debt and Growth*. IMF Working Paper, 10(174), International Monetary Fund.

Laeven, L., and Levine, R. (2009). Bank Governance, Regulation and Risk Taking. *Journal of Financial Economics*, 93(2), 259-275. https://doi.org/10.1016/j.jfineco.2008.09.003

Levy, D. (1987). Adam Smith's Case for Usury Laws. *History of Political Economy*, 19, 387-400.

Lusardi, A., and Mitchell, O. S. (2014). The Economic Importance of Financial Literacy: Theory and Evidence. *Journal of Economic Literature*, 52(1), 5-44. https://doi.org/10.1257/jel.52.1.5

Mariyanti, T., Edastama, P., Edastami, M. S., Aswandy, E., and Faruqi, F. (2023). The Impact of Religious Beliefs on Public Perception and Attitudes towards Riba in Islamic Finance. *Journal of Namibian Studies: History Politics Culture*, 34, 1772-1796.

Marshall, A. (1920). *Principles of Economics*, Macmillan, London.

McKinnon, R. (1973). *Money and Capital in Economic Development*, Brookings Institution, Washington D.C.
Millner, A. and Heal, G. (2023). Choosing the Future: Markets, Ethics, and Rapprochement in Social Discounting. *Journal of Economic Literature*, 61(3), 1037-1087.
Nienhaus, V. (2012). Method and Substance of Islamic Economics: Moving Where?. in Workshop on "The Future of Islamic Economics" during 12-13 November, organized by IEI, Jeddah, 167-197.
North, D. C., and Weingast, B. R. (1989). Constitutions and Commitment: The Evolution of Institutions Governing Public Choice in Seventeenth-Century England. *The Journal of Economic History*, 44(4), 803-832.
Obstfeld, M., and Taylor, A. M. (2004). *Global Capital Markets: Integration, Crisis, and Growth*, Cambridge University Press, Cambridge. https://doi.org/10.1017/CBO9780511616521
Office for Budget Responsibility (OBR). (2023). *Economic and Fiscal Outlook*, March 2023, OBR Report.
Oswald, A. J. (1997). 'Happiness and Economic Performance'. *Economic Journal*, 107(445), 1815-1831.
Pearce, D. W., and Turner, R. K. (1990). *Economics of Natural Resources and the Environment*, Harvester Wheatsheaf, London.
Radelet, S., and Sachs, J. (1998). The East Asian Financial Crises: Diagnosis, Remedies, Prospects. *Brookings Papers on Economic Activity*.
Reinhart, C., Reinhart, V., and Rogoff, K. (2012). 'Debt Overhangs: Past and Present'. NBER Working Paper, 18015. Available at http://www.nber.org/papers/w18015
Reinhart, C. M., and Rogoff, K. S. (2010). Growth in a Time of Debt. *American Economic Review: Papers & Proceedings*, 100(2), 573-578. https://doi.org/10.1257/aer.100.2.573
Reinhart, C. M., and Rogoff, K. S. (2009). *This Time Is Different: Eight Centuries of Financial Folly*, Princeton University Press.
Rogoff, K. (1999). International Institutions for Reducing Global Financial Instability. *Journal of Economic Perspectives*, 13(4), 21-46.
Romer, P. M. (1990). Endogenous Technological Change. *Journal of Political Economy*, 98(5), 71-102. https://doi.org/10.1086/261725
Rousseau, P., and Sylla, R. (2003). Financial Systems, Economic Growth, and Globalization. In Historical Perspective. in M. Bordo, A. Taylor and J. Williamson (eds), *Globalization in Historical Perspective*, University of Chicago Press, Chicago, 373-413.
Sanders, R. (1987). The Pareto Principle: Its Use and Abuse. *Journal of Services Marketing*, 1(2), 37-40. https://doi.org/10.1108/eb024706
Santomero, A. M., and Seater, J. J. (2000). Is There an Optimal Size for the Financial Sector? in A.B. Atkinson and F. Bourguignon (eds). *Handbook of Income Distribution*, 1, Elsevier, 575-620. https://doi.org/10.1016/S1574-0056(00)80016-8
Schefold, B. (2017). *Great Economic Thinkers from the Classicals to the Moderns*, Routledge, New York, NY.
Shakespeare, R. (2005). Non-Interest Mobilization for Public Capital Projects: The Use of Islamic Endogenous Loans, in Bank Indonesia. *Proceedings of the 6th International Conference on Islamic Economics and Banking in the 21st Century*, Bank Indonesia, Jakarta, 261-271.
Siddiqui, M. N. (2008). Obstacles to Research in Islamic Economics, in *Proceedings of the Seventh International Conference on Islamic Economics*. Available at: http://islamiccenter.kaau.edu.sa/7iecon/English/English%20Contents.htm
Smith, H. (1591). *A Preparative to Marriage; Of the Lord's Supper; Of Usury*, Theatrum Orbis Terrarum, Amsterdam.
Solow, R. M. (1956). A Contribution to the Theory of Economic Growth. *Quarterly Journal of Economics*, 70(1), 65-94. https://doi.org/10.2307/1884513
Stern, N. (2006). *The Economics of Climate Change: The Stern Review*, Cambridge University Press. https://doi.org/10.1017/CBO9780511817430
Stiglitz, J. E., and Greenwald, B. (2014). *Creating a Learning Society: A New Approach to Growth, Development, and Social Progress*, Columbia University Press, New York.
Stiglitz, J. E., and Greenwald, B. (2003). *Towards a New Paradigm in Monetary Economics*, Cambridge University Press. https://doi.org/10.1017/CBO9780511615207
Taylor, J. B. (2013). The Effectiveness of Central Bank Independence vs. Policy Rules, in I. Angeloni, A. Boltho and V.G. De Flumeri (eds), *Central Banking, Monetary Policies, and the Implications for Transition Economies*, Cambridge University Press, 23-40. https://doi.org/10.1017/CBO9781107360228.003
The Jewish Encyclopedia, (1912). Volume 12, Funk and Wagnalls, New York and London.
Ugurlu, E. N., and Razmi, A. (2023). Political Economy of Real Exchange Rate Levels. *Journal of Comparative Economics*, 51, 918-940. https://doi.org/10.1016/j.jce.2023.03.004

Visser, W. A. M., and Macintosh, A. (1998). A Short Review of the Historical Critique of Usury. *Accounting, Business & Financial History*, 8(2), 175-189. https://doi.org/10.1080/095852098330503

Woodford, M. (2003). *Interest and Prices: Foundations of a Theory of Monetary Policy*, Princeton University Press. https://doi.org/10.1515/9780691186299

Yeon-Koo, C., Jinwoo, K., Fuhito, K., Christopher T. R. (2024). "Near" Weighted Utilitarian Characterizations of Pareto Optima. *Econometrica*, 92(1), 141-165. https://doi.org/10.3982/ECTA18930

Zaman, A. (2008). Improving Social Science Education in Pakistan. *Lahore Journal of Policy Studies*, 2(1).

Zarka, M. A. (2008). Duality of Sources in Islamic Economics, and its Methodological Consequences. in *The 7th International Conference in Islamic Economics*, King Abdulaziz University, Jeddah, 23-36.