

Risk & Return of Islamic Stock Market Indexes

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Trends in investment selection during the past decade:

- Individual and institutional investors are placing more assets in 'socially responsible' portfolios particularly in the U.S.
 - ➔ Between 1997 and 2000, the size of these funds almost doubled from \$1.185 trillion to \$2.16 trillion.
- Second, investors are increasingly interested in tying their assets to indexes rather than relying entirely on 'active' money management.
 - ➔ The size of pension funds tied to stock indexes in the US grew 30% between 1998 and 1999.
- This change was dwarfed by the spectacular increase in the assets of Islamic financial institutions which grew 40 fold since 1982 to reach over \$230 b today.

Globalization in Finance

- During the 1990s
 - ➔ Assets managed by institutional investors doubled and by 1998 amount to 100% of World GDP or 30 trillion
 - ➔ Net Private Capital flows to emerging markets doubled
- Same Trends in Islamic Financial Intermediaries
 - ➔ Integration in Global Markets
 - multinational banks offering Islamic products
 - Major stock exchanges provide Islamic indices
 - ➔ Consolidation
 - Mergers in Bahrain, Malaysia, Brunei, Pakistan
 - ➔ Diversity of Products and Complex Risks

Implications of Globalization

- The globalization of financial markets increases the strength of market linkages
 - ➔ markets are subject to common shocks
 - ➔ Global slowdown creates global credit quality issues as corporate earnings decline
 - ➔ Market contagion effects from global portfolio rebalancing and open financial markets lead to narrower margins and more competitive environment

Challenges for Islamic Financial Products and Institutions

Today's Financial Marketplace

- **Ethical dimension - undesirable investments sectors**
 - ➔ tobacco
 - ➔ alcohol
 - ➔ armaments
 - ➔ gambling
- **Regulatory**
 - ➔ Existing banking regulations in most Islamic countries are based on the Western banking model.
- **Accounting, Transparency & Surveillance**
 - ➔ Any Islamic financial system needs sound accounting procedures and standards
 - ➔ Western accounting procedures are inadequate because of the different nature and treatment of financial instruments.
 - ➔ Well-defined procedures and standards are crucial for information disclosure, building investors' confidence, and surveillance.

These concerns are amplified for Islamic Intermediaries

- **Unique risks in Islamic intermediaries.**
 - ➔ Specific characteristics of Islamic instruments and the associated mix of risks.
 - ➔ Limitations on asset diversification—based on Sharia'a restrictions on investments.
 - ➔ Increased operational risks, including legal risks.
 - ➔ Absence of uniform prudential rules.
 - ➔ Weakness in market infrastructure – liquidity infrastructure.

How are Islamic Financial Institutions Responding to the Challenges?

- As a result, Islamic Financial Institutions had to police themselves
- The absence of Islamic Money Market Instruments has forced Islamic Banks to hold on average 40% more liquidity than their conventional counterparts
- Islamic Financial Institutions operating in non-Islamic countries face difficulties owing to the absence of a regulatory body that operates in accordance with Islamic principles and suffers loopholes in corporate governance and transparency.

Why Demand for Islamic Investments is increasing?

- Search for alternatives to Western style markets given added impetus in Muslim countries by:
 - the turmoil in Asian financial markets in 1997,
 - the ensuing meltdown in emerging equity markets worldwide,
 - and more recently the 'bear' market in US and European equities since March 2000
 - Several financial scandals.
- In the Western model, several fiascos:
 - Savings & Loans crisis (\$240 b in '89)
 - Metallgesellschaft (\$1b loss in '93)
 - Barings Bank
 - Procter & Gamble (\$160m in '94)
 - Orange County, CA (\$1.7b in '95)
 - Long Term Capital Management (\$4b in '98)
 - Global Crossing (\$billions in '01)
 - Enron (\$billions in '01)
 - Worldcom (\$3b in '02)
- In response, many large Western financial institutions have established their own Islamic subsidiaries and offered Islamic financial instruments targeted directly at their Islamic clientele.

Targeting investors with a broad Family of index funds

DOW JONES ISLAMIC MARKET INDEX MARKET CAPITALIZATION

Index	No. of Stocks	Market Capitalization Data (US\$)*			Component Weight (%)		
		Total	Average	Median	Top 10	Top 25	Top 50
Dow Jones Islamic Market	1,273	7,931.60	5.5	0.9	23.06	41.25	56.75
DJ Islamic Market US	596	4,609.20	7.3	1.2	34.7	55.13	71.45
DJ Islamic Market Technology	340	1,652.70	4.3	0.6	57.51	74.22	84.18
DJ Islamic Market Extra Liquid	100	5,291.20	47.7	30.7	32.77	59.29	82.04
DJ Islamic Market Canadian	58	97.7	1.3	0.6	66.57	88.62	99.17
DJ Islamic Market UK	91	752.4	5	0.9	68.74	88.69	96.79
DJ Islamic Market Japan	151	604.3	2.9	1.2	42.27	65.15	81.05
DJ Islamic Market Europe	257	2,147.60	6.9	0.9	54.27	75.71	87.07
DJ Islamic Market Asia/Pacific	337	1,028.10	2	0.6	29.61	50.12	68.39

As of July 31, 2002.

Correlation: false or authentic?



The DJIMI

- DJIMI is a 'low-debt, non-financial, social-ethical index' in the broad sense.
- The index is aimed directly at the world 1.2 b Muslims who adhere to Islamic principles in how they use and manage their investments.
- To become eligible for inclusion in the DJIM index, each US company must undergo three screening filters:
 - ➔ Its primary business must be halal (permissible according to Islamic law -- Shari'a), therefore companies engaged in gambling, alcohol, armaments, tobacco, pornography or pork are excluded,
 - ➔ A company must meet specific financial constraints:
 - Its debt ratio must not exceed 33%
 - Accounts receivables to total assets must remain below 45%
 - Interest income should represent less than 5% of total revenue
 - ➔ Finally companies are continuously monitored according to these criteria. Whenever a company exceeds these limits, it is removed from the index and replaced by another.

The Wilshire 5000

- ➔ A parallel and unrestricted counterpart of the DJIMI is the Wilshire 5000 Index (W5000)
- ➔ tracks the price performance of the largest 5000 US companies.
- ➔ Of that index, approximately 75% of the companies fail to meet the Islamic criteria, leaving only approximately 700 companies as potential candidates for inclusion in the DJIMI.

Main Questions

- Are Muslim investors being penalized for Shari'a restriction?
- Is the Shari'a restriction causing Muslim investors to bear additional risk and/or lower return?

Objectives

- How has this selection restriction affected the performance of Islamic investments represented by the W5000 index?
- Is the DJIM index less diversified than the W5000 index? if so, to what extent has the limited diversification affected its risk and return?
- Finally, what dynamic correlation and long-term relationship exist between the two indexes.
- Is the correlation spurious (false) or authentic?

How does the DJ Islamic Index rank up?

Table 1 - Descriptive Statistics

	DJ Islamic Mkt Index	Wilshire 5000	3m Tbill
Annualized Mean	-19%	-12%	-0.01%
Annualized Median	-7%	-4%	0.00%
Daily Maximum	10.30%	5.20%	0.01%
Daily Minimum	-9.50%	-6.70%	-0.01%
Annualized Std. Dev.	22%	24%	0.02%
Sharp Ratio	-118%	-194%	-194%
Number of Obs.	702	702	702

Historical Performance of DJIMI

- On a return basis, the 3m Tbill dominates both DJIMI and W5000
 - ➔ the period of the study was marked by a significant decline in equity prices worldwide.
- DJIMI less risky than W5000 (22% vs. 24%).
 - ➔ This is a somewhat surprising result because W5000 represents a more diversified market basket of stocks than the more restrictive DJIMI.
- Sharp Ratio basis, (risk per unit of return).
 - ➔ DJIMI outperforms not only the W5000, but, surprisingly, ranks at par with the Tbill rate, in spite of significant volatility on a historical basis (September 11).
- Overall, the risk performance of DJIMI is more attractive than the W5000
 - ➔ Sharp Ratio that is 64% lower (118% vs. 194%).
- Statistical (unit roots) tests confirm that DJIMI follows a random walk.

Dynamic links of the DJIMI (Cointegration)

- Investigate the statistical linkages between the three series in a bivariate and trivariate models
- Trivariate: {DJIMI, W5000, Tbill}
- Bivariate: {DJIMI, W5000}, {W5000, Tbill}, {DJIMI, Tbill}.

Results

System: {DJIMI, W5000, Tbill}
One link

System: {DJIMI, W5000}
No link

System: {DJIMI, Tbill}
No link

System: {W5000, Tbill}
No link

Analysis of Dynamic Links Suggests

- Only W5000 exhibits a long-term stable link with the interest rate
- Absence of any link between DJIMI and the interest rate
 - ➔ natural consequence of the selection criteria of the stocks which comprise the index.
- Absence of any link between DJIMI and W5000, a broad market index which incorporates all of the stocks included in the DJIMI.
- Why? Exogenous variables may impact one index but not the other.

Causality + short- & long-term links

- Statistical analysis (cointegration) among the three series implies that causality must exist among these series in at least one direction.
- Results:
 - ➔ neither the Wilshire 5000 nor the 3m Tbill are significant in explaining the variability in the Islamic index in either the short- or long-terms.
 - ➔ In contrast, the Wilshire 5000 is strongly influenced by movements in interest rates.
- Previous results: Dow Jones Inc., the publisher of the Islamic index boasts a 92% to 94% statistical correlation between the index and the rest of the market.
 - ➔ Correlation is spurious and not stable
 - ➔ DJIMI is influenced by entirely independent factors.

Significance

- Because movements in the DJIMI and W5000 are not statistically linked over time:
 - ➔ Muslim investors reap an additional diversification benefit
- Differential risk premia.
 - ➔ Because the DJIM and W5000 indexes are independent from each other in the long-term, then the risks associated with each index bear different prices.
 - ➔ From Table 1, the Sharp ratio on the broader Wilshire 5000 index is markedly higher than on the Islamic index.
- Market Completeness:
 - ➔ Islamic index is presenting investors with unique characteristics reflected in risk-return tradeoffs that are not available in a broad market basket of stocks.
- Based on the limited observation period we have since its recent introduction to the market, investors in the DJIMI have been relatively more immune from the equity markets turmoil.

Conclusion and Take-Aways

- Three immediate implications emerge from our study. Our findings
 - ➔ help investors evaluate the performance of the most popular Islamic index available today vs. the rest of the market,
 - ➔ motivate money managers to look beyond interest rates and the broad market to identify the drivers for the fluctuations in the Islamic index, and
 - ➔ reveal that on a risk-return basis, no loss from the restriction criteria that the Muslim index requires. Consequently, Muslim investors are no worse off investing in an Islamic basket of stocks than a much larger basket of stocks.