Can Islamic Financing Ease in Monetary Policy Uncertainty – A Proposal for Islamic Monetary Policy

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ABSTRACT

Purpose: The impact of monetary policy uncertainty in Pakistan on economic conditions, financial markets, and investor confidence is substantial. Historically, the conventional monetary system has failed to manage inflation, which has led to an uncertain monetary policy environment. The primary objective of this document is to offer a comprehensive analysis of monetary policy uncertainty determinants using the quadratic function of Islamic financing.

Methods: The bound-testing ARDL assessment confirmed a U-shaped effect of overall producer and consumer financing on uncertainty.

Findings: The results highlight that Islamic financing management can help reduce monetary policy uncertainty, while increasing production can assist in exacting gains from Islamic financial development for monetary policy effectiveness.

Originality/Value: This study is instrumental in highlighting the ability of the Islamic financial system to reduce monetary policy uncertainty.

Keywords: Equity Financing; Inflation targeting policy; Islamic financial development

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1. Introduction

Monetary policy uncertainty pertains to the extent of unpredictability and lack of clarity surrounding the future actions undertaken by central banks or monetary authorities in relation to various elements of monetary policy, such as interest rates, money supply, and the implementation of other monetary tools (Bouri et al., 2020). It stems from the uncertainty that envelops the decision-making process and subsequently influences economic conditions, financial markets, and investor sentiments. The level of monetary policy uncertainty exhibits fluctuations driven by diverse factors, including economic conditions, political dynamics, global events, and the overall effectiveness and communication of policy measures (Fernandez et al., 2015). Essentially, it denotes the inherent ambiguity and unpredictability inherent in monetary policy's future actions and outcomes, leading to heightened uncertainty among market participants and economic actors (Bloom et al., 2014).

Pakistan holds a prominent position as a significant emerging economy, making it crucial to examine the role of uncertainty within its economic landscape. The country's history of receiving 22 International Monetary Fund (IMF) bailouts and its relatively low credit-to-GDP ratios in South Asia highlight the importance of understanding and addressing Uncertainty (Choudhary et al., 2020). In the research conducted by Bloom et al. (2014), the authors emphasize the relevance of monetary policy uncertainty (MPU) specifically for emerging economies like Pakistan. They argue that such economies often exhibit distinct characteristics, including non-diversified sectors, volatile goods prices, and political instability, all salient features observed in Pakistan's economic environment. Pakistan's economy heavily relies on a limited range of sectors, rendering it vulnerable to external shocks and fluctuations in global market conditions. This lack of diversification amplifies the country's exposure to uncertainty, as any disruptions or uncertainties in key sectors can have profound repercussions on its overall economic performance. Additionally, Pakistan faces challenges in managing goods prices, influenced by global commodity price volatility and domestic supply-demand dynamics. Fluctuations in the prices of vital commodities, such as oil, agricultural products, and raw materials, contribute to economic uncertainty, impacting investment decisions, business planning, and overall economic Stability (Choudhary et al., 2020).

In times of increased uncertainty, households often adopt a more cautious approach by curbing their discretionary spending. This response arises from a genuine concern to protect their financial security in light of unpredictable economic circumstances that lie ahead. Factors such as uncertain employment prospects, volatile income stability, or an ambiguous economic outlook contribute to a sense of unease among households, prompting them to exercise prudence by reducing their expenditures on non-essential items and services (Fernandez et al., 2015).

Political instability is another significant factor contributing to economic uncertainty in Pakistan. The country has witnessed political turmoil and transitions, which can disrupt policy continuity, implementation, and decision-making processes. The uncertainty arising from political factors impedes long-term planning, investment, and sustainable economic growth. By recognizing the specific characteristics of Pakistan's economy and its exposure to uncertainties associated with non-diversified sectors, volatile goods prices, and political instability, policymakers and researchers can gain deeper insights into the challenges and develop appropriate strategies to address economic policy uncertainty. The study by Bloom et al. (2014) offers valuable insights into the implications of Uncertainty for Pakistan's emerging economy, facilitating well-informed policies to promote stability and sustainable growth.

From a time-series perspective, Gulen and Ion (2016) provide insights into how policy uncertainty influences investment decisions. According to them, the effects of policy uncertainty on investment extend up to eight quarters into the future. Notably, their examination shows a gradual intensification of the adverse effect within the first four to five quarters. Nevertheless, the impact gradually wanes as time progresses and eventually turns positive at longer intervals. This observed pattern implies that businesses augment their investments to meet pent-up demand once uncertainty is resolved. The findings of their study emphasize the substantial duration of the rebound process, spanning a period of two to three years, which indicates the time required for the economy to fully recover from the negative consequences of policy uncertainty. Their research highlights the importance of these findings in gaining insights into investment behavior dynamics and comprehending the impact of policy uncertainty on economic outcomes.

1.1. Islamic monetary policy and stability

Islamic finance exhibits promising prospects in several key aspects. Firstly, it can potentially enhance financial inclusion, particularly among underserved Muslim communities. Secondly, its focus on asset-backed financing and risk-sharing mechanisms makes it a suitable avenue for supporting SMEs and facilitating investment in public infrastructure projects. Lastly, due to its risk-sharing nature and prohibition of speculative practices, Islamic finance may inherently present a lower systemic risk level than conventional finance. These dimensions make Islamic finance a compelling and potentially beneficial addition to the global financial landscape (Yasmin & Ayaz., 2023).

Inappropriate monetary policies can lead to economic instability and crises, both domestically and globally. It is crucial for policymakers to carefully assess the prevailing economic conditions and implement suitable monetary measures to address challenges. The impact of monetary policy on economic stability is significant, and effective policy responses are necessary to mitigate risks and promote sustainable growth. Monetary

policy is crucial in maintaining economic stability and promoting growth in conventional and Islamic economies.

In the context of Islamic economics, monetary policy has been a significant policy since the inception of Islam. The foundations of Islamic monetary policy can be traced back to the time of the Prophet Muhammad (peace be upon him) and the early days of Islam. One notable aspect of Islamic monetary policy is the use of specific currencies, such as the Dinar and Dirham, which were established as a medium of exchange during the early Islamic period. Adopting these currencies helped facilitate trade and economic activities within the Muslim community (Zalloom, 1988). Furthermore, an essential component of Islamic monetary policy is the prohibition of usury, known as riba, in both sale and lending transactions. This prohibition is a fundamental principle in Islamic finance and serves as a key aspect of monetary policy in Islamic economics. The aim is to prevent exploitative practices and ensure fairness in financial transactions. Due to the prevalence of riba in traditional monetary instruments, it holds great significance for Islamic economists to actively pursue the development and innovation of new monetary instruments that adhere to Shari'ah law (Bidabad et al., 2011). By adhering to the principles of Islamic monetary policy, Islamic economies strive to create an environment that promotes economic stability, social justice, and ethical conduct in financial matters.

The objective of the study is to explore the role of Islamic consumer and producer financing types as a proposed monetary policy instrument and explore its nonlinear role in determining the monetary policy uncertainty in the case of Pakistan. This study anticipates that an increase in Islamic financing substitutes the fiat currency-based usurious monetary expansion, which has been deemed more effective in controlling inflation in the economy.

Following the introduction, this study delves into the literature exploring the links between conventional lending and monetary policy effectiveness. Section 3 explores the methods pertaining to the set objectives, followed by section 4 of results and discussions. In the last section, the study's conclusion is provided with policy implications.

2. Literature review

The concept of uncertainty holds significant importance in economic literature, with its origins traced back to the works of Keynes (1921) and Knight (1921). These scholars distinguished uncertainty from insurable risk and emphasized its impact on economic outcomes. According to Keynes and Knight, the presence of uncertainty about the future leads to underemployment as economic agents hesitate to commit their irreversible resources.

Bernanke (1983) made a noteworthy contribution by documenting the adverse relationship between uncertainty and investment and employment decisions. His research highlighted that heightened uncertainty tends to deter investment and hiring

activities in the economy. This finding aligns with the argument put forth by Keynes (1921) and Knight (1921) regarding the inhibitory effects of uncertainty.

According to Rodrik (1991), in the realm of economic policy uncertainty, implementing reforms in developing countries can prompt a postponement of investment decisions. This delay arises from the reluctance of investors to commit their resources until the uncertainties surrounding the reform's efficacy and ultimate outcomes are resolved. Uncertainty regarding the success and sustainability of the reform measures leads investors to adopt a cautious stance, temporarily suspending their investment activities. Hassett and Metcalf (1999) examined the adverse effects of uncertainty in areas such as monetary policy, fiscal policy, and regulatory policy. Their studies highlight how uncertainty in these policy domains can disrupt economic stability, impede business planning and investment, and hinder economic growth.

Byrne and Davis (2004) contribute to the literature by providing empirical evidence on the impact of uncertainty, suggesting that uncertainty can influence non-residential fixed investment in the United States through a monetary policy mechanism. Specifically, they observe that the temporary component of inflation uncertainty has a more pronounced negative impact on investment compared to the permanent component. Sim et al. (2011) shed light on the relationship between policy uncertainty and its economic impact. Their research reveals that policy uncertainty contributes to an increase in the cost of finance, which subsequently deters firms from making investment decisions. Pastor and Veronesi (2012) state that policy uncertainty raises the cost of finance, reduces investment, and exacerbates economic downturns, highlighting the negative consequences of uncertainty on investment decisions and their broader implications for the overall economy. Mumtaz and Zanetti (2013) investigate the impact of monetary policy volatility using a structural vector autoregression (SVAR) model with stochastic volatility. Their analysis reveals that increased volatility in monetary policy leads to a decline in the nominal interest rate, output growth, and inflation. They also develop a dynamic stochastic general equilibrium (DSGE) model with stochastic volatility to provide a theoretical basis for these findings. The study highlights the adverse effects of uncertainty in monetary policy on key macroeconomic variables.

Fernandez et al. (2015) highlight a tangible manifestation of the detrimental impact of uncertainty through their examination of precautionary spending cutbacks by households. In times of heightened uncertainty, households tend to exercise caution and reduce their discretionary spending, thereby dampening economic activity. This empirical observation emphasizes the direct link between uncertainty and the cautious financial behavior of households, contributing to a broader economic slowdown. Moreover, the repercussions of uncertainty extend beyond individual households and permeate various policy domains, leading to adverse economic consequences. Uncertainty can impede effective decision-making processes in areas such as monetary policy, fiscal policy, and regulatory frameworks. The resulting ambiguity and

unpredictability hinder policy formulation and implementation, leading to inefficiencies and suboptimal outcomes. Therefore, acknowledging and effectively addressing uncertainty is crucial for fostering stability, enhancing economic performance, and enabling sustainable growth across these policy domains.

Utilizing a comprehensive dataset of U.S. companies, Gulen and Ion (2016) employ various econometric methods to analyze the effects of policy uncertainty on investment levels. Their findings reveal a negative association between higher policy uncertainty and corporate investment, indicating that increased uncertainty leads to reduced business investment. This underscores the significance of policy stability and predictability for firms, as uncertainty can hinder investment decisions and delay capital expenditures.

Literature on uncertainty dates back to the ground-breaking contributions of Keynes (1921) and Knight (1921) and highlights its profound influence on economic outcomes. Subsequent research by scholars such as Bernanke (1983), Fernandez et al. (2015), and Hassett and Metcalf (1999) has further expanded the understanding of the detrimental effects of uncertainty on various economic agents and policy domains. These studies, conducted in different years, have investigated the intricate relationship between uncertainty and key economic variables, shedding light on how uncertainty shapes economic behavior and influences policy decisions.

Several factors determine the monetary policy uncertainty in which transparency and credibility of the banks are most prominent (Amisano & Tristani, 2019). The prevalent inflation expectations and interest rates contribute to monetary policy uncertainty (Cascaldi-Garcia et al., 2023; Stulz, 1986). Under the current conventional banking system, there is a trade-off between inflation management and financial stability whereby inflation-deterring monetary policy may destabilize financial markets (Brunnermeier, 2023; Borio & Hofmann, 2017). Correspondingly, Islamic banks are resilient during financial crises (Farooq & Zaheer, 2015). The non-reliance on interest rates in the monetary policy transmission in Islamic banking makes it a better option for creating real change (Zaheer et al., 2013; Ogiji, 2023). Islamic banking can ensure low inflation and rule-based monetary policy, as evidenced in Muslim countries (Hossain, 2015), ensuring financial stability in a 10-country comparison having dual banking (Ibrahim & Rizvi, 2018).

A study by Gheeraert and Weill (2015) on 70 countries between 2000 and 2005 showed that Islamic financing follows an inverted U-shaped effect on macroeconomic efficiency. Managing credit supply from Islamic banks can help improve the effectiveness of monetary policy in Malaysia (Rashid et al., 2020). Because of its specific characteristics, the expansion of Islamic financing in Pakistan may impact monetary policy uncertainty. Islamic finance's prohibition on interest and emphasis on stability may limit speculative behavior, boosting economic stability and predictability. However, the unique interest rate dynamics, altered policy transmission mechanisms, liquidity management

challenges, and the need for regulatory adjustments may complicate monetary policy decision-making and implementation, potentially increasing uncertainty about the effectiveness of policy tools and market reactions to changes in interest rates and regulations (Bouri et al., 2020).

The capital provided by Islamic banks to producers can impact uncertain monetary policies. Islamic banks follow different rules than their conventional counterparts, focusing on risk sharing and ethics (Abduh et al., 2012). This may help stabilize the economy but also complicate how the government governs liquidity. Because Islamic banks function in distinct ways, it may affect how interest rates and policies operate, making forecasting how the economy will react more challenging (Chandio et al., 2016). As a result, while Islamic banking contributes to stability, it may also pose new challenges to how the government implements policies (Yasmin et al., 2022). Through its unique characteristics, Islamic banks' financing to consumers and households is funded on moral precepts that might influence the unpredictability of monetary policy. The absence of interest in Islamic banking may make it more difficult to forecast how changes in interest rates affect consumer borrowing and spending habits, even though this practice promotes financial stability by preventing risky borrowing and prioritizing justice (Manzoor & Arshed, 2021). Due to this uniqueness, policymakers may struggle to manage the economy and control inflation if interest rate-based monetary policy measures are ineffective. The requirement for specialized regulatory strategies for Islamic financial products may also add complexity and uncertainty to how these products interact with more general economic policies, potentially influencing the nature of the monetary policy uncertainty.

While discussing the control variables, the exchange rate significantly impacts monetary policy uncertainty because it's linked to economic dynamics and policy choices. Its impact is manifested through import-export dynamics, in which currency depreciation may boost exports (Nino et al., 2011) while intensifying inflation concerns, necessitating a complex trade-off. Furthermore, fluctuating exchange rates directly impact inflation control since changes in import costs need interest rate changes, but the magnitude of these shifts is unpredictable due to factors such as exchange rate pass-through. The sensitivity of capital flows to exchange rates adds complexity since it necessitates policy responses that balance domestic goals with external impacts (Habib et al., 2017). Similarly, uncertainty regarding economic stability, growth prospects, and inflation pressures can be transmitted through fluctuations in industrial output, complicating policymakers' decisions. The delayed impact of policy actions on production and the implications on foreign investment and employment complicate policy development. The transition from agricultural to industrial economies raises concerns about labor-market adaptations and resource allocation (Yasmin et al., 2022). Overall, the diverse impact of industrial production heightens monetary policy uncertainty as policymakers attempt to balance economic forces for stability and growth. Moreover, Shaheen et al. (2022) investigated the impact of equity-based and debt-based financing of Islamic banks on

economic stability in twelve Islamic countries from 2014Q1 to 2019Q4. They have applied the GARCH volatility approach and a nonlinear ARDL model for statistical analysis. Empirical findings demonstrate an inverted U-shaped outcome between equity-based financing and output instability, whereas both types of financing have little impact on price volatility. As per the above literature review, these insights can be useful for regulators and policymakers looking to optimize Islamic financing techniques for specific economic stability goals.

Our research proposes that expanding Islamic financing could serve as a potential solution to reduce policy uncertainty. This is primarily due to the distinctive nature of asset-based contracts utilized in Islamic finance, prioritizing achieving predefined objectives rather than relying on interest-based and speculative instruments commonly found in conventional banking. By adopting a more transparent and ethical approach, Islamic financing aims to address the uncertainty associated with traditional banking practices, fostering greater stability and trust within the financial system.

3. Methods

Aligned with the set objectives, we further establish the framework of the study, and in this section, the relevant information is discussed.

3.1. Variables and Data Sources

This study explores the quadratic impact of Islamic financing on monetary policy uncertainty in Pakistan. In this context, a set of six variables has been utilized. It considers monetary policy uncertainty as a dependent variable, whereas overall Islamic financing, Islamic producer financing, Islamic consumer financing, exchange rate, and industrial production index is taken as independent variables in the study. Data from 2010Q4 to 2022Q3 is collected from reliable sources, including Policyuncertainty.com, the State Bank of Pakistan's Islamic banking quarterly bulletins, and international finance statistics presented below. All financial variables were logarithmically transformed for analysis.

Monetary policy uncertainty (MPU) index: This index is a tool used to assess the unpredictability of choices made on economic policy in a certain country. This EPU index attempts to capture the ambiguity around economic policies, regulations, and governmental initiatives and the potential implications on many aspects of the economy. These include things like consumer spending, investments, and the overall soundness of the economy (Husted et al., 2017). This data is taken from policyuncertainty.com.

Overall Islamic Financing (IFIN): Sum of Shari'ah-compliant financing arrangements conducted by the Islamic financial system in Pakistan. The data is acquired from the Islamic Banking Bulletin – State Bank of Pakistan.

Islamic Producer Financing (IPF): Sum of Shari'ah-compliance financing to producers by the Islamic financial system in Pakistan. The data is acquired from the Islamic Banking Bulletin – State Bank of Pakistan.

Islamic Consumer Financing (ICF): Sum of Shari'ah-compliance financing to consumers by the Islamic financial system in Pakistan. The data is acquired from the Islamic Banking Bulletin – State Bank of Pakistan.

Exchange Rate (ER): End of time period value of rupees per dollar. This data is acquired from International Financial Statistics.

Industrial Production Index (IPI): Index of industrial production in the country. This data is acquired from International Financial Statistics.

Structural Break: An unknown break in the time series is calculated using Bai and Perron (2003) in order to stabilize the equation.

Following are the parameterized equations used to analyze determinants of monetary policy uncertainty in the context of Islamic financing. Equations 1, 2, and 3 use the quadratic function of overall financing, producer financing, and consumer financing. The quadratic function of financing is used in expectation that, since Islamic financing is risk-sharing and asset performance-based, over-extension of this form of money may have diminishing returns. Kalim and Arshed (2018) showed a nonlinear effect of Mudarabah financing on bank efficiency in the case of 53 Islamic banks globally. Manzoor and Arshed (2021) confirmed in the case of Pakistan that consumer and producer financing has a nonlinear effect on inflation. Lastly, a study by Sohail and Arshed (2022) confirmed the case of 16 countries that Islamic debt-based financing has a nonlinear moderating effect on the financial development-entrepreneurship relationship.

$$MPU_t = \alpha_0 + \alpha_1 IFIN_t + \alpha_2 IFIN_t^2 + \alpha_3 ER_t + \alpha_4 IPI_t + \alpha_5 Dum_t + \varepsilon_t \ (1)$$

$$MPU_t = \alpha_0 + \alpha_1 IPF_t + \alpha_2 IPF_t^2 + \alpha_3 ER_t + \alpha_4 IPI_t + \alpha_5 Dum_t + \varepsilon_t \ (2)$$

$$MPU_t = \alpha_0 + \alpha_1 ICF_t + \alpha_2 ICF_t^2 + \alpha_3 ER_t + \alpha_4 IPI_t + \alpha_5 Dum_t + \varepsilon_t \ (3)$$

In order to model monetary policy uncertainty within the context of Islamic decomposed financing stationarity, ADF and KPSS tests are evaluated. Moreover, the widely adopted approach of ARDL bounds testing approach by Pesaran et al. (2001) is employed to uncover both short-run and long-run nonlinear associations among the selected variables. CUSUM and CUSUM Square tests, as recommended by Pesaran et al. (2001) carried out to ensure the statistical stability of the selected models of the study.

4. Results and Discussions

Figure 1 compares the time evolution of overall Islamic financing and monetary policy uncertainty. Here it can be seen that there is a mixed association between them, whereby it was negative till 2015 while having a positive association in 2021. Figure 2 compares the time evolution of Islamic producer financing and monetary policy uncertainty. Here it can be seen that there is a mixed association between them, whereby it was negative till 2015 while having a positive association beyond it.
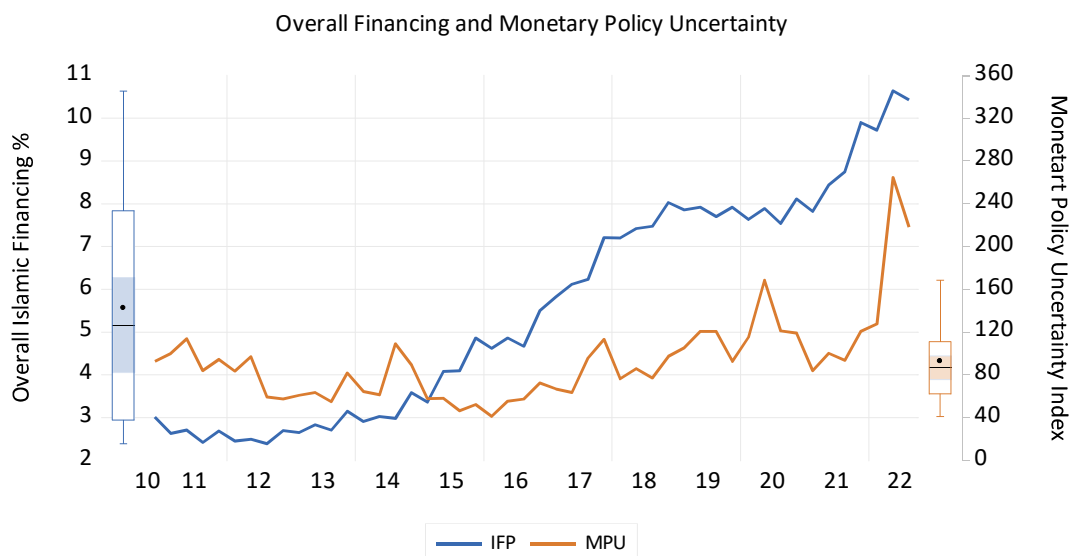

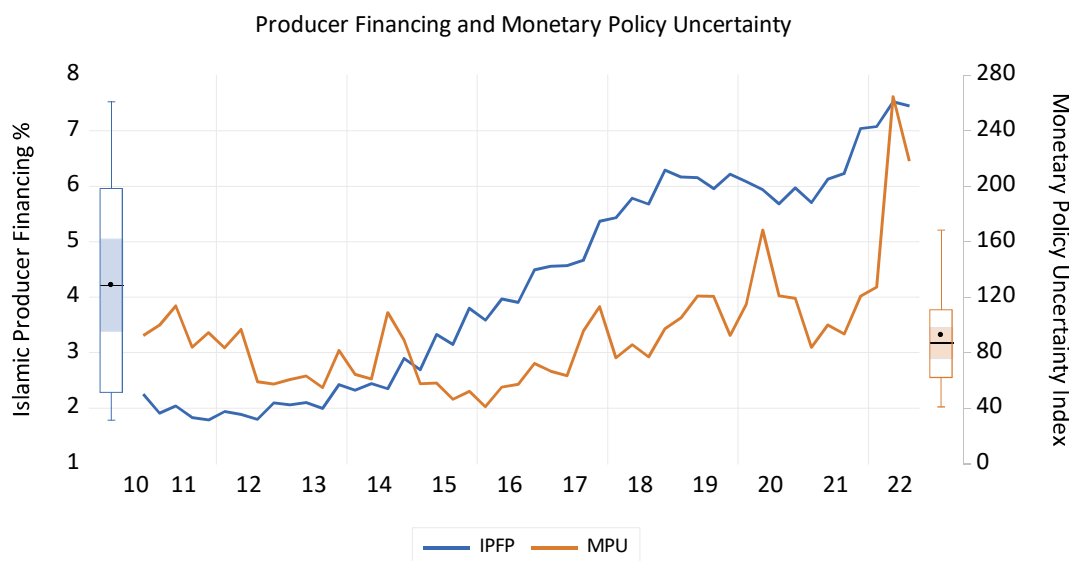*Figure 1 – Line chart of overall financing and monetary policy uncertainty*

Figure 2– Line chart of producer financing and monetary policy uncertainty
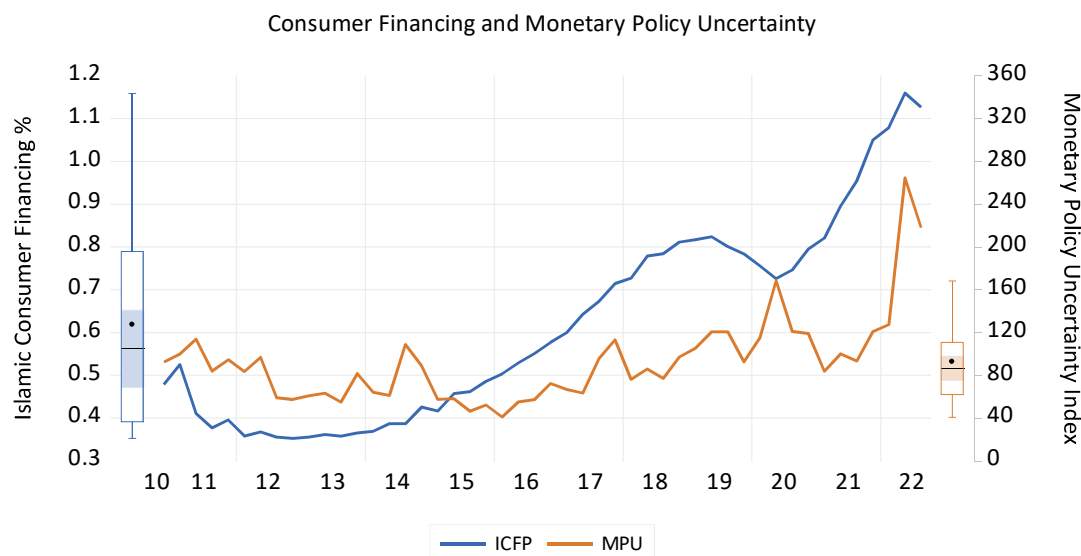
Figure 3– Line chart of consumer financing and monetary policy uncertainty

Figure 3 compares the time evolution of Islamic consumer financing and monetary policy uncertainty. Here it can be seen that there is a mixed association between them, which seems to have a positive association.

Table 1 reports the Bai and Perron (2003) test for determining unknown structural breaks. It is shown that there is only one break in the data in 2019Q1. Using this information, the structural break dummy variable has been constituted and used in the model as an exogenous variable. The ARDL bounds test is conducted on the specification in equations 1, 2, and 3. Table 2 shows that the test values are higher than critical values at 1%, confirming a long-run relation in the mixed order of integration variables.

Table 1 – Structural Break Determination

Bai-Perron Tests for Structural Breaks

Break test	F Statistic	Critical Value
0 vs 1	31.69	8.58
1 vs 2	3.57	10.13
Break Dates	Sequential	Repartition
1	2019Q1	2019Q1

Table 2 – Bounds test for cointegration

F bounds Test

Test	IFIN Model	IPF model		ICF model	
F Statistic	5.596	8.572		10.831	
Significance value	I(1) 10%	3.09	I(1) 2.5%		3.87
	I(1) 5%	3.49	I(1) 1.%		4.37

Table 3 – Long run relation

Long Run Effects

Variable	IFIN Model Coef. (Prob)	IPF Model Coef. (Prob)	ICF Model Coef. (Prob)
IFIN	-42.665 (0.003)		
IFIN^2	5.042 (0.004)		
IPF		-65.052 (0.085)	
IPF^2		9.793 (0.088)	
ICF			-248.92 (0.119)
ICF^2			337.72 (0.034)
IPI	-0.704 (0.105)	-3.211 (0.034)	-6.601 (0.011)
ER	0.336 (0.606)	1.560 (0.034)	2.552 (0.016)
C	197.607 (0.034)	369.436 (0.008)	566.761 (0.011)

Since the variables are cointegrated, table 3 reports the long-run relationship. In the three models, the intercept is positive, showing that generally, EPU tends to increase, which validates the selection of variables in the model in anticipation of reducing EPU where no further possibility of EPU is left.

While comparing the controlling variables, a 1% increase in IPI, there is a fall in MPU at 0.7%, 3.21%, and 6.60% in the overall financing, producer financing, and consumer financing models, respectively. This shows that if there is an increase in production, generally, there is an increase in consistency in monetary policy, especially in the consumer financing model where the financing by the banks promotes consumption for the produced goods. Our findings are aligned with Manzoor and Arshed (2021), explaining that consumer financing options like lease financing, credit cards, and overdraft facilities contribute towards more spending and demand for goods and services.

For the exchange rate, a 1% depreciation leads to an increase in EPU by 0.336%, 1.56%, and 2.552% in overall producer and consumer financing models, respectively. This higher intensity in the consumer financing model is logical, whereby consumers are being

promoted to consume and buy at higher exchange rates increasing the demand for foreign currency (Manzoor & Arshed, 2021) and weakening the domestic currency and efficiency of monetary policy. These findings align with the work of Di Nino et al. (2011), indicating that currency depreciation has certainly boosted the country's exports, particularly in high-productivity sectors such as manufacturing.

While discussing the effect of overall financing, the effect of IFIN is -42.665, while the effect of $IFIN^2$ is 5.04, which depicts a U-shaped relation as shown in Figure 4. This concludes that up to a certain level of Islamic producer financing, it has a certainty promoting effect on monetary policy, but beyond it will increase uncertainty. Our findings concur with those of Yasmin et al. (2022), who also contend that the impact would turn negative after reaching a certain point.

While discussing the effect of producer financing, the effect of IPF is -65.05, while the effect of IPF^2 is 9.79, which depicts a U-shaped relation, as shown in Figure 5. This concludes that up to a certain level of Islamic financing, it has a certain promoting effect on monetary policy, but beyond that, it will increase uncertainty. Arcand et al. (2015) also depict the same thing: the effect of financing might be negative.

While discussing the effect of producer financing, the effect of ICF is -248.9 while the effect of ICF^2 is 337.72, which depicts a U-shaped relation as shown in Figure 6. This concludes that up to a certain level of Islamic financing, it has a certain promoting effect on monetary policy, but beyond that, it will increase uncertainty. These outcomes are aligned with the findings of Yasmin and Ayaz (2023).

Observing the short-run estimates in Table 4 shows that the selected variables can explain MPU by 67%, 84%, and 84% in overall producer and consumer financing models, respectively. Further, the counter (-1) is negative and significant in all models, showing convergence in all models.

These results depict that monetary policy can improve its effectiveness by optimizing the financing levels at the current level of Islamic financing in Pakistan. Though this model adds an upper limit to financing to reduce uncertainty, this also points towards increasing IPI to accommodate a higher level of Islamic financing.

Table 5 provides the regression diagnostics. Here, we can see that other than the RESET test in the overall financing model, all other statistics support the validity of the model at a 5% level. The CUSUM and CUSUMsq charts are showing the mean and variance of the model are stable in response to structural changes.
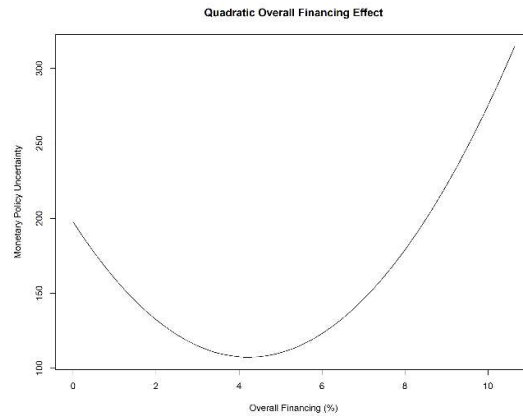
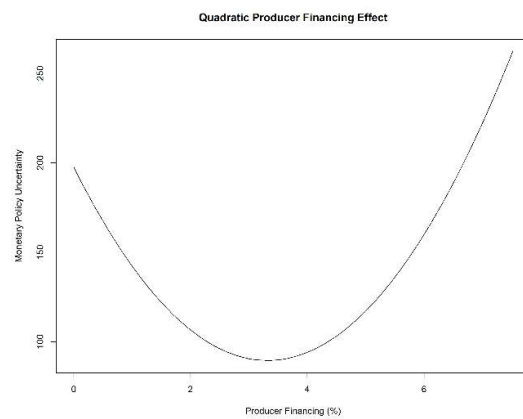*Figure 4 – Quadratic effect of Islamic financing on MPU*

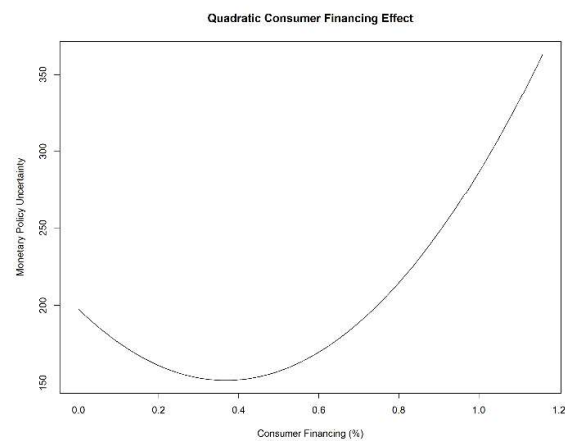*Figure 5 – Quadratic effect of Islamic producer financing on MPU*

Figure 6 – Quadratic effect of Islamic consumer financing on MPU

Table 4 – Short run effects

Short Run Effects

Variable	IFIN model Coef. (Prob)	IPF Model Coef. (Prob)	ICF Model Coef. (Prob)
IFIN	2.725 (0.000)		
IFIN^2	-2.646 (0.000)		
IPF		-4.87 (0.855)	
IPF $_{-1}$		-47.224 (0.062)	
IPF $_{-2}$		-143.214 (0.000)	
IPF^2		2.124 (0.434)	
IPF^2 $_{-1}$		3.338 (0.203)	
IPF^2 $_{-2}$		18.516 (0.000)	
ICF			-616.780 (0.024)
ICF $_{-1}$			-228.649 (0.003)
ICF $_{-2}$			-198.181 (0.032)
ICF^2			871.164 (0.000)
IPI		-1.083 (0.001)	-1.277 (0.000)
IPI $_{-1}$			1.819 (0.000)
IPI $_{-2}$			0.902 (0.002)
ER		-1.159 (0.013)	0.745 (0.059)
ER $_{-1}$		-2.105 (0.000)	-1.382 (0.012)
ER $_{-2}$		-4.285 (0.000)	-2.955 (0.000)
DUM	-7.606 (0.200)	10.780 (0.027)	12.231 (0.083)
CointEq(-1)	-0.638 (0.000)	-0.647 (0.000)	-0.508 (0.000)
R Squared	0.67	0.84	0.84
Durbin Watson	1.85	2.38	2.16

Table 5 – Post regression tests

Post Regression Diagnostics

	IFIN Model	**IPF Model**	**ICF Model**
Jarque Bera (Prob)	0.99 (0.60)	4.79 (0.09)	1.65 (0.44)
BG Autocorrelation LM Test	0.39 (0.67)	1.48 (0.24)	0.97 (0.39)
BPG Heteroskedasticity Test	1.96 (0.08)	1.09 (0.40)	0.73 (0.74)
RESET t stat	2.18 (0.03)	1.62 (0.11)	0.19 (0.84)
CUSUM	Stable	Stable	Stable
CUSUMsq	Stable	Stable	Stable

5. Conclusion and Policy Implications

In conclusion, this comprehensive study delves into the multifaceted realm of monetary policy uncertainty and its impact on emerging economies, focusing on Pakistan. As early economists Keynes and Knight outlined, uncertainty has far-reaching implications for economic behavior, policy formulation, and stability. The research highlights the significance of monetary policy uncertainty (MPU) and its intricate interplay with various factors shaping economic outcomes.

Pakistan's economic landscape, marked by limited sector diversification, volatile goods prices, and political instability, is particularly susceptible to uncertainty. The country's history of IMF bailouts and low credit-to-GDP ratios underscore the need to comprehend and address these challenges effectively. The adverse effects of uncertainty ripple through households, curtailing their spending and, consequently, dampening economic activity. Moreover, political instability disrupts policy continuity, inhibits investment, and hampers sustainable growth.

Islamic finance emerges as a promising avenue for mitigating uncertainty's adverse effects. By adhering to ethical and risk-sharing principles, Islamic finance has the potential to enhance financial inclusion, support SMEs, and reduce systemic risk. In contrast to conventional monetary policy mechanisms, Islamic finance promotes stability and resilience by prohibiting interest and asset-backed financing.

However, the expansion of Islamic finance introduces its complexities to the economic landscape. The distinctiveness of Islamic banks' practices, such as their focus on risk sharing and ethics, can influence monetary policy transmission, making forecasting and policy implementation more intricate. While Islamic finance contributes to stability,

specialized regulatory strategies and the absence of interest-based monetary policy instruments may introduce new uncertainties into policy decisions.

Given these insights, the research proposes that expanding Islamic financing could help alleviate monetary policy uncertainty. The asset-based contracts and ethical principles inherent in Islamic finance may be a transparent and stable alternative to conventional banking practices, fostering greater predictability and trust within the financial system.

This study has applied the ARDL model to estimate the long- and short-run quadratic effects of disaggregated Islamic Financing on Monetary Policy Uncertainty from 2010Q4 to 2022Q3. The results showed a U-shaped effect of disaggregated Islamic financing on uncertainty. This outcome iterates that proper Islamic financing portfolio management and regulatory support can help monetary policymakers reduce uncertainty.

By recognizing the distinctive characteristics of such economies and considering the potential of Islamic finance, policymakers can address the challenges posed by uncertainty and pave the way for economic stability and sustainable growth. This comprehensive exploration of uncertainty's implications and its interactions with Islamic finance provides valuable insights for guiding policy decisions and promoting financial resilience in dynamic economic landscapes.

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