

**INTEGRASI SAHAM SYARIAH INDONESIA: ANALISIS
LINTAS NEGARA BERKEMBANG DAN MAJU**



LAPORAN AKHIR PENELITIAN

HIBAH RISET MUHAMMADIYAH

BATCH V

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**MAJELIS PENDIDIKAN TINGGI PENELITIAN DAN
PENGEMBANGAN**

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Abstrak

Globalisasi mengubah sistem ekonomi dan keuangan dunia semakin terintegrasi. Globalisasi juga dapat memicu guncangan pada pasar saham syariah dan mengurangi manfaat diversifikasi bagi investor. Penelitian ini bertujuan untuk menganalisis integrasi indeks saham syariah Indonesia dengan indeks saham syariah negara maju dan berkembang. Dengan menggunakan vector error correction model dan data harian dari 2012 hingga 2021 yang mencapai 2088 obeservasi mengungkapkan bahwa indeks saham syariah Indonesia terintegrasi dengan indeks saham syariah negara maju dan berkembang. Indeks saham syariah Indonesia merespon positif dan negated indeks saham syariah negara maju dan berkembang. Jepang memiliki kontribusi terbesar dalam mempengaruhi indeks saham syariah Indonesia. Indeks saham syariah Indonesia perlu menyiapkan berbagai strategi alternatif dalam menghadapi guncangan dari indeks saham syariah negara maju dan berkembang.

Kata Kunci: Stock, Integration, Develop, Developing, Islamic

BAB I

PENDAHULUAN

1.1. Latar Belakang

Globalisasi perekonomian di suatu Negara tidak lagi hanya ditentukan oleh Negara itu sendiri melainkan juga dengan kondisi perekonomian di Negara lain sehingga saling berpengaruh satu sama lain (Awdel et al., 2020; Masteikiene & Venckuviene, 2015). Pasar modal memiliki peran penting dalam perekonomian suatu negara karena memiliki fungsi utama berupa sarana untuk pendanaan dan wadah investor untuk menginvestasikan uangnya dalam berbagai instrument investasi (Coşkun et al., 2017; Hornuf & Schwienbacher, 2018).

Pasar modal dapat menggambarkan mengenai pertumbuhan perekonomian suatu negara saat kebijakan yang dilakukan oleh setiap negara dalam menunjang pertumbuhan pasar modal (Surugiu & Surugiu, 2015; Yildirim & Gökalp, 2016). Salah satu usaha yang dilakukan adalah integrasi ekonomi pada pasar modal antar negara yang dapat memberikan gambaran kegiatan pasar yang sebenarnya terjadi (Miyazawa et al., 2019; Rungcharoenkitkul, 2012). Melihat peran dan fungsi, pasar modal memiliki pangsa pasar yang sangat besar untuk industri keuangan syariah (Salman & Nawaz, 2018; Wahyudi & Sani, 2014).

Tumbuhnya ekonomi Islam di Indonesia belakangan ini menjadi fenomena yang menarik dan menggembirakan. Praktek kegiatan ekonomi konvensional pada transaksi pasar modal yang mengandung unsur spekulasi sebagai salah satu komponennya nampaknya masih menjadi hambatan psikologis bagi umat Islam untuk turut aktif dalam kegiatan investasi terutama di bidang pasar modal (Habib, 2017; Mirakhor, 2013). Perbedaan mendasar antara pasar modal konvensional dengan pasar modal syariah dapat dilihat pada instrumen dan mekanisme transaksinya, sedangkan perbedaan nilai indeks saham syariah dengan nilai indeks saham konvensional terletak pada kriteria saham emiten yang harus memenuhi prinsip dasar syariah (Alam et al., 2013; Hassan & Mahlkecht, 2011). Secara umum konsep pasar modal syariah dengan pasar modal konvensional tidak jauh berbeda meskipun dalam konsep pasar modal syariah disebutkan bahwa saham yang diperdagangkan harus berasal dari perusahaan yang

bergerak dalam sektor yang memenuhi kriteria syariah dan terbebas dari unsur ribawi, serta transaksi saham dilakukan dengan menghindari berbagai praktik spekulasi.

Investasi syariah mengeksplorasi mengenai kinerja yang diklaim dibandingkan dengan investasi yang bertanggung jawab secara sosial dan sejauh mana tujuan hukum Islam secara praktis dipenuhi oleh lembaga keuangan Islam (Yesuf & Aassouli, 2020; Zafar & Sulaiman, 2019). Harga saham syariah mencakup perusahaan yang dicirikan oleh rasio leverage yang kecil dan keterlibatan kepentingan dimana menyiratkan hubungan yang berkaitan dengan arus informasi dan transmisi guncangan (Ferris et al., 2018; Saiti et al., 2014). Dengan kata lain, perantara keuangan Islam memainkan peran penting karena mengurangi transmisi guncangan dan mengurangi potensi kerugian akibat krisis keuangan yang tidak terduga (Djennas, 2016). Hal ini mungkin disebabkan oleh fakta bahwa aset dalam keuangan Islam memiliki hubungan yang erat antara sektor riil dan keuangan sehingga mempengaruhi pasar keuangan Islam karena dampak volatilitas dari pasar negara lain.

Penelitian ini sangat menarik dan berguna karena implikasi kebijakan bagi investor internasional dan pelaku pasar pada negara berkembang dan negara maju. Memang, investor di pasar keuangan internasional akan memiliki motivasi untuk merestrukturisasi portofolionya dengan memanfaatkan diversifikasi risiko dengan melihat korelasi yang lemah dan tidak adanya transmisi guncangan di pasar saham syariah. Penelitian ini mencoba lebih jauh untuk menjelaskan beberapa masalah ini dengan berkontribusi pada bukti empiris terbatas yang ada tentang diversifikasi berdasarkan pasar saham syariah.

1.2. Perumusan Masalah

Berdasarkan latar belakang yang telah diuraikan sebelumnya mengenai integrasi saham syariah negara berkembang dan maju, maka penelitian mempelajari seberapa besar kinerja dari pasar modal syariah Indonesia di mata dunia dengan perbandingan antara pasar saham syariah Indonesia dengan saham syariah di beberapa negara berkembang dan maju serta pengaruh yang ditimbulkan sehingga muncul pertanyaan sebagai berikut:

1. Bagaimana pengaruh jangka pendek dan jangka panjang antara pasar saham syariah negara berkembang dan maju dengan pasar saham syariah Indonesia?

2. Bagaimana respons pasar saham syariah Indonesia menghadapi guncangan pasar saham syariah negara berkembang dan maju?
3. Bagaimana kontribusi setiap pasar saham syariah negara berkembang dan maju terhadap pasar saham syariah Indonesia?

1.3. Tujuan Penelitian

Adapun tujuan penelitiannya adalah sebagai berikut:

1. Menganalisis pengaruh jangka pendek dan jangka panjang antara pasar saham syariah negara berkembang dan maju dengan pasar saham syariah Indonesia.
2. Menganalisis respons pasar saham syariah Indonesia menghadapi guncangan pasar saham syariah negara berkembang dan maju.
3. Menganalisis kontribusi setiap pasar saham syariah negara berkembang dan maju terhadap pasar saham syariah Indonesia.

1.4. Urgensi Penelitian

Hasil dari penelitian ini diharapkan dapat memberikan informasi yang bermanfaat bagi berbagai pihak, di antaranya:

1. Bagi akademisi, menambah wawasan dan menjadi sarana pembelajaran mengenai integrasi pasar saham syariah negara berkembang dan maju terhadap pasar saham syariah Indonesia serta memberikan gambaran tentang kondisi umum pasar saham syariah negara berkembang dan maju.
2. Bagi pembuat kebijakan dan pemangku kepentingan, menjadi bahan pertimbangan dalam pengambilan keputusan yang berkaitan dengan integrasi pasar saham syariah syariah negara berkembang dan maju.
3. Bagi investor, menjadi bahan pertimbangan dalam menentukan diversifikasi modal yang dimiliki sehingga dapat mengurangi risiko kerugian yang dapat terjadi.

BAB II

TINJAUAN PUSTAKA

2.1. Saham

Ide mengenai pasar saham pertama kali diperkenalkan di Prancis sekitar abad ketiga belas. Saham merupakan salah satu instrumen keuangan pada pasar modal yang dapat didefinisikan sebagai tanda kepemilikan seseorang dalam suatu perusahaan. Saham berwujud selembar kertas yang menjelaskan mengenai pemilik kertas tersebut adalah pemilik perusahaan yang menerbitkan surat berharga. Adanya penyertaan modal menyebabkan suatu pihak berhak mengklaim bagiannya terhadap pendapatan, aset, dan dapat hadir pada saat rapat umum pemegang saham yang dilakukan oleh perusahaan. Saham dapat dibagi menjadi dua berdasarkan penerapan prinsip hukum dagang Islam, yaitu saham konvensional dan saham syariah. Kriteria yang ditetapkan terhadap prinsip syariah yaitu emiten atau penerbit saham tidak melakukan usaha yang bertentangan dengan syariah, larangan terhadap bunga (riba), larangan terhadap spekulasi risiko dan return (maysir), larangan jual beli risiko yang mengandung ketidakpastian (gharar), serta memenuhi persyaratan rasio keuangan tertentu (Mishkin, 1998).

Adapun indikator utama yang menggambarkan pergerakan harga saham adalah indeks harga saham. Kebutuhan suatu investor memilih investasi pada suatu saham memerlukan pergerakan data sebelumnya di bursa saham. Transaksi pada bursa saham terjadi pada setiap saat sehingga pergerakan harga pun berubah setiap waktu. Dari kejadian dan fakta data sebelumnya yang terjadi di bursa saham harus disajikan dengan baik sehingga menghasilkan informasi yang sederhana. Investor dapat menafsirkan informasi dengan menggunakan informasi yang sederhana sehingga dapat mengambil keputusan investasi terhadap saham. Selain bursa efek, indeks saham juga dapat diterbitkan oleh lembaga jasa keuangan untuk mempermudah para investor dan pembacanya dalam melihat pergerakan harga saham yang memiliki kesamaan karakteristik tertentu.

Terdapat beberapa teori terkait pembentukan harga saham, diantaranya adalah Arbitrage Pricing Theory (APT) dan Rational Expectations Theory. APT adalah teori yang dikembangkan oleh Stephen A Ross pada tahun 1976, dimana Ross menyatakan bahwa harga suatu aktiva bisa dipengaruhi oleh berbagai faktor. APT berguna untuk memprediksi harga suatu saham di masa yang akan datang. Pada model APT tingkat pengembalian saham tidak hanya dipengaruhi oleh portofolio pasar, namun juga faktor makroekonomi. Ada tiga asumsi yang mendasari model Arbitrage Pricing Theory (APT), yaitu pasar modal dalam kondisi pasar persaingan sempurna, para investor yang selalu menyukai kekayaan lebih dari pada kurang dengan kepastian, dan hasil dari proses stokastik yang berarti pendapatan aset dianggap sebagai model faktor.

Teori lainnya adalah Rational Expectations Theory. Teori ini pertama kali diperkenalkan oleh John F Muth pada sebuah tulisannya yang berjudul "Rational Expectations and the Theory of Price Movement". Terdapat 2 asumsi yang menjadi teori ekspektasi rasional. Pertama, mengasumsikan bahwa semua pelaku kegiatan ekonomi bertindak secara rasional, mengetahui segala kegiatan ekonomi, dan memiliki informasi yang lengkap tentang peristiwa yang terjadi pada kegiatan perekonomian. Keadaan yang berlangsung di masa depan dapat diprediksi, kemudian dengan pemikiran rasional dapat menentukan reaksi terbaik terhadap perubahan yang telah diprediksi. Akibat dari asumsi ini, teori ekspektasi rasional mengembangkan analisis berdasarkan prinsip yang terdapat dalam teori mikro ekonomi dengan anggapan pembeli, produsen dan pemilik faktor produksi bertindak secara rasional dalam menjalankan kegiatan perekonomiannya. Kedua, semua jenis pasar beroperasi secara efisien dan dapat dengan cepat melakukan penyesuaian ke arah perubahan yang berlaku. Akibatnya, tingkat harga dan tingkat upah dapat mengalami perubahan dengan mudah. Semua pasar bersifat persaingan sempurna, dan informasi yang lengkap akan diketahui oleh semua pelaku kegiatan ekonomi di berbagai pasar.

2.2. Indeks Saham Syariah dan Perkembangannya

Islam merupakan salah satu agama dengan pemeluk terbanyak di dunia. Berdasarkan hasil kajian yang dilakukan oleh Pew Research Center, populasi penduduk muslim dunia pada tahun 2020 berjumlah 1,9 miliar jiwa. Jumlah ini menempatkan

Islam sebagai agama terbesar ke-dua di dunia setelah agama Kristen. Populasi muslim di dunia diprediksi akan terus tumbuh dan berjumlah 2.99 miliar jiwa pada tahun 2060.

Islam sebagai agama yang memiliki peraturan komprehensif sehingga harus ditaati oleh para pengikutnya dalam menjalankan seluruh aspek kehidupan, baik dalam aspek hubungan terhadap Tuhan (*hablumminallah*) maupun dalam aspek hubungan terhadap sesama manusia (*hablumminannas*). Salah satu aspek hubungan terhadap sesama manusia yang memiliki aturan adalah jual beli dan perdagangan (*muamalah*). Salah satu ayat Al-Qur'an yang membahas tentang prinsip dasar muamalah dalam Islam adalah QS Al-Baqarah ayat 275 yang artinya: "...Padahal Allah SWT menghalalkan jual beli dan mengharamkan riba..." Berdasarkan ayat tersebut, Allah SWT membolehkan transaksi jual beli dan memerintahkan umatnya untuk menjauhi riba.

Adanya perintah ini menyebabkan umat Islam tidak diperbolehkan melakukan kegiatan perdagangan yang berkaitan dengan bunga atau riba dimana digunakan dalam sistem keuangan konvensional saat ini. Populasi muslim dunia yang merupakan terbesar ke-dua di dunia serta adanya larangan riba di dalam Al-Qur'an menjadikan pengembangan instrumen keuangan syariah merupakan hal yang mutlak harus dilakukan. Inovasi dan pengembangan terhadap produk keuangan syariah telah dimulai sejak akhir abad ke-20 hingga awal abad ke-21. Salah satu instrumen keuangan syariah yang berkembang pada awal abad ke-21 di Indonesia sebagai alternatif investasi syariah yaitu saham syariah. Selain menghindari aspek riba, investasi dalam Islam menjadi penting karena menjadi jawaban atas perintah Allah SWT mengenai manajemen harta dan menumbuhkan aset/harta.

The Dow Jones & Company pertama kali meluncurkan seri indeks saham syariah Dow Jones Islamic Market World (DJIM) pada tahun 1999. Indeks ini pertama kali diluncurkan di Bahrain dan indeks pertama yang dibuat untuk investor yang mencari investasi sesuai dengan hukum syariah. Industri ini berkembang dengan pesat hingga saat ini. Kehadiran saham syariah di dunia menjadi jawaban bagi para investor muslim yang ingin menyalurkan kelebihan dana yang dimiliki untuk kegiatan investasi yang sesuai dengan prinsip agama Islam (Adam et al., 2017).

2.3. Integrasi Ekonomi

Globalisasi yang terjadi pada sektor perekonomian memaksa suatu negara untuk lebih meningkatkan kondisi perekonomiannya agar berada dalam level yang stabil. Jika kondisi perekonomian sebuah negara rapuh, saat terjadi guncangan membuat negara tersebut akan mengalami krisis perekonomian dan akan terus berlanjut ke negara lain yang serupa dan menimbulkan efek domino. Integrasi yang terjadi antara satu negara dengan negara lain yang diakibatkan oleh globalisasi justru menjadi pemicu adanya efek domino terutama bila terjadi masalah pada negara yang tergolong penting atau berperan besar dalam sektor tertentu (Puspitasari et al., 2015). Integrasi ekonomi khususnya pada pasar saham, erat kaitannya dengan diversifikasi portofolio dan efisiensi pasar.

Jika menemukan bahwa informasi buruk tentang suatu pasar diterima oleh pelaku pasar berlebihan, berbeda dengan informasi baik. Akibatnya, saat pasar mengalami guncangan maka korelasi antar pasar dengan pasar negara lain akan meningkat sehingga diversifikasi antar pasar saham internasional semakin sulit dilakukan dan menjadi sangat berisiko kehilangan manfaatnya sama sekali. Jika suatu pasar mengalami penurunan, maka akan menyebabkan pasar lain menurun lebih besar dibanding pengaruh normalnya akibat korelasi yang meningkat. Diversifikasi yang dilakukan hanya berlaku pada kondisi pasar normal dan sangat merugikan jika suatu pasar mengalami penurunan yang signifikan.

Konsep pasar efisien pertama kali dikemukakan dan dipopulerkan oleh Fama et al. (1969). Dalam konteks ini yang dimaksud dengan pasar adalah pasar modal dan pasar uang. Menurut *efficient market hypothesis*, pasar keuangan yang efisien ditandai oleh kemampuannya dalam menyesuaikan dengan informasi baru. Artinya, harga yang terbentuk di pasar merupakan cerminan dari informasi yang ada. Harga aset di pasar keuangan yang efisien sepenuhnya mencerminkan semua informasi yang tersedia dan konsisten dengan fundamental ekonomi. Informasi dibagi menjadi tiga, yaitu informasi harga saham masa lalu, semua informasi publik, dan semua informasi yang ada termasuk informasi orang. Masing-masing kelompok informasi tersebut mencerminkan sejauh mana tingkat efisiensi suatu pasar.

Dalam konteks integrasi pasar, secara teori aset di pasar yang sepenuhnya terintegrasi memiliki keuntungan yang diharapkan sama karena memiliki risiko yang sama. Integrasi antar pasar saham menunjukkan efisiensi, tetapi juga menunjukkan bahwa pasar tersebut tidak memiliki manfaat diversifikasi karena kinerja pasar

cenderung sama antar pasar. Dalam kerangka pengembalian risiko, seorang investor dapat meningkatkan pengembalian, mengurangi risiko, atau keduanya dengan memiliki kombinasi investasi di pasar saham dengan pengembalian yang tidak berkorelasi. Dengan demikian, tingkat integrasi pasar saham menunjukkan potensi manfaat diversifikasi portofolio yang dapat diperoleh oleh investor.

2.4. Penelitian Terdahulu

Penelitian terkait dengan integrasi pasar pernah dilakukan oleh (Nurrachmi, 2019) menguji integrasi pasar indeks saham syariah pada saat terjadinya krisis dan setelah krisis tahun 2007 dan untuk menganalisis apakah investor internasional dapat memperoleh manfaat ketika mengalokasikan dana mereka di pasar-pasar saham ini. Hasilnya menunjukkan adanya kointegrasi di pasar saham syariah setelah krisis tetapi tidak pada saat terjadinya krisis. Pada hubungan jangka panjang menunjukkan investor dapat memperoleh keuntungan portofolio di enam negara lainnya.

Lee dan Kim (2020) menganalisis integrasi waktu yang bervariasi dari pasar saham di antara empat belas negara Eropa dan penggerak moneter yang relevan dengan dua peristiwa yang berlawanan, yaitu pengenalan Euro pada tahun 1999 dan krisis perbankan pada tahun 2011. Analisis panel melaporkan bukti bahwa konvergensi kinerja moneter, penurunan perbedaan suku bunga dan inflasi di antara negara-negara european union telah menjadi pendorong utama peningkatan integrasi pasar saham european union pasca european monetary union. Analisis kualitatif menunjukkan bahwa pasca european monetary union, perbedaan PDB di antara negara-negara UE memiliki hubungan terbalik dengan konvergensi kinerja moneter.

Wu (2019) mengeksplorasi isu integrasi keuangan antara pasar saham ekonomi ASEAN5, ditambah China (China daratan dan Hong Kong), Jepang dan Korea Selatan (disebut sebagai ASEAN5+4). Menggunakan teori grafik dan metode berbasis Vector Autoregressive (VAR) hasilnya menunjukkan bahwa tingkat keterkaitan di antara pasar-pasar ini tinggi tetapi dengan pola waktu yang bervariasi. Sebagian besar dari tingkat integrasi yang tampaknya tinggi ini terbukti didorong oleh faktor-faktor global yang sama. Setelah menyaring faktor-faktor ini dari masing-masing pasar saham, besarnya keterkaitan turun secara substansial. Oleh karena itu, integrasi pasar saham di Asia Timur dan Tenggara tidak sekuat yang terlihat. Meskipun pemerintah di wilayah ini

telah mempromosikan kolaborasi dan integrasi pasar keuangan, hambatan tetap signifikan. Keterkaitan yang dilebih-lebihkan ini terutama merupakan cerminan sederhana dari pengaruh global yang lebih kuat di pasar individu, sementara keterkaitan mereka yang disebabkan oleh faktor-faktor non-global menunjukkan tren yang menurun setelah krisis.

Suteja, Suryaningprang, dan Zein (2019) melakukan penelitian untuk melihat bukti empiris apakah ada kointegrasi pasar saham syariah di Indonesia, Malaysia dan Singapura, baik sebelum dan selama krisis di Yunani. Penelitian ini juga ingin mengetahui negara mana yang paling berpengaruh terhadap volatilitas harga saham syariah di Jakarta Islamic Index (JII). Hasilnya menunjukkan tidak ada kointegrasi di pasar modal dalam sampel penelitian. Namun, hasil penelitian membuktikan ada pengaruh contagion pada pergerakan harga saham syariah di tiga negara yang diteliti. Studi ini juga menunjukkan pasar saham syariah Singapura mendominasi pengaruhnya terhadap JII dibandingkan dengan Malaysia.

Almohamad, Mishra, dan Yu (2018) membahas hubungan jangka pendek dan jangka panjang dalam krisis keuangan global sebelum dan sesudah di antara pasar saham Timur Tengah dan Afrika Utara, antara MENA dan pasar saham Tiongkok dan juga antara MENA dan pasar saham negara maju, yakni Amerika Serikat dan Inggris. Data yang digunakan adalah harga saham mingguan untuk 12 pasar saham, termasuk sembilan pasar MENA, yaitu Mesir, Yordania, Kuwait, Maroko, Oman, Qatar, Arab Saudi, Tunisia dan Uni Emirat Arab, pasar saham Tiongkok dan dua pasar negara maju, yakni Amerika Serikat dan Inggris. Hasilnya menunjukkan baik hubungan kointegrasi jangka panjang maupun hubungan sebab akibat jangka pendek antar pasar saham MENA meningkat pada pasca-krisis dibandingkan pada sub-periode sebelum krisis. Tingkat integrasi antara MENA dan pasar saham Tiongkok meningkat pada pasca krisis daripada sebelum krisis. Tingkat integrasi antara MENA dan pasar saham negara maju, yaitu Amerika Serikat dan Inggris meningkat pada pasca-krisis daripada di pra-krisis. Kehadiran peningkatan hubungan antar pasar MENA, dan antara MENA dan pasar saham Tiongkok dan juga antara MENA dan pasar negara maju, yaitu Amerika Serikat dan Inggris memiliki implikasi penting bagi investor portofolio dan pembuat kebijakan.

Adam et al. (2017) menganalisis suku bunga asing dan integrasi pasar saham syariah antara Indonesia dan Malaysia. Hasil uji kointegrasi menunjukkan terdapat

hubungan kointegrasi antara Jakarta Islamic Index dan Hijrah Shariah Index, namun tidak ada hubungan kointegrasi yang terjadi antara Jakarta Islamic Index, Hijrah Shariah Index, dan suku bunga The FED. Hasil estimasi dari model VAR menunjukkan ada hubungan jangka panjang antara Jakarta Islamic Index, Hijrah Shariah Index, dan ada integrasi antara pasar saham syariah Indonesia dan Malaysia. Selanjutnya, hasil estimasi model VARX mengungkapkan bahwa suku bunga asing hanya mempengaruhi indeks harga saham syariah Malaysia. Jiang et al. 2017 menganalisis krisis keuangan dan pergerakan bersama pasar saham global pada enam ekonomi. Hasilnya menunjukkan krisis keuangan telah memperkuat hubungan saling ketergantungan pasar saham global. Namun, pergerakan bersama secara umum dari pasar saham global tetap ada, bahkan setelah krisis.

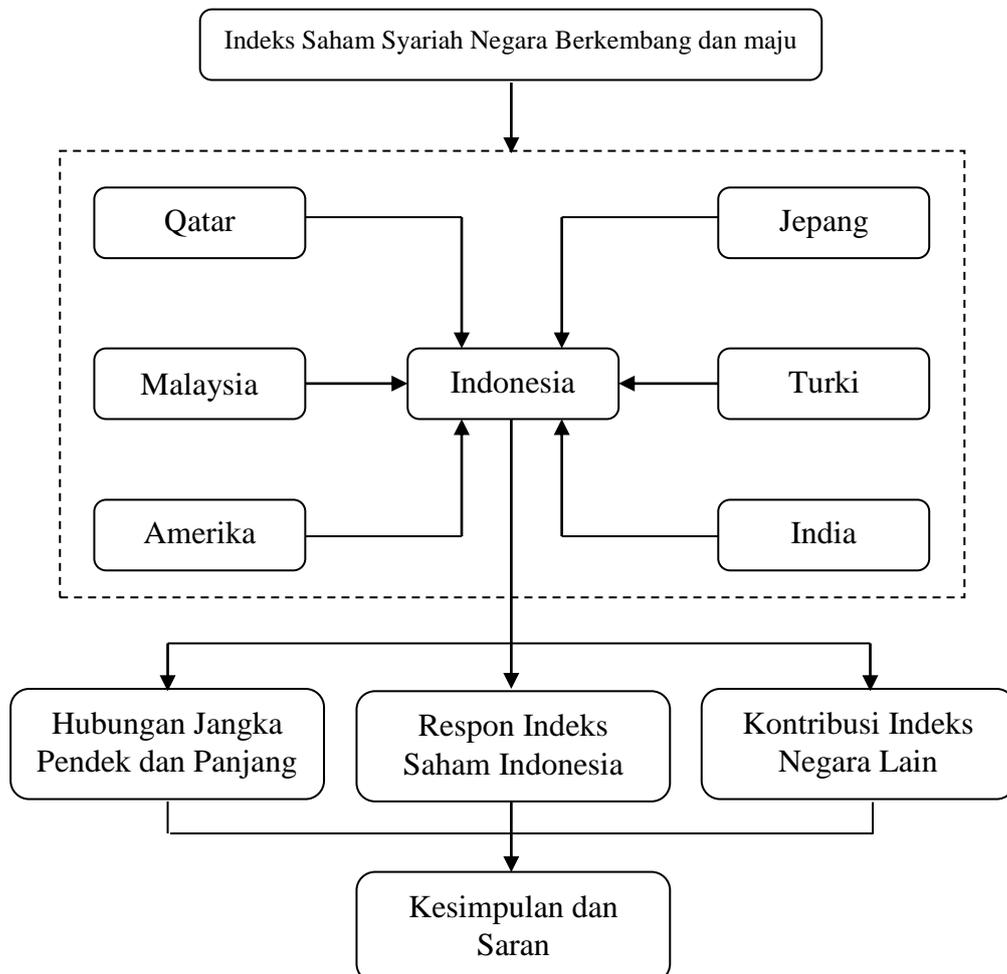
Majdoub, Mansour, dan Jouini (2016) menganalisis integrasi pasar antara harga saham konvensional dan syariah dari perspektif jangka pendek dan panjang untuk Perancis, Indonesia, Inggris dan Amerika Serikat. Hasilnya menunjukkan hubungan jangka panjang untuk semua negara, kecuali untuk Inggris di mana tidak ada kointegrasi antara harga saham konvensional dan syariah. Temuan ini menunjukkan bahwa industri keuangan syariah di negara-negara selain Inggris tampaknya tidak sesuai dengan aturan hukum Islam sehingga menghambat manajer portofolio dan pelaku pasar untuk mendapatkan keuntungan dari peluang diversifikasi internasional dan efektivitas lindung nilai. Dari perspektif korelasi, lemahnya hubungan antara pasar Indonesia dan pasar negara maju untuk harga saham konvensional dan syariah, sehingga menunjukkan bahwa investor dapat mendiversifikasi portofolio mereka di tingkat internasional untuk meminimalkan risiko. Namun, ada hubungan yang kuat antar pasar negara maju untuk indeks konvensional dan syariah.

Saiti dan Masih (2016) menganalisis hubungan sebab akibat pengembalian harian antara empat indeks konvensional dan tiga indeks syariah di wilayah Asia, yaitu, FTSE Syariah Tiongkok Index, Asia Shariah Index, Malaysia EMAS Shariah Index, SSE Tiongkok Composite Index, Hang Seng Index, Nikkei 225 dan KOSPI. Hasilnya menunjukkan kointegrasi yang signifikan antara indeks saham konvensional dan syariah, serta pengaruh pasar SSE konvensional Tiongkok diikuti oleh pasar syariah Malaysia dalam menggerakkan semua indeks termasuk Tiongkok Shariah Index.

Puspitasari et al. (2015) menganalisis integrasi bursa saham ASEAN 5, yakni Indonesia, Malaysia, Singapura, Thailand, dan Filipina yang dikaitkan dengan dinamika harga minyak dunia termasuk penurunan pada tahun 2014. Hasil dari penelitian ini menunjukkan terdapat hubungan kointegrasi di antara bursa saham ASEAN 5 selama periode penelitian yang mencerminkan bursa saham di negara-negara ASEAN 5 terintegrasi. Pasar saham Indonesia dipengaruhi oleh bursa saham Thailand dan Singapura dalam jangka panjang. Harga minyak dunia berpengaruh signifikan terhadap IHSG dalam jangka pendek.

2.5. Kerangka Pemikiran

Indeks harga saham berfungsi menggambarkan kondisi dan pergerakan pasar saham di suatu bursa atau negara. Pasar saham syariah di negara berkembang didominasi oleh lima negara berkembang, yaitu Indonesia, Turki, Malaysia, Qatar, dan India dan dua negara maju, yaitu Amerika dan Jepang. Oleh sebab itu, indeks harga saham syariah yang menjadi fokus penelitian adalah enam negara tersebut. Keterkaitan sesama negara berkembang dan maju merupakan salah satu dampak dari implementasi sistem perekonomian terbuka. Penelitian ini akan memfokuskan pada integrasi indeks harga saham negara berkembang dan maju.



Gambar 1. Kerangka Pemikiran

BAB III

METODE PENELITIAN

3.1. Jenis dan Sumber Data

Penelitian ini menggunakan jenis data time series bulanan dari tahun 2011 sampai dengan tahun 2021. Data yang digunakan adalah data penutupan indeks harga saham syariah bulanan negara anggota negara berkembang dan maju. Adapun negara yang termasuk ke dalam negara berkembang adalah Indonesia, Turki, Malaysia, Qatar, Kuwait, dan India sedangkan negara maju adalah Amerika Serikat dan Jepang. Sumber data yang digunakan berasal dari S&P Dow Jones Indices dan investing.com

Tabel 1. Indeks Saham Setiap Negara

No	Negara	Nama Indeks	Kode
1.	Indonesia	Indonesia Sharia Stock Index	JKISSI
2.	Turki	Dow Jones Islamic Market Turkey	DJIMTR
3.	Malaysia	Dow Jones Islamic Market Malaysia Titans 25 Index	DJIMMTI
4.	Qatar	QE Al Rayan Islamic	QERI
5.	India	Dow Jones Islamic Market India INR	DJIMIN
6.	Amerika	Dow Jones Islamic Market Index US	DJIMUS
7.	Jepang	Dow Jones Islamic Market Index Japan	DJIJP

3.2. Metode Analisis Data

Vector Autoregression (VAR)

Model persamaan Vector Autoregression (VAR) adalah bentuk pemodelan yang digunakan untuk menganalisis multivariate time series yang umumnya digunakan pada data makroekonomi sebagai alternatif dari persamaan simultan. Teori Vector Autoregression (VAR) diperkenalkan oleh Cristopher Sims pada tahun 1980. VAR merupakan sebuah n-persamaan dengan n-variabel, di mana masing-masing variabel dijelaskan oleh nilai lagnya sendiri, serta nilai saat ini dan nilai masa lampau (Firdaus, 2006). Selain itu, VAR menyediakan cara sistematis untuk menangkap perubahan yang dinamis dalam multiple time series, serta memiliki pendekatan yang kredibel dan mudah untuk dipahami bagi pendeskripsian data, forecasting, inferensi struktural, serta analisis kebijakan. Menurut Lutkepohl dan Kratzig (2004) model umum dari persamaan VAR(p) dengan ordo p adalah:

$$y_t = A_0 + A_1 Y_{t-1} + \dots + A_p Y_{t-p} + u_t$$

dimana:

y_t = vektor peubah tak bebas

A_0 = vektor intesep berukuran $n \times 1$

A_1 = matriks parameter berukuran $n \times n$

u_t = vektor sisaan

Ada beberapa asumsi yang harus dipenuhi dalam analisis VAR, yaitu semua variabel tak bebas bersifat stasioner, semua sisaan memiliki rataan nol (white noise), ragam konstan, dan tidak ada korelasi antara variabel tak bebas. Apabila data tidak stasioner pada level maka dapat dilakukan pendiferensialan agar data menjadi stasioner, maka model VAR yang digunakan adalah VAR first difference (VAR-FD). Penggunaan VAR-FD mempunyai kelemahan, yaitu hilangnya informasi hubungan jangka panjang antar variabel, untuk itu model VAR dikombinasikan dengan model VECM untuk data yang terkointegrasi untuk mendapatkan informasi jangka panjang.

Vector Error Correction Model (VECM)

Vector Error Correction Model (VECM) adalah model Vector Autoregression (VAR) terestriksi yang digunakan untuk variabel yang non stasioner tapi memiliki potensi untuk terkointegrasi. Restriksi tambahan ini harus diberikan karena keberadaan

bentuk data yang tidak stasioner pada level, tetapi terkointegrasi. VECM kemudian memanfaatkan informasi restriksi kointegrasi tersebut ke dalam spesifikasinya. Oleh karena itu VECM disebut sebagai desain VAR bagi series nonstasioner yang memiliki hubungan kointegrasi. Dengan demikian, dalam VECM terdapat speed of adjustment dari jangka pendek ke jangka panjang (Firdaus, 2011). Adapun persamaan umum VECM menurut Lutkepohl dan Kratzig (2004) adalah sebagai berikut.

$$\Delta y_t = \Pi y_{t-1} + \Gamma_1 \Delta y_{t-1} + \dots + \Gamma_{p-1} \Delta y_{t-p+1} + u_t$$

Dimana:

$$\Delta y_t = y_t - y_{t-1}$$

y_t = vektor yang berisi variabel yang dianalisis dalam penelitian

Π = parameter jangka panjang

Γ = parameter jangka pendek

u_t = error term

Analisis data dengan menggunakan pendekatan model VAR dan VECM yang pada umumnya digunakan yaitu Impulse Response Function (IRF), Forecast Error Variance Decomposition (FEVD), dan uji kausalitas. Sebelum melakukan estimasi VAR/VECM, maka ada beberapa tahapan yang harus dilakukan yaitu pengujian pra-estimasi. Pengujian-pengujian tersebut antara lain uji stasioneritas data, uji stabilitas VAR, penentuan lag optimal, dan uji kointegrasi.

BAB IV

HASIL DAN PEMBAHASAN

3.1. Analisis Statistik Deskriptif

Analisis statistik deskriptif menjelaskan mengenai gambaran secara umum tentang karakteristik dari setiap data yang diteliti yang meliputi pemusatan dan penyebaran data. Adapun gambaran data setiap indeks meliputi rata-rata, standar deviasi, skewness, jangkauan, data terkecil, data terbesar, dan jumlah data yang digunakan. Rata-rata yang dimaksud merupakan suatu kelompok data yang mewakili data secara menyeluruh. Standar deviasi digunakan untuk menentukan seberapa dekat data dengan rata-ratanya. Kurtosis menunjukkan indikator derajat keruncingan dimana semakin besar nilai kurtosis maka semakin runcing kurvanya. Nilai acuan dari kurtosis adalah 3. Jika nilai lebih dari 3 maka kurva terdistribusi secara leptokurtik, jika lebih rendah dari 3 maka kurva terdistribusi secara platikurtik, dan jika sama dengan 3 kurva terdistribusi normal atau mesokurtik.

Skewness menunjukkan ukuran ketidaksimetrisan pada nilai distribusi. Skewness dapat bernilai positif, negatif, dan nol. Skewness yang bernilai positif berarti ekor berada di sebelah kanan nilai terbanyak yang sebagian besar distribusi berada di nilai rendah. Skewness yang bernilai negatif berarti distribusi berada di sebelah kiri dimana sebagian besar nilai berada pada sebelah kanan kurva. Skewness yang bernilai nol berarti terdistribusi secara simetris dengan jarang antara ekor sama besar antara kanan dan kiri.

Tabel 2. Statistik Deskriptif

	Indonesia (IDR)	Turki (TRY)	Malaysia (MYR)	Qatar (QERI)	India (INR)	AS (USD)	Jepang (USD)
Mean	163.51	5,636.38	998.43	3,626.71	3,205.15	4,516.32	1,614.46
Standard Deviation	19.88	1,890.50	74.86	776.44	1,252.14	1,832.22	465.38
Kurtosis	-0.86	-0.12	2.37	-0.56	0.91	0.77	-0.65
Skewness	-0.40	0.91	0.78	-0.64	0.95	1.15	0.59
Range	82.04	7,417.63	480.90	2,935.82	5,288.78	7,538.54	1,639.24
Minimum	115.42	3,144.49	790.94	1,882.67	1,496.05	2,085.78	1,001.22
Maximum	197.46	10,562.12	1,271.84	4,818.49	6,784.83	9,624.32	2,640.46
Count	127	127	127	127	127	127	127

Indeks saham syariah Indonesia (ISSI) memiliki rata-rata sebesar 163,51 dengan nilai maksimum sebesar 197,46 dan minimum sebesar 115,42. Standar deviasi sebesar 19,88 dimana nilai tersebut jauh dari rata-ratanya. Kurtosis sebesar -0,86 berarti memiliki kurva terdistribusi secara platikurtik. Skewness sebesar -0,40 berarti distribusi berada di sebelah kiri dimana sebagian besar nilai berada pada sebelah kanan kurva.

Indeks saham syariah Turki (DJIMTR) memiliki rata-rata sebesar 5,636.38 dengan nilai maksimum sebesar 10,562.12 dan minimum sebesar 3,144.49. Standar deviasi sebesar 1,890.50 dimana nilai tersebut jauh dari rata-ratanya. Kurtosis sebesar -0.12 berarti memiliki kurva terdistribusi secara platikurtik. Skewness sebesar 0.91 berarti ekor berada di sebelah kanan nilai terbanyak yang sebagian besar distribusi berada di nilai rendah.

Indeks saham syariah Malaysia (DJIMMTI) memiliki rata-rata sebesar 998.43 dengan nilai maksimum sebesar 1,271.84 dan minimum sebesar 790.94. Standar deviasi sebesar 74.86 dimana nilai tersebut jauh dari rata-ratanya. Kurtosis sebesar 2.37 berarti memiliki kurva terdistribusi secara platikurtik. Skewness sebesar 0.78 berarti ekor berada di sebelah kanan nilai terbanyak yang sebagian besar distribusi berada di nilai rendah.

Indeks saham syariah Qatar (QERI) memiliki rata-rata sebesar 3,626.71 dengan nilai maksimum sebesar 4,818.49 dan minimum sebesar 1,882.67. Standar deviasi sebesar 776.44 dimana nilai tersebut jauh dari rata-ratanya. Kurtosis sebesar -0.56 berarti memiliki kurva terdistribusi secara platikurtik. Skewness sebesar -0.64 berarti distribusi berada di sebelah kiri dimana sebagian besar nilai berada pada sebelah kanan kurva.

Indeks saham syariah India (DJIMIN) memiliki rata-rata sebesar 3,205.15 dengan nilai maksimum sebesar 6,784.83 dan minimum sebesar 1,496.05. Standar deviasi sebesar 1,252.14 dimana nilai tersebut jauh dari rata-ratanya. Kurtosis sebesar 0.91 berarti memiliki kurva terdistribusi secara platikurtik. Skewness sebesar 0.95 berarti ekor berada di sebelah kanan nilai terbanyak yang sebagian besar distribusi berada di nilai rendah.

Indeks saham syariah Amerika (DJIMUS) memiliki rata-rata sebesar 4,516.32 dengan nilai maksimum sebesar 9,624.32 dan minimum sebesar 2,085.78. Standar deviasi sebesar 1,832.22 dimana nilai tersebut jauh dari rata-ratanya. Kurtosis sebesar 0.77 berarti memiliki kurva terdistribusi secara platikurtik. Skewness sebesar 1.15 berarti ekor berada di sebelah kanan nilai terbanyak yang sebagian besar distribusi berada di nilai rendah.

Indeks saham syariah Jepang (DJJIP) memiliki rata-rata sebesar 1,614.46 dengan nilai maksimum sebesar 2,640.46 dan minimum sebesar 1,001.22. Standar deviasi sebesar 465.38 dimana nilai tersebut jauh dari rata-ratanya. Kurtosis sebesar -0.65 berarti memiliki kurva terdistribusi secara platikurtik. Skewness sebesar 0.59 berarti ekor berada di sebelah kanan nilai terbanyak yang sebagian besar distribusi berada di nilai rendah.

3.2. Uji Stasioner

Uji stasioner dilakukan karena data yang digunakan dalam penelitian ini berupa data time series. Data yang tidak stasioner ini apabila diregresikan akan menghasilkan spurious regression. Data yang tidak stasioner dapat diubah menjadi data stasioner dengan meningkatkan derajat integrasinya sampai data menjadi stasioner. Penelitian ini menggunakan uji Augmented Dickey Fuller (ADF) dan Pilips Perron (PP) untuk mengecek stasioneritas data. Hasil dari uji ADF dan PP berupa probabilitas data kurang dari 0,05 maka data tersebut stasioner.

Tabel 3. Hasil Uji Stasioneritas

Variabel	Uji Augmented Dickey-Fuller (ADF)		Uji Phillip-Perron (PP)	
	Level	Difference	Level	Difference
ISSI	0,1793	0,0000	0,1552	0,0000

DJIMTR	0,9155	0,0000	0,9656	0,0000
DJIMMTI	0,0519	0,0000	0,0394	0,0000
QERI	0,1550	0,0000	0,1550	0,0000
DJIMIN	0,9894	0,0000	0,9918	0,0000
DJIMUS	0,9889	0,0000	0,9989	0,0000
DJIJP	0,9377	0,0000	0,9623	0,0000

Berdasarkan Tabel 2, pengujian ADF dan PP yang dilakukan pada tingkat level jika tidak stasioner maka dilanjutkan dengan tingkat difference. Pada pengujian tingkat level, semua data mengandung unit root terbukti dengan nilai probabilitasnya yang lebih besar dari 0,05. Dengan kata lain, pada tingkat level ini data tidak stasioner. Pengujian dilanjutkan dengan meningkatkan derajat integrasinya pada difference. Hasil yang diperoleh menunjukkan bahwa semua data mempunyai nilai probabilitas dibawah 0,05 sehingga data tidak mengandung unit root dan data telah stasioner. Hasil ini berarti kemungkinan indeks saham syariah Indonesia dengan indeks saham negara berkembang dan negara maju memiliki hubungan jangka panjang.

3.3. Uji Stasioner

Penelitian ini menggunakan data time series. Oleh sebab itu, hal pertama yang perlu dilakukan adalah melakukan pengujian stasioneritas data yang bertujuan untuk apakah data yang digunakan sudah stasioner atau belum. Jika data belum stasioner, maka akan menghasilkan hasil yang semu/bias. Adapun data yang tidak stasioner dapat diubah menjadi data stasioner dengan meningkatkan derajat integrasinya sampai data menjadi stasioner.

Tabel 4. Hasil Uji Stasioneritas Data

Indeks Saham Syariah	Augmented Dickey Fuller (ADF)		Philips Perron (PP)	
	Level	Difference	Level	Difference
Indonesia	0.1385	0.0000	0.1340	0.0001
Turki	0.9249	0.0000	0.9162	0.0000
Malaysia	0.0909	0.0001	0.0601	0.0001
Qatar	0.0469	0.0000	0.0811	0.0000

India	0.9404	0.0000	0.9156	0.0000
Amerika Serikat	0.9846	0.0000	0.9850	0.0001
Jepang	0.7833	0.0001	0.7837	0.0001

Penelitian ini menggunakan uji Augmented Dickey Fuller (ADF) dan Philips Perron (PP) untuk mengecek stasioneritas data dengan data level dan difference. Hasil dari uji ADF dan PP berupa probabilitas data kurang dari 0,05 maka data tersebut stasioner. Berdasarkan Tabel 4, pengujian ADF dan PP yang dilakukan pada tingkat level jika tidak stasioner maka dilanjutkan dengan tingkat difference. Pada pengujian tingkat level, semua data mengandung unit root terbukti dengan nilai probabilitasnya yang lebih besar dari 0,05. Dengan kata lain, pada tingkat level ini data tidak stasioner. Pengujian dilanjutkan dengan meningkatkan derajat integrasinya yaitu pada difference. Hasil yang diperoleh menunjukkan bahwa semua data mempunyai nilai probabilitas dibawah 0,05 sehingga data tidak mengandung unit root dan data telah stasioner. Hasil ini berarti kemungkinan indeks saham syariah Indonesia dengan negara berkembang dan maju memiliki hubungan jangka panjang.

3.4. Penentuan Lag Optimal

Setelah menguji stasioneritas data, langkah selanjutnya adalah menentukan lag optimal agar estimasi model VAR/VECM yang diperoleh menjadi valid. Dalam penggunaan data time series, maka peran waktu dalam pemodelan menjadi sangat penting. Oleh karena itu, penentuan panjang lag dilakukan untuk mendapatkan model estimasi yang tepat.

Kriteria penentuan panjang lag optimum dalam model VAR/VECM ditentukan oleh informasi yang ditampilkan Final Prediction Error (FPE), Akaike Information Criterion (AIC), Schwarz Criterion (SC), dan Hannan-Quinn (HQ). Nilai lag optimum yaitu memiliki nilai FPE, AIC, SC, dan HQ yang terkecil. Tanda bintang merupakan panjang lag optimum yang direkomendasikan dari pengujian dengan software e-views. Hasil dari pengujian lag optimal pada penelitian selengkapnya pada Tabel 2.

Tabel 5. Hasil Uji Lag Optimal

Lag	LogL	LR	FPE	AIC	SC	HQ
-----	------	----	-----	-----	----	----

0	14524.17	NA	2.04e-15	-13.95882	-13.93983	-13.95186
1	44977.66	60672.73	4.11e-28	-43.19391	-43.04206	-43.13826
2	45216.37	473.9721	3.42e-28	-43.37632	-43.09160*	-43.27198*
3	45257.93	82.24749	3.45e-28	-43.36917	-42.95158	-43.21614
4	45346.62	174.8969	3.32e-28	-43.40733	-42.85687	-43.20561
5	45467.05	236.6953	3.10e-28	-43.47601	-42.79269	-43.22561
6	45522.26	108.1424	3.08e-28	-43.48199	-42.66579	-43.18289
7	45563.53	80.54695	3.10e-28	-43.47455	-42.52549	-43.12676
8	45637.77	144.4129*	3.03e-28*	-43.49882*	-42.41689	-43.10234

*indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

Hasil uji lag optimal indeks saham syariah Indonesia dengan indeks saham negara berkembang dan maju adalah lag 2. Adapun lag 2 diambil karena memiliki nilai Schwarz Criterion (SC) yang paling kecil.

3.5. Stabilitas VAR

Setelah mendapatkan lag optimum, langkah selanjutnya adalah pengujian stabilitas VAR yang berfungsi untuk mengetahui apakah model VAR sudah stabil atau belum. Uji stabilitas VAR dilakukan dengan melihat nilai modulusnya. Jika nilai modulus kurang dari 1 (<1) maka model VAR tersebut telah stabil. Selain dari nilai modulusnya, kriteria stabil atau tidak juga dapat dilihat dari informasi yang ditampilkan pada saat uji stabilitas VAR berupa VAR satisfies the stability condition.

Tabel 6. Hasil Uji Stabilitas VAR

Indonesia dan Negara Berkembang		Indonesia dan Negara Maju	
Root	Modulus	Root	Modulus
0.999950	0.999950	0.999985	0.999985

0.993533	0.993533	0.992721	0.992721
0.992250 - 0.008438i	0.992286	0.979431	0.979431
0.992250 + 0.008438i	0.992286		
0.971530	0.971530		

No root lies outside the unit circle.

VAR satisfies the stability condition.

Hasil uji stabilitas VAR memperlihatkan jika menggunakan lag 2 sesuai dengan lag optimal yang telah diperoleh pada pengujian sebelumnya maka memperoleh hasil yang tidak stabil. Oleh sebab itu, karena tidak stabil maka langkah selanjutnya adalah menggunakan lag yang kecil setelahnya, yaitu lag 1. Ketika menggunakan lag 1 memperlihatkan bahwa indeks saham syariah Indonesia dengan negara berkembang dan negara maju sudah stabil sehingga penggunaan lag yang sesuai adalah lag 1 (Tabel 6).

3.6. Kointegrasi

Setelah dilakukan uji lag optimum, dilanjutkan dengan uji Johansen Cointegration untuk menganalisis ada atau tidaknya integrasi dalam jangka panjang antara indeks saham syariah Indonesia dengan indeks saham negara berkembang dan indeks saham syariah negara maju pada lag 1. Pengujian ini dilakukan dengan membandingkan nilai trace statistic dengan nilai kritis pada taraf 5%. Hasil dari pengujian Johansen Cointegration ditampilkan pada Tabel 7.

Tabel 7. Hasil Uji Johansen Cointegration Indeks Saham Indonesia

	Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
Negara Berkembang	None *	0.020734	107.9798	88.80380	0.0011
	At most 1 *	0.012183	64.27472	63.87610	0.0463
	At most 2	0.009012	38.70420	42.91525	0.1239
	At most 3	0.006058	19.82062	25.87211	0.2351
	At most 4	0.003420	7.145439	12.51798	0.3296
Negara Maju	None *	0.012133	45.62920	42.91525	0.0261
	At most 1	0.006538	20.16502	25.87211	0.2177
	At most 2	0.003103	6.482290	12.51798	0.4016

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level for developing country and Trace test indicates 1 cointegrating eqn(s) at the 0.05 level for developed countries

*denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Dari Tabel 7, terlihat bahwa pada tingkat signifikansi 5% ditemukan adanya 2 persamaan kointegrasi antara indeks saham syariah Indonesia dengan indeks saham negara berkembang dan 1 persamaan kointegrasi antara indeks saham syariah Indonesia dengan indeks saham syariah negara maju yang berarti memiliki hubungan keseimbangan dan kesamaan pergerakan dalam jangka panjang. Hasil uji Johansen digunakan untuk menentukan model VAR atau VECM. Pada penelitian ini, karena ditemukan integrasi maka model yang digunakan yaitu VECM.

3.7. Integrasi Jangka Pendek dan Jangka Panjang

Hasil uji pra estimasi yang telah dilakukan mengindikasikan bahwa semua variabel telah stasioner pada difference dan terdapat kointegrasi maka model yang digunakan yaitu VECM. Model VECM menggunakan lag optimum 1. Hasil dari estimasi VAR/VECM ditampilkan pada Tabel 8.

Tabel 8. Hasil Jangka Pendek dan Jangka Panjang

Indeks Saham Syariah	Koefisien	t-statistic
Jangka Pendek		
Turki	0.045216	2.37569*
Malaysia	0.056758	1.85105
Qatar	-0.024856	-1.13002
India	-0.016286	-1.04282
Amerika Serikat	0.009591	0.45302
Jepang	0.047662	2.24690*
Jangka Panjang		
Turki	-0.176158	-0.11404
Malaysia	8.056244	3.55487*

Qatar	-8.045002	-6.41477*
India	15.20192	7.53467*
Amerika Serikat	-6.341088	-3.30768*
Jepang	-15.28591	-7.23298*

*signifikan 5% (t-tabel 1.96)

Tabel 8 menunjukkan hasil estimasi VECM pada jangka pendek dan jangka panjang. Pada jangka pendek, indeks saham syariah Turki dan Jepang mempengaruhi indeks saham syariah Indonesia sedangkan pada jangka panjang indeks saham syariah Malaysia, Qatar, India, Amerika Serikat dan Jepang mempengaruhi indeks saham syariah Indonesia dengan lag satu bulan sebelumnya.

Indeks saham syariah Indonesia dengan Turki memiliki pengaruh pada jangka pendek namun tidak dalam jangka panjang. Kementerian Luar Negeri Republik Indonesia (2021) mengungkapkan bahwa hubungan kerjasama antara Indonesia dengan Turki sudah berlangsung sejak lama dan saat ini memasuki babak baru yang lebih memperlihatkan nilai strategis dari kedua negara dengan diluncurkannya “Joint declaration Indonesia-Turkey: Toward an Enhanced Partnership in a New World Setting” dimana kedua negara komitmen saling bekerja sama salah satunya dalam bidang ekonomi dan perdagangan dengan menargetkan sebesar US\$ 10 miliar pada tahun 2023. Indonesia dan Turki memiliki potensi perdagangan yang besar namun realisasinya masih sedikit. Saat ini volume perdagangan antara keduanya hanya sekitar US\$ 1.5 miliar yang masih jauh dari potensi sebenarnya.

Indeks saham syariah Indonesia dengan Malaysia memiliki pengaruh pada jangka panjang namun tidak dalam jangka pendek. Kementerian Koordinator Bidang Perekonomian Republik Indonesia (2021) menyatakan bahwa Malaysia merupakan salah satu mitra utama bidang ekonomi dalam investasi dan perdagangan. Data Kementerian Perdagangan (2021) mengungkapkan bahwa penanaman modal asing yang berasal dari Malaysia mencapai US\$ 706.8 juta yang tersebar di 1,324 proyek. Kemudian dari sisi perdagangan barang, volume perdagangan bilateral antar negara mencapai US\$ 15.03 juta pada tahun 2020 dan US\$ 13.43 juta pada tahun 2021. Data tersebut menunjukkan bahwa hubungan kedua negara sangat intens dalam bidang perekonomian.

Indeks saham syariah Indonesia dengan Malaysia memiliki pengaruh pada jangka panjang namun tidak dalam jangka pendek. Pada 2014, total perdagangan Indonesia dengan Qatar mencapai USD 1.68 miliar. Namun nilai tersebut turun menjadi USD 828 juta pada 2015, dan kembali mengalami kenaikan mencapai USD 1.5 miliar pada 2018. Peluang Indonesia untuk memasarkan produknya masih sangat terbuka luar. Beberapa produk andalan Indonesia yang dipasarkan di Qatar meliputi makanan/minuman olahan, kopi, gula, garam, teh, minyak goreng, tepung terigu, buah-buahan. Disamping itu, terdapat produk suku cadang kendaraan bermotor, listrik, alat elektronik dan pasokan untuk building material.

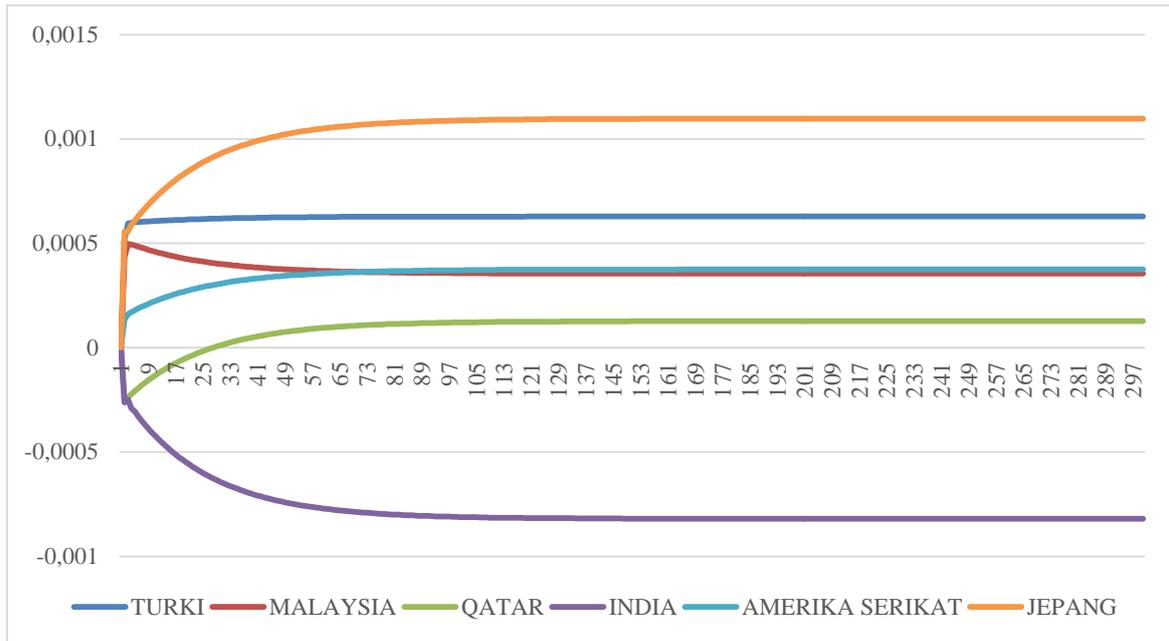
Indeks saham syariah Indonesia dengan India memiliki pengaruh pada jangka panjang namun tidak dalam jangka pendek. Indonesia selalu mencatat surplus dalam berdagang dengan India. Data Kementerian Perdagangan Republik Indonesia mencatat nilai perdagangan Indonesia dengan India pada 2017 mencapai US\$ 18,13 miliar. Jumlah tersebut terdiri dari nilai ekspor Indonesia ke India senilai US\$ 14,98 miliar dan impor Indonesia dari negara tersebut US\$ 4,05 miliar. Alhasil, neraca perdagangan Indonesia surplus US\$ 10,04 miliar. Angka ini merupakan yang terbesar sejak 2013. Namun, pada 2018 perdagangan Indonesia dengan India sepanjang periode Jan-Mar 2018 mengalami penurunan 2.99% menjadi US\$ 4.32 miliar dari periode yang sama tahun sebelumnya. Untuk ekspor Indonesia ke India menyusut 7% menjadi US\$ 3.2 miliar dari sebelumnya sedangkan impor dari India justru meningkat 10.82% menjadi US\$ 1.1 miliar. Sehingga neraca perdagangan Indonesia turun 14,4% menjadi US\$ 2.09 miliar dari periode yang sama tahun sebelumnya.

Indeks saham syariah Indonesia dengan Amerika Serikat memiliki pengaruh pada jangka panjang namun tidak dalam jangka pendek. Kementerian Perdagangan (2021) mencatat neraca perdagangan Indonesia dan Amerika Serikat (AS) selalu mencetak surplus. Meski ekspor Indonesia sempat mengalami penurunan, namun penurunan impornya lebih besar sehingga masih tetap surplus. Pada 2019, nilai ekspor Indonesia dan Amerika Serikat turun 3,8% menjadi US\$ 17,7 miliar. Sementara impor menurun hingga 8,8% menjadi US\$ 9,3 miliar sehingga nilai neraca perdagangan meningkat 2,4% dari US\$ 8,3 miliar pada 2018 menjadi US\$ 8,5 miliar. Peningkatan impor bahan baku mencerminkan peningkatan kinerja sektor riil, sementara peningkatan barang modal juga cukup baik karena berdampak pada peningkatan kapasitas produksi.

Indeks saham syariah Indonesia dengan Jepang memiliki pengaruh pada jangka panjang namun tidak dalam jangka pendek. Negara Jepang merupakan mitra yang sangat penting bagi Indonesia. Meskipun dihadapkan pada berbagai tantangan global, hubungan antar kedua negara tetap terjalin kuat. Kementerian Perdagangan (2020) menyatakan nilai perdagangan bilateral Indonesia-Jepang pada tahun 2020 mencapai US\$ 24.3 miliar. Selama periode 2018 hingga 2020 Jepang konsisten menduduki peringkat ke-3 sebagai tujuan ekspor utama Indonesia dengan nilai ekspor di Tahun 2020 mencapai US\$ 13.6 miliar. Kondisi ini terus berlanjut, dimana pada semester 1 - 2021, nilai ekspor Indonesia ke Jepang telah mencapai nilai US\$ 7.9 miliar. Dari sisi investasi, selama periode 2018 hingga Semester I - 2021 Penanaman Modal Asing (PMA) dari Jepang yang masuk ke Indonesia mencapai 12.9 miliar US\$. Adapun Jepang menjadi negara terbesar ke-3 PMA yang masuk ke Indonesia selama periode tersebut. Sementara itu, total proyek PMA asal Jepang selama periode tersebut mencapai lebih dari 19 ribu proyek. Hingga paruh pertama tahun 2021, PMA asal Jepang yang masuk ke Indonesia telah mencapai US\$ 1,04 miliar. Pemerintah Indonesia mengharapkan PMA asal Jepang yang masuk di Tahun 2021 akan mampu melampaui realisasi di tahun 2020 yang mencapai US\$ 2,6 miliar.

3.8. *Impulse Response Function*

Analisis Impulse Response Function (IRF) berfungsi untuk melihat respon dari suatu variabel akibat adanya guncangan variabel lain pada satu standar deviasi. Adapun guncangan tersebut berasal dari variabel itu sendiri maupun variabel lain. Analisis IRF ini akan mengestimasi respon dari variabel endogen dari dalam sistem VAR akibat adanya guncangan variabel lain. Adanya guncangan yang terjadi tidak hanya dari variabel itu sendiri namun juga dari variabel lain karena variabel ke-i tidak hanya mempengaruhi variabel ke-i itu saja melainkan adanya transmisi ke semua variabel lain melalui struktur lag dalam VECM. IRF menggambarkan bentuk respon setiap variabel dependen terhadap guncangan variabel independent dan lama waktu untuk mencapai kestabilan sehingga IRF tidak menggambarkan besarnya dampak suatu variabel terhadap variabel lainnya.

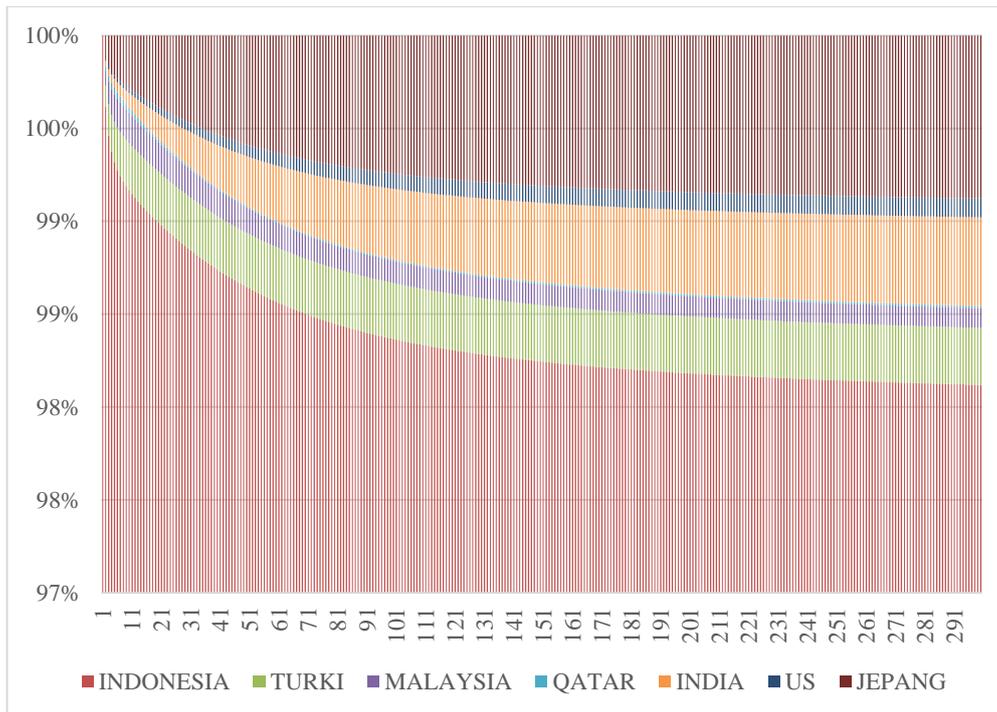


Gambar 2. Impulse Response Function

Penelitian ini mengambil jangka waktu respon indeks saham syariah Indonesia selama 300 bulan kedepan. Hasil analisis IRF pada penelitian ini akan menjelaskan respon dari indeks saham syariah Indonesia apabila terdapat guncangan pada indeks saham syariah Turki, Malaysia, Qatar, India, USA dan Jepang. Secara umum, pada awal terjadinya guncangan sebesar satu standar deviasi, indeks saham syariah Indonesia belum merespon setiap guncangan dari indeks saham syariah lainnya. Respon indeks saham syariah Indonesia mulai terlihat ketika berada periode kedua dimana indeks saham syariah Indonesia merespon dengan respon yang positif dan negatif. Indeks saham syariah Indonesia merespon positif guncangan indeks saham syariah Turki, Malaysia, USA, dan Jepang sedangkan Qatar dan India direspon negatif.

3.9. Forecast Error Variance Decomposition

Analisis Forecast Error Variance Decomposition (FEVD) pada metode VECM digunakan untuk mengidentifikasi dan menjelaskan kontribusi masing-masing guncangan variabel terhadap variabel utama yang diamati. Metode FEVD ini dapat melihat kekuatan dan kelemahan masing-masing variabel dalam memengaruhi variabel lainnya dalam kurun waktu yang panjang. Pola dari FEVD mengindikasikan sifat dari kausalitas multivariate di antara variabel-variabel dalam model VAR.



Gambar 3. Forecast Error Variance Decomposition

Hasil analisis FEVD dalam penelitian ini akan menjelaskan seberapa besar kontribusi masing-masing shock variabel indeks saham syariah Turkey, Malaysia, Qatar, India, USA, dan Japan dalam memengaruhi indeks saham syariah Indonesia. Jangka waktu yang digunakan adalah tiga tahun ke depan dimana terdiri dari 300 bulan. Hasilnya menunjukkan bahwa indeks saham syariah Indonesia mendominasi dengan rata-rata 98.37 persen kemudian mengikuti selanjutnya indeks saham syariah Japan sebesar 0.73 persen, India sebesar 0.38 persen, Turkey sebesar 0.29 persen, Malaysia sebesar 0.12 persen, USA sebesar 0.08 persen dan Qatar sebesar 0.01 persen.

Kesimpulan

Hasil estimasi menunjukkan indeks saham syariah Turkey dan Japan mempengaruhi indeks saham syariah Indonesia pada jangka pendek dan jangka panjang sedangkan indeks saham syariah Malaysia, Qatar, India, dan USA mempengaruhi pada jangka panjang. Indeks saham syariah Indonesia merespon dengan respon yang positif dan negatif. Indeks saham syariah Indonesia merespon positif guncangan indeks saham

syariah Turki, Malaysia, USA, dan Jepang sedangkan Qatar dan India direspon negatif. Indeks saham syariah Japan memberikan kontribusi terbesar dalam mempengaruhi keragaman indeks saham syariah Indonesia.

Indeks saham syariah Indonesia perlu meningkatkan kualitas struktur dan infrastruktur pasar saham agar dapat meminimalisir dampak dari guncangan pasar saham syariah negara berkembang dan negara maju serta untuk mempercepat proses integrasi pasar saham. Selain itu, perlunya koordinasi antar negara, baik itu dari peraturan dan kesiapan pasar modal di masing-masing negara untuk mencapai integrasi pasar saham.

Daftar Pustaka

- Adam, P., Nusantara, A. W., & Muthalib, A. A. (2017). Foreign Interest Rates and the Islamic Stock Market Integration between Indonesia and Malaysia. *Iranian Economic Review*, 21(3), 639–659.
- Alam, N., Hassan, M. K., & Haque, M. A. (2013). Are Islamic Bonds Different from Conventional Bonds? International Evidence from Capital Market Tests. *Borsa Istanbul Review*, 13(3), 22–29. <https://doi.org/10.1016/j.bir.2013.10.006>
- Almohamad, S., Mishra, A. V., & Yu, X. (2018). Mena Stock Markets Integration: Pre and Post Global Financial Crisis. *Australian Economic Papers*, 57(2), 107–141. <https://doi.org/10.1111/1467-8454.12106>
- Awdel, Z. M., Odel, N. M., & Saadi, W. F. (2020). The Rise of the Globalization and its Effect on the Autonomy of State and Political Economy. *Journal of Critical Reviews*, 7(6), 998–1000. <https://doi.org/10.31838/jcr.07.06.171>
- Coşkun, Y., Seven, Ü., Ertuğrul, M., & Ulussever, T. (2017). Capital Market and Economic Growth Nexus: Evidence from Turkey. *Central Bank Review*, 17(1), 19–29. <https://doi.org/10.1016/j.cbrev.2017.02.003>
- Djennas, M. (2016). Business Cycle Volatility, Growth and Financial Openness: Does Islamic Finance Make Any Difference? *Borsa Istanbul Review*, 16(3), 121–145. <https://doi.org/10.1016/j.bir.2016.06.003>
- Ferris, S. P., Hanousek, J., Shamshur, A., & Tresl, J. (2018). Asymmetries in the Firm's Use of Debt to Changing Market Values. *Journal of Corporate Finance*, 48, 542–555. <https://doi.org/10.1016/j.jcorpfin.2017.12.006>

- Firdaus, M. (2006). *Analisis Deret Waktu Satu Ragam*. IPB Press.
- Habib, F. (2017). The Issue of Speculation in the Islamic Capital Market. *Journal of Islamic Economics, Banking and Finance*, 13(2), 89–101.
- Hassan, M. K., & Mahlknecht, M. (2011). *Islamic Capital Markets: Products and Strategies*. John Wiley and Company.
- Hornuf, L., & Schwienbacher, A. (2018). Market Mechanisms and Funding Dynamics in Equity Crowdfunding. *Journal of Corporate Finance*, 50, 556–574. <https://doi.org/10.1016/j.jcorpfin.2017.08.009>
- Lee, H., & Kim, H. (2020). Time Varying Integration of European Stock Markets and Monetary Drivers. *Journal of Empirical Finance*, 58(3), 369–385. <https://doi.org/10.1016/j.jempfin.2020.07.004>
- Majdoub, J., Mansour, W., & Jouini, J. (2016). Market Integration between Conventional and Islamic Stock Prices. *North American Journal of Economics and Finance*, 37, 436–457. <https://doi.org/10.1016/j.najef.2016.03.004>
- Masteikiene, R., & Venckuviene, V. (2015). Changes of Economic Globalization Impacts on the Baltic States Business Environments. *Procedia Economics and Finance*, 26(15), 1086–1094. [https://doi.org/10.1016/s2212-5671\(15\)00934-x](https://doi.org/10.1016/s2212-5671(15)00934-x)
- Mirakhor, Z. I. and A. (2013). Finance and Development in Islam: A Historical Perspective and a Brief Look Forward. In *Economic Development and Islamic Finance*. <http://documents.worldbank.org/curated/en/798771468050094748/Economic-development-and-Islamic-finance>
- Mishkin, F. S. (1998). *The Economics of Money, Banking, and Financial Market*. Addison Wesley.
- Miyazawa, K., Ogawa, H., & Tamai, T. (2019). Capital Market Integration and Fiscal Sustainability. *European Economic Review*, 120, 1–20. <https://doi.org/10.1016/j.euroecorev.2019.103305>
- Nurrachmi, R. (2019). Movements of Islamic Stock Indices in Selected OIC Countries. *Al-Muzara'ah*, 6(2), 77–90. <https://doi.org/10.29244/jam.6.2.77-90>
- Puspitasari, A., Siregar, H., & Andati, T. (2015). Analisis Integrasi Bursa Saham ASEAN 5. *Jurnal Ekonomi Dan Kebijakan Pembangunan*, 4(2), 187–204. <https://journal.ipb.ac.id/index.php/jekp/article/download/19807/13673>

- Rungcharoenkitkul, P. (2012). Risk Sharing versus Financial Contagion in Asia: An Asset Price Perspective. *Review of Development Finance*, 2(3–4), 101–117. <https://doi.org/10.1016/j.rdf.2012.09.004>
- Saiti, B., Bacha, O., & Masih, M. (2014). The Diversification Benefits from Islamic Investment During the Financial Turmoil: The Case for the US-based Equity Investors. *Borsa Istanbul Review*, 14(4), 196–211. <https://doi.org/10.1016/j.bir.2014.08.002>
- Saiti, B., & Masih, M. (2016). The Co-movement of Selective Conventional and Islamic Stock Indices: Is there any Impact on Shariah Compliant Equity Investment in China? *International Journal of Economics and Financial Issues*, 6(4), 1895–1905.
- Salman, A., & Nawaz, H. (2018). Islamic Financial System and Conventional Banking: A Comparison. *Arab Economic and Business Journal*, 13(2), 155–167. <https://doi.org/10.1016/j.aebj.2018.09.003>
- Surugiu, M.-R., & Surugiu, C. (2015). International Trade, Globalization and Economic Interdependence between European Countries: Implications for Businesses and Marketing Framework. *Procedia Economics and Finance*, 32(15), 131–138. [https://doi.org/10.1016/s2212-5671\(15\)01374-x](https://doi.org/10.1016/s2212-5671(15)01374-x)
- Suteja, J., Suryaningprang, A., & Zein, E. (2019). Greek Crisis, Co-integration, and Contagion Effect of Sharia Stock Markets in Indonesia Malaysia and Singapore: Is there a problem for investors? *Journal of Entrepreneurship Education*, 22(2), 1–18. <https://doi.org/10.18502/kss.v3i13.4211>
- Wahyudi, I., & Sani, G. A. (2014). Interdependence Between Islamic Capital Market and Money Market: Evidence from Indonesia. *Borsa Istanbul Review*, 14(1), 32–47. <https://doi.org/10.1016/j.bir.2013.11.001>
- Wu, F. (2019). Stock Market Integration in East and Southeast Asia: The Role of Global Factors. *International Review of Financial Analysis*, 67, 1–42. <https://doi.org/10.1016/j.irfa.2019.101416>
- Yesuf, A. J., & Aassouli, D. (2020). Exploring Synergies and Performance Evaluation Between Islamic Funds and Socially Responsible Investment (SRIs) in Light of the Sustainable Development Goals (SDGs). *Heliyon*, 6(8), 1–17. <https://doi.org/10.1016/j.heliyon.2020.e04562>

- Yildirim, A., & Gökalp, M. F. (2016). Institutions and Economic Performance: A Review on the Developing Countries. *Procedia Economics and Finance*, 38, 347–359. [https://doi.org/10.1016/s2212-5671\(16\)30207-6](https://doi.org/10.1016/s2212-5671(16)30207-6)
- Zafar, M. B., & Sulaiman, A. A. (2019). Corporate Social Responsibility and Islamic Banks: a Systematic Literature Review. *Management Review Quarterly*, 69(2), 159–206. <https://doi.org/10.1007/s11301-018-0150-x>

LAMPIRAN

Uji Stasioner

Null Hypothesis: INDONESIA has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=25)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.411828	0.1385
Test critical values:		
1% level	-3.433285	
5% level	-2.862723	
10% level	-2.567446	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(INDONESIA)

Method: Least Squares

Date: 01/28/22 Time: 09:45

Sample (adjusted): 1/02/2014 12/31/2021

Included observations: 2087 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INDONESIA(-1)	-0.005811	0.002409	-2.411828	0.0160
C	0.029841	0.012355	2.415300	0.0158
R-squared	0.002782	Mean dependent var		4.83E-05
Adjusted R-squared	0.002304	S.D. dependent var		0.010789
S.E. of regression	0.010777	Akaike info criterion		-6.221872
Sum squared resid	0.242154	Schwarz criterion		-6.216464
Log likelihood	6494.523	Hannan-Quinn criter.		-6.219891
F-statistic	5.816917	Durbin-Watson stat		1.911702
Prob(F-statistic)	0.015959			

Null Hypothesis: D(INDONESIA) has a unit root

Exogenous: Constant

Lag Length: 1 (Automatic - based on SIC, maxlag=25)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-33.50868	0.0000
Test critical values:		
1% level	-3.433288	
5% level	-2.862724	
10% level	-2.567447	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(INDONESIA,2)

Method: Least Squares

Date: 01/28/22 Time: 09:45

Sample (adjusted): 1/06/2014 12/31/2021

Included observations: 2085 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(INDONESIA(-1))	-1.014745	0.030283	-33.50868	0.0000
D(INDONESIA(-1),2)	0.053581	0.021826	2.454941	0.0142
C	7.30E-05	0.000235	0.310331	0.7563
R-squared	0.483528	Mean dependent var		7.47E-06
Adjusted R-squared	0.483032	S.D. dependent var		0.014945
S.E. of regression	0.010746	Akaike info criterion		-6.227150
Sum squared resid	0.240417	Schwarz criterion		-6.219032
Log likelihood	6494.804	Hannan-Quinn criter.		-6.224176
F-statistic	974.5983	Durbin-Watson stat		1.999514
Prob(F-statistic)	0.000000			

Null Hypothesis: INDONESIA has a unit root

Exogenous: Constant

Bandwidth: 3 (Newey-West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-2.428269	0.1340
Test critical values:		
1% level	-3.433285	
5% level	-2.862723	
10% level	-2.567446	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.000116
HAC corrected variance (Bartlett kernel)	0.000117

Phillips-Perron Test Equation

Dependent Variable: D(INDONESIA)

Method: Least Squares

Date: 01/28/22 Time: 09:46

Sample (adjusted): 1/02/2014 12/31/2021

Included observations: 2087 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INDONESIA(-1)	-0.005811	0.002409	-2.411828	0.0160
C	0.029841	0.012355	2.415300	0.0158
R-squared	0.002782	Mean dependent var		4.83E-05
Adjusted R-squared	0.002304	S.D. dependent var		0.010789
S.E. of regression	0.010777	Akaike info criterion		-6.221872
Sum squared resid	0.242154	Schwarz criterion		-6.216464
Log likelihood	6494.523	Hannan-Quinn criter.		-6.219891
F-statistic	5.816917	Durbin-Watson stat		1.911702
Prob(F-statistic)	0.015959			

Null Hypothesis: D(INDONESIA) has a unit root

Exogenous: Constant

Bandwidth: 6 (Newey-West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-43.96798	0.0001
Test critical values:		
1% level	-3.433287	
5% level	-2.862724	
10% level	-2.567446	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.000116
HAC corrected variance (Bartlett kernel)	0.000103

Phillips-Perron Test Equation

Dependent Variable: D(INDONESIA,2)

Method: Least Squares

Date: 01/28/22 Time: 09:46

Sample (adjusted): 1/03/2014 12/31/2021

Included observations: 2086 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(INDONESIA(-1))	-0.960831	0.021845	-43.98444	0.0000
C	6.14E-05	0.000236	0.260606	0.7944
R-squared	0.481415	Mean dependent var		1.29E-05
Adjusted R-squared	0.481167	S.D. dependent var		0.014944
S.E. of regression	0.010764	Akaike info criterion		-6.224228
Sum squared resid	0.241468	Schwarz criterion		-6.218818
Log likelihood	6493.870	Hannan-Quinn criter.		-6.222246
F-statistic	1934.631	Durbin-Watson stat		1.999123
Prob(F-statistic)	0.000000			

Null Hypothesis: TURKI has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=25)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-0.283121	0.9249
Test critical values:		
1% level	-3.433285	
5% level	-2.862723	
10% level	-2.567446	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(TURKI)

Method: Least Squares

Date: 01/28/22 Time: 09:47

Sample (adjusted): 1/02/2014 12/31/2021

Included observations: 2087 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURKI(-1)	-0.000270	0.000955	-0.283121	0.7771
C	0.002731	0.008286	0.329623	0.7417
R-squared	0.000038	Mean dependent var		0.000387
Adjusted R-squared	-0.000441	S.D. dependent var		0.012420
S.E. of regression	0.012423	Akaike info criterion		-5.937570
Sum squared resid	0.321782	Schwarz criterion		-5.932162
Log likelihood	6197.854	Hannan-Quinn criter.		-5.935588
F-statistic	0.080158	Durbin-Watson stat		1.901229
Prob(F-statistic)	0.777112			

Null Hypothesis: D(TURKI) has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=25)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-43.44894	0.0000
Test critical values:		
1% level	-3.433287	
5% level	-2.862724	
10% level	-2.567446	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(TURKI,2)

Method: Least Squares

Date: 01/28/22 Time: 09:47

Sample (adjusted): 1/03/2014 12/31/2021

Included observations: 2086 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TURKI(-1))	-0.953052	0.021935	-43.44894	0.0000
C	0.000368	0.000272	1.354113	0.1758
R-squared	0.475302	Mean dependent var		-1.83E-05
Adjusted R-squared	0.475050	S.D. dependent var		0.017132
S.E. of regression	0.012413	Akaike info criterion		-5.939254
Sum squared resid	0.321087	Schwarz criterion		-5.933843
Log likelihood	6196.641	Hannan-Quinn criter.		-5.937271
F-statistic	1887.810	Durbin-Watson stat		1.999341
Prob(F-statistic)	0.000000			

Null Hypothesis: TURKI has a unit root

Exogenous: Constant

Bandwidth: 11 (Newey-West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-0.342227	0.9162
Test critical values:		
1% level	-3.433285	
5% level	-2.862723	
10% level	-2.567446	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.000154
HAC corrected variance (Bartlett kernel)	0.000165

Phillips-Perron Test Equation

Dependent Variable: D(TURKI)

Method: Least Squares

Date: 01/28/22 Time: 09:48

Sample (adjusted): 1/02/2014 12/31/2021

Included observations: 2087 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURKI(-1)	-0.000270	0.000955	-0.283121	0.7771
C	0.002731	0.008286	0.329623	0.7417
R-squared	0.000038	Mean dependent var		0.000387
Adjusted R-squared	-0.000441	S.D. dependent var		0.012420
S.E. of regression	0.012423	Akaike info criterion		-5.937570
Sum squared resid	0.321782	Schwarz criterion		-5.932162
Log likelihood	6197.854	Hannan-Quinn criter.		-5.935588
F-statistic	0.080158	Durbin-Watson stat		1.901229
Prob(F-statistic)	0.777112			

Null Hypothesis: D(TURKI) has a unit root

Exogenous: Constant

Bandwidth: 13 (Newey-West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-43.42419	0.0000
Test critical values:		
1% level	-3.433287	
5% level	-2.862724	
10% level	-2.567446	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.000154
HAC corrected variance (Bartlett kernel)	0.000150

Phillips-Perron Test Equation

Dependent Variable: D(TURKI,2)

Method: Least Squares

Date: 01/28/22 Time: 09:48

Sample (adjusted): 1/03/2014 12/31/2021

Included observations: 2086 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TURKI(-1))	-0.953052	0.021935	-43.44894	0.0000
C	0.000368	0.000272	1.354113	0.1758
R-squared	0.475302	Mean dependent var		-1.83E-05
Adjusted R-squared	0.475050	S.D. dependent var		0.017132
S.E. of regression	0.012413	Akaike info criterion		-5.939254
Sum squared resid	0.321087	Schwarz criterion		-5.933843
Log likelihood	6196.641	Hannan-Quinn criter.		-5.937271
F-statistic	1887.810	Durbin-Watson stat		1.999341
Prob(F-statistic)	0.000000			

Null Hypothesis: MALAYSIA has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=25)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.610502	0.0909
Test critical values:		
1% level	-3.433285	
5% level	-2.862723	
10% level	-2.567446	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(MALAYSIA)

Method: Least Squares

Date: 01/28/22 Time: 09:48

Sample (adjusted): 1/02/2014 12/31/2021

Included observations: 2087 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MALAYSIA(-1)	-0.006693	0.002564	-2.610502	0.0091
C	0.046296	0.017746	2.608852	0.0091
R-squared	0.003258	Mean dependent var		-2.72E-05
Adjusted R-squared	0.002780	S.D. dependent var		0.007688
S.E. of regression	0.007677	Akaike info criterion		-6.900113
Sum squared resid	0.122895	Schwarz criterion		-6.894705
Log likelihood	7202.268	Hannan-Quinn criter.		-6.898131
F-statistic	6.814720	Durbin-Watson stat		1.917492
Prob(F-statistic)	0.009106			

Null Hypothesis: D(MALAYSIA) has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=25)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-43.98367	0.0001
Test critical values:		
1% level	-3.433287	
5% level	-2.862724	
10% level	-2.567446	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(MALAYSIA,2)

Method: Least Squares

Date: 01/28/22 Time: 09:49

Sample (adjusted): 1/03/2014 12/31/2021

Included observations: 2086 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(MALAYSIA(-1))	-0.962496	0.021883	-43.98367	0.0000
C	-2.14E-05	0.000168	-0.127228	0.8988
R-squared	0.481407	Mean dependent var		6.70E-06
Adjusted R-squared	0.481158	S.D. dependent var		0.010667
S.E. of regression	0.007683	Akaike info criterion		-6.898556
Sum squared resid	0.123028	Schwarz criterion		-6.893145
Log likelihood	7197.194	Hannan-Quinn criter.		-6.896573
F-statistic	1934.564	Durbin-Watson stat		1.999623
Prob(F-statistic)	0.000000			

Null Hypothesis: MALAYSIA has a unit root

Exogenous: Constant

Bandwidth: 10 (Newey-West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-2.788550	0.0601
Test critical values:		
1% level	-3.433285	
5% level	-2.862723	
10% level	-2.567446	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	5.89E-05
HAC corrected variance (Bartlett kernel)	6.68E-05

Phillips-Perron Test Equation

Dependent Variable: D(MALAYSIA)

Method: Least Squares

Date: 01/28/22 Time: 09:49

Sample (adjusted): 1/02/2014 12/31/2021

Included observations: 2087 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MALAYSIA(-1)	-0.006693	0.002564	-2.610502	0.0091
C	0.046296	0.017746	2.608852	0.0091
R-squared	0.003258	Mean dependent var		-2.72E-05
Adjusted R-squared	0.002780	S.D. dependent var		0.007688
S.E. of regression	0.007677	Akaike info criterion		-6.900113
Sum squared resid	0.122895	Schwarz criterion		-6.894705
Log likelihood	7202.268	Hannan-Quinn criter.		-6.898131
F-statistic	6.814720	Durbin-Watson stat		1.917492
Prob(F-statistic)	0.009106			

Null Hypothesis: D(MALAYSIA) has a unit root

Exogenous: Constant

Bandwidth: 8 (Newey-West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-44.02566	0.0001
Test critical values:		
1% level	-3.433287	
5% level	-2.862724	
10% level	-2.567446	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	5.90E-05
HAC corrected variance (Bartlett kernel)	6.14E-05

Phillips-Perron Test Equation

Dependent Variable: D(MALAYSIA,2)

Method: Least Squares

Date: 01/28/22 Time: 09:50

Sample (adjusted): 1/03/2014 12/31/2021

Included observations: 2086 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(MALAYSIA(-1))	-0.962496	0.021883	-43.98367	0.0000
C	-2.14E-05	0.000168	-0.127228	0.8988
R-squared	0.481407	Mean dependent var		6.70E-06
Adjusted R-squared	0.481158	S.D. dependent var		0.010667
S.E. of regression	0.007683	Akaike info criterion		-6.898556
Sum squared resid	0.123028	Schwarz criterion		-6.893145
Log likelihood	7197.194	Hannan-Quinn criter.		-6.896573
F-statistic	1934.564	Durbin-Watson stat		1.999623
Prob(F-statistic)	0.000000			

Null Hypothesis: QATAR has a unit root

Exogenous: Constant

Lag Length: 3 (Automatic - based on SIC, maxlag=25)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.887673	0.0469
Test critical values:		
1% level	-3.433290	
5% level	-2.862725	
10% level	-2.567447	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(QATAR)

Method: Least Squares

Date: 01/28/22 Time: 09:50

Sample (adjusted): 1/07/2014 12/31/2021

Included observations: 2084 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
QATAR(-1)	-0.005293	0.001833	-2.887673	0.0039
D(QATAR(-1))	0.134384	0.021771	6.172546	0.0000
D(QATAR(-2))	-0.041150	0.021947	-1.874958	0.0609
D(QATAR(-3))	0.107294	0.021779	4.926566	0.0000
C	0.044007	0.015170	2.900905	0.0038
R-squared	0.031441	Mean dependent var		0.000254
Adjusted R-squared	0.029578	S.D. dependent var		0.010717
S.E. of regression	0.010557	Akaike info criterion		-6.261643
Sum squared resid	0.231709	Schwarz criterion		-6.248107
Log likelihood	6529.632	Hannan-Quinn criter.		-6.256683
F-statistic	16.87206	Durbin-Watson stat		1.999456
Prob(F-statistic)	0.000000			

Null Hypothesis: D(QATAR) has a unit root

Exogenous: Constant

Lag Length: 2 (Automatic - based on SIC, maxlag=25)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-23.11324	0.0000
Test critical values:		
1% level	-3.433290	
5% level	-2.862725	
10% level	-2.567447	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(QATAR,2)

Method: Least Squares

Date: 01/28/22 Time: 09:50

Sample (adjusted): 1/07/2014 12/31/2021

Included observations: 2084 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(QATAR(-1))	-0.805546	0.034852	-23.11324	0.0000
D(QATAR(-1),2)	-0.061717	0.028891	-2.136163	0.0328
D(QATAR(-2),2)	-0.104963	0.021802	-4.814346	0.0000
C	0.000206	0.000232	0.887812	0.3747
R-squared	0.443827	Mean dependent var		4.78E-06
Adjusted R-squared	0.443024	S.D. dependent var		0.014171
S.E. of regression	0.010576	Akaike info criterion		-6.258600
Sum squared resid	0.232638	Schwarz criterion		-6.247771
Log likelihood	6525.461	Hannan-Quinn criter.		-6.254632
F-statistic	553.2802	Durbin-Watson stat		1.998769
Prob(F-statistic)	0.000000			

Null Hypothesis: QATAR has a unit root

Exogenous: Constant

Bandwidth: 7 (Newey-West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-2.661127	0.0811
Test critical values:		
1% level	-3.433285	
5% level	-2.862723	
10% level	-2.567446	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.000114
HAC corrected variance (Bartlett kernel)	0.000151

Phillips-Perron Test Equation

Dependent Variable: D(QATAR)

Method: Least Squares

Date: 01/28/22 Time: 09:51

Sample (adjusted): 1/02/2014 12/31/2021

Included observations: 2087 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
QATAR(-1)	-0.004504	0.001846	-2.440459	0.0148
C	0.037518	0.015274	2.456266	0.0141
R-squared	0.002848	Mean dependent var		0.000246
Adjusted R-squared	0.002370	S.D. dependent var		0.010712
S.E. of regression	0.010699	Akaike info criterion		-6.236329
Sum squared resid	0.238678	Schwarz criterion		-6.230920
Log likelihood	6509.609	Hannan-Quinn criter.		-6.234347
F-statistic	5.955838	Durbin-Watson stat		1.744722
Prob(F-statistic)	0.014751			

Null Hypothesis: D(QATAR) has a unit root

Exogenous: Constant

Bandwidth: 2 (Newey-West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-40.15485	0.0000
Test critical values:		
1% level	-3.433287	
5% level	-2.862724	
10% level	-2.567446	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.000113
HAC corrected variance (Bartlett kernel)	0.000110

Phillips-Perron Test Equation

Dependent Variable: D(QATAR,2)

Method: Least Squares

Date: 01/28/22 Time: 09:51

Sample (adjusted): 1/03/2014 12/31/2021

Included observations: 2086 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(QATAR(-1))	-0.873815	0.021730	-40.21229	0.0000
C	0.000216	0.000233	0.927828	0.3536
R-squared	0.436913	Mean dependent var		1.58E-06
Adjusted R-squared	0.436643	S.D. dependent var		0.014164
S.E. of regression	0.010631	Akaike info criterion		-6.249072
Sum squared resid	0.235543	Schwarz criterion		-6.243662
Log likelihood	6519.782	Hannan-Quinn criter.		-6.247090
F-statistic	1617.028	Durbin-Watson stat		1.992506
Prob(F-statistic)	0.000000			

Null Hypothesis: INDIA has a unit root

Exogenous: Constant

Lag Length: 8 (Automatic - based on SIC, maxlag=25)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-0.164078	0.9404
Test critical values:		
1% level	-3.433297	
5% level	-2.862728	
10% level	-2.567449	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(INDIA)

Method: Least Squares

Date: 01/28/22 Time: 09:52

Sample (adjusted): 1/14/2014 12/31/2021

Included observations: 2079 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INDIA(-1)	-0.000185	0.001126	-0.164078	0.8697
D(INDIA(-1))	-0.342496	0.021936	-15.61341	0.0000
D(INDIA(-2))	-0.105121	0.023191	-4.532795	0.0000
D(INDIA(-3))	-0.121079	0.023265	-5.204300	0.0000
D(INDIA(-4))	0.276573	0.023416	11.81107	0.0000
D(INDIA(-5))	0.006052	0.023421	0.258397	0.7961
D(INDIA(-6))	-0.064994	0.023267	-2.793385	0.0053
D(INDIA(-7))	0.017965	0.023195	0.774528	0.4387
D(INDIA(-8))	-0.082212	0.021933	-3.748296	0.0002
C	0.002293	0.009195	0.249339	0.8031

R-squared	0.226004	Mean dependent var	0.000557
Adjusted R-squared	0.222637	S.D. dependent var	0.015314
S.E. of regression	0.013502	Akaike info criterion	-5.767095
Sum squared resid	0.377211	Schwarz criterion	-5.739968
Log likelihood	6004.895	Hannan-Quinn criter.	-5.757154
F-statistic	67.12667	Durbin-Watson stat	1.999675
Prob(F-statistic)	0.000000		

Null Hypothesis: D(INDIA) has a unit root

Exogenous: Constant

Lag Length: 7 (Automatic - based on SIC, maxlag=25)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-17.20595	0.0000
Test critical values:		
1% level	-3.433297	
5% level	-2.862728	
10% level	-2.567449	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(INDIA,2)

Method: Least Squares

Date: 01/28/22 Time: 09:52

Sample (adjusted): 1/14/2014 12/31/2021

Included observations: 2079 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(INDIA(-1))	-1.416533	0.082328	-17.20595	0.0000
D(INDIA(-1),2)	0.073879	0.077477	0.953550	0.3404
D(INDIA(-2),2)	-0.031395	0.071587	-0.438563	0.6610
D(INDIA(-3),2)	-0.152620	0.065780	-2.320159	0.0204
D(INDIA(-4),2)	0.123807	0.059439	2.082919	0.0374
D(INDIA(-5),2)	0.129679	0.048510	2.673227	0.0076
D(INDIA(-6),2)	0.064517	0.036739	1.756085	0.0792
D(INDIA(-7),2)	0.082329	0.021917	3.756457	0.0002
C	0.000785	0.000300	2.618510	0.0089

R-squared	0.712534	Mean dependent var	6.19E-06
Adjusted R-squared	0.711423	S.D. dependent var	0.025129
S.E. of regression	0.013499	Akaike info criterion	-5.768044
Sum squared resid	0.377216	Schwarz criterion	-5.743630
Log likelihood	6004.882	Hannan-Quinn criter.	-5.759097
F-statistic	641.3565	Durbin-Watson stat	1.999702
Prob(F-statistic)	0.000000		

Null Hypothesis: INDIA has a unit root

Exogenous: Constant

Bandwidth: 18 (Newey-West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-0.346082	0.9156
Test critical values:		
1% level	-3.433285	
5% level	-2.862723	
10% level	-2.567446	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.000234
HAC corrected variance (Bartlett kernel)	0.000104

Phillips-Perron Test Equation

Dependent Variable: D(INDIA)

Method: Least Squares

Date: 01/28/22 Time: 09:52

Sample (adjusted): 1/02/2014 12/31/2021

Included observations: 2087 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INDIA(-1)	-0.001210	0.001260	-0.960222	0.3371
C	0.010446	0.010292	1.014944	0.3103
R-squared	0.000442	Mean dependent var		0.000568
Adjusted R-squared	-0.000037	S.D. dependent var		0.015291
S.E. of regression	0.015291	Akaike info criterion		-5.522106
Sum squared resid	0.487524	Schwarz criterion		-5.516697
Log likelihood	5764.317	Hannan-Quinn criter.		-5.520124
F-statistic	0.922027	Durbin-Watson stat		2.689504
Prob(F-statistic)	0.337055			

Null Hypothesis: D(INDIA) has a unit root

Exogenous: Constant

Bandwidth: 8 (Newey-West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-67.48712	0.0001
Test critical values:		
1% level	-3.433287	
5% level	-2.862724	
10% level	-2.567446	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.000206
HAC corrected variance (Bartlett kernel)	0.000176

Phillips-Perron Test Equation

Dependent Variable: D(INDIA,2)

Method: Least Squares

Date: 01/28/22 Time: 09:53

Sample (adjusted): 1/03/2014 12/31/2021

Included observations: 2086 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(INDIA(-1))	-1.346105	0.020554	-65.49167	0.0000
C	0.000767	0.000314	2.438135	0.0148
R-squared	0.673004	Mean dependent var		9.47E-06
Adjusted R-squared	0.672847	S.D. dependent var		0.025092
S.E. of regression	0.014352	Akaike info criterion		-5.648864
Sum squared resid	0.429276	Schwarz criterion		-5.643454
Log likelihood	5893.765	Hannan-Quinn criter.		-5.646882
F-statistic	4289.159	Durbin-Watson stat		2.058139
Prob(F-statistic)	0.000000			

Null Hypothesis: US has a unit root

Exogenous: Constant

Lag Length: 9 (Automatic - based on SIC, maxlag=25)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	0.440112	0.9846
Test critical values:		
1% level	-3.433299	
5% level	-2.862729	
10% level	-2.567449	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(US)

Method: Least Squares

Date: 01/28/22 Time: 09:53

Sample (adjusted): 1/15/2014 12/31/2021

Included observations: 2078 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
US(-1)	0.000349	0.000794	0.440112	0.6599
D(US(-1))	-0.131189	0.021914	-5.986634	0.0000
D(US(-2))	0.053247	0.022024	2.417697	0.0157
D(US(-3))	0.030421	0.021935	1.386870	0.1656
D(US(-4))	-0.062388	0.021900	-2.848780	0.0044
D(US(-5))	0.004134	0.021952	0.188303	0.8507
D(US(-6))	-0.071774	0.021915	-3.275110	0.0011
D(US(-7))	0.106539	0.021968	4.849814	0.0000
D(US(-8))	-0.089541	0.022066	-4.057804	0.0001
D(US(-9))	0.099033	0.021961	4.509573	0.0000
C	-0.002407	0.006727	-0.357728	0.7206

R-squared	0.087403	Mean dependent var	0.000523
Adjusted R-squared	0.082988	S.D. dependent var	0.011155
S.E. of regression	0.010682	Akaike info criterion	-6.235145
Sum squared resid	0.235876	Schwarz criterion	-6.205294
Log likelihood	6489.316	Hannan-Quinn criter.	-6.224205
F-statistic	19.79645	Durbin-Watson stat	1.996783
Prob(F-statistic)	0.000000		

Null Hypothesis: D(US) has a unit root

Exogenous: Constant

Lag Length: 8 (Automatic - based on SIC, maxlag=25)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-14.62829	0.0000
Test critical values:		
1% level	-3.433299	
5% level	-2.862729	
10% level	-2.567449	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(US,2)

Method: Least Squares

Date: 01/28/22 Time: 09:54

Sample (adjusted): 1/15/2014 12/31/2021

Included observations: 2078 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(US(-1))	-1.057292	0.072277	-14.62829	0.0000
D(US(-1),2)	-0.073413	0.067668	-1.084899	0.2781
D(US(-2),2)	-0.019729	0.063503	-0.310675	0.7561
D(US(-3),2)	0.011174	0.058030	0.192551	0.8473
D(US(-4),2)	-0.050749	0.052702	-0.962957	0.3357
D(US(-5),2)	-0.046125	0.046721	-0.987237	0.3236
D(US(-6),2)	-0.117450	0.040679	-2.887263	0.0039
D(US(-7),2)	-0.010434	0.033173	-0.314523	0.7532
D(US(-8),2)	-0.099476	0.021933	-4.535374	0.0000
C	0.000552	0.000237	2.327056	0.0201

R-squared	0.614237	Mean dependent var	7.92E-07
Adjusted R-squared	0.612558	S.D. dependent var	0.017159
S.E. of regression	0.010680	Akaike info criterion	-6.236014
Sum squared resid	0.235898	Schwarz criterion	-6.208876
Log likelihood	6489.218	Hannan-Quinn criter.	-6.226069
F-statistic	365.8665	Durbin-Watson stat	1.996851
Prob(F-statistic)	0.000000		

Null Hypothesis: US has a unit root

Exogenous: Constant

Bandwidth: 14 (Newey-West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	0.451153	0.9850
Test critical values:		
1% level	-3.433285	
5% level	-2.862723	
10% level	-2.567446	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction) 0.000124

HAC corrected variance (Bartlett kernel)

9.52E-05

Phillips-Perron Test Equation

Dependent Variable: D(US)

Method: Least Squares

Date: 01/28/22 Time: 09:54

Sample (adjusted): 1/02/2014 12/31/2021

Included observations: 2087 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
US(-1)	0.000161	0.000817	0.197349	0.8436
C	-0.000838	0.006931	-0.120901	0.9038
R-squared	0.000019	Mean dependent var		0.000529
Adjusted R-squared	-0.000461	S.D. dependent var		0.011137
S.E. of regression	0.011139	Akaike info criterion		-6.155740
Sum squared resid	0.258709	Schwarz criterion		-6.150332
Log likelihood	6425.515	Hannan-Quinn criter.		-6.153759
F-statistic	0.038947	Durbin-Watson stat		2.365352
Prob(F-statistic)	0.843573			

Null Hypothesis: D(US) has a unit root

Exogenous: Constant

Bandwidth: 10 (Newey-West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-54.55400	0.0001
Test critical values:		
1% level	-3.433287	
5% level	-2.862724	
10% level	-2.567446	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)

0.000120

HAC corrected variance (Bartlett kernel)

0.000130

Phillips-Perron Test Equation

Dependent Variable: D(US,2)

Method: Least Squares

Date: 01/28/22 Time: 09:54

Sample (adjusted): 1/03/2014 12/31/2021

Included observations: 2086 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(US(-1))	-1.182592	0.021534	-54.91662	0.0000
C	0.000622	0.000240	2.589632	0.0097

R-squared	0.591359	Mean dependent var	-4.15E-06
Adjusted R-squared	0.591163	S.D. dependent var	0.017130
S.E. of regression	0.010953	Akaike info criterion	-6.189414
Sum squared resid	0.250022	Schwarz criterion	-6.184003
Log likelihood	6457.559	Hannan-Quinn criter.	-6.187431
F-statistic	3015.835	Durbin-Watson stat	1.974674
Prob(F-statistic)	0.000000		

Null Hypothesis: JEPANG has a unit root

Exogenous: Constant

Lag Length: 1 (Automatic - based on SIC, maxlag=25)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-0.917165	0.7833
Test critical values:		
1% level	-3.433287	
5% level	-2.862724	
10% level	-2.567446	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(JEPANG)

Method: Least Squares

Date: 01/28/22 Time: 09:54

Sample (adjusted): 1/03/2014 12/31/2021

Included observations: 2086 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
JEPANG(-1)	-0.000948	0.001033	-0.917165	0.3592
D(JEPANG(-1))	-0.120436	0.021749	-5.537456	0.0000
C	0.007465	0.007689	0.970809	0.3318
R-squared	0.015023	Mean dependent var		0.000371
Adjusted R-squared	0.014077	S.D. dependent var		0.011164
S.E. of regression	0.011085	Akaike info criterion		-6.164966
Sum squared resid	0.255965	Schwarz criterion		-6.156851
Log likelihood	6433.060	Hannan-Quinn criter.		-6.161993
F-statistic	15.88461	Durbin-Watson stat		1.997843
Prob(F-statistic)	0.000000			

Null Hypothesis: D(JEPANG) has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=25)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-51.55505	0.0001
Test critical values:		
1% level	-3.433287	
5% level	-2.862724	
10% level	-2.567446	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(JEPANG,2)

Method: Least Squares

Date: 01/28/22 Time: 09:54

Sample (adjusted): 1/03/2014 12/31/2021

Included observations: 2086 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(JEPANG(-1))	-1.120919	0.021742	-51.55505	0.0000
C	0.000416	0.000243	1.713086	0.0868
R-squared	0.560516	Mean dependent var		-4.67E-06
Adjusted R-squared	0.560305	S.D. dependent var		0.016717
S.E. of regression	0.011085	Akaike info criterion		-6.165521
Sum squared resid	0.256068	Schwarz criterion		-6.160111
Log likelihood	6432.639	Hannan-Quinn criter.		-6.163539
F-statistic	2657.923	Durbin-Watson stat		1.997956
Prob(F-statistic)	0.000000			

Null Hypothesis: JEPANG has a unit root

Exogenous: Constant

Bandwidth: 14 (Newey-West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-0.915819	0.7837
Test critical values:		
1% level	-3.433285	
5% level	-2.862723	
10% level	-2.567446	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.000124
HAC corrected variance (Bartlett kernel)	9.22E-05

Phillips-Perron Test Equation

Dependent Variable: D(JEPANG)

Method: Least Squares

Date: 01/28/22 Time: 09:55

Sample (adjusted): 1/02/2014 12/31/2021

Included observations: 2087 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
JEPANG(-1)	-0.001111	0.001039	-1.069103	0.2851
C	0.008640	0.007735	1.116969	0.2641
R-squared	0.000548	Mean dependent var		0.000374
Adjusted R-squared	0.000069	S.D. dependent var		0.011163
S.E. of regression	0.011162	Akaike info criterion		-6.151579
Sum squared resid	0.259788	Schwarz criterion		-6.146170
Log likelihood	6421.172	Hannan-Quinn criter.		-6.149597
F-statistic	1.142981	Durbin-Watson stat		2.240322
Prob(F-statistic)	0.285147			

Null Hypothesis: D(JEPANG) has a unit root

Exogenous: Constant

Bandwidth: 12 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-51.84553	0.0001
Test critical values:	1% level	-3.433287	
	5% level	-2.862724	
	10% level	-2.567446	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.000123
HAC corrected variance (Bartlett kernel)	0.000113

Phillips-Perron Test Equation

Dependent Variable: D(JEPANG,2)

Method: Least Squares

Date: 01/28/22 Time: 09:55

Sample (adjusted): 1/03/2014 12/31/2021

Included observations: 2086 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(JEPANG(-1))	-1.120919	0.021742	-51.55505	0.0000
C	0.000416	0.000243	1.713086	0.0868
R-squared	0.560516	Mean dependent var		-4.67E-06
Adjusted R-squared	0.560305	S.D. dependent var		0.016717
S.E. of regression	0.011085	Akaike info criterion		-6.165521
Sum squared resid	0.256068	Schwarz criterion		-6.160111
Log likelihood	6432.639	Hannan-Quinn criter.		-6.163539
F-statistic	2657.923	Durbin-Watson stat		1.997956
Prob(F-statistic)	0.000000			

Uji lag maximum

Roots of Characteristic Polynomial

Endogenous variables: INDONESIA TURKI MALAYSIA QATAR INDIA

Exogenous variables: C

Lag specification: 1 1

Date: 01/28/22 Time: 10:10

Root	Modulus
0.999950	0.999950
0.993533	0.993533

0.992250 - 0.008438i	0.992286
0.992250 + 0.008438i	0.992286
0.971530	0.971530

No root lies outside the unit circle.

VAR satisfies the stability condition.

VAR Lag Order Selection Criteria

Endogenous variables: INDONESIA TURKI MALAYSIA QATAR INDIA

Exogenous variables: C

Date: 01/28/22 Time: 10:12

Sample: 1/01/2014 12/31/2021

Included observations: 2080

Lag	LogL	LR	FPE	AIC	SC	HQ
0	8363.601	NA	2.22e-10	-8.037116	-8.023558	-8.032148
1	32117.29	47370.35	2.74e-20	-30.85317	-30.77182	-30.82336
2	32282.98	329.6101	2.40e-20	-30.98844	-30.83930*	-30.93379
3	32305.13	43.96099	2.40e-20	-30.98570	-30.76877	-30.90621
4	32379.93	148.1014	2.29e-20	-31.03359	-30.74887	-30.92925
5	32455.94	150.1131	2.18e-20*	-31.08263*	-30.73013	-30.95346*
6	32478.66	44.75902	2.19e-20	-31.08044	-30.66014	-30.92642
7	32496.18	34.42949	2.20e-20	-31.07325	-30.58516	-30.89439
8	32522.58	51.76589*	2.20e-20	-31.07460	-30.51872	-30.87089

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

Roots of Characteristic Polynomial

Endogenous variables: INDONESIA JEPANG US

Exogenous variables: C

Lag specification: 1 1

Date: 01/28/22 Time: 10:13

Root	Modulus
0.999985	0.999985
0.992721	0.992721
0.979431	0.979431

No root lies outside the unit circle.

VAR satisfies the stability condition.

VAR Lag Order Selection Criteria

Endogenous variables: INDONESIA JEPANG US

Exogenous variables: C

Date: 01/28/22 Time: 10:13

Sample: 1/01/2014 12/31/2021

Included observations: 2080

Lag	LogL	LR	FPE	AIC	SC	HQ
0	4271.324	NA	3.31e-06	-4.104157	-4.096023	-4.101176
1	19309.63	30018.78	1.75e-12	-18.55542	-18.52288	-18.54349
2	19366.88	114.1142	1.67e-12	-18.60181	-18.54487*	-18.58094*
3	19378.63	23.38866	1.67e-12	-18.60446	-18.52311	-18.57465
4	19382.33	7.353360	1.68e-12	-18.59936	-18.49361	-18.56061
5	19395.29	25.72187	1.67e-12	-18.60317	-18.47301	-18.55547
6	19400.03	9.378138	1.68e-12	-18.59906	-18.44450	-18.54243
7	19414.13	27.89837	1.67e-12	-18.60397	-18.42500	-18.53838
8	19443.29	57.63347*	1.64e-12*	-18.62336*	-18.41999	-18.54883

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion
 SC: Schwarz information criterion
 HQ: Hannan-Quinn information criterion

VAR Lag Order Selection Criteria

Endogenous variables: INDONESIA TURKI MALAYSIA QATAR INDIA US JEPANG

Exogenous variables: C

Date: 01/28/22 Time: 10:16

Sample: 1/01/2014 12/31/2021

Included observations: 2080

Lag	LogL	LR	FPE	AIC	SC	HQ
0	14524.17	NA	2.04e-15	-13.95882	-13.93983	-13.95186
1	44977.66	60672.73	4.11e-28	-43.19391	-43.04206	-43.13826
2	45216.37	473.9721	3.42e-28	-43.37632	-43.09160*	-43.27198*
3	45257.93	82.24749	3.45e-28	-43.36917	-42.95158	-43.21614
4	45346.62	174.8969	3.32e-28	-43.40733	-42.85687	-43.20561
5	45467.05	236.6953	3.10e-28	-43.47601	-42.79269	-43.22561
6	45522.26	108.1424	3.08e-28	-43.48199	-42.66579	-43.18289
7	45563.53	80.54695	3.10e-28	-43.47455	-42.52549	-43.12676
8	45637.77	144.4129*	3.03e-28*	-43.49882*	-42.41689	-43.10234

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

Kointegrasi Neara Berkembang

Date: 01/28/22 Time: 10:17

Sample (adjusted): 1/03/2014 12/31/2021

Included observations: 2086 after adjustments

Trend assumption: Linear deterministic trend (restricted)

Series: INDONESIA TURKI MALAYSIA QATAR

INDIA

Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.020734	107.9798	88.80380	0.0011
At most 1 *	0.012183	64.27472	63.87610	0.0463
At most 2	0.009012	38.70420	42.91525	0.1239
At most 3	0.006058	19.82062	25.87211	0.2351
At most 4	0.003420	7.145439	12.51798	0.3296

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.020734	43.70507	38.33101	0.0110
At most 1	0.012183	25.57052	32.11832	0.2544
At most 2	0.009012	18.88358	25.82321	0.3132
At most 3	0.006058	12.67518	19.38704	0.3549
At most 4	0.003420	7.145439	12.51798	0.3296

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'S11*b=D):

INDONESIA	TURKI	MALAYSIA	QATAR	INDIA	@TREND(1/02/14)
5.554799	-11.76264	17.03001	-3.405379	4.588778	0.003018
-8.379749	-2.731484	2.550430	-7.239648	8.874841	-0.001443
-3.785746	1.033035	9.862429	7.094028	-6.978715	0.002224
4.975658	6.302026	4.380656	-1.765210	0.845931	-0.003678
2.054390	-1.961780	6.723769	-4.202510	-5.779168	0.003513

Unrestricted Adjustment Coefficients (alpha):

D(INDONESIA)	0.000247	0.000556	0.000736	-6.47E-05	-0.000298
D(TURKI)	0.000767	0.000366	-6.50E-05	-0.000727	0.000302
D(MALAYSIA)	-0.000975	0.000122	-2.05E-05	-0.000258	-5.43E-05
D(QATAR)	-0.000128	0.000966	-0.000403	0.000300	9.33E-05
D(INDIA)	-0.000436	8.77E-05	0.000787	0.000270	0.000626

Log

1 Cointegrating Equation(s): likelihood 32343.63

Normalized cointegrating coefficients (standard error in parentheses)

INDONESIA	TURKI	MALAYSIA	QATAR	INDIA	@TREND(1/02/14)
1.000000	-2.117564	3.065819	-0.613052	0.826092	0.000543
	(0.37738)	(0.56529)	(0.31535)	(0.36387)	(0.00017)

Adjustment coefficients (standard error in parentheses)

D(INDONESIA)	0.001375
	(0.00131)
D(TURKI)	0.004261
	(0.00151)
D(MALAYSIA)	-0.005414
	(0.00093)
D(QATAR)	-0.000708
	(0.00129)
D(INDIA)	-0.002423
	(0.00174)

Log

2 Cointegrating Equation(s): likelihood 32356.41

Normalized cointegrating coefficients (standard error in parentheses)

INDONESIA	TURKI	MALAYSIA	QATAR	INDIA	@TREND(1/02/14)
1.000000	0.000000	0.145220	0.666917	-0.807603	0.000222
		(0.33730)	(0.22133)	(0.25878)	(0.00010)
0.000000	1.000000	-1.379226	0.604453	-0.771497	-0.000152
		(0.23918)	(0.15695)	(0.18351)	(7.2E-05)

Adjustment coefficients (standard error in parentheses)

D(INDONESIA)	-0.003287	-0.004430
	(0.00236)	(0.00284)
D(TURKI)	0.001192	-0.010024
	(0.00273)	(0.00327)
D(MALAYSIA)	-0.006441	0.011130
	(0.00168)	(0.00202)
D(QATAR)	-0.008804	-0.001139
	(0.00233)	(0.00280)
D(INDIA)	-0.003158	0.004892
	(0.00316)	(0.00379)

Log

3 Cointegrating Equation(s): likelihood 32365.85

Normalized cointegrating coefficients (standard error in parentheses)

INDONESIA	TURKI	MALAYSIA	QATAR	INDIA	@TREND(1/02/14)
1.000000	0.000000	0.000000	0.556571	-0.694255	0.000182
			(0.21298)	(0.23980)	(9.5E-05)
0.000000	1.000000	0.000000	1.652464	-1.848024	0.000223
			(0.35042)	(0.39456)	(0.00016)
0.000000	0.000000	1.000000	0.759855	-0.780529	0.000272
			(0.21598)	(0.24319)	(9.7E-05)

Adjustment coefficients (standard error in parentheses)

D(INDONESIA)	-0.006074	-0.003669	0.012895
	(0.00252)	(0.00284)	(0.00465)
D(TURKI)	0.001438	-0.010091	0.013357
	(0.00291)	(0.00329)	(0.00538)
D(MALAYSIA)	-0.006363	0.011109	-0.016488
	(0.00179)	(0.00202)	(0.00331)

D(QATAR)	-0.007278	-0.001555	-0.003683
	(0.00249)	(0.00281)	(0.00460)
D(INDIA)	-0.006137	0.005705	0.000557
	(0.00337)	(0.00380)	(0.00622)

Log

4 Cointegrating Equation(s): likelihood 32372.19

Normalized cointegrating coefficients (standard error in parentheses)

INDONESIA	TURKI	MALAYSIA	QATAR	INDIA	@TREND(1/02/14)
1.000000	0.000000	0.000000	0.000000	-0.104528	-3.66E-05
				(0.17267)	(7.6E-05)
0.000000	1.000000	0.000000	0.000000	-0.097121	-0.000426
				(0.24763)	(0.00011)
0.000000	0.000000	1.000000	0.000000	0.024590	-2.66E-05
				(0.14667)	(6.5E-05)
0.000000	0.000000	0.000000	1.000000	-1.059571	0.000393
				(0.22116)	(9.7E-05)

Adjustment coefficients (standard error in parentheses)

D(INDONESIA)	-0.006397	-0.004077	0.012612	0.000469
	(0.00278)	(0.00320)	(0.00476)	(0.00254)
D(TURKI)	-0.002178	-0.014671	0.010174	-0.004442
	(0.00321)	(0.00370)	(0.00550)	(0.00293)
D(MALAYSIA)	-0.007646	0.009484	-0.017618	0.002742
	(0.00198)	(0.00228)	(0.00339)	(0.00181)
D(QATAR)	-0.005783	0.000338	-0.002367	-0.009950
	(0.00274)	(0.00317)	(0.00471)	(0.00251)
D(INDIA)	-0.004792	0.007408	0.001741	0.005957
	(0.00371)	(0.00428)	(0.00637)	(0.00340)

Kointegrasi Negara Maju

Date: 01/28/22 Time: 10:18

Sample (adjusted): 1/03/2014 12/31/2021

Included observations: 2086 after adjustments

Trend assumption: Linear deterministic trend (restricted)

Series: INDONESIA US JEPANG

Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.012133	45.62920	42.91525	0.0261
At most 1	0.006538	20.16502	25.87211	0.2177
At most 2	0.003103	6.482290	12.51798	0.4016

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None	0.012133	25.46417	25.82321	0.0557
At most 1	0.006538	13.68273	19.38704	0.2761
At most 2	0.003103	6.482290	12.51798	0.4016

Max-eigenvalue test indicates no cointegration at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'S11*b=I):

INDONESIA	US	JEPANG	@TREND(1/02/14)
2.510425	6.921477	-17.41311	0.003136
11.20513	-1.667610	-2.754570	0.000841
-2.267478	-9.138744	-0.073191	0.005199

Unrestricted Adjustment Coefficients (alpha):

D(INDONESIA)	-0.000493	-0.000784	-6.41E-05
D(US)	0.000303	-0.000219	0.000570

D(JEPANG)	0.001080	-0.000328	-0.000175
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1 Cointegrating Equation(s):	Log likelihood	19404.92
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Normalized cointegrating coefficients (standard error in parentheses)

INDONESIA	US	JEPANG	@TREND(1/02/14)
1.000000	2.757094	-6.936321	0.001249
	(0.94622)	(1.30299)	(0.00049)

Adjustment coefficients (standard error in parentheses)

D(INDONESIA)	-0.001239
	(0.00059)
D(US)	0.000761
	(0.00060)
D(JEPANG)	0.002712
	(0.00061)

2 Cointegrating Equation(s):	Log likelihood	19411.76
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Normalized cointegrating coefficients (standard error in parentheses)

INDONESIA	US	JEPANG	@TREND(1/02/14)
1.000000	0.000000	-0.588482	0.000135
		(0.33369)	(0.00013)
0.000000	1.000000	-2.302366	0.000404
		(0.40725)	(0.00016)

Adjustment coefficients (standard error in parentheses)

D(INDONESIA)	-0.010026	-0.002108
	(0.00269)	(0.00167)
D(US)	-0.001697	0.002464
	(0.00275)	(0.00171)
D(JEPANG)	-0.000968	0.008024
	(0.00277)	(0.00172)

Date: 01/28/22 Time: 10:19

Sample (adjusted): 1/03/2014 12/31/2021

Included observations: 2086 after adjustments

Trend assumption: Linear deterministic trend (restricted)

Series: INDONESIA TURKI MALAYSIA QATAR INDIA

US JEPANG

Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized		Trace	0.05	
			Critical	
No. of CE(s)	Eigenvalue	Statistic	Value	Prob.**
None *	0.035554	212.3820	150.5585	0.0000
At most 1 *	0.021458	136.8666	117.7082	0.0018
At most 2 *	0.016440	91.61819	88.80380	0.0308
At most 3	0.011193	57.03945	63.87610	0.1644
At most 4	0.008331	33.56001	42.91525	0.3091
At most 5	0.005549	16.10866	25.87211	0.4839
At most 6	0.002156	4.502005	12.51798	0.6688

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized		Max-Eigen	0.05	
			Critical	
No. of CE(s)	Eigenvalue	Statistic	Value	Prob.**
None *	0.035554	75.51534	50.59985	0.0000
At most 1 *	0.021458	45.24844	44.49720	0.0413
At most 2	0.016440	34.57874	38.33101	0.1269
At most 3	0.011193	23.47944	32.11832	0.3841
At most 4	0.008331	17.45135	25.82321	0.4204
At most 5	0.005549	11.60665	19.38704	0.4526
At most 6	0.002156	4.502005	12.51798	0.6688

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'S11*b=I):

INDONESIA	TURKI	MALAYSIA	QATAR	INDIA	US	JEPANG	@TREND(1/02/14)
1.118943	-0.197110	9.014474	-9.001894	17.01007	-7.095313	-17.10406	0.003423
-6.655584	11.57236	-15.97212	1.354232	-1.145819	-1.083003	-1.420375	-0.003061
3.292943	-6.372076	4.512184	-2.116267	-8.626806	16.37125	-7.577979	0.001245
10.14526	4.202203	-4.416832	1.167412	-1.892876	-0.620882	-7.206000	0.001110
-2.917512	-5.992410	-12.17081	-4.213953	3.077073	1.866526	7.284520	-0.001555
3.084458	1.737915	-0.563533	-5.743983	2.190109	2.719167	5.162066	-0.005199
-0.225668	0.156501	-4.546106	3.518038	3.244532	4.657413	-3.087568	-0.003192

Unrestricted Adjustment Coefficients (alpha):

D(INDONESIA)	-0.000168	-0.000199	-0.000373	-0.000972	-0.000244	-0.000155	0.000130
D(TURKI)	0.000356	-0.000709	0.001030	-0.000297	0.000460	-0.000393	-4.50E-05
D(MALAYSIA)	-0.000451	0.000910	1.93E-05	-0.000108	0.000284	-0.000130	2.24E-05
D(QATAR)	0.000754	0.000326	0.000359	-0.000405	0.000211	0.000594	5.75E-06
D(INDIA)	-0.000486	0.000376	0.000631	-0.000351	-0.000670	1.14E-05	-0.000471
D(US)	0.001525	0.000290	-0.000574	-8.27E-05	9.71E-05	-0.000239	-0.000197
D(JEPANG)	0.000873	0.000590	0.000533	0.000164	-0.000516	-0.000184	0.000238

1 Cointegrating Equation(s):
Log likelihood 45284.77

Normalized cointegrating coefficients (standard error in parentheses)

INDONESIA	TURKI	MALAYSIA	QATAR	INDIA	US	JEPANG	@TREND(1/02/14)
1.000000	-0.176158	8.056244	-8.045002	15.20192	-6.341088	-15.28591	0.003059
	(1.54469)	(2.26626)	(1.25414)	(2.01760)	(1.91708)	(2.11336)	(0.00081)

Adjustment coefficients (standard error in parentheses)

D(INDONESIA)	-0.000188	(0.00026)
D(TURKI)	0.000399	(0.00030)
D(MALAYSIA)	-0.000504	(0.00019)
D(QATAR)	0.000844	

(0.00026)
 D(INDIA) -0.000543
 (0.00035)
 D(US) 0.001706
 (0.00027)
 D(JEPANG) 0.000977
 (0.00027)

2 Cointegrating Log
 Equation(s): likelihood 45307.40

Normalized cointegrating coefficients (standard error in parentheses)

INDONESIA	TURKI	MALAYSIA	QATAR	INDIA	US	JEPANG	@TREND(1/02/14)
1.000000	0.000000	8.693921	-8.929014	16.89629	-7.074293	-17.03322	0.003352
		(2.25381)	(1.34422)	(2.24379)	(1.97373)	(2.32635)	(0.00086)
0.000000	1.000000	3.619919	-5.018300	9.618513	-4.162207	-9.919017	0.001663
		(1.32634)	(0.79106)	(1.32045)	(1.16152)	(1.36903)	(0.00050)

Adjustment coefficients (standard error in parentheses)

D(INDONESIA) 0.001134 -0.002265
 (0.00159) (0.00272)
 D(TURKI) 0.005119 -0.008278
 (0.00183) (0.00314)
 D(MALAYSIA) -0.006560 0.010618
 (0.00112) (0.00192)
 D(QATAR) -0.001327 0.003625
 (0.00157) (0.00269)
 D(INDIA) -0.003044 0.004444
 (0.00212) (0.00363)
 D(US) -0.000227 0.003061
 (0.00160) (0.00275)
 D(JEPANG) -0.002950 0.006655
 (0.00163) (0.00279)

3 Cointegrating Log
 Equation(s): likelihood 45324.69

Normalized cointegrating coefficients (standard error in parentheses)

INDONESIA	TURKI	MALAYSIA	QATAR	INDIA	US	JEPANG	@TREND(1/02/14)
1.000000	0.000000	0.000000	-47.76628	-7.740122	101.7621	-138.6927	0.010023
			(19.0275)	(30.8575)	(25.8798)	(29.9670)	(0.01019)
0.000000	1.000000	0.000000	-21.18911	-0.639440	41.15439	-60.57480	0.004441
			(8.05039)	(13.0556)	(10.9496)	(12.6788)	(0.00431)
0.000000	0.000000	1.000000	4.467175	2.833752	-12.51868	13.99362	-0.000767
			(2.14879)	(3.48476)	(2.92263)	(3.38420)	(0.00115)

Adjustment coefficients (standard error in parentheses)

D(INDONESIA)	-9.59E-05	0.000114	-2.81E-05
	(0.00176)	(0.00310)	(0.00444)
D(TURKI)	0.008511	-0.014842	0.019187
	(0.00203)	(0.00357)	(0.00511)
D(MALAYSIA)	-0.006496	0.010495	-0.018508
	(0.00125)	(0.00219)	(0.00314)
D(QATAR)	-0.000144	0.001336	0.003210
	(0.00174)	(0.00306)	(0.00438)
D(INDIA)	-0.000967	0.000424	-0.007532
	(0.00236)	(0.00414)	(0.00592)
D(US)	-0.002115	0.006716	0.006520
	(0.00178)	(0.00313)	(0.00448)
D(JEPANG)	-0.001194	0.003258	0.000851
	(0.00181)	(0.00318)	(0.00455)

4 Cointegrating Log
Equation(s): likelihood 45336.43

Normalized cointegrating coefficients (standard error in parentheses)

INDONESIA	TURKI	MALAYSIA	QATAR	INDIA	US	JEPANG	@TREND(1/02/14)
1.000000	0.000000	0.000000	0.000000	-0.361884	0.430895	-0.808775	0.000171
				(0.24535)	(0.26974)	(0.30168)	(0.00011)
0.000000	1.000000	0.000000	0.000000	2.633545	-3.796108	0.590470	7.06E-05
				(0.53216)	(0.58504)	(0.65432)	(0.00023)
0.000000	0.000000	1.000000	0.000000	2.143728	-3.042029	1.098511	0.000154
				(0.47952)	(0.52717)	(0.58960)	(0.00021)
0.000000	0.000000	0.000000	1.000000	0.154465	-2.121396	2.886637	-0.000206
				(0.48035)	(0.52809)	(0.59062)	(0.00021)

Adjustment coefficients (standard error in parentheses)

D(INDONESIA)	-0.009954	-0.003969	0.004264	0.000900
	(0.00295)	(0.00324)	(0.00454)	(0.00220)
D(TURKI)	0.005498	-0.016090	0.020499	-0.006693
	(0.00341)	(0.00375)	(0.00524)	(0.00255)
D(MALAYSIA)	-0.007597	0.010039	-0.018029	0.005122
	(0.00210)	(0.00230)	(0.00322)	(0.00156)
D(QATAR)	-0.004257	-0.000367	0.005001	-0.007580
	(0.00293)	(0.00321)	(0.00450)	(0.00218)
D(INDIA)	-0.004529	-0.001052	-0.005981	0.003135
	(0.00396)	(0.00435)	(0.00608)	(0.00295)
D(US)	-0.002954	0.006368	0.006886	-0.012218
	(0.00299)	(0.00329)	(0.00460)	(0.00223)
D(JEPANG)	0.000467	0.003946	0.000128	-0.007995
	(0.00304)	(0.00334)	(0.00467)	(0.00227)

5 Cointegrating

Log

Equation(s): likelihood 45345.15

Normalized cointegrating coefficients (standard error in parentheses)

INDONESIA	TURKI	MALAYSIA	QATAR	INDIA	US	JEPANG @TREND(1/02/14)
1.000000	0.000000	0.000000	0.000000	0.000000	-0.101946	-0.532578
					(0.21436)	(0.29518)
0.000000	1.000000	0.000000	0.000000	0.000000	0.081551	-1.419505
					(0.22589)	(0.31106)
0.000000	0.000000	1.000000	0.000000	0.000000	0.114418	-0.537626
					(0.15761)	(0.21703)
0.000000	0.000000	0.000000	1.000000	0.000000	-1.893959	2.768746
					(0.38072)	(0.52426)
0.000000	0.000000	0.000000	0.000000	1.000000	-1.472410	0.763220
					(0.21432)	(0.29512)

Adjustment coefficients (standard error in parentheses)

D(INDONESIA)	-0.009244	-0.002510	0.007228	0.001926	0.001679
	(0.00303)	(0.00353)	(0.00536)	(0.00241)	(0.00455)
D(TURKI)	0.004155	-0.018847	0.014899	-0.008632	-3.62E-05
	(0.00350)	(0.00408)	(0.00619)	(0.00279)	(0.00525)
D(MALAYSIA)	-0.008426	0.008335	-0.021491	0.003923	-0.007794

	(0.00215)	(0.00251)	(0.00380)	(0.00171)	(0.00323)
D(QATAR)	-0.004872	-0.001632	0.002433	-0.008469	0.010771
	(0.00300)	(0.00350)	(0.00531)	(0.00239)	(0.00451)
D(INDIA)	-0.002576	0.002960	0.002168	0.005957	-0.015529
	(0.00406)	(0.00473)	(0.00717)	(0.00323)	(0.00609)
D(US)	-0.003238	0.005786	0.005704	-0.012627	0.031012
	(0.00307)	(0.00358)	(0.00543)	(0.00245)	(0.00461)
D(JEPANG)	0.001973	0.007038	0.006409	-0.005821	0.007674
	(0.00311)	(0.00363)	(0.00550)	(0.00248)	(0.00467)

6 Cointegrating

Log

Equation(s):

likelihood 45350.96

Normalized cointegrating coefficients (standard error in parentheses)

INDONESIA	TURKI	MALAYSIA	QATAR	INDIA	US	JEPANG	@TREND(1/02/14)
1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-1.036059	0.000325
						(0.28922)	(0.00011)
0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	-1.016751	-7.21E-05
						(0.26023)	(0.00010)
0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	0.027452	-3.32E-05
						(0.22199)	(8.7E-05)
0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	-6.584963	0.002596
						(1.80368)	(0.00070)
0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	-6.508581	0.002188
						(1.45450)	(0.00057)
0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	-4.938706	0.001480
						(1.03839)	(0.00041)

Adjustment coefficients (standard error in parentheses)

D(INDONESIA)	-0.009723	-0.002779	0.007316	0.002819	0.001339	-0.004979
	(0.00311)	(0.00356)	(0.00536)	(0.00276)	(0.00458)	(0.00425)
D(TURKI)	0.002943	-0.019530	0.015120	-0.006375	-0.000897	0.015078
	(0.00360)	(0.00411)	(0.00619)	(0.00319)	(0.00528)	(0.00491)
D(MALAYSIA)	-0.008827	0.008109	-0.021418	0.004669	-0.008078	0.002773
	(0.00221)	(0.00252)	(0.00380)	(0.00196)	(0.00325)	(0.00302)
D(QATAR)	-0.003039	-0.000599	0.002098	-0.011883	0.012073	0.002439
	(0.00308)	(0.00352)	(0.00530)	(0.00273)	(0.00453)	(0.00421)
D(INDIA)	-0.002541	0.002980	0.002162	0.005892	-0.015504	0.012366

	(0.00417)	(0.00476)	(0.00718)	(0.00370)	(0.00613)	(0.00570)
D(US)	-0.003974	0.005372	0.005839	-0.011256	0.030490	-0.020942
	(0.00316)	(0.00360)	(0.00543)	(0.00280)	(0.00464)	(0.00431)
D(JEPANG)	0.001404	0.006718	0.006513	-0.004762	0.007271	0.000329
	(0.00320)	(0.00365)	(0.00550)	(0.00284)	(0.00470)	(0.00437)

Hasil VECM

Vector Error Correction Estimates

Date: 01/28/22 Time: 10:21

Sample (adjusted): 1/03/2014 12/31/2021

Included observations: 2086 after adjustments

Standard errors in () & t-statistics in []

Cointegrating Eq:	CointEq1
INDONESIA(-1)	1.000000
TURKI(-1)	-0.176158 (1.54469) [-0.11404]
MALAYSIA(-1)	8.056244 (2.26626) [3.55487]
QATAR(-1)	-8.045002 (1.25414) [-6.41477]
INDIA(-1)	15.20192 (2.01760) [7.53467]
US(-1)	-6.341088 (1.91708) [-3.30768]
JEPANG(-1)	-15.28591 (2.11336) [-7.23298]

@TREND(1/01/14) 0.003059
(0.00081)
[3.77241]

C 47.41148

Error Correction:	D(INDONESIA)	D(TURKI)	D(MALAYSIA)	D(QATAR)	D(INDIA)	D(US)	D(JEPANG)
CointEq1	-0.000188 (0.00026) [-0.71496]	0.000399 (0.00030) [1.31018]	-0.000504 (0.00019) [-2.69366]	0.000844 (0.00026) [3.24814]	-0.000543 (0.00035) [-1.54608]	0.001706 (0.00027) [6.42324]	0.000977 (0.00027) [3.61742]
D(INDONESIA(-1))	0.039252 (0.02182) [1.79864]	0.011795 (0.02523) [0.46745]	-0.000353 (0.01553) [-0.02273]	-0.006197 (0.02155) [-0.28758]	-0.011807 (0.02916) [-0.40497]	-0.014903 (0.02204) [-0.67623]	0.046358 (0.02240) [2.06998]
D(TURKI(-1))	0.045216 (0.01903) [2.37569]	0.046684 (0.02201) [2.12140]	0.000195 (0.01354) [0.01440]	-0.011170 (0.01879) [-0.59434]	-0.061528 (0.02543) [-2.41972]	-0.036068 (0.01922) [-1.87655]	0.028983 (0.01953) [1.48383]
D(MALAYSIA(-1))	0.056758 (0.03066) [1.85105]	-0.007817 (0.03545) [-0.22048]	0.036214 (0.02182) [1.65967]	-0.021122 (0.03028) [-0.69763]	-0.008093 (0.04096) [-0.19757]	0.060392 (0.03096) [1.95036]	0.078515 (0.03147) [2.49514]
D(QATAR(-1))	-0.024856 (0.02200) [-1.13002]	0.035399 (0.02543) [1.39192]	-0.004323 (0.01565) [-0.27621]	0.128855 (0.02172) [5.93268]	-0.005276 (0.02939) [-0.17954]	0.003315 (0.02221) [0.14922]	0.055181 (0.02257) [2.44455]
D(INDIA(-1))	-0.016286 (0.01562) [-1.04282]	-0.028650 (0.01806) [-1.58664]	-0.009697 (0.01111) [-0.87258]	-0.009017 (0.01542) [-0.58475]	-0.339001 (0.02086) [-16.2480]	-0.020407 (0.01577) [-1.29396]	-0.017702 (0.01603) [-1.10451]
D(US(-1))	0.009591 (0.02117) [0.45302]	0.008793 (0.02448) [0.35924]	0.033496 (0.01507) [2.22344]	-0.008831 (0.02090) [-0.42246]	-0.005175 (0.02828) [-0.18295]	-0.188395 (0.02138) [-8.81215]	0.006919 (0.02173) [0.31847]
D(JEPANG(-1))	0.047662 (0.02121) [2.24690]	-0.004721 (0.02453) [-0.19249]	0.055162 (0.01509) [3.65430]	0.060401 (0.02095) [2.88370]	-0.007555 (0.02834) [-0.26660]	0.011643 (0.02142) [0.54354]	-0.113169 (0.02177) [-5.19868]
C	3.70E-05 (0.00024)	0.000372 (0.00027)	-5.34E-05 (0.00017)	0.000207 (0.00023)	0.000795 (0.00032)	0.000648 (0.00024)	0.000394 (0.00024)

	[0.15704]	[1.36441]	[-0.31829]	[0.88753]	[2.52286]	[2.72199]	[1.62817]
R-squared	0.009649	0.004999	0.015538	0.024343	0.123436	0.055658	0.029351
Adj. R-squared	0.005835	0.001166	0.011747	0.020585	0.120060	0.052020	0.025613
Sum sq. resids	0.239507	0.320184	0.121287	0.233527	0.427486	0.244252	0.252241
S.E. equation	0.010738	0.012416	0.007642	0.010604	0.014346	0.010844	0.011020
F-statistic	2.529570	1.304348	4.097834	6.477638	36.56004	15.30174	7.850808
Log likelihood	6502.375	6199.578	7212.058	6528.744	5898.125	6481.912	6448.344
Akaike AIC	-6.225671	-5.935358	-6.906096	-6.250953	-5.646332	-6.206052	-6.173868
Schwarz SC	-6.201325	-5.911011	-6.881750	-6.226607	-5.621986	-6.181705	-6.149521
Mean dependent	6.34E-05	0.000387	-2.25E-05	0.000247	0.000572	0.000525	0.000371
S.D. dependent	0.010770	0.012423	0.007687	0.010714	0.015294	0.011138	0.011164
<hr/>							
Determinant resid covariance (dof adj.)	3.39E-28						
Determinant resid covariance	3.29E-28						
Log likelihood	45284.77						
Akaike information criterion	-43.34973						
Schwarz criterion	-43.15767						
Number of coefficients	71						

Hasil VECM Negara Berkembang

Vector Error Correction Estimates

Date: 01/28/22 Time: 10:22

Sample (adjusted): 1/06/2014 12/31/2021

Included observations: 2085 after adjustments

Standard errors in () & t-statistics in []

Cointegrating Eq:	CointEq1
INDONESIA(-1)	1.000000
TURKI(-1)	-2.365569 (0.42381) [-5.58164]

MALAYSIA(-1)	3.409396 (0.63494) [5.36961]
QATAR(-1)	-0.545262 (0.35263) [-1.54626]
INDIA(-1)	0.822893 (0.40702) [2.02176]
@TREND(1/01/14)	0.000649 (0.00020) [3.32358]
C	-11.08576

Error Correction:	D(INDONESIA)	D(TURKI)	D(MALAYSIA)	D(QATAR)	D(INDIA)
CointEq1	0.001792 (0.00120) [1.49288]	0.004336 (0.00139) [3.12783]	-0.004608 (0.00085) [-5.39675]	-0.001038 (0.00119) [-0.87154]	-0.002128 (0.00160) [-1.32934]
D(INDONESIA(-1))	0.033858 (0.02198) [1.54072]	0.003726 (0.02539) [0.14677]	0.006283 (0.01564) [0.40186]	-0.008293 (0.02181) [-0.38019]	-0.008487 (0.02932) [-0.28949]
D(INDONESIA(-2))	-0.058474 (0.02189) [-2.67187]	0.001865 (0.02528) [0.07376]	-0.008460 (0.01557) [-0.54329]	0.004348 (0.02172) [0.20017]	0.006403 (0.02919) [0.21933]
D(TURKI(-1))	0.047143 (0.01911) [2.46647]	0.052780 (0.02208) [2.39030]	-0.010599 (0.01360) [-0.77937]	-0.010570 (0.01897) [-0.55715]	-0.067290 (0.02550) [-2.63908]
D(TURKI(-2))	0.021340 (0.01940) [1.09998]	0.047022 (0.02241) [2.09804]	0.018290 (0.01380) [1.32502]	0.001757 (0.01926) [0.09126]	-0.020067 (0.02588) [-0.77540]
D(MALAYSIA(-1))	0.054812 (0.03067) [1.78719]	-0.009045 (0.03543) [-0.25527]	0.038391 (0.02182) [1.75927]	-0.020458 (0.03044) [-0.67203]	-0.013123 (0.04091) [-0.32076]

D(MALAYSIA(-2))	0.049596 (0.03068) [1.61662]	-0.007224 (0.03544) [-0.20383]	0.000759 (0.02183) [0.03476]	0.029197 (0.03045) [0.95881]	0.015734 (0.04093) [0.38447]
D(QATAR(-1))	-0.023341 (0.02214) [-1.05404]	0.041389 (0.02558) [1.61789]	-0.008730 (0.01576) [-0.55408]	0.129418 (0.02198) [5.88801]	-0.005158 (0.02954) [-0.17463]
D(QATAR(-2))	0.005779 (0.02216) [0.26077]	-0.019539 (0.02560) [-0.76324]	0.027787 (0.01577) [1.76231]	-0.031553 (0.02200) [-1.43451]	0.009148 (0.02956) [0.30947]
D(INDIA(-1))	-0.013450 (0.01643) [-0.81872]	-0.028040 (0.01898) [-1.47744]	-0.012973 (0.01169) [-1.10987]	0.005668 (0.01631) [0.34758]	-0.374059 (0.02191) [-17.0688]
D(INDIA(-2))	0.013885 (0.01641) [0.84618]	-0.010842 (0.01896) [-0.57196]	-0.005853 (0.01168) [-0.50131]	0.016373 (0.01629) [1.00527]	-0.086058 (0.02189) [-3.93151]
C	5.19E-05 (0.00024) [0.21997]	0.000356 (0.00027) [1.30587]	-1.94E-05 (0.00017) [-0.11566]	0.000218 (0.00023) [0.93039]	0.000865 (0.00031) [2.74959]
R-squared	0.012513	0.010832	0.020282	0.018439	0.129960
Adj. R-squared	0.007273	0.005583	0.015083	0.013230	0.125343
Sum sq. resids	0.238418	0.318200	0.120702	0.234901	0.424278
S.E. equation	0.010724	0.012389	0.007631	0.010645	0.014306
F-statistic	2.387953	2.063655	3.901372	3.540147	28.14991
Log likelihood	6503.509	6202.586	7213.137	6519.001	5902.649
Akaike AIC	-6.226867	-5.938212	-6.907565	-6.241727	-5.650502
Schwarz SC	-6.194392	-5.905737	-6.875090	-6.209252	-5.618027
Mean dependent	7.30E-05	0.000382	-2.24E-05	0.000250	0.000569
S.D. dependent	0.010764	0.012424	0.007689	0.010716	0.015297
Determinant resid covariance (dof adj.)		2.36E-20			
Determinant resid covariance		2.30E-20			
Log likelihood		32349.49			
Akaike information criterion		-30.96738			
Schwarz criterion		-30.78877			
Number of coefficients		66			

Hasil VECM Negara Maju

Vector Error Correction Estimates

Date: 01/28/22 Time: 10:22

Sample (adjusted): 1/06/2014 12/31/2021

Included observations: 2085 after adjustments

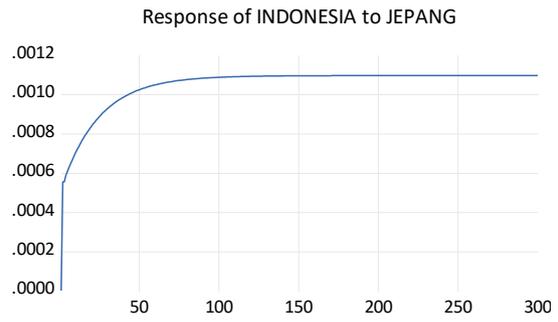
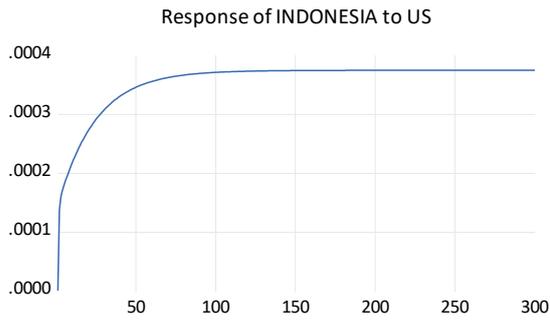
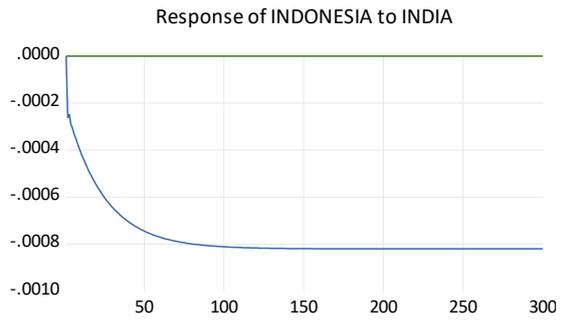
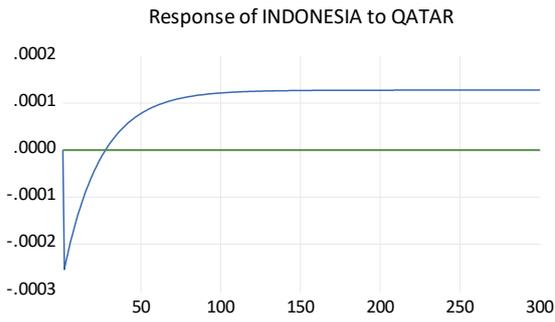
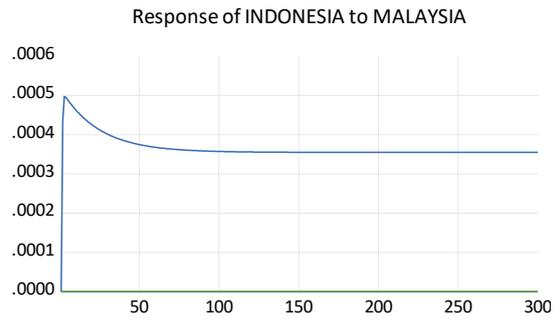
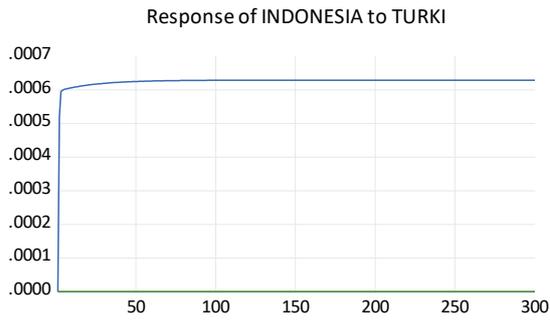
Standard errors in () & t-statistics in []

Cointegrating Eq:	CointEq1		
INDONESIA(-1)	1.000000		
US(-1)	2.352168 (0.84746) [2.77555]		
JEPANG(-1)	-6.111131 (1.16934) [-5.22616]		
@TREND(1/01/14)	0.001124 (0.00043) [2.58662]		
C	19.22225		
Error Correction:	D(INDONESIA)	D(US)	D(JEPANG)
CointEq1	-0.001454 (0.00068) [-2.14779]	0.000720 (0.00069) [1.04322]	0.003037 (0.00070) [4.36042]
D(INDONESIA(-1))	0.039453 (0.02186) [1.80491]	-0.016968 (0.02230) [-0.76096]	0.047919 (0.02250) [2.12998]
D(INDONESIA(-2))	-0.056698 (0.02181) [-2.59908]	-0.009142 (0.02225) [-0.41085]	-0.021772 (0.02245) [-0.96972]
D(US(-1))	0.004040 (0.02158) [0.18723]	-0.172012 (0.02201) [-7.81437]	0.004259 (0.02221) [0.19177]

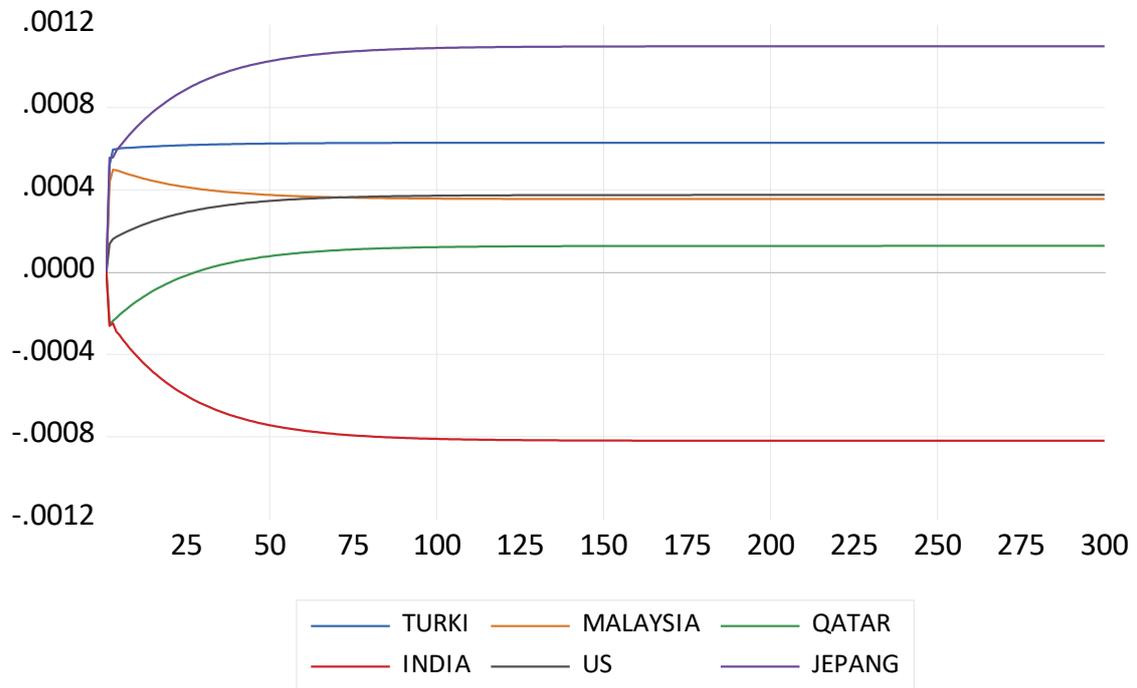
D(US(-2))	-0.033966 (0.02156) [-1.57517]	0.067596 (0.02200) [3.07307]	0.011055 (0.02219) [0.49812]
D(JEPANG(-1))	0.047267 (0.02134) [2.21472]	0.001662 (0.02177) [0.07632]	-0.109998 (0.02197) [-5.00782]
D(JEPANG(-2))	-0.008753 (0.02131) [-0.41084]	0.018178 (0.02173) [0.83644]	0.013288 (0.02193) [0.60601]
C	7.44E-05 (0.00024) [0.31546]	0.000573 (0.00024) [2.38185]	0.000395 (0.00024) [1.62771]
R-squared	0.010936	0.039263	0.026584
Adj. R-squared	0.007603	0.036025	0.023304
Sum sq. resids	0.238798	0.248478	0.252949
S.E. equation	0.010723	0.010938	0.011036
F-statistic	3.280785	12.12597	8.103330
Log likelihood	6501.846	6460.421	6441.831
Akaike AIC	-6.229108	-6.189373	-6.171541
Schwarz SC	-6.207458	-6.167723	-6.149891
Mean dependent	7.30E-05	0.000523	0.000369
S.D. dependent	0.010764	0.011140	0.011167
Determinant resid covariance (dof adj.)		1.67E-12	
Determinant resid covariance		1.65E-12	
Log likelihood		19406.77	
Akaike information criterion		-18.58875	
Schwarz criterion		-18.51297	
Number of coefficients		28	

Impulse Response Function

Response to Cholesky One S.D. (d.f. adjusted) Innovations



Response of INDONESIA to Innovations
using Cholesky (d.f. adjusted) Factors



Period	TURKI	MALAYSIA	QATAR	INDIA	US	JEPANG
1	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2	0.000519	0.000436	-0.000254	-0.000262	0.000137	0.000556
3	0.000595	0.000497	-0.000237	-0.000249	0.000161	0.000557
4	0.000598	0.000495	-0.000223	-0.000290	0.000171	0.000589
5	0.000601	0.000490	-0.000208	-0.000306	0.000180	0.000610
6	0.000602	0.000484	-0.000194	-0.000330	0.000188	0.000630
7	0.000603	0.000479	-0.000180	-0.000349	0.000196	0.000649
8	0.000604	0.000474	-0.000168	-0.000369	0.000203	0.000668
9	0.000605	0.000469	-0.000155	-0.000388	0.000210	0.000686
10	0.000606	0.000464	-0.000144	-0.000406	0.000217	0.000703
11	0.000607	0.000459	-0.000132	-0.000423	0.000224	0.000719
12	0.000608	0.000455	-0.000121	-0.000439	0.000230	0.000735
13	0.000609	0.000451	-0.000111	-0.000455	0.000236	0.000750
14	0.000610	0.000447	-0.000101	-0.000470	0.000242	0.000765
15	0.000611	0.000443	-9.18E-05	-0.000485	0.000247	0.000778
16	0.000611	0.000439	-8.26E-05	-0.000499	0.000253	0.000792

17	0.000612	0.000436	-7.39E-05	-0.000512	0.000258	0.000804
18	0.000613	0.000432	-6.56E-05	-0.000525	0.000263	0.000817
19	0.000613	0.000429	-5.76E-05	-0.000537	0.000267	0.000828
20	0.000614	0.000426	-4.99E-05	-0.000549	0.000272	0.000839
21	0.000615	0.000423	-4.25E-05	-0.000560	0.000276	0.000850
22	0.000615	0.000420	-3.55E-05	-0.000571	0.000280	0.000860
23	0.000616	0.000418	-2.87E-05	-0.000581	0.000284	0.000870
24	0.000616	0.000415	-2.22E-05	-0.000591	0.000288	0.000880
25	0.000617	0.000413	-1.60E-05	-0.000601	0.000291	0.000889
26	0.000617	0.000410	-1.00E-05	-0.000610	0.000295	0.000897
27	0.000618	0.000408	-4.34E-06	-0.000619	0.000298	0.000906
28	0.000618	0.000406	1.13E-06	-0.000627	0.000301	0.000914
29	0.000619	0.000403	6.37E-06	-0.000635	0.000304	0.000921
30	0.000619	0.000401	1.14E-05	-0.000643	0.000307	0.000929
31	0.000620	0.000400	1.62E-05	-0.000650	0.000310	0.000936
32	0.000620	0.000398	2.08E-05	-0.000657	0.000313	0.000942
33	0.000620	0.000396	2.52E-05	-0.000664	0.000315	0.000949
34	0.000621	0.000394	2.95E-05	-0.000670	0.000318	0.000955
35	0.000621	0.000393	3.35E-05	-0.000676	0.000320	0.000961
36	0.000621	0.000391	3.74E-05	-0.000682	0.000323	0.000967
37	0.000622	0.000389	4.12E-05	-0.000688	0.000325	0.000972
38	0.000622	0.000388	4.47E-05	-0.000694	0.000327	0.000977
39	0.000622	0.000387	4.82E-05	-0.000699	0.000329	0.000982
40	0.000622	0.000385	5.15E-05	-0.000704	0.000331	0.000987
41	0.000623	0.000384	5.46E-05	-0.000709	0.000332	0.000992
42	0.000623	0.000383	5.76E-05	-0.000713	0.000334	0.000996
43	0.000623	0.000382	6.05E-05	-0.000718	0.000336	0.001000
44	0.000623	0.000381	6.33E-05	-0.000722	0.000338	0.001004
45	0.000624	0.000379	6.60E-05	-0.000726	0.000339	0.001008
46	0.000624	0.000378	6.85E-05	-0.000730	0.000341	0.001012
47	0.000624	0.000377	7.09E-05	-0.000734	0.000342	0.001015
48	0.000624	0.000377	7.33E-05	-0.000737	0.000343	0.001019
49	0.000624	0.000376	7.55E-05	-0.000741	0.000345	0.001022
50	0.000625	0.000375	7.77E-05	-0.000744	0.000346	0.001025
51	0.000625	0.000374	7.97E-05	-0.000747	0.000347	0.001028
52	0.000625	0.000373	8.17E-05	-0.000750	0.000348	0.001031
53	0.000625	0.000372	8.36E-05	-0.000753	0.000349	0.001034
54	0.000625	0.000372	8.54E-05	-0.000756	0.000350	0.001037

55	0.000625	0.000371	8.72E-05	-0.000758	0.000351	0.001039
56	0.000626	0.000370	8.88E-05	-0.000761	0.000352	0.001041
57	0.000626	0.000370	9.04E-05	-0.000763	0.000353	0.001044
58	0.000626	0.000369	9.19E-05	-0.000766	0.000354	0.001046
59	0.000626	0.000368	9.34E-05	-0.000768	0.000355	0.001048
60	0.000626	0.000368	9.48E-05	-0.000770	0.000356	0.001050
61	0.000626	0.000367	9.62E-05	-0.000772	0.000357	0.001052
62	0.000626	0.000367	9.75E-05	-0.000774	0.000357	0.001054
63	0.000626	0.000366	9.87E-05	-0.000776	0.000358	0.001056
64	0.000626	0.000366	9.99E-05	-0.000778	0.000359	0.001058
65	0.000627	0.000365	0.000101	-0.000780	0.000359	0.001059
66	0.000627	0.000365	0.000102	-0.000781	0.000360	0.001061
67	0.000627	0.000365	0.000103	-0.000783	0.000361	0.001062
68	0.000627	0.000364	0.000104	-0.000784	0.000361	0.001064
69	0.000627	0.000364	0.000105	-0.000786	0.000362	0.001065
70	0.000627	0.000363	0.000106	-0.000787	0.000362	0.001067
71	0.000627	0.000363	0.000107	-0.000789	0.000363	0.001068
72	0.000627	0.000363	0.000108	-0.000790	0.000363	0.001069
73	0.000627	0.000362	0.000109	-0.000791	0.000364	0.001070
74	0.000627	0.000362	0.000109	-0.000792	0.000364	0.001071
75	0.000627	0.000362	0.000110	-0.000793	0.000365	0.001072
76	0.000627	0.000361	0.000111	-0.000795	0.000365	0.001074
77	0.000627	0.000361	0.000111	-0.000796	0.000366	0.001074
78	0.000627	0.000361	0.000112	-0.000797	0.000366	0.001075
79	0.000628	0.000361	0.000113	-0.000798	0.000366	0.001076
80	0.000628	0.000360	0.000113	-0.000799	0.000367	0.001077
81	0.000628	0.000360	0.000114	-0.000799	0.000367	0.001078
82	0.000628	0.000360	0.000114	-0.000800	0.000367	0.001079
83	0.000628	0.000360	0.000115	-0.000801	0.000368	0.001080
84	0.000628	0.000360	0.000116	-0.000802	0.000368	0.001080
85	0.000628	0.000359	0.000116	-0.000803	0.000368	0.001081
86	0.000628	0.000359	0.000116	-0.000803	0.000368	0.001082
87	0.000628	0.000359	0.000117	-0.000804	0.000369	0.001082
88	0.000628	0.000359	0.000117	-0.000805	0.000369	0.001083
89	0.000628	0.000359	0.000118	-0.000805	0.000369	0.001084
90	0.000628	0.000358	0.000118	-0.000806	0.000369	0.001084
91	0.000628	0.000358	0.000119	-0.000806	0.000370	0.001085
92	0.000628	0.000358	0.000119	-0.000807	0.000370	0.001085

93	0.000628	0.000358	0.000119	-0.000808	0.000370	0.001086
94	0.000628	0.000358	0.000120	-0.000808	0.000370	0.001086
95	0.000628	0.000358	0.000120	-0.000808	0.000370	0.001087
96	0.000628	0.000358	0.000120	-0.000809	0.000371	0.001087
97	0.000628	0.000358	0.000120	-0.000809	0.000371	0.001088
98	0.000628	0.000357	0.000121	-0.000810	0.000371	0.001088
99	0.000628	0.000357	0.000121	-0.000810	0.000371	0.001088
100	0.000628	0.000357	0.000121	-0.000811	0.000371	0.001089
101	0.000628	0.000357	0.000122	-0.000811	0.000371	0.001089
102	0.000628	0.000357	0.000122	-0.000811	0.000372	0.001090
103	0.000628	0.000357	0.000122	-0.000812	0.000372	0.001090
104	0.000628	0.000357	0.000122	-0.000812	0.000372	0.001090
105	0.000628	0.000357	0.000122	-0.000812	0.000372	0.001090
106	0.000628	0.000357	0.000123	-0.000813	0.000372	0.001091
107	0.000628	0.000357	0.000123	-0.000813	0.000372	0.001091
108	0.000628	0.000357	0.000123	-0.000813	0.000372	0.001091
109	0.000628	0.000356	0.000123	-0.000814	0.000372	0.001092
110	0.000628	0.000356	0.000123	-0.000814	0.000372	0.001092
111	0.000628	0.000356	0.000124	-0.000814	0.000373	0.001092
112	0.000628	0.000356	0.000124	-0.000814	0.000373	0.001092
113	0.000628	0.000356	0.000124	-0.000814	0.000373	0.001092
114	0.000628	0.000356	0.000124	-0.000815	0.000373	0.001093
115	0.000628	0.000356	0.000124	-0.000815	0.000373	0.001093
116	0.000628	0.000356	0.000124	-0.000815	0.000373	0.001093
117	0.000628	0.000356	0.000124	-0.000815	0.000373	0.001093
118	0.000628	0.000356	0.000124	-0.000815	0.000373	0.001093
119	0.000628	0.000356	0.000125	-0.000816	0.000373	0.001094
120	0.000629	0.000356	0.000125	-0.000816	0.000373	0.001094
121	0.000629	0.000356	0.000125	-0.000816	0.000373	0.001094
122	0.000629	0.000356	0.000125	-0.000816	0.000373	0.001094
123	0.000629	0.000356	0.000125	-0.000816	0.000373	0.001094
124	0.000629	0.000356	0.000125	-0.000816	0.000373	0.001094
125	0.000629	0.000356	0.000125	-0.000817	0.000374	0.001094
126	0.000629	0.000356	0.000125	-0.000817	0.000374	0.001095
127	0.000629	0.000356	0.000125	-0.000817	0.000374	0.001095
128	0.000629	0.000356	0.000125	-0.000817	0.000374	0.001095
129	0.000629	0.000356	0.000125	-0.000817	0.000374	0.001095
130	0.000629	0.000355	0.000126	-0.000817	0.000374	0.001095

283	0.000629	0.000355	0.000127	-0.000820	0.000375	0.001097
284	0.000629	0.000355	0.000127	-0.000820	0.000375	0.001097
285	0.000629	0.000355	0.000127	-0.000820	0.000375	0.001097
286	0.000629	0.000355	0.000127	-0.000820	0.000375	0.001097
287	0.000629	0.000355	0.000127	-0.000820	0.000375	0.001097
288	0.000629	0.000355	0.000127	-0.000820	0.000375	0.001097
289	0.000629	0.000355	0.000127	-0.000820	0.000375	0.001097
290	0.000629	0.000355	0.000127	-0.000820	0.000375	0.001097
291	0.000629	0.000355	0.000127	-0.000820	0.000375	0.001097
292	0.000629	0.000355	0.000127	-0.000820	0.000375	0.001097
293	0.000629	0.000355	0.000127	-0.000820	0.000375	0.001097
294	0.000629	0.000355	0.000127	-0.000820	0.000375	0.001097
295	0.000629	0.000355	0.000127	-0.000820	0.000375	0.001097
296	0.000629	0.000355	0.000127	-0.000820	0.000375	0.001097
297	0.000629	0.000355	0.000127	-0.000820	0.000375	0.001097
298	0.000629	0.000355	0.000127	-0.000820	0.000375	0.001097
299	0.000629	0.000355	0.000127	-0.000820	0.000375	0.001097
300	0.000629	0.000355	0.000127	-0.000820	0.000375	0.001097

Cholesky Ordering: INDONESIA TURKI MALAYSIA QATAR INDIA US JEPANG

Forecast Error Variance Decomposition

Period	S.E.	INDONESIA	TURKI	MALAYSIA	QATAR	INDIA	US	JEPANG
1	0.010738	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2	0.015513	99.61736	0.112089	0.078980	0.026744	0.028494	0.007844	0.128484
3	0.019163	99.46182	0.169909	0.119022	0.032813	0.035572	0.012201	0.168665
4	0.022223	99.37439	0.198880	0.138076	0.034458	0.043459	0.015027	0.195714
5	0.024909	99.31799	0.216544	0.148541	0.034369	0.049720	0.017180	0.215652
6	0.027333	99.27627	0.228361	0.154730	0.033565	0.055839	0.019003	0.232229
7	0.029559	99.24293	0.236921	0.158533	0.032422	0.061716	0.020639	0.246843
8	0.031628	99.21467	0.243435	0.160883	0.031123	0.067526	0.022157	0.260209
9	0.033571	99.18976	0.248595	0.162291	0.029765	0.073282	0.023596	0.272714
10	0.035407	99.16715	0.252805	0.163062	0.028402	0.079013	0.024977	0.284587
11	0.037152	99.14622	0.256322	0.163387	0.027064	0.084724	0.026313	0.295968
12	0.038819	99.12654	0.259319	0.163393	0.025768	0.090419	0.027614	0.306951
13	0.040418	99.10782	0.261913	0.163166	0.024527	0.096095	0.028884	0.317599
14	0.041956	99.08987	0.264189	0.162767	0.023344	0.101751	0.030128	0.327954
15	0.043440	99.07255	0.266209	0.162241	0.022223	0.107381	0.031347	0.338048

16	0.044874	99.05577	0.268018	0.161618	0.021164	0.112983	0.032545	0.347903
17	0.046265	99.03945	0.269654	0.160925	0.020166	0.118550	0.033721	0.357538
18	0.047615	99.02353	0.271142	0.160180	0.019228	0.124079	0.034878	0.366964
19	0.048927	99.00798	0.272505	0.159396	0.018349	0.129565	0.036015	0.376192
20	0.050206	98.99276	0.273760	0.158585	0.017525	0.135005	0.037133	0.385230
21	0.051453	98.97786	0.274922	0.157756	0.016754	0.140395	0.038232	0.394085
22	0.052671	98.96324	0.276003	0.156916	0.016033	0.145732	0.039313	0.402763
23	0.053861	98.94890	0.277012	0.156069	0.015361	0.151011	0.040376	0.411268
24	0.055026	98.93483	0.277956	0.155221	0.014734	0.156232	0.041420	0.419604
25	0.056166	98.92102	0.278844	0.154375	0.014150	0.161391	0.042447	0.427776
26	0.057284	98.90745	0.279680	0.153534	0.013606	0.166486	0.043456	0.435786
27	0.058381	98.89413	0.280471	0.152699	0.013100	0.171516	0.044448	0.443639
28	0.059457	98.88104	0.281219	0.151873	0.012630	0.176479	0.045422	0.451336
29	0.060515	98.86819	0.281929	0.151057	0.012194	0.181374	0.046379	0.458881
30	0.061554	98.85556	0.282604	0.150252	0.011789	0.186199	0.047319	0.466276
31	0.062577	98.84316	0.283248	0.149460	0.011413	0.190953	0.048243	0.473525
32	0.063583	98.83098	0.283861	0.148679	0.011066	0.195637	0.049149	0.480629
33	0.064573	98.81902	0.284448	0.147913	0.010744	0.200249	0.050039	0.487592
34	0.065549	98.80727	0.285009	0.147159	0.010447	0.204790	0.050912	0.494416
35	0.066510	98.79573	0.285547	0.146419	0.010173	0.209258	0.051769	0.501103
36	0.067458	98.78440	0.286063	0.145694	0.009920	0.213654	0.052611	0.507656
37	0.068392	98.77328	0.286558	0.144982	0.009687	0.217979	0.053436	0.514078
38	0.069314	98.76236	0.287034	0.144284	0.009472	0.222231	0.054246	0.520370
39	0.070224	98.75164	0.287493	0.143600	0.009275	0.226412	0.055041	0.526536
40	0.071123	98.74112	0.287934	0.142930	0.009095	0.230523	0.055821	0.532578
41	0.072010	98.73079	0.288359	0.142274	0.008930	0.234562	0.056585	0.538498
42	0.072887	98.72065	0.288770	0.141631	0.008779	0.238531	0.057336	0.544298
43	0.073753	98.71071	0.289166	0.141002	0.008641	0.242431	0.058071	0.549981
44	0.074609	98.70094	0.289549	0.140386	0.008516	0.246263	0.058793	0.555550
45	0.075456	98.69136	0.289920	0.139783	0.008402	0.250026	0.059500	0.561006
46	0.076293	98.68196	0.290278	0.139193	0.008299	0.253722	0.060194	0.566351
47	0.077121	98.67274	0.290625	0.138615	0.008207	0.257352	0.060875	0.571589
48	0.077941	98.66369	0.290961	0.138049	0.008123	0.260916	0.061542	0.576721
49	0.078752	98.65481	0.291286	0.137496	0.008049	0.264415	0.062197	0.581750
50	0.079554	98.64609	0.291602	0.136954	0.007983	0.267851	0.062838	0.586677
51	0.080349	98.63755	0.291908	0.136424	0.007924	0.271224	0.063468	0.591506
52	0.081136	98.62916	0.292205	0.135906	0.007872	0.274535	0.064085	0.596237
53	0.081916	98.62093	0.292494	0.135398	0.007827	0.277785	0.064690	0.600873
54	0.082688	98.61286	0.292774	0.134901	0.007789	0.280975	0.065283	0.605416
55	0.083453	98.60494	0.293047	0.134415	0.007756	0.284106	0.065865	0.609869
56	0.084211	98.59718	0.293312	0.133939	0.007728	0.287180	0.066435	0.614232
57	0.084963	98.58955	0.293569	0.133473	0.007705	0.290196	0.066994	0.618509
58	0.085707	98.58208	0.293820	0.133017	0.007687	0.293157	0.067543	0.622700

59	0.086446	98.57474	0.294064	0.132570	0.007673	0.296062	0.068081	0.626808
60	0.087178	98.56755	0.294301	0.132133	0.007663	0.298914	0.068608	0.630836
61	0.087904	98.56048	0.294533	0.131705	0.007656	0.301713	0.069126	0.634783
62	0.088625	98.55356	0.294758	0.131286	0.007653	0.304460	0.069633	0.638653
63	0.089339	98.54676	0.294978	0.130875	0.007653	0.307156	0.070131	0.642447
64	0.090048	98.54009	0.295192	0.130473	0.007656	0.309802	0.070619	0.646166
65	0.090751	98.53355	0.295401	0.130080	0.007662	0.312399	0.071098	0.649813
66	0.091449	98.52713	0.295604	0.129694	0.007670	0.314948	0.071567	0.653389
67	0.092142	98.52083	0.295803	0.129317	0.007681	0.317450	0.072028	0.656896
68	0.092829	98.51464	0.295997	0.128947	0.007693	0.319905	0.072480	0.660334
69	0.093512	98.50858	0.296186	0.128584	0.007708	0.322316	0.072923	0.663707
70	0.094189	98.50262	0.296371	0.128229	0.007724	0.324682	0.073358	0.667015
71	0.094862	98.49678	0.296552	0.127881	0.007742	0.327005	0.073785	0.670259
72	0.095530	98.49104	0.296728	0.127540	0.007761	0.329285	0.074204	0.673442
73	0.096194	98.48541	0.296900	0.127205	0.007782	0.331524	0.074615	0.676564
74	0.096852	98.47988	0.297069	0.126878	0.007804	0.333722	0.075018	0.679627
75	0.097507	98.47446	0.297233	0.126556	0.007827	0.335880	0.075414	0.682633
76	0.098157	98.46913	0.297394	0.126241	0.007851	0.337999	0.075802	0.685582
77	0.098803	98.46390	0.297552	0.125933	0.007876	0.340079	0.076184	0.688475
78	0.099444	98.45877	0.297706	0.125630	0.007902	0.342122	0.076558	0.691315
79	0.100082	98.45373	0.297856	0.125333	0.007928	0.344129	0.076925	0.694103
80	0.100715	98.44878	0.298004	0.125041	0.007955	0.346099	0.077286	0.696839
81	0.101345	98.44391	0.298148	0.124756	0.007983	0.348034	0.077640	0.699524
82	0.101971	98.43914	0.298289	0.124475	0.008012	0.349935	0.077988	0.702161
83	0.102592	98.43445	0.298428	0.124200	0.008041	0.351802	0.078330	0.704749
84	0.103211	98.42984	0.298563	0.123930	0.008070	0.353636	0.078665	0.707290
85	0.103825	98.42532	0.298696	0.123666	0.008100	0.355438	0.078994	0.709786
86	0.104436	98.42088	0.298826	0.123406	0.008129	0.357209	0.079318	0.712237
87	0.105043	98.41651	0.298953	0.123151	0.008160	0.358948	0.079636	0.714643
88	0.105647	98.41222	0.299078	0.122900	0.008190	0.360657	0.079948	0.717007
89	0.106247	98.40800	0.299200	0.122654	0.008221	0.362336	0.080254	0.719329
90	0.106845	98.40386	0.299320	0.122413	0.008251	0.363987	0.080556	0.721610
91	0.107438	98.39979	0.299438	0.122176	0.008282	0.365609	0.080852	0.723851
92	0.108029	98.39579	0.299553	0.121943	0.008313	0.367203	0.081143	0.726053
93	0.108616	98.39186	0.299666	0.121715	0.008344	0.368770	0.081429	0.728217
94	0.109200	98.38799	0.299777	0.121490	0.008375	0.370311	0.081710	0.730343
95	0.109781	98.38420	0.299886	0.121270	0.008406	0.371825	0.081986	0.732432
96	0.110359	98.38046	0.299993	0.121053	0.008436	0.373314	0.082257	0.734486
97	0.110934	98.37679	0.300097	0.120840	0.008467	0.374778	0.082524	0.736505
98	0.111506	98.37318	0.300200	0.120631	0.008498	0.376218	0.082787	0.738489
99	0.112075	98.36963	0.300301	0.120425	0.008528	0.377634	0.083045	0.740440
100	0.112641	98.36613	0.300400	0.120223	0.008559	0.379026	0.083298	0.742359
101	0.113205	98.36270	0.300498	0.120025	0.008589	0.380396	0.083548	0.744245

102	0.113765	98.35932	0.300593	0.119829	0.008619	0.381743	0.083793	0.746100
103	0.114323	98.35600	0.300687	0.119637	0.008649	0.383068	0.084035	0.747924
104	0.114878	98.35273	0.300780	0.119449	0.008679	0.384371	0.084272	0.749718
105	0.115431	98.34952	0.300870	0.119263	0.008709	0.385654	0.084505	0.751483
106	0.115981	98.34635	0.300959	0.119081	0.008738	0.386916	0.084735	0.753219
107	0.116528	98.34324	0.301047	0.118901	0.008767	0.388157	0.084961	0.754927
108	0.117072	98.34018	0.301133	0.118725	0.008796	0.389379	0.085184	0.756608
109	0.117615	98.33716	0.301217	0.118551	0.008825	0.390582	0.085402	0.758261
110	0.118154	98.33419	0.301301	0.118380	0.008854	0.391766	0.085618	0.759889
111	0.118692	98.33127	0.301382	0.118212	0.008882	0.392931	0.085830	0.761490
112	0.119226	98.32840	0.301463	0.118047	0.008910	0.394078	0.086039	0.763066
113	0.119759	98.32557	0.301542	0.117884	0.008938	0.395207	0.086244	0.764618
114	0.120289	98.32278	0.301619	0.117724	0.008965	0.396319	0.086446	0.766145
115	0.120817	98.32004	0.301696	0.117566	0.008993	0.397413	0.086645	0.767649
116	0.121342	98.31734	0.301771	0.117411	0.009020	0.398491	0.086841	0.769129
117	0.121865	98.31468	0.301845	0.117258	0.009047	0.399553	0.087034	0.770587
118	0.122386	98.31206	0.301918	0.117108	0.009073	0.400598	0.087224	0.772022
119	0.122905	98.30948	0.301990	0.116959	0.009100	0.401628	0.087412	0.773436
120	0.123422	98.30693	0.302060	0.116814	0.009126	0.402643	0.087596	0.774828
121	0.123936	98.30443	0.302130	0.116670	0.009151	0.403642	0.087778	0.776200
122	0.124448	98.30196	0.302198	0.116528	0.009177	0.404626	0.087957	0.777551
123	0.124959	98.29953	0.302265	0.116389	0.009202	0.405596	0.088133	0.778882
124	0.125467	98.29714	0.302331	0.116252	0.009227	0.406552	0.088307	0.780193
125	0.125973	98.29478	0.302397	0.116117	0.009252	0.407494	0.088478	0.781485
126	0.126477	98.29245	0.302461	0.115983	0.009277	0.408422	0.088646	0.782758
127	0.126979	98.29016	0.302524	0.115852	0.009301	0.409337	0.088813	0.784013
128	0.127479	98.28790	0.302587	0.115723	0.009325	0.410238	0.088977	0.785250
129	0.127977	98.28567	0.302648	0.115595	0.009348	0.411127	0.089138	0.786468
130	0.128473	98.28348	0.302709	0.115470	0.009372	0.412003	0.089297	0.787670
131	0.128968	98.28132	0.302768	0.115346	0.009395	0.412867	0.089454	0.788854
132	0.129460	98.27918	0.302827	0.115224	0.009418	0.413719	0.089609	0.790021
133	0.129951	98.27708	0.302885	0.115103	0.009441	0.414558	0.089761	0.791173
134	0.130439	98.27500	0.302942	0.114985	0.009463	0.415386	0.089912	0.792308
135	0.130926	98.27296	0.302998	0.114868	0.009485	0.416203	0.090060	0.793427
136	0.131411	98.27094	0.303054	0.114752	0.009507	0.417008	0.090206	0.794531
137	0.131895	98.26895	0.303108	0.114639	0.009529	0.417803	0.090351	0.795619
138	0.132376	98.26699	0.303162	0.114527	0.009551	0.418586	0.090493	0.796693
139	0.132856	98.26505	0.303215	0.114416	0.009572	0.419359	0.090633	0.797752
140	0.133334	98.26314	0.303268	0.114307	0.009593	0.420122	0.090772	0.798797
141	0.133810	98.26126	0.303320	0.114199	0.009614	0.420874	0.090908	0.799828
142	0.134285	98.25940	0.303371	0.114093	0.009634	0.421616	0.091043	0.800845
143	0.134758	98.25756	0.303421	0.113988	0.009654	0.422349	0.091176	0.801848
144	0.135229	98.25575	0.303471	0.113885	0.009674	0.423072	0.091307	0.802838

145	0.135699	98.25397	0.303519	0.113783	0.009694	0.423785	0.091437	0.803815
146	0.136167	98.25220	0.303568	0.113682	0.009714	0.424489	0.091565	0.804780
147	0.136634	98.25046	0.303615	0.113583	0.009733	0.425184	0.091691	0.805731
148	0.137098	98.24874	0.303662	0.113485	0.009752	0.425870	0.091815	0.806671
149	0.137562	98.24705	0.303709	0.113388	0.009771	0.426547	0.091938	0.807598
150	0.138024	98.24537	0.303755	0.113292	0.009790	0.427215	0.092060	0.808514
151	0.138484	98.24372	0.303800	0.113198	0.009809	0.427875	0.092180	0.809418
152	0.138942	98.24209	0.303845	0.113105	0.009827	0.428527	0.092298	0.810310
153	0.139400	98.24048	0.303889	0.113013	0.009845	0.429170	0.092415	0.811191
154	0.139855	98.23889	0.303932	0.112922	0.009863	0.429806	0.092530	0.812061
155	0.140310	98.23731	0.303975	0.112832	0.009881	0.430433	0.092644	0.812920
156	0.140762	98.23576	0.304017	0.112744	0.009898	0.431053	0.092756	0.813769
157	0.141214	98.23423	0.304059	0.112656	0.009916	0.431665	0.092868	0.814607
158	0.141663	98.23271	0.304101	0.112570	0.009933	0.432270	0.092977	0.815435
159	0.142112	98.23122	0.304142	0.112485	0.009950	0.432867	0.093086	0.816253
160	0.142559	98.22974	0.304182	0.112400	0.009967	0.433457	0.093193	0.817060
161	0.143005	98.22828	0.304222	0.112317	0.009983	0.434040	0.093299	0.817858
162	0.143449	98.22684	0.304261	0.112235	0.010000	0.434616	0.093403	0.818647
163	0.143892	98.22541	0.304300	0.112154	0.010016	0.435185	0.093506	0.819426
164	0.144333	98.22400	0.304338	0.112073	0.010032	0.435748	0.093609	0.820196
165	0.144773	98.22261	0.304376	0.111994	0.010048	0.436303	0.093709	0.820956
166	0.145212	98.22124	0.304414	0.111916	0.010063	0.436852	0.093809	0.821708
167	0.145650	98.21988	0.304451	0.111838	0.010079	0.437395	0.093908	0.822451
168	0.146086	98.21853	0.304488	0.111762	0.010094	0.437932	0.094005	0.823185
169	0.146521	98.21721	0.304524	0.111686	0.010109	0.438462	0.094101	0.823911
170	0.146954	98.21589	0.304560	0.111611	0.010125	0.438986	0.094196	0.824628
171	0.147387	98.21460	0.304595	0.111537	0.010139	0.439504	0.094290	0.825338
172	0.147818	98.21331	0.304630	0.111464	0.010154	0.440016	0.094383	0.826039
173	0.148248	98.21205	0.304664	0.111392	0.010169	0.440523	0.094475	0.826732
174	0.148676	98.21079	0.304699	0.111320	0.010183	0.441024	0.094566	0.827417
175	0.149104	98.20955	0.304732	0.111250	0.010197	0.441519	0.094656	0.828095
176	0.149530	98.20833	0.304766	0.111180	0.010211	0.442008	0.094745	0.828765
177	0.149955	98.20711	0.304799	0.111111	0.010225	0.442493	0.094833	0.829427
178	0.150378	98.20591	0.304831	0.111042	0.010239	0.442972	0.094919	0.830083
179	0.150801	98.20473	0.304864	0.110975	0.010253	0.443445	0.095005	0.830731
180	0.151222	98.20355	0.304896	0.110908	0.010266	0.443914	0.095090	0.831372
181	0.151642	98.20239	0.304927	0.110842	0.010280	0.444377	0.095175	0.832006
182	0.152062	98.20125	0.304959	0.110776	0.010293	0.444835	0.095258	0.832633
183	0.152479	98.20011	0.304989	0.110712	0.010306	0.445288	0.095340	0.833253
184	0.152896	98.19899	0.305020	0.110648	0.010319	0.445737	0.095421	0.833867
185	0.153312	98.19788	0.305050	0.110584	0.010332	0.446181	0.095502	0.834474
186	0.153726	98.19678	0.305080	0.110522	0.010344	0.446620	0.095581	0.835075
187	0.154140	98.19569	0.305110	0.110460	0.010357	0.447054	0.095660	0.835669

188	0.154552	98.19461	0.305139	0.110399	0.010369	0.447484	0.095738	0.836257
189	0.154963	98.19355	0.305168	0.110338	0.010382	0.447909	0.095815	0.836839
190	0.155373	98.19249	0.305197	0.110278	0.010394	0.448330	0.095892	0.837415
191	0.155782	98.19145	0.305225	0.110219	0.010406	0.448747	0.095967	0.837985
192	0.156190	98.19042	0.305253	0.110160	0.010418	0.449159	0.096042	0.838549
193	0.156597	98.18940	0.305281	0.110102	0.010430	0.449567	0.096116	0.839108
194	0.157003	98.18839	0.305309	0.110044	0.010442	0.449971	0.096190	0.839660
195	0.157407	98.18738	0.305336	0.109987	0.010453	0.450370	0.096262	0.840207
196	0.157811	98.18639	0.305363	0.109931	0.010465	0.450766	0.096334	0.840748
197	0.158214	98.18541	0.305389	0.109875	0.010476	0.451158	0.096405	0.841284
198	0.158615	98.18444	0.305416	0.109819	0.010487	0.451546	0.096475	0.841815
199	0.159016	98.18348	0.305442	0.109765	0.010498	0.451930	0.096545	0.842340
200	0.159416	98.18253	0.305468	0.109710	0.010509	0.452310	0.096614	0.842860
201	0.159814	98.18159	0.305493	0.109657	0.010520	0.452686	0.096682	0.843375
202	0.160212	98.18065	0.305519	0.109604	0.010531	0.453059	0.096750	0.843885
203	0.160609	98.17973	0.305544	0.109551	0.010542	0.453428	0.096817	0.844390
204	0.161004	98.17881	0.305569	0.109499	0.010553	0.453793	0.096883	0.844890
205	0.161399	98.17791	0.305593	0.109447	0.010563	0.454155	0.096949	0.845385
206	0.161793	98.17701	0.305618	0.109396	0.010574	0.454514	0.097014	0.845876
207	0.162186	98.17612	0.305642	0.109346	0.010584	0.454868	0.097078	0.846361
208	0.162577	98.17524	0.305666	0.109295	0.010594	0.455220	0.097142	0.846842
209	0.162968	98.17437	0.305690	0.109246	0.010604	0.455568	0.097205	0.847319
210	0.163358	98.17350	0.305713	0.109197	0.010614	0.455913	0.097268	0.847790
211	0.163747	98.17265	0.305736	0.109148	0.010624	0.456255	0.097330	0.848258
212	0.164135	98.17180	0.305759	0.109100	0.010634	0.456593	0.097391	0.848721
213	0.164523	98.17096	0.305782	0.109052	0.010644	0.456929	0.097452	0.849180
214	0.164909	98.17013	0.305805	0.109004	0.010653	0.457261	0.097512	0.849634
215	0.165294	98.16931	0.305827	0.108958	0.010663	0.457590	0.097572	0.850084
216	0.165679	98.16849	0.305850	0.108911	0.010673	0.457916	0.097631	0.850530
217	0.166062	98.16768	0.305872	0.108865	0.010682	0.458239	0.097690	0.850972
218	0.166445	98.16688	0.305893	0.108819	0.010691	0.458559	0.097748	0.851410
219	0.166827	98.16608	0.305915	0.108774	0.010701	0.458876	0.097805	0.851844
220	0.167208	98.16530	0.305936	0.108729	0.010710	0.459191	0.097862	0.852274
221	0.167588	98.16452	0.305957	0.108685	0.010719	0.459502	0.097919	0.852700
222	0.167967	98.16374	0.305978	0.108641	0.010728	0.459811	0.097975	0.853123
223	0.168346	98.16298	0.305999	0.108597	0.010737	0.460117	0.098030	0.853541
224	0.168723	98.16222	0.306020	0.108554	0.010746	0.460420	0.098085	0.853956
225	0.169100	98.16147	0.306040	0.108511	0.010754	0.460721	0.098140	0.854367
226	0.169476	98.16072	0.306061	0.108469	0.010763	0.461018	0.098194	0.854775
227	0.169851	98.15998	0.306081	0.108427	0.010772	0.461314	0.098248	0.855179
228	0.170225	98.15925	0.306101	0.108385	0.010780	0.461606	0.098301	0.855579
229	0.170598	98.15852	0.306120	0.108344	0.010789	0.461896	0.098353	0.855976
230	0.170971	98.15780	0.306140	0.108303	0.010797	0.462184	0.098405	0.856369

231	0.171343	98.15709	0.306159	0.108262	0.010805	0.462469	0.098457	0.856759
232	0.171714	98.15638	0.306179	0.108222	0.010814	0.462752	0.098508	0.857146
233	0.172084	98.15568	0.306198	0.108182	0.010822	0.463032	0.098559	0.857530
234	0.172453	98.15498	0.306217	0.108142	0.010830	0.463310	0.098610	0.857910
235	0.172822	98.15429	0.306235	0.108103	0.010838	0.463585	0.098660	0.858287
236	0.173190	98.15361	0.306254	0.108064	0.010846	0.463859	0.098709	0.858660
237	0.173557	98.15293	0.306272	0.108025	0.010854	0.464129	0.098758	0.859031
238	0.173923	98.15226	0.306291	0.107987	0.010862	0.464398	0.098807	0.859398
239	0.174288	98.15159	0.306309	0.107949	0.010869	0.464664	0.098855	0.859763
240	0.174653	98.15093	0.306327	0.107911	0.010877	0.464929	0.098903	0.860124
241	0.175017	98.15027	0.306345	0.107874	0.010885	0.465190	0.098951	0.860482
242	0.175380	98.14962	0.306362	0.107837	0.010892	0.465450	0.098998	0.860838
243	0.175743	98.14898	0.306380	0.107800	0.010900	0.465708	0.099045	0.861190
244	0.176104	98.14834	0.306397	0.107764	0.010907	0.465963	0.099091	0.861540
245	0.176465	98.14770	0.306414	0.107728	0.010915	0.466217	0.099137	0.861886
246	0.176825	98.14707	0.306432	0.107692	0.010922	0.466468	0.099183	0.862230
247	0.177185	98.14645	0.306448	0.107656	0.010929	0.466718	0.099228	0.862571
248	0.177544	98.14583	0.306465	0.107621	0.010937	0.466965	0.099273	0.862910
249	0.177902	98.14522	0.306482	0.107586	0.010944	0.467210	0.099317	0.863245
250	0.178259	98.14461	0.306499	0.107551	0.010951	0.467454	0.099361	0.863578
251	0.178616	98.14400	0.306515	0.107517	0.010958	0.467695	0.099405	0.863909
252	0.178971	98.14340	0.306531	0.107483	0.010965	0.467935	0.099449	0.864236
253	0.179327	98.14281	0.306547	0.107449	0.010972	0.468172	0.099492	0.864561
254	0.179681	98.14222	0.306564	0.107415	0.010979	0.468408	0.099535	0.864884
255	0.180035	98.14163	0.306579	0.107382	0.010986	0.468642	0.099577	0.865204
256	0.180388	98.14105	0.306595	0.107349	0.010992	0.468874	0.099619	0.865521
257	0.180740	98.14047	0.306611	0.107316	0.010999	0.469104	0.099661	0.865836
258	0.181092	98.13990	0.306626	0.107284	0.011006	0.469333	0.099702	0.866149
259	0.181443	98.13933	0.306642	0.107251	0.011012	0.469560	0.099744	0.866459
260	0.181793	98.13877	0.306657	0.107219	0.011019	0.469785	0.099784	0.866767
261	0.182143	98.13821	0.306672	0.107187	0.011025	0.470008	0.099825	0.867073
262	0.182492	98.13765	0.306687	0.107156	0.011032	0.470230	0.099865	0.867376
263	0.182840	98.13710	0.306702	0.107124	0.011038	0.470449	0.099905	0.867676
264	0.183188	98.13656	0.306717	0.107093	0.011045	0.470668	0.099945	0.867975
265	0.183535	98.13602	0.306732	0.107062	0.011051	0.470884	0.099984	0.868271
266	0.183881	98.13548	0.306747	0.107032	0.011057	0.471099	0.100023	0.868565
267	0.184227	98.13494	0.306761	0.107001	0.011064	0.471313	0.100062	0.868857
268	0.184572	98.13441	0.306776	0.106971	0.011070	0.471524	0.100100	0.869147
269	0.184917	98.13389	0.306790	0.106941	0.011076	0.471734	0.100138	0.869434
270	0.185260	98.13336	0.306804	0.106912	0.011082	0.471943	0.100176	0.869720
271	0.185604	98.13285	0.306818	0.106882	0.011088	0.472150	0.100214	0.870003
272	0.185946	98.13233	0.306832	0.106853	0.011094	0.472356	0.100251	0.870284
273	0.186288	98.13182	0.306846	0.106824	0.011100	0.472560	0.100288	0.870563

274	0.186629	98.13131	0.306860	0.106795	0.011106	0.472762	0.100325	0.870840
275	0.186970	98.13081	0.306873	0.106766	0.011112	0.472963	0.100361	0.871115
276	0.187310	98.13031	0.306887	0.106738	0.011118	0.473163	0.100397	0.871388
277	0.187649	98.12981	0.306900	0.106709	0.011123	0.473361	0.100433	0.871660
278	0.187988	98.12932	0.306914	0.106681	0.011129	0.473558	0.100469	0.871929
279	0.188326	98.12883	0.306927	0.106654	0.011135	0.473753	0.100504	0.872196
280	0.188664	98.12835	0.306940	0.106626	0.011140	0.473947	0.100540	0.872461
281	0.189001	98.12786	0.306953	0.106598	0.011146	0.474140	0.100574	0.872725
282	0.189337	98.12738	0.306966	0.106571	0.011152	0.474331	0.100609	0.872986
283	0.189673	98.12691	0.306979	0.106544	0.011157	0.474521	0.100644	0.873246
284	0.190008	98.12644	0.306992	0.106517	0.011163	0.474709	0.100678	0.873504
285	0.190343	98.12597	0.307005	0.106491	0.011168	0.474897	0.100712	0.873760
286	0.190677	98.12550	0.307018	0.106464	0.011174	0.475082	0.100745	0.874014
287	0.191010	98.12504	0.307030	0.106438	0.011179	0.475267	0.100779	0.874267
288	0.191343	98.12458	0.307043	0.106412	0.011184	0.475450	0.100812	0.874517
289	0.191675	98.12413	0.307055	0.106386	0.011190	0.475632	0.100845	0.874766
290	0.192007	98.12367	0.307067	0.106360	0.011195	0.475813	0.100878	0.875014
291	0.192338	98.12322	0.307080	0.106334	0.011200	0.475993	0.100911	0.875259
292	0.192668	98.12278	0.307092	0.106309	0.011205	0.476171	0.100943	0.875503
293	0.192998	98.12233	0.307104	0.106284	0.011211	0.476348	0.100975	0.875745
294	0.193328	98.12189	0.307116	0.106259	0.011216	0.476524	0.101007	0.875986
295	0.193657	98.12146	0.307128	0.106234	0.011221	0.476699	0.101039	0.876225
296	0.193985	98.12102	0.307139	0.106209	0.011226	0.476872	0.101070	0.876462
297	0.194313	98.12059	0.307151	0.106184	0.011231	0.477044	0.101101	0.876698
298	0.194640	98.12016	0.307163	0.106160	0.011236	0.477216	0.101132	0.876932
299	0.194966	98.11974	0.307174	0.106136	0.011241	0.477386	0.101163	0.877165
300	0.195292	98.11931	0.307186	0.106112	0.011246	0.477555	0.101194	0.877396

Cholesky Ordering: INDONESIA TURKI MALAYSIA QATAR INDIA US

JEPANG

SUMMARY
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Integration of the Indonesian Islamic Stock Index: Evidence from Developed and Developing Countries

Abstract

Globalization is changing the world's economic and financial systems are increasingly integrated. Globalization can also trigger shocks to the Islamic stock market and reduce diversification benefits for investors. This study aims to analyze the integration of the Indonesian Islamic stock index with the Islamic stock index of developed and developing countries. Using a vector error correction model and daily data from 2012 to 2021, which reached 2088, the observations reveal that the Indonesian Islamic stock index is integrated with the Islamic stock index of developed and developing countries. The Indonesian Islamic stock index responded positively and negatively to the developed and developing Islamic stock index. Japan has the most significant contribution in influencing Indonesia's Islamic stock index. Indonesia's Islamic stock index needs to prepare various alternative strategies in dealing with shocks from developed and developing country Islamic stock indexes.

Keywords: Stock, Integration, Develop, Developing, Islamic

INTRODUCTION

The capital market describes the economic growth when each country carries out policies supporting capital market growth (Surugiu & Surugiu, 2015; Yildirim & Gökalp, 2016). One of the efforts made is economic integration in the inter-country capital market which can provide an overview of market activities (Miyazawa et al., 2019; Rungcharoenkitkul, 2012). The capital market has a considerable market share for the Islamic finance industry based on roles and functions (Salman & Nawaz, 2018; Wahyudi & Sani, 2014).

Islamic investment explores the purported performance compared to socially responsible investments and the extent to which Islamic legal objectives are practically met by Islamic financial institutions (Yesuf & Aassouli, 2020; Zafar & Sulaiman, 2019). An important role may be since assets in Islamic finance have a close relationship between the fundamental and financial sectors, thus affecting the Islamic financial market due to the impact of volatility from other countries' markets. Islamic stock prices include companies characterized by small leverage ratios and interest involvement which implies a relationship related to information flow and shock transmission (Ferris et al., 2018; Saiti et al., 2014). In other words, Islamic financial intermediaries play an important role because they reduce the transmission of shocks and reduce potential losses due to unexpected financial crises (Djennas, 2016).

Integration in the stock market is a link between stock markets worldwide due to unlimited access owned by investors. It has an impact on the achievement of stock prices internationally. Stock price reflects the expectations of investors considering the risks it faces. To that end, international investors tend to invest in areas where the economy is more conducive to liquidity, high stock, and low cost. This situation makes the degree of integration of the international stock market increase due to investors diversifying shares.

Stoupos and Kiohos (2021) have carried out research related to market integration that the euro area faces many financial and economic asymmetries due to other economic participation in trade unions. Lee and Kim (2020) analyze the time-varying integration of the stock market among fourteen European countries and their monetary drivers relevant to two events. Wu (2019) explores the issue of financial integration between the stock

market economies of ASEAN5, plus China (Mainland China and Hong Kong), Japan, and South Korea (referred to as ASEAN5+4). Aladesanmi et al. (2019) investigate macroeconomic determinants' impact on stock market integration. Mohti et al. (2019) assess the degree of integration of regional and global stock markets of emerging and leading Asian countries. Batten et al. (2019) investigate the integrated relationship between Asia's ten major stock markets and a diversified oil, coal, and gas energy portfolio.

This research is exciting and valuable because of the policy implications for international investors and market participants in developing and developed countries. Indeed, investors in international financial markets will be motivated to restructure their portfolios by taking advantage of risk diversification by looking at the weak correlation and the absence of transmission of shocks in the Islamic stock market. This study attempts to further elucidate some of these issues by contributing to the limited empirical evidence regarding diversification based on the Islamic stock market.

This study aims to analyze the effect of the Islamic stock market in developed-developing countries and the Indonesian Islamic stock market in the short and long term, analyze the response of the Indonesian Islamic stock market to the shocks of the developing-developed Islamic stock market, analyze the contribution of each developing-developed Islamic stock market to the Indonesian Islamic stock market. The results of this study significantly contribute to various views, firstly providing an overview of the general condition of the Islamic stock market in developing and developed countries. Second, consideration of decision making related to the integration of the Islamic stock market in developing and developed countries. Third, determining the diversification of capital owned reduces the risk of losses.

LITERATURE REVIEW

Globalization that occurs in the economic sector forces a country to improve its economic conditions further so that it is stable. If the economic condition is fragile, when a shock occurs, the country will experience an economic crisis and continue to other similar countries and cause a domino effect (BenSaïda et al., 2018; Cieslak & Schrimpf, 2019; Werner, 2016). The integration between one country and another caused by globalization triggers a domino effect, mainly when problems occur in countries classified as essential or significant in specific sectors (Balli et al., 2019; Casu & Girardone, 2010; Jebran et al., 2017). Economic integration, especially in the stock market, is closely related to portfolio diversification and market efficiency.

If inadequate information about a market is received by market participants excessively, it is different from good information. If one market is experiencing a decline, it will cause the other market to decline more than its average effect due to the increasing correlation. As a result, when the market experiences a shock, the correlation between markets with other countries' markets will increase, making diversification between international stock markets increasingly tricky, and there is a very high risk of losing the benefits altogether (Ellington, 2018; Lee & Goh, 2016; Sarwar et al., 2020). The diversification carried out only applies in normal market conditions and is detrimental if a market experiences a significant decline.

In the context of market integration, in theory, assets in a fully integrated market have the same expected returns because they carry the same risk (Balli et al., 2019; Singh & Singh, 2016). Integration between stock markets shows efficiency, and these markets do not benefit from diversification because market performance tends to be the same across markets (Kim et al., 2015; Silvers, 2021). In a risk-return framework, an investor can increase returns, reduce risk, or both by owning a combination of investments in the stock

market with uncorrelated returns. Thus, the degree of integration of the stock market indicates the potential benefits of portfolio diversification that investors can obtain.

Stoupos and Kiohos (2021) state that the euro area faces many financial and economic asymmetries due to the further participation of economies in trade unions. The long-term financial integration of the member states of the euro area is an essential task for policymakers in terms of business and economy. The results reveal that stock market integration is strong between Germany and the core member countries of the euro area but different for the periphery of the euro area. On the other hand, there are only indications regarding integrating the eastern Mediterranean and Baltic stock markets with the DAX-30.

Lee and Kim (2020) analyze the time-varying integration of stock markets among fourteen European countries and their relevant monetary drivers with two opposing events: the introduction of the Euro in 1999 and the banking crisis in 2011. The panel analysis reports evidence that the convergence of economic performance, the reduction in interest rate differentials, and inflation among the European Union countries have been the main drivers of increased integration of the European Union stock market after the European monetary union. Qualitative analysis shows that post-European monetary union, differences in GDP among the European Union countries have an inverse relationship with the convergence of economic performance.

Wu (2019) explores the issue of financial integration between the stock market economies of ASEAN5, plus China (China and Hong Kong), Japan, and South Korea (referred to as ASEAN5+4). Using graph theory and Vector Autoregressive (VAR) based methods, together with a rolling window approach, the results show that the degree of interrelationship between these markets is high but with varying time patterns. Much of this high degree of integration proves to be driven by the same global factors. After filtering these factors from each stock market, the magnitude of the correlation drops substantially. Therefore, stock market integration in East and Southeast Asia is not as strong as it seems. Although governments in the region have promoted collaboration and integration of financial markets, barriers remain significant. These exaggerated linkages mainly reflect the more substantial global influence on individual markets, while their linkages caused by non-global factors show a downward trend after the crisis.

Aladesanmi et al. (2019) investigate how macroeconomic determinants impact stock market integration, such as various measures of financial convergence and volatility and varied crisis episodes from 1935 to 2015. In addition, it measures how the degree of integration between the UK and US stock markets changed across three monetary regimes during this period: pre-Bretton Woods (BW), fixed exchange rates BW, and post-BW flexible rates. Empirical results show that integration is strongest under the post-BW regime and weakest under the BW regime. Further research indicates that stock market integration between the two markets is driven mainly by macroeconomic convergence, financial volatility, and the crisis, especially since the demise of the BW system.

Mohti et al. (2019) assess the degree of integration of regional and global stock markets of emerging and leading Asian countries. The long-term relationship formed between the markets was investigated using the Gregory and Hansen cointegration test and the Detrended Cross-Correlation coefficient. The results of the empirical analysis show that all of the emerging markets considered exhibiting some evidence of global and regional integration. However, in the case of the border market, it applies only to Pakistan and to a lesser extent to Vietnam. These results are interesting for international investors interested in expanding the geographic scope of portfolio diversification strategies.

Batten et al. (2019) said the degree of integration between energy and stock markets is critical to global companies and investors' diversification, risk management, and funding

decisions. The research investigates the integrated relationship between Asia's ten major stock markets and a diversified oil, coal, and gas energy portfolio. Estimating the relationship in the time-varying framework of asset pricing, which allows regime change, identifies two main regimes. The first regime represents a period of low energy stock market integration. The market tends to segment and accounts for more than two-thirds of the sample period from December 1992 to December 2015. The second regime represents a period of high integration characterized by limited diversification opportunities and increased levels of volatility. Also, the company's funding conditions are less favorable in the second regime. The two regimes differ in the way equity markets price energy risk. In addition to the energy-unrelated positive equity risk premium during the low integration regime, other results identify a significant positive energy-related equity risk premium during the high integration regime. Finally, investors can use conditional information from the integration model to outperform passive portfolio investment strategies in the stock and energy markets.

RESEARCH METHOD

This study uses daily data from 2012 to 2021, reaching around 2088 observations. The data used is the closing date of developing and developed member countries' daily Islamic stock price index. The developing countries are Indonesia, Turkey, Malaysia, Qatar, Kuwait, and India, while the developed countries are the United States and Japan. The data sources used are S&P Dow Jones Indices, investing.com, and yahoofinance.com.

This study uses a vector error correction model (VECM) to answer the research objectives. Several assumptions must be met in the analysis. All dependent variables are stationary and mean zero (white noise), constant variance, and no correlation between dependent variables. If the data is not stationary at the level, then differentiation can be done so that the data becomes stationary. Then the VAR model used is VAR first difference (VAR-FD). The use of VAR-FD has a weakness: the loss of information on long-term relationships between variables. The VAR model is combined with the VECM model for cointegrated data to obtain long-term information.

Vector Error Correction Model (VECM) is a restricted Vector Autoregression (VAR) model used for variables that are non-stationary but have the potential to be cointegrated. This additional restriction must be given due to data forms that are not stationary at the level but are cointegrated. VECM then leverages this cointegration restriction information into its specifications. Thus, in VECM, there is a speed of adjustment from the short term to the long term. Therefore, VECM is a VAR design for non-stationary series with a cointegration relationship.

$$\Delta y_t = \Pi y_{t-1} + \Gamma_1 \Delta y_{t-1} + \dots + \Gamma_{p-1} \Delta y_{t-p+1} + u_t$$

Where Δy_t is $y_t - y_{t-1}$, y_t is a vector containing the variables analyzed in the study, Π is the long term parameter, Γ is the short term parameter, and u_t is the error term. Data analysis using the VECM approach generally uses short-term and long-term effects, Impulse Response Function (IRF), Forecast Error Variance Decomposition (FEVD). Before estimating VECM, several steps must be carried out, namely pre-estimation testing. These tests include the data stationarity test, VAR stability test, determination of optimal lag, and cointegration test.

RESULTS AND DISCUSSION

Descriptive Statistics

Tabel 1 merupakan descriptive statistics dari indeks saham negara berkembang dan maju. rata-rata indeks saham syariah negara berkembang dan maju berkisar antara 5.12

persen sampai 8.47 persen. Indeks saham syariah USA memiliki rata-rata terbesar diantara indeks saham syariah lainnya dengan jangkauan antara 8.05 persen sampai dengan 9.19 persen yang berarti memiliki harga saham paling tinggi dibandingkan dengan yang lain. Harga saham yang tinggi ini sejalan dengan risiko yang ada pada indeks saham syariah USA yang direfleksikan oleh standar deviasi dengan nilai tertinggi diantara yang lain.

Table 1. Descriptive Statistics

	Indonesia	Turkey	Malaysia	Qatar	India	USA	Japan
Mean	5.126769	8.674046	6.920698	8.274827	8.161095	8.475796	7.438708
Maximum	5.296365	9.451003	7.171572	8.504375	8.866576	9.196663	7.948806
Minimum	4.753159	8.236969	6.687894	7.876976	7.616451	8.058444	7.032933
Std. Dev.	0.097932	0.285083	0.065556	0.126964	0.265934	0.298751	0.235237
Observations	2088	2088	2088	2088	2088	2088	2088

Stationary Test

This study uses time-series data. Therefore, the first thing that needs to be done is to test the stationarity of the data, which aims to determine whether the data used is stationary or not. If the data is not stationary, it will produce false/biased results. The non-stationary data can be converted into stationary data by increasing integration until the data becomes stationary.

This study uses the Augmented Dickey-Fuller (ADF), and Philips Perron (PP) tests to check the stationarity of the data with level and difference data. The results of the ADF and PP tests are the probability of the data being less than 0.05, so the data is stationary. Based on Table 2, the ADF and PP tests were carried out at the level, if not stationary, then proceed with the level difference. At the level test, all data contains a unit root proven with a probability value greater than 0.05. In other words, at this level, the data is not stationary. The test is continued by increasing the degree of integration, namely the difference. The results obtained indicate that all data have a probability value below 0.05 so that the data does not contain a unit root and the data is stationary. This result means that the possibility of Indonesia's Islamic stock index with developing and developed countries has a long-term relationship.

Table 2. Stationary Test Results

Islamic Stock Index	Augmented Dickey-Fuller (ADF)		Philips Perron (PP)	
	Level	Difference	Level	Difference
Indonesia	0.1385	0.0000	0.1340	0.0001
Turkey	0.9249	0.0000	0.9162	0.0000
Malaysia	0.0909	0.0001	0.0601	0.0001
Qatar	0.0469	0.0000	0.0811	0.0000
India	0.9404	0.0000	0.9156	0.0000
USA	0.9846	0.0000	0.9850	0.0001
Japan	0.7833	0.0001	0.7837	0.0001

Cointegration

After the optimum lag test has been carried out, it is followed by the Johansen Cointegration test to analyze the presence or absence of long-term integration between the Indonesian Islamic stock index and developing country stock indices and developed country Islamic stock indexes at lag 1. This test compares the trace statistic value with the critical value at the 5% level. The results of the Johansen Cointegration test are shown in Table 3.

Table 3. Cointegration Test Results
Indonesia and Developing Countries

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.020734	107.9798	88.80380	0.0011
At most, 1 *	0.012183	64.27472	63.87610	0.0463
At most 2	0.009012	38.70420	42.91525	0.1239
At most 3	0.006058	19.82062	25.87211	0.2351
At most 4	0.003420	7.145439	12.51798	0.3296

Indonesia and Developed Countries				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.012133	45.62920	42.91525	0.0261
At most 1	0.006538	20.16502	25.87211	0.2177
At most 2	0.003103	6.482290	12.51798	0.4016

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level for developing countries, and Trace test indicates 1 cointegrating eqn(s) at the 0.05 level for developed countries

*denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Johansen's test results are used to determine the VAR or VECM model. Table 7, at the 5% significance level, it is found that there are two cointegration equations between the Indonesian Islamic stock index and the developing country stock index and one cointegration equation between the Indonesian Islamic stock index and the developed country Islamic stock index, which means it has a balanced relationship and the similarity of movements in the stock index long-term. In this study, because integration was found, the model used was VECM.

Short-Term and Long-Term Integration

The results of the pre-estimation test that have been carried out indicate that all variables are stationary at the difference, and there is cointegration, so the model used is VECM. The VECM model uses an optimum lag 1. The results of the VAR/VECM estimation are shown in Table 4. Table 4 shows the VECM estimation results in the short and long term. In the short term, the Islamic stock indexes of Turkey and Japan affect the Indonesian Islamic stock index, while in the long term, the Islamic stock indexes of

Malaysia, Qatar, India, the United States, and Japan affect the Indonesian Islamic stock index with a lag of one month earlier.

Table 4. Short-Term and Long-Term Results

Islamic Stock Index	Coefficient	t-statistic
Short-Term		
Turkey	0.045216	2.37569*
Malaysia	0.056758	1.85105
Qatar	-0.024856	-1.13002
India	-0.016286	-1.04282
USA	0.009591	0.45302
Japan	0.047662	2.24690*
Long-Term		
Turkey	-0.176158	-0.11404
Malaysia	8.056244	3.55487*
Qatar	-8.045002	-6.41477*
India	15.20192	7.53467*
USA	-6.341088	-3.30768*
Japan	-15.28591	-7.23298*

Indonesia's Islamic stock index with Turkey affects the short term but not the long term. The Ministry of Foreign Affairs of the Republic of Indonesia (2021) said that the cooperative relationship between Indonesia and Turkey has been going on for a long time and is currently entering a new phase that further demonstrates the strategic value of the two countries with the launch of the "Joint declaration Indonesia-Turkey: Toward an Enhanced Partnership in a New Word Setting" where the two countries are committed to cooperating, one of which is in the economic and trade fields with a target of US\$ 10 billion by 2023. Indonesia and Turkey have excellent trade potential, but the realization is still tiny. Currently, the trading volume between the two is only around US\$ 1.5 billion, which is still far from its true potential.

Indonesia's Islamic stock index with Malaysia influences in the long term but not in the short term. The Coordinating Ministry for Economic Affairs of the Republic of Indonesia (2021) stated that Malaysia is one of the main economic partners in investment and trade. Data from the Ministry of Trade (2021) revealed that foreign investment originating from Malaysia reached US\$ 706.8 million spread over 1,324 projects. Then in terms of trade in goods, the volume of bilateral trade between countries reached US\$ 15.03 million in 2020 and US\$ 13.43 million in 2021. The data shows that the relationship between the two countries is very intense in the economic field.

Indonesia's Islamic stock index with Malaysia influences in the long term but not in the short term. Indonesia's opportunities to market its products are still very open. In 2014, Indonesia's total trade with Qatar reached US\$ 1.68 billion. However, this value fell to

USD 828 million in 2015 and increased to USD 1.5 billion in 2018. Some of Indonesia's mainstay products marketed in Qatar include processed food/beverages, coffee, sugar, salt, tea, cooking oil, wheat flour, fruits. In addition, there are motor vehicle spare parts, electricity, electronic equipment, and supplies for building materials.

Indonesia's Islamic stock index with India influences in the long term but not in the short term. Indonesia has continuously recorded a surplus in trade with India. Data from the Ministry of Trade of the Republic of Indonesia recorded that Indonesia's trade value with India in 2017 reached US\$ 18.13 billion. This amount consists of the value of Indonesia's exports to India of US\$ 14.98 billion and Indonesia's imports from the country of US\$ 4.05 billion. As a result, Indonesia's trade balance was a surplus of US\$ 10.04 billion. This figure is the largest since 2013. However, in 2018 Indonesia's trade with India during the Jan-Mar 2018 period decreased 2.99% to US\$ 4.32 billion from the same period the previous year. Indonesia's exports to India shrank 7% to US\$ 3.2 billion from the previous year, while imports from India increased 10.82 percent to US\$ 1.1 billion. Indonesia's trade balance fell 14.4 percent to US\$ 2.09 billion from the same period the previous year.

Indonesia's Islamic stock index with the United States influences in the long term but not in the short term. The Ministry of Trade (2021) noted that the trade balance between Indonesia and the United States (US) consistently scored a surplus. Although Indonesia's exports had experienced a decline, the decline in imports was more excellent so that the surplus remained. In 2019, the export value of Indonesia and the United States fell 3.8 percent to US\$ 17.7 billion. Meanwhile, imports decreased by 8.8% to US\$ 9.3 billion, so the value of the trade balance increased 2.4% from US\$ 8.3 billion in 2018 to US\$ 8.5 billion. The increase in imports of raw materials reflects an increase in the performance of the real sector. At the same time, the increase in capital goods is also quite good because it impacts increasing production capacity.

Indonesia's Islamic stock index with Japan influences in the long term but not in the short term. Japan is an essential partner for Indonesia. Despite being faced with various global challenges, relations between the two countries remain strong. The Ministry of Trade (2020) stated that the value of bilateral trade between Indonesia and Japan in 2020 reached US\$ 24.3 billion. During the 2018 to 2020 period, Japan consistently ranks 3rd as Indonesia's leading export destination, with export values in 2020 reaching US\$ 13.6 billion. This condition continues, wherein semester 1 - 2021, the value of Indonesia's exports to Japan has reached a value of US\$ 7.9 billion. In terms of investment, during the period 2018 to Semester I - 2021, Foreign Investment (PMA) from Japan that entered Indonesia reached US\$ 12.9 billion.

Meanwhile, Japan became the third largest foreign investment country entering Indonesia. Until the first half of 2021, FDI from Japan entering Indonesia has reached US\$ 1.04 billion. Meanwhile, the total PMA projects from Japan reached more than 19 thousand projects during that period. The Indonesian government hopes that foreign direct investment from Japan entering in 2021 will be able to exceed the realization in 2020, which reached US\$ 2.6 billion.

Impulse Response Function

Impulse Response Function (IRF) analysis serves to see the response of a variable due to shocks in other variables at one standard deviation. The shocks come from the variable itself and other variables. This IRF analysis will estimate the response of endogenous variables from within the VAR system due to shocks from other variables. Some shocks occur from the variable itself and other variables because the i variable affects

the *i*-variable. There is transmission to all other variables through the lag structure in VECM. IRF describes the response of each dependent variable to the shock of the independent variable and the length of time to achieve stability so that the IRF does not describe the magnitude of the impact of one variable on other variables.

This study takes the response period of the Indonesian Islamic stock index for the next 300 months. The results of the IRF analysis in this study will explain the response of the Indonesian Islamic stock index if there are shocks in the Islamic stock indexes of Turkey, Malaysia, Qatar, India, the USA, and Japan. In general, at the beginning of the shock of one standard deviation, the Indonesian Islamic stock index has not responded to any shocks from other Islamic stock indices. The response of the Indonesian Islamic stock index began to be seen when it was in the second period where the Indonesian Islamic stock index responded with positive and negative responses. The Indonesian Islamic stock index responded positively to the shocks of Turkey, Malaysia, USA, and Japan Islamic stock indices, while Qatar and India responded negatively.

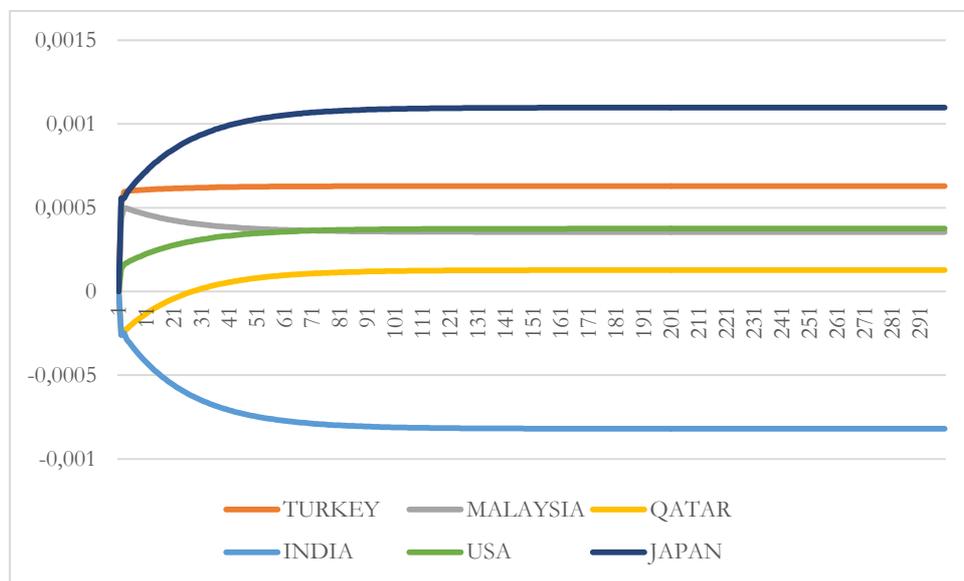


Figure 1. Impulse Response Function Result

Forecast Error Variance Decomposition

Forecast Error Variance Decomposition (FEVD) analysis on the VECM method is used to identify and explain the contribution of each variable shock to the main variables observed. This FEVD method can see the strengths and weaknesses of each variable in influencing other variables over a long period. The pattern of the FEVD indicates the nature of multivariate causality among the variables in the VAR model. The results of the FEVD analysis in this study will explain how big the contribution of each shock variable to the Islamic stock index of Turkey, Malaysia, Qatar, India, the USA, and Japan is in influencing the Indonesian Islamic stock index. The period used is the next three years which consists of 300 months. The results show that Indonesia's Islamic stock index dominates with an average of 98.37 percent, followed by Japan's Islamic stock index at 0.73 percent, India by 0.38 percent, Turkey by 0.29 percent, Malaysia by 0.12 percent, the USA by 0.08 percent, and Qatar by 0.01 percent.

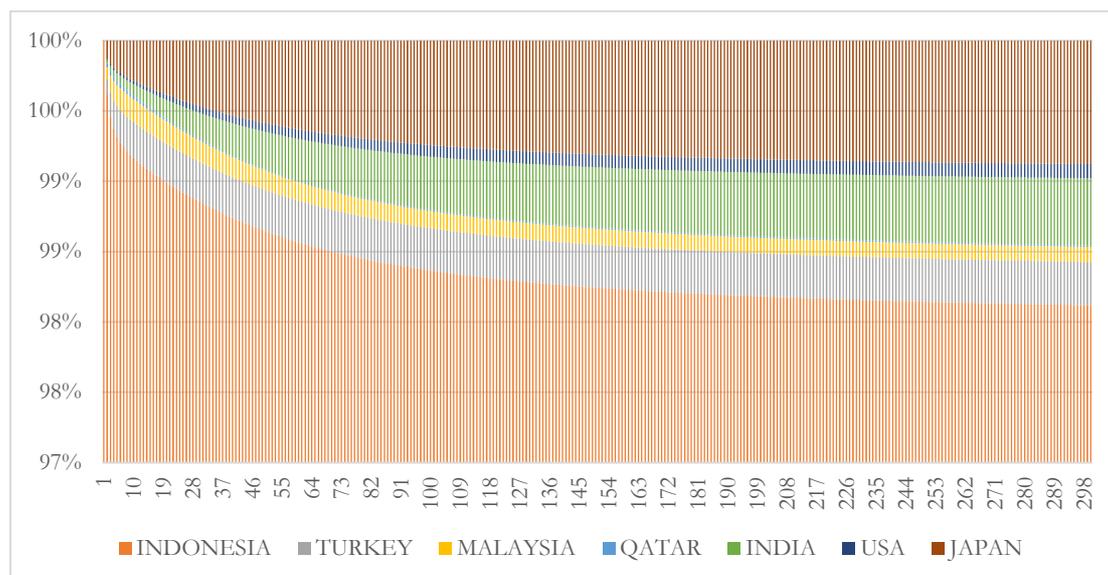


Figure 2. Forecast Error Variance Decomposition Results

CONCLUSION

The estimation results show that the sharia stock indexes of Turkey and Japan affect the Indonesian sharia stock indexes in the short and long term. In contrast, the Malaysian, Qatar, India, and USA sharia stock indices affect the long term. Indonesian sharia stock index responded with positive and negative responses. The Indonesian sharia stock index responded positively to the shocks of Turkey, Malaysia, USA, and Japan sharia stock indices, while Qatar and India responded negatively. Japan's sharia stock index provides the most significant contribution in influencing the diversity of Indonesia's sharia stock index.

The Indonesian sharia stock index needs to improve the quality of the structure and infrastructure of the stock market in order to minimize the impact of shocks to the sharia stock market in developing and developed countries and accelerate the process of stock market integration. In addition, there is a need for coordination between countries, both in terms of regulations and capital market readiness in each country, to achieve stock market integration.

References

- Aladesanmi, O., Casalin, F., & Metcalf, H. (2019). Stock Market Integration between the UK and the US: Evidence over Eight Decades. *Global Finance Journal*, 41(3), 32–43. <https://doi.org/10.1016/j.gfj.2018.11.005>
- Balli, F., de Bruin, A., & Chowdhury, M. I. H. (2019). Spillovers and The Determinants in Islamic Equity Markets. *North American Journal of Economics and Finance*, 50, 1–18. <https://doi.org/10.1016/j.najef.2019.101040>
- Batten, J. A., Kinateder, H., Szilagyi, P. G., & Wagner, N. F. (2019). Time-varying Energy and Stock Market Integration in Asia. *Energy Economics*, 80, 777–792. <https://doi.org/10.1016/j.eneco.2019.01.008>
- BenSaïda, A., Litimi, H., & Abdallah, O. (2018). Volatility Spillover Shifts in Global Financial Markets. *Economic Modelling*, 73, 343–353. <https://doi.org/10.1016/j.econmod.2018.04.011>
- Casu, B., & Girardone, C. (2010). Integration and Efficiency Convergence in EU Banking Markets. *Omega*, 38(5), 260–267. <https://doi.org/10.1016/j.omega.2009.08.004>
- Cieslak, A., & Schrimpf, A. (2019). Non-monetary News in Central Bank Communication.

- Journal of International Economics*, 118, 293–315.
<https://doi.org/10.1016/j.jinteco.2019.01.012>
- Djennas, M. (2016). Business Cycle Volatility, Growth, and Financial Openness: Does Islamic Finance Make Any Difference? *Borsa Istanbul Review*, 16(3), 121–145.
<https://doi.org/10.1016/j.bir.2016.06.003>
- Ellington, M. (2018). Financial Market Illiquidity Shocks and Macroeconomic Dynamics: Evidence from the UK. *Journal of Banking and Finance*, 89, 225–236.
<https://doi.org/10.1016/j.jbankfin.2018.02.013>
- Ferris, S. P., Hanousek, J., Shamshur, A., & Tresl, J. (2018). Asymmetries in the Firm's Use of Debt to Changing Market Values. *Journal of Corporate Finance*, 48, 542–555.
<https://doi.org/10.1016/j.jcorpfin.2017.12.006>
- Jebran, K., Chen, S., & Tauni, M. Z. (2017). Islamic and Conventional Equity Index Co-movement and Volatility Transmission: Evidence from Pakistan. *Future Business Journal*, 3(2), 98–106. <https://doi.org/10.1016/j.fbj.2017.05.001>
- Kim, J. B., Ma, M. L. Z., & Wang, H. (2015). Financial Development and the Cost of Equity Capital: Evidence from China. *China Journal of Accounting Research*, 8(4), 243–277. <https://doi.org/10.1016/j.cjar.2015.04.001>
- Lee, H., & Kim, H. (2020). Time-Varying Integration of European Stock Markets and Monetary Drivers. *Journal of Empirical Finance*, 58(3), 369–385.
<https://doi.org/10.1016/j.jempfin.2020.07.004>
- Lee, S. S. P., & Goh, K. L. (2016). Regional and International Linkages of the ASEAN-5 Stock Markets: A Multivariate GARCH Approach. *Asian Academy of Management Journal of Accounting and Finance*, 12(1), 49–71.
- Miyazawa, K., Ogawa, H., & Tamai, T. (2019). Capital Market Integration and Fiscal Sustainability. *European Economic Review*, 120, 1–20.
<https://doi.org/10.1016/j.eurocorev.2019.103305>
- Mohti, W., Dionísio, A., Vieira, I., & Ferreira, P. (2019). Regional and Global Integration of Asian Stock Markets. *Research in International Business and Finance*, 50(6), 357–368.
<https://doi.org/10.1016/j.ribaf.2019.06.003>
- Rungcharoenkitkul, P. (2012). Risk Sharing versus Financial Contagion in Asia: An Asset Price Perspective. *Review of Development Finance*, 2(3–4), 101–117.
<https://doi.org/10.1016/j.rdf.2012.09.004>
- Saiti, B., Bacha, O., & Masih, M. (2014). The Diversification Benefits from Islamic Investment During the Financial Turmoil: The Case for the US-based Equity Investors. *Borsa Istanbul Review*, 14(4), 196–211.
<https://doi.org/10.1016/j.bir.2014.08.002>
- Salman, A., & Nawaz, H. (2018). Islamic Financial System and Conventional Banking: A Comparison. *Arab Economic and Business Journal*, 13(2), 155–167.
<https://doi.org/10.1016/j.aebj.2018.09.003>
- Sarwar, S., Tiwari, A. K., & Tingqiu, C. (2020). Analyzing Volatility Spillovers between Oil Market and Asian Stock Markets. *Resources Policy*, 66, 1–12.
<https://doi.org/10.1016/j.resourpol.2020.101608>
- Silvers, R. (2021). Does Regulatory Cooperation Help Integrate Equity Markets? *Journal of Financial Economics*, 142(3), 1275–1300. <https://doi.org/10.1016/j.jfineco.2021.05.040>
- Singh, A., & Singh, M. (2016). Inter-linkages and Causal Relationships between the US and BRIC Equity Markets: An Empirical Investigation. *Arab Economic and Business Journal*, 11(2), 115–145. <https://doi.org/10.1016/j.aebj.2016.10.003>
- Stoupos, N., & Kiohos, A. (2021). Euro Area Stock Markets Integration: Empirical Evidence after the 2010 Debt Crisis. *Finance Research Letters*, 8, 1–8.

- <https://doi.org/10.1016/j.frl.2021.102423>
- Surugiu, M.-R., & Surugiu, C. (2015). International Trade, Globalization and Economic Interdependence between European Countries: Implications for Businesses and Marketing Framework. *Procedia Economics and Finance*, 32(15), 131–138. [https://doi.org/10.1016/s2212-5671\(15\)01374-x](https://doi.org/10.1016/s2212-5671(15)01374-x)
- Wahyudi, I., & Sani, G. A. (2014). Interdependence Between Islamic Capital Market and Money Market: Evidence from Indonesia. *Borsa Istanbul Review*, 14(1), 32–47. <https://doi.org/10.1016/j.bir.2013.11.001>
- Werner, R. (2016). A Lost Century in Economics: Three Theories of Banking and the Conclusive Evidence. *International Review of Financial Analysis*, 46, 361–379. <https://doi.org/10.1016/j.irfa.2015.08.014>
- Wu, F. (2019). Stock Market Integration in East and Southeast Asia: The Role of Global Factors. *International Review of Financial Analysis*, 67, 1–42. <https://doi.org/10.1016/j.irfa.2019.101416>
- Yesuf, A. J., & Aassouli, D. (2020). Exploring Synergies and Performance Evaluation Between Islamic Funds and Socially Responsible Investment (SRIs) in Light of the Sustainable Development Goals (SDGs). *Heliyon*, 6(8), 1–17. <https://doi.org/10.1016/j.heliyon.2020.e04562>
- Yildirim, A., & Gökalp, M. F. (2016). Institutions and Economic Performance: A Review on the Developing Countries. *Procedia Economics and Finance*, 38, 347–359. [https://doi.org/10.1016/s2212-5671\(16\)30207-6](https://doi.org/10.1016/s2212-5671(16)30207-6)
- Zafar, M. B., & Sulaiman, A. A. (2019). Corporate Social Responsibility and Islamic Banks: a Systematic Literature Review. *Management Review Quarterly*, 69(2), 159–206. <https://doi.org/10.1007/s11301-018-0150-x>

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