

**COMPARISON OF DOWNSIDE BETA IN SHARIAH-  
COMPLIANT AND CONVENTIONAL STOCKS IN MALAYSIA**

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## ABSTRAK

Secara amnya, risiko perniagaan dikategorikan sebagai risiko sistematik atau risiko tidak sistematik. Risiko sistematik atau beta adalah risiko umum sekuriti, manakala risiko tidak sistematik adalah risiko khusus dalam setiap sekuriti. Kajian ini meneliti secara kritis ciri-ciri beta ke bawah bagi syarikat-syarikat yang disenaraikan di Bursa Malaysia. Sampel kajian adalah 50 saham konvensional dan 50 saham patuh Syariah yang dipilih secara rawak. Analisa kajian bermula dari Januari 2015 hingga Januari 2020. Pertama, pulangan saham dikira bagi penanda aras pasaran, Indeks Komposit Kuala Lumpur (FBM KLCI) dan kedua-dua portfolio konvensional dan patuh Syariah. Kemudian, model beta ke bawah dibina menggunakan tiga kaedah: Kemeruapan Lampau (HV), Purata Bergerak Berpemberat Eksponensial (EWMA) dan GARCH (1,1). Seterusnya, nilai beta ke bawah bagi indeks dan portfolio bagi kedua-dua jenis saham dibandingkan. Dapatan kajian menunjukkan, secara statistiknya, terdapat perbezaan signifikan bagi nilai beta ke bawah bagi indeks saham konvensional dan indeks saham patuh Syariah. Namun, nilai ke bawah bagi kedua-dua jenis portfolio yang menggunakan sampel yang dipilih secara rawak tidak menunjukkan sebarang perbezaan yang signifikan. Seterusnya, Nisbah Sortino dikira untuk menentukan prestasi pulangan saham berdasarkan risiko ke bawah yang telah dimodelkan. Dapatan kajian menunjukkan saham patuh Syariah mempunyai Nisbah Sortino yang lebih tinggi dan signifikan berbanding saham konvensional. Kesimpulannya, terdapat insentif yang tinggi bagi pelabur untuk memilih saham patuh Syariah sebagai pilihan dalam pelaburan berasaskan nisbah pulangan kepada risiko ke bawah yang lebih tinggi.

Kata kunci: beta ke bawah, stok patuh Syariah, stok konvensional, Risiko sistematik, Kemeruapan Lampau, Purata Bergerak Berpemberat Eksponensial (EWMA), GARCH (1,1), Nisbah Sortino

## ABSTRACT

Generally, business risks are categorized as either systematic risks or unsystematic risks. Systematic risks or beta are considered as risks that have a general impact on all securities while unsystematic risk is an intrinsic, security specific risk. This study critically studied the characteristics of downside beta for listed companies in Malaysia. The process involves a random selection of 50 Shariah-compliant and 50 conventional stock returns, analysed from January 2015 to January 2020. Firstly, the study tabled the stock returns of the market benchmark, Financial Times Stock Exchange Bursa Malaysia Kuala Lumpur Composite Index (FBM KLCI) and both Shariah-compliant and conventional stocks portfolios. The downside beta is then computed using three methods: Historical Volatility (HV), Exponentially Weighted Moving Average (EWMA) and GARCH (1,1). While analysis of the Shariah-compliant and conventional portfolio as an index can indicate statistically significant difference in their downside beta values, the randomly selected 50 portfolio stocks in this research indicated no statistically significant difference between the two. Furthermore, the Sortino ratio is used to determine the beta to return performance between the two portfolios. The Sortino ratio results indicates Shariah-compliant businesses outperforms their conventional counterparts. As such, there is higher appeal for investors to adopt an Islamic business framework, provided due diligence is anchored on downside beta and reward analysis.

Keywords: Downside beta, Shariah-compliant stocks, Conventional stocks, Systematic risks, Historical Volatility, EWMA, GARCH (1,1), Sortino ratio

## ملخص البحث

بشكل عام ، يتم تصنيف مخاطر الأعمال على أنها إما مخاطر منهجية أو مخاطر غير منهجية. تعتبر المخاطر المنهجية أو بيتا من المخاطر التي لها تأثير عام على جميع الأوراق المالية، بينما تعتبر المخاطر غير المنهجية مخاطر داخلية خاصة بالأمن. قام هذا البحث على إجراء دراسة نقدية لخصائص سلبيات بيتا للشركات المدرجة في ماليزيا. تتضمن العملية اختياريًا عشوائيًا لـ ٥٠ عائدًا من الأسهم المتوافقة مع الشريعة الإسلامية و ٥٠ عائدًا من الأسهم التقليدية ، والتي تم تحليلها من يناير ٢٠١٥ إلى يناير ٢٠٢٠. أولاً، يتم استرداد البيانات الأولية لمؤشرات السوق المرجعية ( Financial Times Stock Exchange Bursa Malaysia ) لكل من الأسهم المتوافقة مع الشريعة الإسلامية والأسهم التقليدية. ثم يتم حساب الجانب السلبي بيتا باستخدام ثلاث طرق: التقلب التاريخي والمتوسط المتحرك الموزون بشكل مضاعف (EWMA) و (١,١) GARCH ، في حين أن تحليل الحافطة التقليدية والمتوافقة مع الشريعة الإسلامية كمؤشر يمكن أن تشير إلى وجود فرق ذي دلالة إحصائية في قيم بيتا السلبية ، فإن الـ ٥٠ سهمًا اللاتي تم اختيارها عشوائيًا في هذا البحث تشير إلى عدم وجود فرق ذي دلالة إحصائية بين الاثنين، علاوة على ذلك ، يتم استخدام نسبة سورتينو لتحديد الإصدار التجريبي لإرجاع الأداء بين المحفظتين. بينت نتائج نسبة سورتينو إلى أن الشركات المتوافقة مع الشريعة الإسلامية تتفوق على نظائرها التقليدية. وعلى هذا النحو ، فهناك جاذبية أكبر للمستثمرين لتبني إطار عمل إسلامي ، شريطة أن يتم تثبيت العناية الواجبة على الجانب السلبي (بيتا) وتحليل المكافآت.

الكلمات المحورية: بيتا السلبية، الأسهم الموافقة للشريعة الإسلامية، الأسهم التقليدية، المخاطر المنهجية، التقلبات التاريخية، EWMA، GARCH (١,١) ، نسبة سورتينو.

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## ABBREVIATION

|         |  |
|---------|--|
| CAPM    | Capital Asset Pricing Model                            |
| FTSE    | Financial Times Stock Exchange                         |
| KCLI    | Kuala Lumpur Stock Exchange Composite                  |
| EWMA    | Exponentially Weighted Moving Average                  |
| OLS     | Ordinary Least Square                                  |
| DCAPM   | Downside Capital Asset Pricing Model                   |
| DBETA   | Downside Beta  |
| ARCH    | Auto Regressive Conditional Heteroscedasticity         |
| GARCH   | General Auto Regressive Conditional Heteroscedasticity |
| LM      | Lagrange Multiplier                                    |
| SCS     | Shariah-Compliant Stocks                               |
| CS      | Conventional Stocks                                    |
| COVID   | Corona Virus Disease                                   |
| S&P 500 | Standard and Poor's 500                                |
| VIX     | CBOE Volatility Index                                  |
| SV      | Stochastic Volatility                                  |
| VaR     | Value at Risk  |