# Role and Functions of Central Banks in Islamic Finance

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# Brief Background of the Study

- Islamic banking and the field of Islamic finance has grown appreciably since 1960.
- In Egypt, first Islamic savings bank was established based on the principle of profit-sharing at Mit Ghamr in 1963.
- The Islamic financial system in Malaysia was first introduced in 1963.
- In 1975, the Islamic Development Bank was established to provide financing to projects in the member countries.
- Dubai Islamic Bank was the first modern commercial Islamic bank founded in 1975.
- Indonesia's first Islamic bank was Bank Muamalat, established in 1991.
- In Bahrain, first Islamic commercial bank was established in 1978.
- In Pakistan, Meezan Bank was the first Islamic commercial bank established in 2002.

# Problem Statement

This study reviews, analyzes and appraises the existing literature available on central banking in Islamic economics and the practices followed by central banks for liquidity management and monetary management in countries where Islamic banking is prevalent. We contribute in devising the role of a central bank in an Islamic economy in a paradigm compliant with Islamic principles to carry out its functions and compatible with the environment of conventional monetary policy regimes.

# Objectives of the Study

•To recommend alternate to the interest based benchmark in the current monetary system based on empirical evidence and proposal from renowned scholars in the area of Islamic finance.

•To suggest a monetary policy mechanism for the central bank to perform its functions.

# Scope of the Study

•The study focuses on how central banks can perform their functions of managing money supply, foreign debt and liquidity in the banking sector and what mechanism they can utilize to perform their functions.

# Limits of the Study

•The study due to its limited and focused scope could not take into account exchange rate stability and signeorage.

# Research methodology

•This study is exploratory in nature.

•It discusses the role of a central bank in an interest free monetary system by reviewing academic literature as well as practices followed in Islamic countries where Islamic banking is prevalent.

•Data on two variables ‘Nominal Income Growth’ as measured by Nominal GDP growth and ‘Nominal interest rates’ is taken from International Financial Statistics (IMF) for the last 20 years from 14 countries where Islamic banking has been prevalent.

•Equivalency of means test is carried out to determine whether there exists significant relationship between the two variables.

# Brief Literature Review

- Pricing of Capital
  - Shadow Price vs. Accounting Price (Mannan, 1982).
  - Problems in monetizing public debt (Darrat & Bashir, 2000).
  - Treatment of public debt (Kurrihara, 1951).
- Alternative Instruments suggested in Islamic central banking literature.
  - Refinance Ratio (Siddique, 1982).
  - Qard-e-Hasan ratio (Khan, 1982).
  - Using Mudarabah & restricting high powered money by way of RRR than relying on OMO (Chapra, 1983).
  - Time Multiple Counter Loan (Mehmood, 1991).
  - Equity stake in commercial banks (Uzair, 1982).
  - Composite stock (Zangeneh & Salam, 1993).

# Central Banking in Muslim Countries

- In **UAE**, the monetary instruments and liquidity management framework in the money market has following salient features:

a) Minimum Reserve Requirement,
b) Swap Arrangements,
c) Advances and overdraft facility for banks and
d) Certificates of Deposits.

- In **Sudan**, the monetary instruments and liquidity management framework in the money market has following salient features:

a) Minimum Reserve Requirement,
b) Central Bank of Sudan provides financial support to the Islamic banks facing liquidity problems through purchasing financial papers “Sukuks” from them.

# Central Banking in Muslim Countries

- In **Saudi Arab**,

a) The monetary policy of Saudi Monetary Agency (SAMA) relies primarily on variations in the reserve ratio requirements.
b) Credit controls are used which include regulation of credit ceilings, cash margins, terms and conditions of customer transactions, limits, prohibitions on specific categories of loans, and fixing the assets to be held within the Kingdom by each bank.
c) SAMA also deploys its own accounts and government deposits with commercial banks to regulate the money supply.
d) SAMA uses ORR (Official Repo Rate) for short term liquidity management.

- In **Iran**,

a) Variable reserve ratio requirements is used.
b) RRR (Reserve Requirement Ratio), Participation Papers and ODA (Open Deposit Accounts) are used for short term liquidity management.
c) Expected profit rates are determined by MCC (Money and Credit Council) in Iran.

# Central Banking in Muslim Countries

- In **Qatar**, the monetary instruments and liquidity management framework in the money market has following salient features:

a) Required Reserve.
b) Certificates of Deposit
c) QCB Rate
d) Repo Operation-Repo
e) OMO & Discount Window.

- In **Oman**, the monetary instruments and liquidity management framework in the money market has following salient features:

a) T-bill.
b) Certificates of Deposits
c) OMO and Repurchase/Reverse Repurchase.

- In **Pakistan**, the monetary instruments and liquidity management framework in the Islamic money market has following salient features:

a) Interbank Musharakah Agreement.
b) Wakalah Agreement.

# Central Banking in Muslim Countries

- In **Malaysia**, the monetary instruments and liquidity management framework in the Islamic money market has following salient features:

a) Mudarabah Interbank Investment (MII)
b) Wadiah Acceptance
c) Government Investment Issue (GII)
d) Bank Negara Monetary Notes-i (BNMN-i)
e) Sell and Buy Back Agreement (SBBA)
f) Cagamas Mudarabah Bonds (SMC)
g) When Issue (WI)
h) Islamic Accepted Bills (IAB)
i) Islamic Negotiable Instruments (INI)
j) Islamic Private Debt Securities
k) Ar Rahnu Agreement-I (RA-i)
l) Sukuk BNM Ijarah (SBNMI)
m) Green Banker's Acceptances
n) Repurchase Agreements

Malaysia has sophisticated array of Islamic finance products; but, the use of Bai-al-Dayn (Sale of Debt) & Bai-Inaah (Buy Back) is not recommendable by many Islamic scholars and hence it warrants us to look for better alternatives.

# Data Analysis

- Data from 14 Muslim countries is taken for approximately 20 years from 1986 to 2006 on two variables i.e. Nominal GDP growth rate & Interest rates (discount rate, T-bill, Call money/lending rate are taken on availability basis.

| **Country** | **Bahrain** | **Equivalency of Means Test** | |
|---|---|---|---|
| Period of Study | 1986-2006 | $H_o$: $u_1 = u_2$ | |
| Mean (NGDP) | 7.59 | $H_A$: $u_1 \neq u_2$ | |
| Standard Deviation | 8.60 | t-statistic | 1.14441 |
| Mean (MM Rate) | 5.37 | t-table value (α=0.01) | 2.704 |
| Standard Deviation | 2.17 | | |

**Conclusion:** Calculated value does not fall in critical region. We do not reject null hypothesis.

| **Country** | **Bangladesh** | **Equivalency of Means Test** | |
|---|---|---|---|
| Period of Study | 1987-2008 | $H_o$: $u_1 = u_2$ | |
| Mean (NGDP) | 10.32 | $H_A$: $u_1 \neq u_2$ | |
| Standard Deviation | 2.63 | t-statistic | 4.519 |
| Mean (Discount Rate) | 7.102 | t-table value (α=0.01) | 2.70 |
| Standard Deviation | 2.06 | | |

**Conclusion:** Calculated value does fall in critical region. We reject null hypothesis.

# Data Analysis

| Country | Iran | Equivalency of Means Test | |
|---|---|---|---|
| Period of Study | 1961-1979 | $H_o$: $u_1 = u_2$ | |
| Mean (NGDP) | 17.75 | $H_A$: $u_1 \neq u_2$ | |
| Standard Deviation | 17.86 | t-statistic | 2.6165 |
| Mean (Discount Rate) | 6.974 | t-table value ($\alpha$=0.01) | 2.726 |
| Standard Deviation | 1.874 | | |

**Conclusion:** Calculated value does not fall in critical region. We do not reject null hypothesis.

| Country | Indonesia | Equivalency of Means Test | |
|---|---|---|---|
| Period of Study | 1990-2008 | $H_o$: $u_1 = u_2$ | |
| Mean (NGDP) | 19.36 | $H_A$: $u_1 \neq u_2$ | |
| Standard Deviation | 8.9625 | t-statistic | 1.9419 |
| Mean (Call Money Rate) | 14.313 | t-table value ($\alpha$=0.01) | 2.724 |
| Standard Deviation | 6.9269 | | |

**Conclusion:** Calculated value does not fall in critical region. We do not reject null hypothesis.

| Country | Egypt | Equivalency of Means Test | |
|---|---|---|---|
| Period of Study | 1977-2008 | $H_o$: $u_1 = u_2$ | |
| Mean (NGDP) | 16.25 | $H_A$: $u_1 \neq u_2$ | |
| Standard Deviation | 7.32 | t-statistic | 1.1532 |
| Mean (Lending Rate) | 14.67 | t-table value ($\alpha$=0.01) | 2.659 |
| Standard Deviation | 2.619 | | |

**Conclusion:** Calculated value does not fall in critical region. We do not reject null hypothesis.

# Data Analysis

| Country | Jordon | Equivalency of Means Test | |
|---|---|---|---|
| Period of Study | 1986-2007 | $H_o$: $u_1 = u_2$ | |
| Mean (NGDP) | 8.32 | $H_A$: $u_1 \neq u_2$ | |
| Standard Deviation | 5.1717 | t-statistic | 1.1828 |
| Mean (Discount Rate) | 6.9783 | t-table value (α=0.01) | 2.70 |
| Standard Deviation | 1.7368 | | |

**Conclusion:** Calculated value does not fall in critical region. We do not reject null hypothesis.

| Country | Kuwait | Equivalency of Means Test | |
|---|---|---|---|
| Period of Study | 1987-2008 | $H_o$: $u_1 = u_2$ | |
| Mean (NGDP) | 12.39 | $H_A$: $u_1 \neq u_2$ | |
| Standard Deviation | 24.96 | t-statistic | 1.1669 |
| Mean (Discount Rate) | 6.167 | t-table value (α=0.01) | 2.70 |
| Standard Deviation | 1.465 | | |

**Conclusion:** Calculated value does not fall in critical region. We do not reject null hypothesis.

| Country | Libya | Equivalency of Means Test | |
|---|---|---|---|
| Period of Study | 1987-2005 | $H_o$: $u_1 = u_2$ | |
| Mean (NGDP) | 12.30 | $H_A$: $u_1 \neq u_2$ | |
| Standard Deviation | 14.23 | t-statistic | 2.299 |
| Mean (Discount Rate) | 4.789 | t-table value (α=0.01) | 2.726 |
| Standard Deviation | 0.535 | | |

**Conclusion:** Calculated value does not fall in critical region. We do not reject null hypothesis.

# Data Analysis

| Country | Malaysia | Equivalency of Means Test | |
|---|---|---|---|
| Period of Study | 1986-2008 | $H_o$: $u_1 = u_2$ | |
| Mean (NGDP) | 10.48 | $H_A$: $u_1 \neq u_2$ | |
| Standard Deviation | 5.943 | t-statistic | 4.333 |
| Mean (Overnight MM Rate) | 4.76 | t-table value (α=0.01) | 2.70 |
| Standard Deviation | 2.166 | | |

**Conclusion:** Calculated value does fall in critical region. We reject null hypothesis.

| Country | Oman | Equivalency of Means Test | |
|---|---|---|---|
| Period of Study | 1986-2007 | $H_o$: $u_1 = u_2$ | |
| Mean (NGDP) | 7.51 | $H_A$: $u_1 \neq u_2$ | |
| Standard Deviation | 10.38 | t-statistic | 0.4085 |
| Mean (Discount Rate) | 6.59 | t-table value (α=0.01) | 2.70 |
| Standard Deviation | 2.143 | | |

**Conclusion:** Calculated value does not fall in critical region. We do not reject null hypothesis.

| Country | Pakistan | Equivalency of Means Test | |
|---|---|---|---|
| Period of Study | 1986-2008 | $H_o$: $u_1 = u_2$ | |
| Mean (NGDP) | 14.54 | $H_A$: $u_1 \neq u_2$ | |
| Standard Deviation | 5.226 | t-statistic | 2.1250 |
| Mean (Discount Rate) | 11.67 | t-table value (α=0.01) | 2.70 |
| Standard Deviation | 3.56 | | |

**Conclusion:** Calculated value does not fall in critical region. We do not reject null hypothesis.

# Data Analysis

| Country | S. Arabia | Equivalency of Means Test | |
|---|---|---|---|
| Period of Study | 1987-2008 | $H_o$: $u_1 = u_2$ | |
| Mean (NGDP) | 9.27 | $H_A$: $u_1 \neq u_2$ | |
| Standard Deviation | 9.47 | t-statistic | 2.0141 |
| Mean (Deposit Rate) | 5.10 | t-table value (α=0.01) | 2.704 |
| Standard Deviation | 2.0296 | | |

**Conclusion:** Calculated value does not fall in critical region. We do not reject null hypothesis.

| Country | Sudan | Equivalency of Means Test | |
|---|---|---|---|
| Period of Study | 1989-2006 | $H_o$: $u_1 = u_2$ | |
| Mean (NGDP) | 57.21 | $H_A$: $u_1 \neq u_2$ | |
| Standard Deviation | 49.81 | t-statistic | 0.36 |
| Mean (CPI Rate) | 51.33 | t-table value (α=0.01) | 2.726 |
| Standard Deviation | 48.16 | | |

**Conclusion:** Calculated value does not fall in critical region. We do not reject null hypothesis.

| Country | Yemen | Equivalency of Means Test | |
|---|---|---|---|
| Period of Study | 1996-2008 | $H_o$: $u_1 = u_2$ | |
| Mean (NGDP) | 21.02 | $H_A$: $u_1 \neq u_2$ | |
| Standard Deviation | 13.25 | t-statistic | 1.4438 |
| Mean (T-Bill Rate) | 15.5 | t-table value (α=0.01) | 2.797 |
| Standard Deviation | 3.66 | | |

**Conclusion:** Calculated value does not fall in critical region. We do not reject null hypothesis.

# Key Findings

- In 12 out of 14 countries, equivalency of mean test shows that null hypothesis (Ho: $u_1 = u_2$) could not be rejected.

- It is plausible to use growth in nominal GDP as the benchmark for making and refining instruments for money market.

- It is unlike a bond indexed for inflation as inflation does not always imply growth & is more subjective and relative a measure to index an instrument with.

- Indexing the instrument based on nominal GDP growth rate will be appropriate as the benchmark used will be related to production.

- Since this figure on right confirms the movement of both variables NGDP(t-1) and NIR in the same direction, it can be used for indexing loans from the rest of the world.

# Key Findings: Contd.

- In IMF loans pegged with SDR or other bilateral or multilateral loans pegged with USD or with any other hard currency, the financing facility so provided can be benchmarked using nominal GDP growth rate of the lender's country of origin or benchmarked with weighted nominal GDP growth rate in major donor countries.

- Financing in development projects from World Bank and International Development Association (IDA) can also be benchmarked with weighted Nominal GDP growth rate in the same way.

- For soft loans, aid and grants, the nominal GDP growth rate in the recipient country can be used.

- This may provide a stable mechanism for recipient countries to get out of debt trap with debt servicing linked with output performance benchmark.

- Countries will be able to introduce the proposed benchmark for pricing financial instruments in money market.

- This will get its way in pricing of commercial banking products as well.

- Financing from domestic banks can be benchmarked with national NGDP growth.

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