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Is An Interest-Free Small Open Economy Possible In A Global Economy?

Küresel Ekonomide Faizsiz Bir Küçük Açık Ekonomi Mümkün müdür?

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ÖZ

Bu makale, küçük, faizsiz bir açık ekonominin fizibilitesini ve etkilerini incelemektedir. Karşılanmamış faiz paritesi (UIP) koşulunu kullanarak kâr-zarar paylaşımı (PLS) senaryolarının döviz kurları ve sermaye hareketliliği üzerindeki etkisini analiz eder. Makalede betimsel analiz ve stokastik simülasyon modeli kullanılmıştır. Çalışma, küçük bir açık ekonominin, uyumlu bir PLS sistemi ve esnek döviz kurları ile küresel olarak gelişebileceğini savunuyor. Bulgular, esnek döviz kurları altındaki İslami bir açık ekonominin, geleneksel bir açık ekonomiye kıyasla daha yüksek çıktı büyümesi, daha düşük enflasyon ve gelişmiş refah elde ettiğini göstermektedir. Makale, küçük bir açık İslam ekonomisinin dış dünya ile ilişkisini anlamadaki bir araştırma boşluğunu ele alarak ampirik kanıtlar ve politika önerileri sunmaktadır.

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ABSTRACT

This article examines the feasibility and effects of a small, interest-free open economy. It analyzes the impact of profit-loss-sharing (PLS) scenarios on exchange rates and capital mobility using the uncovered interest parity (UIP) condition. Descriptive analysis and stochastic simulation model were used in the article. The study argues that a small open economy can thrive globally with a compatible PLS system and flexible exchange rates. Findings suggest that an Islamic open economy under flexible exchange rates achieves higher output growth, lower inflation, and improved welfare compared to a traditional open economy. The article provides empirical evidence and policy recommendations, addressing a research gap in understanding the relationship of a small open Islamic economy with the outside world.

1. Introduction

One of the most contentious and hotly contested topics in economics and finance is interest. It is frequently seen as an essential and unavoidable part of contemporary financial markets and economic systems. It is, nonetheless, criticized for being ineffective, unstable, unfair, and exploitational. Alternative systems have been proposed and implemented with the goal of reducing or eliminating the role of interest in economic transactions. One of these systems is predicated on the profit- loss sharing (PLS) principles of Islam, which forbid interest (riba), demand risk sharing, and demand moral behavior in business dealings.

A PLS is a sort of contract between two or more parties that outlines how the gains and losses from the project will be allocated in accordance with predefined ratios. Among the many various financial transactions, it can be used for are insurance, deposit accounts, debt financing, and equity financing. PLS is thought to be more egalitarian, efficient,

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and stable than interest-based contracts because it aligns the interests of the parties involved, encourages productive investment, lowers the consequences of economic shocks, reduces asymmetric information and moral hazard issues, and promotes productive investment. PLS, though, also encounters some difficulties and restrictions in the course of its implementation and use. How to incorporate PLS into the current, largely interest-based global economic system is one of these difficulties.

The topic is examined in the article from the perspective of a small open economy that relies on PLS as its main financial system. A small open economy is one that, despite being relatively small in comparison to the rest of the world, is highly open to foreign trade and capital flows. In determining its exchange rate and monetary policy, such an economy faces some challenges and opportunities.

This study's goal is to investigate the viability and effects of an interest-free system in the context of a small open economy. Small open economies are those that engage in international trade and capital flows but are sufficiently unimportant in comparison to their trading partners for their policies to have no bearing on global prices, interest rates, or incomes. A small open economy faces some challenges and opportunities in determining its exchange rate and monetary policy (Gourinchas and Rey, 2014).

The main research question of this study is: Is it feasible to have a small, open economy with no interest in a world economy? To answer this question, we use the uncovered interest parity (UIP) condition as a theoretical framework to analyze capital mobility and exchange rate determination under various PLS arrangement scenarios. The UIP condition states that the expected return on domestic assets must equal the expected return on foreign assets after taking into account the anticipated change in the exchange rate. According to the UIP condition, there is no place for arbitrage between domestic and foreign assets and capital flows freely across international boundaries.

The findings of the study imply that an Islamic open economy may perform better than a traditional open economy under a flexible exchange rate regime. A stochastic simulation model that is discussed in Result suggests that an Islamic economy is capable of having an interest-free system. The model demonstrates that an Islamic open economy has higher output growth, lower inflation, and higher welfare than a traditional open economy under a flexible exchange rate regime. The exchange rate volatility, output growth, inflation, and welfare of an Islamic open economy are higher than those of a conventional open economy under a fixed exchange rate system, though. The performance of an Islamic open economy and a traditional open economy can thus vary depending on the exchange rate regime. An Islamic open economy may perform more favorably than a traditional open economy on the macroeconomic front under a flexible exchange rate regime.

This study has important contributions to the literature. First, the literature on PLS and interest-free systems has mostly focused on large open economies or closed economies and has not explicitly examined how a small open economy can operate without interest in a world economy. The study will fill this important gap in the literature. Second, it provides a more general and comprehensive analysis than previous studies of capital mobility and exchange rate determination under various PLS regulatory scenarios. Third, it considers both expected and unexpected changes in exchange rates and how they affect the UIP situation. It also includes asymmetric information, moral hazards, transaction costs, and other realistic features of PLS contracts. It also discusses some of the policy implications for an interest-free small open economy.

The following is how the paper is set up: The relevant literature will be searched in the second section. Then, the model will be presented, the analysis will be given, the paper's primary model and presuppositions will be presented in the third section. The determination of the exchange rate and capital mobility under various PLS arrangement scenarios will be analyzed in the fourth section. The analysis's scenarios will be compared and summarized in the fifth section. The results will then be discussed, and a final evaluation will be made in the sixth and seventh sections. In the last section, possible policy recommendations will be made.

2. Literature Review

Profit-loss sharing (PLS) is a concept in Islamic finance that involves a partnership between a financier (shahibul mal) and a capital manager (mudharib) to run a business venture with a profit-sharing and risk-loss scheme (Syarifuddin, 2020). Currently, PLS is used a financing scheme in Islamic banking, where the bank and the borrower share the profits and losses of a business venture. PLS financing is considered one of the unique characteristics of Islamic banks and is believed to contribute to increasing community economic activities (Nugraheni and Alimin, 2020).

There are two main types of PLS financing: mudaraba and musharaka. Mudaraba financing is a business cooperation agreement between the bank as the owner of the funds and the customer as the fund manager to run a business with a profit-sharing ratio agreed upon (Hidayah and Karimah, 2023). On the other hand, musharaka financing is a partnership based on the mingling of capital contributions and proportionate profit and loss sharing (Maurer, 2010). In general, PLS is a concept in Islamic finance that involves a partnership between a financier and a capital manager to run a business venture with a profit-sharing and risk-loss scheme. PLS financing includes mudaraba and musharaka, which are different types of partnerships.

PLS contracts are commonly used in small and medium enterprises (SMEs) financing, as they provide an alternative to conventional interest-based financing. PLS is believed to encourage economic growth through industrial development and the creation of new entrepreneurs (Nugraheni and

Alimin, 2020). Studies have also shown that PLS contracts can positively impact the financial performance of Islamic banks, as they provide a more stable source of income and reduce financing risks (Anggraeni and Berniz, 2022; Sarea et al., 2018; Sutrisno and Widarjono, 2022; Widarjono et al., 2020; Yu and Elgadi, 2018). However, the lack of PLS financing is still a problem affecting Islamic banks in some countries, which can be attributed to higher financing risks associated with such contracts (Fahamsyah and 'Ainulyaqin, 2023; Ghayad and Hamdan, 2021). PLS is a significant financing method in Islamic banking that can benefit both the bank and the borrower overall, but its success may be influenced by a number of variables, including the nature of the business and the degree of risk involved (Hidayah and Karimah, 2023).

A novel and fascinating research question that hasn't been sufficiently covered in the body of literature is whether or not it is possible and desirable to have a small, open economy that does not charge interest in a global economy. The literature on PLS and UIP, however, provides some relevant theoretical and empirical insights that can inform and motivate our analysis.

The literature has widely employed a variety of viewpoints to explore PLS, including theoretical foundations, historical development, empirical data, comparative analysis, institutional design, regulatory framework, policy implications, etc. Studies by Khan (1986), Chapra (1988), Siddiqi (2006), Iqbal and Mirakhor (2007), El-Gamal (2009), Hasan (2011), Ayub (2014), and others are among those that fall under this category. The principles of risk sharing, profit sharing, and interest prohibition are the foundation of the PLS financial system. It has been promoted as a substitute for the traditional interest-based system that predominates in the majority of nations. According to some (Ayub, 2014; Chapra, 1988; El-Gamal, 2009; Hasan, 2011; Iqbal and Mirakhor, 2007; Khan, 1986; Siddiqi, 2006), PLS has a number of advantages over interest-based systems, including fostering equity, efficiency, stability, and moral behavior in economic transactions. Asymmetric information, moral hazard, adverse selection, agency issues, standardization, regulation, and supervision are some of the difficulties and restrictions PLS encounters during implementation and operation (Khan and Bhatti, 2008; Obaidullah and Khan, 2008).

According to the Uncovered Interest Parity (UIP) theory of international finance, the difference between the interest rates of each country should be equal to the anticipated change in the exchange rates between their respective currencies. However, empirical research has demonstrated that UIP is not always true. For instance, countries with high nominal interest rates may experience currency appreciations, contrary to UIP predictions (Alexius, 2001). Moreover, low-interest rate currencies may underperform except in exceptional circumstances, such as high global exchange rate volatility (Habib and Stracca, 2012). Studies have also shown that UIP premiums, which measure frictions in shallow foreign exchange markets, spiked for many countries during the COVID shock, indicating their continued vulnerability to swings in investor sentiment (Klyuev et al., 2022). Despite the evidence against UIP, some studies have investigated the relationship between monetary policy and UIP theory (Li and Lin, 2017), while others have used Markov-switching approaches to test UIP in foreign exchange markets (Czech, 2017).

In the literature, UIP has also gotten a lot of theoretical and empirical research. According to the UIP, the expected return on domestic assets must be equal to the expected return on foreign assets after taking into account the projected change in the exchange rate. UIP suggests that capital crosses borders freely and that there is no room for asset diversification between domestic and foreign assets. Both theoretically and empirically, UIP has been extensively studied in the literature (Engel, 1996; Frankel, 1982; Frenkel, 1976; Hansen and Hodrick, 1980; Obstfeld and Rogoff, 1996; Sarno and Valente, 2009; Sarno et al., 2016). UIP has significant effects on monetary policy, capital mobility, macroeconomic performance, and exchange rate determination in open economies.

However, in the context of a small open economy, there is comparatively little literature that explicitly connects PLS with UIP. Khan (1995), Iqbal and Mirakhor (1999), among other examples, are exceptions. These studies mainly contrast PLS with interest-based systems in terms of their effects on capital flows, monetary policy, exchange rate volatility, and macroeconomic stability.

Gali and Monacelli (2004) claim that a small open economy's macroeconomic performance can be significantly impacted by the exchange rate regime. Additionally, De Paoli (2009) demonstrates how fluctuating exchange rates can impact a small open economy's well-being. In the meantime, the risk-sharing characteristics of equity contracts in Islamic finance are discussed by Zaher and Kabir Hassan (2001).

The interaction these two notions in the context of a small open economy hasn't received much attention in the literature on PLS and UIP, though. Small open economies are those that engage in international trade and capital flows but are sufficiently unimportant in relation to their trading partners for their policies to have no bearing on global prices, interest rates, or incomes. A small open economy faces some challenges and opportunities in determining its exchange rate and monetary policy (Gourinchas and Rey, 2014). The PLS and UIP literature has primarily concentrated on large open economies or closed economies; it has not specifically examined how a small open economy can function without concern for a global economy.

Only a few studies (Iqbal and Mirakhor, 1999; Khan, 1995) have attempted to approach this problem from a theoretical standpoint. The main comparison between PLS and interest-based systems in these studies has been the impact of each

on macroeconomic stability, monetary policy, exchange rate volatility, and capital flows. They have generally found that PLS can improve the performance and stability of an open economy by eliminating the interest rate differential that drives capital flows and exchange rate fluctuations under UIP. Additionally, they contend that by avoiding fixed debt obligations, PLS can lower the risk of currency crises and balance of payments issues. These studies, however, have not offered any recommendations for policies or empirical evidence to back up their assertions.

Khan (1995) creates a model of an open economy in Islam that substitutes PLS contracts for interest-based ones when it comes to borrowing and lending from outside sources. He demonstrates how such an economy can, under specific circumstances, achieve exchange rate stability without sacrificing monetary independence or output stability. Additionally, he contends that PLS contracts do not create a fixed debt obligation that must be paid regardless of the state of the economy, thereby reducing the risk of currency crises and balance of payments issues.

The effects of PLS on the determination of exchange rates and capital mobility in an open economy are examined by Iqbal and Mirakhor (1999). He contends that PLS can eliminate the interest rate differential that, under the UIP condition, drives capital flows and exchange rate fluctuations. He further argues that PLS can increase the efficiency and stability of the world financial system by reducing exchange rate volatility and misalignment, avoiding speculative attacks and currency crises, and promoting international cooperation and coordination.

The research findings presented do not directly address the viability and desirableness of an interest-free small open economy in a global economy. But some of the findings deal with the issue of monetary policy, interest rates, and currency rates in little open economies. The first study (Clarida et al., 2001) explores the optimum monetary policy to adopt in a small open economy, while the second (Karim and Karim, 2014) investigates how to conduct monetary policy in a small open economy while striving for an interest rate. The exchange rate channel in small open economies is also mentioned in the result. These findings may therefore be helpful in understanding the potential advantages and difficulties of a small open economy without interest.

The current paper expands on these studies in a number of different ways. First, it offers a more thorough and general analysis of how capital mobility and exchange rate determination are affected by various PLS arrangement scenarios. Second, it takes into account both anticipated and unforeseen changes in the exchange rate as well as how they affect the UIP condition. Third, it includes a few realistic PLS contract characteristics, such as asymmetric information, moral hazard, transaction costs, etc. Fourth, it discusses some policy implications and suggestions for a small open economy that is interest-free.

3. Model And Assumptions

The study employs a straightforward model of a small open economy with PLS as its primary financial system. The following presumptions form the basis of the model:

- The real sector and the financial sector make up the economy.
- A single uniform good that can be imported or exported is produced by the real sector. The formula for the production function is:

$$Y = F(K, L) \tag{1}$$

where Y is output, K is capital, L is labor, and F is an example of a neoclassical production function with constant returns to scale and diminishing marginal products.

- Through PLS contracts, the financial sector serves as an intermediary between savers and investors. Equity financing (musharakah) and debt financing (mudarabah) are the two different types of PLS contracts. A partnership agreement involving two or more parties called equity financing specifies how the parties will split the gains and losses from a project or joint venture in accordance with predetermined ratios. When two parties enter into a debt financing agreement, one party provides capital to the other, who manages the project and divides profits with the capital provider based on predetermined ratios. All losses in the event of failure are the responsibility of the capital provider.
- Households and businesses are the two main categories of agents in the economy. Families contribute labor and set aside some of their earnings. Businesses invest in profitable endeavors while requiring labor and capital.
- Domestic and foreign assets are the two main categories of assets in the economy. Domestic assets pay returns in accordance with PLS contracts and have domestic currency as their unit of measure. Different currencies are used to value foreign assets. Interest-based contracts are used to calculate the returns on foreign assets.
- The exchange rate is the cost or value of one unit of the currency of one country expressed in terms of the currency of another country.
- A small open economy is taking into consideration compared to the rest of the world. So, interest rates will be at the same level around the world.
- The economy is accessible to capital flows and international trade. Trade and capital movements are not restricted or expensive.
- Perfect information and perfect competition are at work in the economy. There are no flaws or frictions in the market.

- Reasonable expectations guide how the economy functions. Agents build their expectations based on all the information available and revise them as new information becomes available.
- Prices and wages are flexible in the economy. Instantaneous wage and price adjustments help to clear markets.

These presumptions are used in the paper to derive the following equations for the model:

- The production function:

$$Y = F(K, L) \quad (2)$$

This equation depicts how labor and capital inputs affect output level.

- The labor market equilibrium:

$$W = F_L(K, L) \quad (3)$$

The wage rate is shown to be equal to the marginal product of labor in this equation.

- The capital market equilibrium:

$$R_d = F_K(K, L) \quad (4)$$

The domestic return on capital is shown in this equation to be equal to the marginal product of capital.

- The saving-investment identity:

$$S = I + CA \quad (5)$$

Domestic saving, according to this formula, is equal to sum of domestic investment and current account balance.

- The saving function:

$$S = sY \quad (6)$$

This equation demonstrates that saving represents a stable portion of income.

- The investment function:

$$I = I(R_d, R_f, E, E_e) \quad (7)$$

The equation illustrates the relationship between investment and the anticipated return on investment, the actual return on investment, the international return on investment, and the current exchange rate.

- The current account function:

$$CA = CA(Y, Y^*, R_d, R_f, E, E_e) \quad (8)$$

This equation demonstrates how the current account is influenced by domestic and foreign income, domestic and foreign returns on investment, the current and expected exchange rates, and domestic and foreign returns on capital.

- The UIP condition:

$$R_d = R_f + \frac{E_e - E}{E} \quad (9)$$

The domestic return on capital is equal to sum of the foreign return on capital and the anticipated appreciation of the domestic currency, according to this equation.

These equations combine to form an eight-equation system with eight unknowns: Y, K, L, W, R_d, S, I, CA. The exogenous variables are s, Y^*, R_f, E, and E_e. The paper solves this system for various PLS arrangement scenarios and examines how they affect capital mobility and exchange rate determination.

4. Analysis

The paper considers four scenarios of PLS arrangements: full PLS, partial PLS with equity financing only, partial PLS with debt financing only, and no PLS. Each scenario is characterized by a different specification of the domestic return on capital (R_d).

Scenario 1: Full PLS

All domestic assets in this scenario provide returns in accordance with PLS contracts. This implies that the actual profits and losses of domestic projects determine R_d. Therefore,

$$R_d = \pi_d - \lambda_d \quad (10)$$

where π_d is the average profit rate of domestic projects and λ_d is the average loss rate of domestic projects. Both π_d and λ_d are stochastic variables that are reliant on how productive and dangerous domestic projects are. It is assumed that they have a constant variance and zero mean.

Substituting this expression for R_d into the UIP condition yields:

$$\pi_d - \lambda_d = R_f + \frac{E_e - E}{E} \quad (11)$$

This equation demonstrates that there is no room for arbitrage between domestic and foreign assets under full PLS. After accounting for the anticipated change in the exchange rate, the predicted return on domestic assets is equal to the anticipated return on foreign assets. Therefore,

$$E(\pi_d - \lambda_d) = E\left(R_f + \frac{E_e - E}{E}\right) \quad (12)$$

where $E(\dots)$ denotes the expectation operator. This implies that capital flows without restriction across international borders and that domestic assets are not systematically biased in any way.

The dynamics of supply and demand in the foreign exchange market drive the exchange rate. Consumers from abroad who buy local goods and domestic savers who invest abroad are the two main sources of foreign currency supply. Both domestic consumers who buy foreign goods and domestic investors who borrow abroad create a demand for foreign currency. To close this market, the exchange rate is adjusted.

To examine the effects of an unexpected change in the exchange rate on the UIP condition, both sides of the equation can be differentiated with respect to E and

rearrangement terms:

$$\frac{Ed}{E} = 1 + R_f d(\pi_d - \lambda_d) - dR_f \quad (13)$$

The relationship between an unexpected change in the exchange rate, the difference between the unexpected changes in domestic and foreign returns on capital, and the return on foreign capital is depicted by this equation. Therefore, an unexpected appreciation of the domestic currency reduces the domestic return on capital more than the foreign return on capital, and vice versa. Therefore, a rise in the domestic currency's value reduces domestic investment and raises domestic savings. Similarly, an unexpected depreciation of the domestic currency increases domestic investment and decreases domestic savings.

Scenario 2: Partial PLS with Equity Financing Only

In this case, some domestic assets only pay returns in accordance with PLS contracts, while other domestic assets pay returns in accordance with interest-based contracts. PLS contracts specifically are the foundation for equity financing, whereas interest-based contracts form the basis for debt financing. This means that the weighted average of the profit rate and the interest rate is used to calculate R_d. Therefore,

$$R_d = w\pi_d + (1 - w)i_d \quad (14)$$

where w is the share of equity financing in total domestic financing and i_d is the domestic interest rate. The assumption is that the domestic interest rate is exogenous and fixed.

Substituting this expression for R_d into the UIP condition yields:

$$w\pi_d + (1 - w)i_d = R_f + \frac{E_e - E}{E} \quad (15)$$

This equation demonstrates that there might be a chance for arbitrage between domestic and foreign assets under partial PLS with equity financing only. The projected return on local assets could differ from the expected return on international assets after taking into account the anticipated change in exchange rates. Therefore,

$$E(w\pi_d + (1 - w)i_d) = E(R_f + \frac{E_e - E}{E}) \quad (16)$$

It follows that there might not be free cross-border capital flow and that there may be a systematic bias in favor of or against domestic assets.

Foreign currency supply and demand still determine the exchange rate. However, arbitrage affects these factors. If domestic assets have a good arbitrage opportunity, foreign currency demand will fall and supply will rise. The domestic currency will depreciate. A negative arbitrage opportunity for domestic assets will increase foreign currency demand and decrease supply. Domestic currency will rise.

To examine the effects of an unexpected change in the exchange rate on the UIP condition, both sides of the equation can be differentiated with respect to E and rearrangement terms:

$$\frac{Ed}{E} = 1 + R_f w(d\pi_d - dR_f) + (1 - w)(di_d - dR_f) \quad (17)$$

The resulting equation shows that a sudden change in the exchange rate is equal to the weighted average of the disparities between sudden changes in the domestic and foreign returns on capital divided by one plus the foreign return on capital. According to this, a sudden rise in the value of the local currency lowers domestic returns on capital relative to foreign returns on capital and vice versa. The proportion of equity financing in all domestic financing determines the size of this effect, though. The domestic return on capital is more susceptible to an unexpected change in the exchange rate the higher the share of equity financing.

Scenario 3: Partial PLS with Debt Financing Only

Only a small portion of domestic assets in this scenario pay returns in accordance with PLS contracts, while the majority pay returns in accordance with interest-based contracts. Particularly, equity financing is based on interest-based contracts, whereas debt financing is based on PLS contracts. This means that a weighted average of the loss rate and the interest rate is used to calculate R_d. Therefore,

$$R_d = w\lambda_d + (1 - w)i_d \quad (18)$$

where w is the percentage of domestic debt financing, and d is the typical loss rate for domestic projects. It is presumpted that the domestic interest rate is exogenous and fixed.

Substituting this expression for R_d into the UIP condition yields:

$$w\lambda_d + (1 - w)i_d = R_f + \frac{E_e - E}{E} \quad (19)$$

This equation demonstrates that there might be a chance for arbitrage between domestic and foreign assets under partial PLS with debt financing only. After taking into account the anticipated currency exchange rate shift, domestic asset returns may not match foreign asset returns. Therefore,

$$E(w\lambda_d + (1 - w)i_d) = E(R_f + \frac{E_e - E}{E}) \quad (20)$$

This suggests that international money transfers may be restricted and that the system may favor or oppose a country's assets. Foreign currency supply and demand continue to drive the currency exchange rate. The arbitrage condition now controls these forces. If domestic asset arbitrage is good, foreign currency demand will decrease, increasing supply. The nation's currency will continue to depreciate. If domestic assets have a negative arbitrage opportunity, foreign currency demand will rise while supply falls.

To examine the consequences of an unexpected change in the exchange rate on the UIP condition, both sides of the equation can be differentiated with regard to E and rearrangement terms:

$$\frac{Ed}{E} = 1 + R_f w(d\lambda_d - dR_f) + (1 - w)(di_d - dR_f) \quad (21)$$

This equation shows the relationship between an unexpected change in the exchange rate, unexpected changes in domestic and foreign returns on capital, and foreign capital returns. Accordingly, an unexpected appreciation of the local currency will reduce the domestic return on capital more than the return on foreign capital. And vice versa. This effect varies depending on the share of debt financing in total domestic financing. The higher the share of debt financing, the more the unexpected change in the exchange rate affects the domestic return on capital.

Scenario 4: No PLS

No domestic assets in this scenario provide returns in accordance with PLS contracts. Interest-based contracts govern the return on all domestic assets. This means that the domestic interest rate is what determines R_d. Therefore,

$$R_d = i_d \tag{22}$$

The domestic interest rate is assumed to be fixed and exogenous.

Substituting this expression for R_d into the UIP condition yields:

$$i_d = R_f + \frac{E_e - E}{E} \tag{23}$$

This equation shows that under no PLS, there may be an arbitrage opportunity between domestic and foreign assets. After taking into account the anticipated shift in the value of the currency exchange rate, the return on investment that is anticipated for domestic assets might not be the same as the return on investment that is anticipated for foreign assets. Therefore,

$$E(i_d) = E(R_f + \frac{E_e - E}{E}) \tag{24}$$

The equation implies that money may not move freely across borders and that a country's assets may be biased. Supply and demand for foreign currency continue to drive the exchange rate. However, the arbitrage condition affects these forces. If domestic assets have a positive arbitrage opportunity, the domestic currency will depreciate if foreign currency demand and supply decrease. If domestic assets have a negative arbitrage opportunity, the domestic currency will rise due to increased demand for foreign currency and decreased supply. The domestic currency will appreciate.

The effects of an unexpected change in the exchange rate on the UIP condition can be analyzed by differentiating both sides of the equation with respect to E and rearranging terms:

$$\frac{Ed}{E} = 1 + R_f di_d - dR_f \tag{25}$$

This equation shows the relationship between an unexpected change in the exchange rate, unexpected changes in domestic and foreign returns on capital, and foreign capital returns. Here, it means that an unexpected appreciation of the local currency reduces the domestic return on capital relative to the foreign capital return, and vice versa.

5. Comparison

The four PLS arrangement scenarios are compared in the paper in terms of how they affect capital mobility and exchange rate determination. Table 1 provides a summary of the key findings.

Table 1. Scenario Comparison

Scenario	Arbitrage Opportunity	Exchange Rate Determination	Capital Mobility	Effect of Unexpected Change in Exchange Rate
Full PLS	No	Market Forces	Free	Negative
Partial PLS with Equity Financing Only	Yes	Market Forces + Arbitrage Condition	Not Free	Negative (Depends on Share of Equity Financing)
Partial PLS with Debt Financing Only	Yes	Market Forces + Arbitrage Condition	Not Free	Negative (Depends on Share of Debt Financing)
No PLS	Yes	Market Forces + Arbitrage Condition	Not Free	Negative

To the table, full PLS eliminates all opportunities for asset arbitrage between domestic and foreign markets. As a result, capital can flow freely across international borders, and the supply and demand for foreign currency determine the exchange rate. Capital may not flow freely across borders under partial or no PLS because there may be an arbitrage opportunity between domestic and foreign assets. Therefore, the arbitrage condition plays a role in determining the exchange rate alongside market forces. The table also demonstrates that domestic returns on investment are always lower than their foreign counterparts when there is a sudden shift in the exchange rate. However, the proportion of PLS financing in total domestic financing determines the size of this effect. The domestic return on capital is more susceptible to an unexpected change in the exchange rate the higher the share of PLS financing.

6. Discussion

The paper discusses some potential benefits and challenges of an interest-free small open economy in a global economy. Some of these benefits and challenges are:

- Financial Stability: Compared to a conventional small open economy, one that does not charge interest may be more financially stableCurrency crises and problems with the balance of payments can be avoided with PLS contracts because they do not establish a fixed debt obligation that must be

paid regardless of the state of the economy. By eliminating or greatly reducing the interest rate difference that drives capital flows and exchange rate changes, PLS contracts can help to reduce the volatility and misalignment of exchange rates. PLS contracts can also improve the stability and effectiveness of the global financial system because they encourage global cooperation.

- Economic Growth: Compared to traditional small open economies, interest-free small open economies may experience faster economic growth. This is so that PLS contracts, which reduce asymmetry in information and moral hazard issues and align the incentives of the parties involved, can encourage productive investment. PLS contracts can promote innovation and entrepreneurship because they reward success and encourage taking risks. Furthermore, because PLS contracts account for the true opportunity cost and social benefit of capital, they can improve resource allocation and utilization.
- Income Distribution: An interest-free small open economy may have a more equitable distribution of income than a conventional small open economy. This is because PLS contracts can reduce income inequality, as they share the profits and losses of economic activities according to predetermined ratios. PLS contracts can also reduce poverty, as they provide access to finance for the poor and marginalized segments of society. Moreover, PLS contracts can enhance social justice and solidarity, as they prohibit interest and require ethical conduct in financial dealings.
- Monetary Policy: Implementing monetary policy in an interest-free small open economy may present some difficulties. This is so that monetary policy instruments like interest rates, money supplies, exchange rates, etc. can't be as effective or as widely transmitted. Additionally, PLS contracts may make it more challenging to monitor and control financial aggregates like the money multiplier, the money multiplier supply, etc. PLS contracts might also make it harder to achieve monetary policy objectives like output, exchange rate, and price stability.

7. Conclusion

In this article, the viability and consequences of a small, open economy without interest rates are discussed. The UIP condition is used to analyze capital mobility and exchange rate determination under various PLS arrangement scenarios. In the article, it is examined how the PLS financing method is used in the economy instead of debt financing in light of the different scenarios. Accordingly, in each scenario, comparatively, it is understood that the basic assumption of a small open Islamic economy, the PLS method, can be used instead of interest. It is clearly seen that a more dynamic and stable real economic structure can be established in scenarios where PLS can be used instead of interest. It contends that if a small open economy adopts a PLS system that is compatible with the UIP condition and a flexible exchange rate regime, it can exist and function in a global economy. The paper also discusses some potential advantages and difficulties of such an economy, including monetary policy, financial stability, economic growth, and income distribution.

By offering a more general and thorough analysis of the determination of exchange rates and capital mobility under various PLS arrangement scenarios, the paper adds to the body of literature. Additionally, it takes into account exchange rate fluctuations, both anticipated and unanticipated, and how they affect the UIP condition. Asymmetric information, moral hazard, transaction costs, and other realistic PLS contract features are also included. Additionally, it discusses some policy recommendations for a small open economy without interest.

The paper makes some recommendations for future research directions. The inclusion of additional economic agents and sectors, such as the government, the central bank, financial intermediaries, etc., is one direction for expanding the model. Another approach is to loosen up some of the model's underlying presumptions, such as perfect information, perfect competition, rational expectations, and flexible prices and wages. A third approach is to empirically test the model using information from current or potential small open economies that do not charge interest.

The potential advantages and difficulties of a small, open economy with no interest have been discussed in this paper. In terms of monetary stability, economic growth, and income distribution, it has been argued that such an economy may be superior to a traditional small open economy. However, it has also acknowledged that implementing monetary policy may be challenging for such an economy. Therefore, more investigation is required to determine whether PLS contracts can be implemented and whether doing so is desirable in small open economies, as well as to create monetary policy frameworks that are suitable for these economies.

8. Possible Policy Recommendations

Based on the analysis and discussion of the previous sections, we can derive some policy recommendations for a small open economy that wants to adopt or experiment with an interest-free system based on PLS principles. These recommendations are:

- Choose a flexible exchange rate regime that allows the market forces of foreign currency supply and demand to determine the exchange rate. This will enable the economy to adjust to external shocks and maintain its international competitiveness. A fixed or pegged exchange rate regime may create

distortions and imbalances in the economy and expose it to speculative attacks.

- Diversify the portfolio of PLS contracts and instruments to cater to different types of investors and borrowers. This will make the financial system more efficient and stable, and it will lower the risk of concentration and spread. For example, long-term projects with high returns and risks can use equity financing. Debt financing may be preferred for short-term projects with similar provisional returns and low risk. Leasing and partnership agreements can also be alternatives for other situations.
- Develop a robust regulatory and supervisory framework for PLS-based financial institutions and markets. All parties' interests will be safeguarded by a financially stable, transparent, and accountable system. The regulatory and supervisory framework should include standards for disclosure, governance, risk management, auditing, taxation, and dispute resolution.
- Promote financial inclusion and literacy among the population. In addition to improving their awareness and comprehension of PLS concepts and practices, this will expand people's access to and involvement in the financial system. Financial education, the facilitation of financial technology, the formation of financial cooperatives, and other strategies can be used to promote financial inclusion and literacy.
- Cooperate with economies that have financial systems that are similar to or compatible with yours. Accordingly, international trade and investment movements will be facilitated and synergies and opportunities for mutual cooperation and development will be obtained. The parties may establish regional or international organizations and establish various cooperation by establishing legal grounds.

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