"Using macroeconomic variables in the prediction of stock market indices:
A theoretical and empirical assessment within BRICS and selected developed economies."

A thesis submitted to
London South Bank University
in partial fulfilment for the degree of
Doctor of Philosophy

By

Berzanna Seydou Ouattara

ID: 2727050

London Doctoral Academy
Division of Accounting, Finance and Economics
School of Business
London South Bank University

Director of Studies: Professor Dr. Kenneth D'Silva

Co-Supervisor: Dr. Ling Xiao

Co-Supervisor: Dr. Stephen Barber

September 2018

Volume 2 (Appendices)

LONDON SOUTH BANK UNIVERSITY

List of Appendices

Appendix 1: The stock markets indices for the BRICS and developed countries

BRICS Markets

Brazil: Brazil Stock Exchange Bovespa

This is known as one of the biggest stock exchanges in the world using market capitalization model. This known Brazilian stock market in 2009, vibrantly rebounded from its 5 years low point of 29, 435.11 on October 27 2008 to its pre-2008 crisis level. Both local and foreign investors were attracted by its strong recovery and the stability of Brazilian macroeconomic variables. This led to an increased equity capital inflow of USD 52.58 billion in 2010, which culminated to USD 352.9 billion foreign reserve in October 2011 (ISI Emerging Markets, 2011), and to an increased growth in the export, which strengthened the Brazilian economic prospect. This steadiness and increased economic growth made the Bovespa a key stock exchange within the BRICS economy or amongst the emerging economies. The Bovespa index is said to have outperformed its emerging markets counterparts, when it increased by 69.4%, while the Shanghai Stock Exchange, known to be the biggest stock exchange in Asia, increased by 42.0% during the period of the post-crisis until January 2011. The MSCI also confirms the attractiveness of the Brazilian market (ISI Emerging Markets, 2011).

Russia: Russian Stock Exchange – RTS

The Futures Industry Association's (FIA) report, published in early April 2010, noted that the number of futures and options that were traded on RTS almost doubled from 2008 to 2009 to hit volume of 474.44 million, and this led to the rise in RTS Index Futures to 71.5% in 2009 to just over 150 million.

Another FIA report states the number of futures and options traded on RTS increased by 31.5% to a total annual volume of almost 624 million contracts (Marketswiki, 2012). Russia's stock market grew rapidly by 686% between 2001 and 2005. It surged again by another 66% in 2006.

Russian foreign direct investment grew to USD 45 billion in 2007 from USD 14.6 billion in 2005, due to the GDP growth rate of 8.1%, which in turn boosted the stock market. (Reuters, 2012)

India: CNX Nifty 50

The Nifty 50 is a well-diversified stock index accounting for 13 sectors of the economy and represents about 65% of the free float market capitalization of the stocks listed on NSE on March 31, 2016. The total traded value of Nifty 50 index constituted approximately 46% of the traded value of all the stocks on the NSE for the last six months ending March 2016.

China: Shanghai Stock Exchange-SSE

Shanghai SSE Composite is the Chinese Index, which experienced a significant loss of 72% after its first hit to a high of 6124 points in Oct 2007. The index plummeted down to a low of 1665 in Oct 2008, and in 2010 it fell again by - 14% YoY to 2808 at the year close. This indicated the inconsistency of the Chinese economy. Though January 2007, an episode of 'Chinese Correction', characterized by an abrupt fall on China's stock prices, which resulted in high instability in the stock exchange and the market, has been before 2008 and has remained as such. With this level of inconsistency in the Chinese market, companies were attracted to the market, because Chinese entrepreneurs and the managers of state-owned enterprises conducted public offerings. China's market improved in 2010 compared to the pre-crisis period, and had over 470 IPOs, which were worth over $100bn, and nearly twice as much deal activity as in 2007 (247 deals, $66bn), according to data from Dialogic. But then again the Chinese economy collapsed in 2012 back to 2008-levels. (Mrchinablog, 2011)

South Africa: Johannesburg Stock Exchange - JSE

South Africa Stock Market (FTSE/JSE) from 1995 until 2013, averaged 15521 Index points reaching an all-time high of 40984 Index points in January of 2013, after a record low of 4308 Index points in September of 1998. The FTSE/JSE All Share Index is a major stock market index and it tracks the performance of all companies listed on the Johannesburg Stock Exchange in South Africa. It is a free-float, market capitalization weighted index with a monopolistic characteristic that made it a popular choice with institutional investors in recent months.

Developed Markets

France: The CAC 40 (CAC quarante)

CAC 40 is a French stock market index and it's a capitalization-weighted index, which measures the performance of the 40 largest, publicly traded companies on the Euro-next Paris France's securities market. CAC 40 is considered to be a strong economic performance indicator as France is one of Europe's leading economies. CAC first had its base set at 1,000 on 31st of December 1987, which is equivalent to a total market capitalization of 370,437,433,957.70 French francs. During the peak of dot-com bubble of September 2000, the CAC reached its all-time high level of 6,922 points. But the CAC fell to its lowest point of 2500 following the credit crunch of 2009 March. However, the CAC bounced back and traded over 4000 points after on.

Germany: DAX

The DAX Index is the benchmark index for the German market that tracks the performance of 30 selected German blue-chip stocks traded on the Frankfurt Stock Exchange. The Index is free floating with a base value of 1000 as of December 31, 1987. The DAX is considered one of the most important indices for European investors, as Germany is known to be the largest euro zone economy. Many DAX components are large multinational companies with high level of significance to the global markets in addition to Germany's domestic market. Dax index is considered important for foreign and international investors to monitor, as the recent studies indicated that nearly 75% of sales generated by DAX-listed companies are earned abroad.

Japan: Nikkei 225

The Nikkei 225 Stock Average Index is a major stock market index that tracks the performance of 225 top rated companies listed in the First Section of the Tokyo Stock Exchange. It is a price-weighted index with a base value of 176.21 as of May 16, 1949. Historically, the Japan NIKKEI 225 Stock Market Index reached an all-time high of 38915.87 in December of 1989 and a record low of 85.25 in July of 1950.

United Kingdom: UK FTSE 100 Stock Market Index

The FTSE 100 Index is the UK major stock market index that tracks the performance of 100 most capitalized companies traded on the London Stock Exchange. Being a free-float index with a base value of 1000 as of January 3, 1984, it represents about 80 percent of the entire market capitalization of the London Stock Exchange. Its base level has grew to around 5500 level in late 2011, which was lower than its 6950 level peak in 1999, during the height of the Internet bubble. The index has rebounded from its low levels during the European sovereign debt crisis of late 2010 and early 2011.

United States: The New York Stock Exchange (NYSE)

NYSE is the world's largest securities exchange that provides a marketplace for buying and selling 9.3 million corporate stocks and other securities daily. It lists 90% of the Dow Jones Industrial Average, 82% of the S&P 500, and 70 of the world's largest corporations. It is itself a publicly-traded company with nearly 3,000 employees. On June 3, 2013, the NYSE shareholders approved its $8.2 billion purchase by Intercontinental Exchange (ICE). (Source: Marketwatch, NYSE Shareholders Approve ICE Merger, June 3, 2013)

All stock market used in this thesis are free-float, market capitalization weighted indexes.

Appendix 2: The development of the multiple factor models (Table 1 0ut of 2)

Name of Theory	Developed by	Year	Focus
Dow Theory	Charles Dow	1900	To identify the primary trend and catch the big moves. Concluded that the market was influenced by emotion and prone to over-reaction both up and down. This theory helps investors identify facts, not make assumptions or forecast. Dow believed that success in the markets required serious study and analysis that would be fraught with successes and failures.
The Present Value Model	Irving Fisher	1907	The present value model underlined all of modern financial economics, and lies at the heart of commercial property valuation and real estate investment decision making. Traditionally this model is applied by forecasting property net cash flows and discounting those cash flows at a constant discount rate. In this model, the discount rate is meant to represent the expected return (that is, the internal rate of return or total return) to an investment in the property, thereby reflecting the opportunity cost of capital.
Markowitz's Portfolio Theory	Markowitz	1952	Markowitz explained that an asset risk refers to the possibility that actual future returns are different from expected returns, or the probability that unexpected events will occur. Markowitz divided risk into systematic and unsystematic. Systematic risk refers to that portion of risk of an individual security's returns caused by factors affecting the markets as a whole (interest rates, inflation), and unsystematic risks as those unique to firms (strikes, losses in operation etc).
Dividend Discount Model	Gordon	1956	This model is used when cash flows and the rate at which they are discounted are uncertain. Gordon found that the value of the stock increases if either the expected current level of dividends or the growth rate of dividends increases, and it declines if the discount rate increases. These results accord with the common intuition about how dividends, growth, and discount rates should influence security prices.
Efficient Market Hypothesis (EMH)	Eugen Fama	1960	Stocks are fairly priced to reflect existing information in an active market. This theory has influenced the behaviour of investors who trade securities under the assumption that the purchase price is lower than what the security is worth to them. Fama (1991) stressed that the EMH and its forms are mostly used as guidelines rather than facts.
Capital Asset Price Model (CAPM)	Sharpe	1964	Developed for the determination of the required rate of return on an investment. This model takes into account two types of risk: systematic risks and unsystematic risks. Sharpe introduced the concept of beta, which is a measure of systematic risk. This model considered systematic risk to be the only risk influencing the level of return on an asset. This model rejects the notion of unsystematic risk.
Capital Market Theory	Sharpe	1970	This model is based on Capital Asset Pricing Model. Sharpe tried to explain and predict the progression of capital (and sometimes financial) markets over time on the basis of the one or the other mathematical model. Capital market theory is a generic term for the analysis of securities. Capital market theory stated that federal funds, federal agency securities, treasury bills, commercial papers, negotiable certificates of deposits, repurchase agreements, Eurocurrency loans and deposits, options and futures are merchandised in the capital market. When one has to put a price on a security, one has to determine the risk and return of the security both for single assets, as well as a portfolio of assets. The uncertainty and variability of returns on assets and the possibilities of losses can be defined as risks.
The Intertemporal Capital Asset Pricing Model (ICAPM)	Merton	1973	The models of asset pricing considered so far had one feature in common: they were all static. The ICAPM and the APT look alike from their results. The ICAPM only has a fixed risk factor, the market portfolio. In the ICAPM a perfect market is assumed, i.e. all assets have limited liability, we face no transaction costs or taxes, assets are infinitely divisible, each investor believes that his decision does not affect the market price, the market is always in equilibrium, hence there is no trades outside the equilibrium prices, investors can borrow and lend without any restrictions all assets at the same rate. Trading takes place continuously, i.e. all investors can trade at every point of time. All variables that can explain the prices and price changes of the assets (the state variables) follow a joint Markov process. The state variables are further assumed to change continuously over time, i.e. no jumps are allowed.

Appendix 2: The Development of the multiple factor models (Table 2 0ut of 2)

Name of Theory	Developed by	Year	Focus
The Conditional Capital Asset Pricing Model	*Ross*	1976	The Conditional CAPM is a generalization of the unconditional form and not a generalization to include other risk factors. The expected return depends linearly on the market risk and the risk of a change in the market risk, i.e. it depends on two different beta. The original form had a single (conditional) beta, only to derive the unconditional form this second beta turned out, no other source of risk than the market risk has been added. This second beta is due to the unobservability of expectations. Any risk factor that we can determine can change over time, i.e. we could derive the conditional version for various sources of risk, when determining the unconditional form for every risk factor such a second beta would turn out.
The Consumption-Based Capital Asset Pricing Model (CCAPM)	*Breeden*	1979	When we want to apply the ICAPM to explain the behavior of asset prices we face the problem of identifying the relevant state variables, the theory does give no hint how to choose the relevant variables. The Consumption-Based Capital Asset Pricing Model (CCAPM) as first developed by Breeden develops the ICAPM further within the same theoretical framework to aggregate the risks from shifting state variables into a single variable, consumption.
The International Capital Asset Pricing Model	*Stulz*	1981	The previous models of asset pricing implicitly assumed that all investors are located in the same country and consider only assets in their home country. In reality, however, we find investors in different countries and they also invest a part of their wealth abroad. In such a framework, we therefore should consider the influence of exchange rates, different tastes for consumption across countries and barriers to foreign investment. These points were incorporated into the International Capital Asset Pricing Model
The Three factors model	*Fama and French*	1993	The purpose of the model is to describe stock returns. In contrast to the CAPM which use only one variable to describe the return of the portfolio, the present model uses three factors (variables) to understand stock returns adding size and value factors to the market risk factor in CAPM. This model considers that market is outperformed by value and small market capitalisation stocks.
The Five factors models	*Fama and Frech*	2015	This is an extension of the three-factor model. It considers the size, value, profitability, and investment patterns in average stock returns.

Appendix 3: Variance Ratio Tests

Appendix 3.1: Variance Ratio Tests – Brazil

Null Hypothesis: Log IBOV_SA is a random walk				
Standard error estimates assume no heteroskedasticity				
Use biased variance estimates				
User-specified lags: 2 5 10 30				
Joint Tests		**Value**	**df**	**Probability**
Max |z| (at period 5)*		1.281748	185	0.5903
Wald (Chi-Square)		2.020498	4	0.732
Individual Tests				
Period	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**
2	1.04	0.07	0.57	0.57
5	1.21	0.16	1.28	0.2
10	1.3	0.25	1.21	0.22
30	1.28	0.45	0.62	0.53

Null Hypothesis: Log IBOV_SA is a martingale				
Heteroskedasticity robust standard error estimates				
Use biased variance estimates				
User-specified lags: 2 5 10 30				
Test probabilities computed using wild bootstrap: dist=twopoint,				
reps=5000, rng=kn, seed=1000				
Joint Tests		**Value**	**df**	**Probability**
Max |z| (at period 10)		1.037542	185	0.651
Individual Tests				
Period	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**
2	1.04	0.1	0.41	0.71
5	1.21	0.2	1.02	0.33
10	1.3	0.29	1.04	0.32
30	1.28	0.48	0.59	0.69

Null Hypothesis: IBOV_SA is a random walk				
Standard error estimates assume no heteroskedasticity				
Use biased variance estimates				
User-specified lags: 2 5 10 30				
Test probabilities computed using wild bootstrap: dist=twopoint,				
reps=5000, rng=kn, seed=1000				
Joint Tests		**Value**	**df**	**Probability**
Max |z| (at period 5)		0.84034	185	0.8966
Wald (Chi-Square)		1.561752	4	0.931
Individual Tests				
Period	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**
2	1.02	0.07	0.24	0.88
5	1.14	0.16	0.84	0.56
10	1.15	0.25	0.6	0.69
30	0.97	0.45	-0.08	0.97

*Probability approximation using studentised maximum modulus with parameter value 4 and infinite degrees of freedom

Appendix 3.2: Variance Ratio Tests – Russia

<table>
<tr><th colspan="5">Null Hypothesis: Log RTS_SA is a random walk</th><th colspan="5">Null Hypothesis: Log RTS_SA is a martingale</th><th colspan="5">Null Hypothesis: Log RTS_SA is a random walk</th></tr>
<tr><th colspan="5">Standard error estimates assume no heteroskedasticity</th><th colspan="5">Heteroskedasticity robust standard error estimates</th><th colspan="5">Standard error estimates assume no heteroskedasticity</th></tr>
<tr><td colspan="5">Use biased variance estimates</td><td colspan="5">Use biased variance estimates</td><td colspan="5">Use biased variance estimates</td></tr>
<tr><td colspan="5" rowspan="2">User-specified lags: 2 5 10 30</td><td colspan="5">User-specified lags: 2 5 10 30</td><td colspan="5">User-specified lags: 2 5 10 30</td></tr>
<tr><td colspan="5">Test probabilities computed using wild bootstrap: dist=twopoint,</td><td colspan="5">Test probabilities computed using wild bootstrap: dist=twopoint,</td></tr>
<tr><th colspan="2">Joint Tests</th><th>Value</th><th>df</th><th>Probability</th><th colspan="2">Joint Tests</th><th>Value</th><th>df</th><th>Probability</th><th colspan="2">Joint Tests</th><th>Value</th><th>df</th><th>Probability</th></tr>
<tr><td colspan="2">Max |z| (at period 2)*</td><td>2.833503</td><td>185</td><td>0.0183</td><td colspan="2">Max |z| (at period 2)</td><td>2.174845</td><td>185</td><td rowspan="2">0.051</td><td colspan="2">Max |z| (at period 2)</td><td>2.833503</td><td>185</td><td>0.0326</td></tr>
<tr><td colspan="2">Wald (Chi-Square)</td><td>9.388648</td><td>4</td><td>0.0521</td><td colspan="4"></td><td colspan="2">Wald (Chi-Square)</td><td>9.388648</td><td>4</td><td>0.119</td></tr>
<tr><th colspan="5">Individual Tests</th><th colspan="5">Individual Tests</th><th colspan="5">Individual Tests</th></tr>
<tr><th>Period</th><th>Var. Ratio</th><th>Std. Error</th><th>z-Stat</th><th>Probability</th><th>Period</th><th>Var. Ratio</th><th>Std. Error</th><th>z-Stat</th><th>Probability</th><th>Period</th><th>Var. Ratio</th><th>Std. Error</th><th>z-Stat</th><th>Probability</th></tr>
<tr><td>2</td><td>1.21</td><td>0.07</td><td>2.83</td><td>0</td><td>2</td><td>1.21</td><td>0.1</td><td>2.17</td><td>0.03</td><td>2</td><td>1.21</td><td>0.07</td><td>2.83</td><td>0.02</td></tr>
<tr><td>5</td><td>1.31</td><td>0.16</td><td>1.9</td><td>0.06</td><td>5</td><td>1.31</td><td>0.2</td><td>1.54</td><td>0.13</td><td>5</td><td>1.31</td><td>0.16</td><td>1.9</td><td>0.11</td></tr>
<tr><td>10</td><td>1.3</td><td>0.25</td><td>1.21</td><td>0.22</td><td>10</td><td>1.3</td><td>0.29</td><td>1.02</td><td>0.35</td><td>10</td><td>1.3</td><td>0.25</td><td>1.21</td><td>0.32</td></tr>
<tr><td>30</td><td>0.98</td><td>0.45</td><td>-0.05</td><td>0.96</td><td>30</td><td>0.98</td><td>0.48</td><td>-0.05</td><td>0.97</td><td>30</td><td>0.98</td><td>0.45</td><td>-0.05</td><td>0.97</td></tr>
<tr><td colspan="15">*Probability approximation using studentized maximum modulus with parameter value 4 and infinite degrees of freedom</td></tr>
</table>

Appendix 3.3 Variance Ratio Test – India

3.3. I

Null Hypothesis: Log NIFTY_SA is a random walk				
Standard error estimates assume no heteroskedasticity				
Use biased variance estimates				
User-specified lags: 2 5 10 30				
Joint Tests		**Value**	**df**	**Probability**
Max |z| (at period 10)*		0.550968	185	**0.9694**
Wald (Chi-Square)		4.224128	4	**0.3765**
Individual Tests				
Period	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**
2	0.97	0.07	-0.4	**0.69**
5	1	0.16	0	**1**
10	1.14	0.25	0.55	**0.58**
30	0.79	0.45	-0.45	**0.65**

Null Hypothesis: Log NIFTY_SA is a martingale				
Heteroskedasticity robust standard error estimates				
Use biased variance estimates				
User-specified lags: 2 5 10 30				
Test probabilities computed using wild bootstrap: dist=twopoint,				
reps=5000, rng=kn, seed=1000				
Joint Tests		**Value**	**df**	**Probability**
Max |z| (at period 10)		0.484927	185	**0.953**
Individual Tests				
Period	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**
2	0.97	0.09	-0.32	**0.78**
5	1	0.19	0	**1**
10	1.14	0.28	0.48	**0.65**
30	0.79	0.49	-0.42	**0.75**

Null Hypothesis: Log NIFTY_SA is a random walk				
Standard error estimates assume no heteroskedasticity				
Use biased variance estimates				
User-specified lags: 2 5 10 30				
Test probabilities computed using wild bootstrap: dist=twopoint,				
reps=5000, rng=kn, seed=1000				
Joint Tests		**Value**	**df**	**Probability**
Max |z| (at period 10)		0.550968	185	**0.9462**
Wald (Chi-Square)		4.224128	4	**0.4556**
Individual Tests				
Period	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**
2	0.97	0.07	-0.4	**0.75**
5	1	0.16	0	**1**
10	1.14	0.25	0.55	**0.63**
30	0.79	0.45	-0.45	**0.75**

*Probability approximation using studentized maximum modulus with parameter value 4 and infinite degrees of freedom

Appendix 3.4: Variance Ratio Tests – China

Null Hypothesis: Log SHCOMP_SA is a random walk					**Null Hypothesis: Log SHCOMP_SA is a martingale**					**Null Hypothesis: Log SHCOMP_SA is a random walk**				
Standard error estimates assume no heteroskedasticity					**Heteroskedasticity robust standard error estimates**					**Standard error estimates assume no heteroskedasticity**				
Use biased variance estimates					Use biased variance estimates					Use biased variance estimates				
User-specified lags: 2 5 10 30					User-specified lags: 2 5 10 30					User-specified lags: 2 5 10 30				
					Test probabilities computed using wild bootstrap: dist=twopoint,					Test probabilities computed using wild bootstrap: dist=twopoint,				
					reps=5000, rng=kn, seed=1000					reps=5000, rng=kn, seed=1000				
Joint Tests		**Value**	**df**	**Probability**	**Joint Tests**		**Value**	**df**	**Probability**	**Joint Tests**		**Value**	**df**	**Probability**
Max |z| (at period 10)*		3.875559	185	0.0004	Max |z| (at period 10)		3.328553	185	0.003	Max |z| (at period 10)		3.875559	185	0.0032
Wald (Chi-Square)		25.37974	4	0						Wald (Chi-Square)		25.37974	4	0.002
Individual Tests					**Individual Tests**					**Individual Tests**				
Period	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**	**Period**	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**	**Period**	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**
2	1.06	0.07	0.86	0.39	2	1.06	0.08	0.79	0.45	2	1.06	0.07	0.86	0.45
5	1.47	0.16	2.95	0	5	1.47	0.18	2.62	0.01	5	1.47	0.16	2.95	0.01
10	1.96	0.25	3.88	0	10	1.96	0.29	3.33	0	10	1.96	0.25	3.88	0
30	1.59	0.45	1.29	0.2	30	1.59	0.52	1.13	0.27	30	1.59	0.45	1.29	0.26
*Probability approximation using studentized maximum modulus with parameter value 4 and infinite degrees of freedom														

Appendix 3.5: Variance Ratio Tests – South Africa

Null Hypothesis: Log JALSH_SA is a random walk				
Standard error estimates assume no heteroskedasticity				
Use biased variance estimates				
User-specified lags: 2 5 10 30				
Joint Tests	**Value**	**df**	**Probability**	
Max |z| (at period 30)*	0.549858	185	0.9696	
Wald (Chi-Square)	0.383039	4	0.9838	
Individual Tests				
Period	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**
2	0.99	0.07	-0.12	0.91
5	0.96	0.16	-0.24	0.81
10	0.88	0.25	-0.47	0.64
30	0.75	0.45	-0.55	0.58

Null Hypothesis: Log JALSH_SA is a martingale				
Heteroskedasticity robust standard error estimates				
Use biased variance estimates				
User-specified lags: 2 5 10 30				
Test probabilities computed using wild bootstrap: dist=twopoint,				
reps=5000, rng=kn, seed=1000				
Joint Tests	**Value**	**df**	**Probability**	
Max |z| (at period 30)	0.525132	185	0.941	
Individual Tests				
Period	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**
2	0.99	0.1	-0.09	0.93
5	0.96	0.19	-0.2	0.86
10	0.88	0.28	-0.42	0.7
30	0.75	0.47	-0.53	0.7

Null Hypothesis: Log JALSH_SA is a random walk				
Standard error estimates assume no heteroskedasticity				
Use biased variance estimates				
User-specified lags: 2 5 10 30				
Test probabilities computed using wild bootstrap: dist=twopoint,				
reps=5000, rng=kn, seed=1000				
Joint Tests	**Value**	**df**	**Probability**	
Max |z| (at period 30)	0.549858	185	0.947	
Wald (Chi-Square)	0.383039	4	0.9896	
Individual Tests				
Period	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**
2	0.99	0.07	-0.12	0.92
5	0.96	0.16	-0.24	0.85
10	0.88	0.25	-0.47	0.69
30	0.75	0.45	-0.55	0.69

*Probability approximation using studentized maximum modulus with parameter value 4 and infinite degrees of freedom

Appendix 3.6: Variance Ratio Tests – France

Null Hypothesis: Log CAC_SA is a random walk				
Standard error estimates assume no heteroskedasticity				
Use biased variance estimates				
User-specified lags: 2 5 10 30				
Joint Tests		**Value**	**df**	**Probability**
Max |z| (at period 10)*		0.549562	185	0.9697
Wald (Chi-Square)		2.46015	4	0.6518
Individual Tests				
Period	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**
2	0.97	0.07	-0.38	0.7
5	1	0.16	-0.02	0.99
10	1.14	0.25	0.55	0.58
30	0.98	0.45	-0.04	0.97

Null Hypothesis: Log CAC_SA is a martingale				
Heteroskedasticity robust standard error estimates				
Use biased variance estimates				
User-specified lags: 2 5 10 30				
Test probabilities computed using wild bootstrap: dist=twopoint,				
reps=5000, rng=kn, seed=1000				
Joint Tests		**Value**	**df**	**Probability**
Max |z| (at period 10)		0.475999	185	0.955
Individual Tests				
Period	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**
2	0.97	0.1	-0.29	0.8
5	1	0.2	-0.01	0.99
10	1.14	0.29	0.48	0.66
30	0.98	0.48	-0.04	0.98

Null Hypothesis: Log CAC_SA is a random walk				
Standard error estimates assume no heteroskedasticity				
Use biased variance estimates				
User-specified lags: 2 5 10 30				
Test probabilities computed using wild bootstrap: dist=twopoint,				
reps=5000, rng=kn, seed=1000				
Joint Tests		**Value**	**df**	**Probability**
Max |z| (at period 10)		0.549562	**185**	0.9542
Wald (Chi-Square)		2.46015	**4**	0.7556
Individual Tests				
Period	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**
2	0.97	0.07	-0.38	0.78
5	1	0.16	-0.02	0.99
10	1.14	0.25	**0.55**	0.66
30	0.98	0.45	-0.04	0.97

*Probability approximation using studentized maximum modulus with parameter value 4 and infinite degrees of freedom

Appendix 3.7: Variance Ratio Tests – Germany

Null Hypothesis: Log DAX_SA is a random walk				
Standard error estimates assume no heteroskedasticity				
Use biased variance estimates				
User-specified lags: 2 5 10 30				
Joint Tests		**Value**	**df**	**Probability**
Max $\lvert z \rvert$ (at period 10)*		0.897732	185	0.8418
Wald (Chi-Square)		2.835926	4	0.5856
Individual Tests				
Period	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**
2	1.01	0.07	0.08	0.93
5	1.05	0.16	0.33	0.74
10	1.22	0.25	0.9	0.37
30	1.09	0.45	0.19	0.85

Null Hypothesis: Log DAX_SA is a martingale				
Heteroskedasticity robust standard error estimates				
Use biased variance estimates				
User-specified lags: 2 5 10 30				
Test probabilities computed using wild bootstrap: dist=twopoint,				
reps=5000, rng=kn, seed=1000				
Joint Tests		**Value**	**df**	**Probability**
Max $\lvert z \rvert$ (at period 10)		0.739807	185	0.847
Individual Tests				
Period	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**
2	1.01	0.09	0.07	0.95
5	1.05	0.21	0.26	0.82
10	1.22	0.3	0.74	0.51
30	1.09	0.49	0.18	0.91

Null Hypothesis: Log DAX_SA is a random walk				
Standard error estimates assume no heteroskedasticity				
Use biased variance estimates				
User-specified lags: 2 5 10 30				
Test probabilities computed using wild bootstrap: dist=twopoint,				
reps=5000, rng=kn, seed=1000				
Joint Tests		**Value**	**df**	**Probability**
Max $\lvert z \rvert$ (at period 10)		0.897732	185	0.822
Wald (Chi-Square)		2.835926	4	0.7034
Individual Tests				
Period	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**
2	1.01	0.07	0.08	0.94
5	1.05	0.16	0.33	0.81
10	1.22	0.25	0.9	0.49
30	1.09	0.45	0.19	0.91

*Probability approximation using studentized maximum modulus with parameter value 4 and infinite degrees of freedom

Appendix 3.8: Variance Ratio Tests – Japan

Null Hypothesis: Log NIKKEY_SA is a random walk					**Null Hypothesis: Log NIKKEY_SA is a martingale**					**Null Hypothesis: Log NIKKEY_SA is a random walk**				
Standard error estimates assume no heteroskedasticity					**Heteroskedasticity robust standard error estimates**					**Standard error estimates assume no heteroskedasticity**				
Use biased variance estimates					Use biased variance estimates					Use biased variance estimates				
User-specified lags: 2 5 10 30					User-specified lags: 2 5 10 30					User-specified lags: 2 5 10 30				
					Test probabilities computed using wild bootstrap: dist=twopoint,					Test probabilities computed using wild bootstrap: dist=twopoint,				
					reps=5000, rng=kn, seed=1000					reps=5000, rng=kn, seed=1000				
Joint Tests		**Value**	**df**	**Probability**	**Joint Tests**		**Value**	**df**	**Probability**	**Joint Tests**		**Value**	**df**	**Probability**
Max |z| (at period 10)*		0.691999	185	0.9318	Max |z| (at period 10)		0.565485	185	0.942	Max |z| (at period 10)		0.691999	185	0.9346
Wald (Chi-Square)		2.276018	4	0.6851						Wald (Chi-Square)		2.276018	4	0.8332
Individual Tests					**Individual Tests**					**Individual Tests**				
Period	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**	**Period**	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**	**Period**	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**
2	1.02	0.07	0.32	0.75	2	1.02	0.1	0.25	0.82	2	1.02	0.07	0.32	0.8
5	1.03	0.16	0.21	0.83	5	1.03	0.2	0.17	0.88	5	1.03	0.16	0.21	0.87
10	1.17	0.25	0.69	0.49	10	1.17	0.3	0.57	0.64	10	1.17	0.25	0.69	0.63
30	1.05	0.45	0.12	0.91	30	1.05	0.51	0.11	0.95	30	1.05	0.45	0.12	0.94
*Probability approximation using studentized maximum modulus with parameter value 4 and infinite degrees of freedom														

Appendix 3.9: Variance Ratio Tests – United Kingdom

Null Hypothesis: Log FTSEE100_SA is a random walk					**Null Hypothesis: Log FTSEE100_SA is a martingale**					**Null Hypothesis: Log FTSEE100_SA is a random walk**				
Standard error estimates assume no heteroskedasticity					**Heteroskedasticity robust standard error estimates**					**Standard error estimates assume no heteroskedasticity**				
Use biased variance estimates					Use biased variance estimates					Use biased variance estimates				
User-specified lags: 2 5 10 30					User-specified lags: 2 5 10 30					User-specified lags: 2 5 10 30				
					Test probabilities computed using wild bootstrap: dist=twopoint,					Test probabilities computed using wild bootstrap: dist=twopoint,				
					reps=1000, rng=kn, seed=845359120					reps=5000, rng=kn, seed=1000				
Joint Tests		**Value**	**df**	**Probability**	**Joint Tests**		**Value**	**df**	**Probability**	**Joint Tests**		**Value**	**df**	**Probability**
Max |z| (at period 10)*		2.267891	185	0.0901	Max |z| (at period 10)		1.946783	185	0.083	Max |z| (at period 10)		2.267891	185	0.1266
Wald (Chi-Square)		7.376361	4	0.1173						Wald (Chi-Square)		7.376361	4	0.1996
Individual Tests					**Individual Tests**					**Individual Tests**				
Period	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**	**Period**	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**	**Period**	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**
2	1.05	0.07	0.67	0.51	2	1.05	0.1	0.48	0.68	2	1.05	0.07	0.67	0.63
5	1.27	0.16	1.65	0.1	5	1.27	0.2	1.32	0.2	5	1.27	0.16	1.65	0.17
10	1.56	0.25	2.27	0.02	10	1.56	0.29	1.95	0.03	10	1.56	0.25	2.27	0.03
30	1.46	0.45	1.02	0.31	30	1.46	0.49	0.95	0.43	30	1.46	0.45	1.02	0.41
*Probability approximation using studentized maximum modulus with parameter value 4 and infinite degrees of freedom														

Appendix 3.10: Variance Ratio Tests – United State

Null Hypothesis: Log SP500_SA is a random walk				
Sample: 2000M01 2015M06				
Included observations: 185 (after adjustments)				
Standard error estimates assume no heteroskedasticity				
Use biased variance estimates				
User-specified lags: 2 5 10 30				
Joint Tests		**Value**	**df**	**Probability**
Max |z| (at period 10)*		0.874643	185	0.8539
Wald (Chi-Square)		0.918241	4	0.9219
Individual Tests				
Period	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**
2	1.05	0.07	0.67	0.5
5	1.12	0.16	0.72	0.47
10	1.22	0.25	0.87	0.38
30	1.33	0.45	0.73	0.47

Null Hypothesis: Log SP500_SA is a martingale				
Sample: 2000M01 2015M06				
Included observations: 185 (after adjustments)				
Heteroskedasticity robust standard error estimates				
Use biased variance estimates				
User-specified lags: 2 5 10 30				
Test probabilities computed using wild bootstrap: dist=twopoint,				
reps=5000, rng=kn, seed=1000				
Joint Tests		**Value**	**df**	**Probability**
Max |z| (at period 10)		0.760537	185	0.846
Individual Tests				
Period	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**
2	1.05	0.09	0.54	0.61
5	1.12	0.19	0.61	0.57
10	1.22	0.29	0.76	0.49
30	1.33	0.49	0.67	0.61

Null Hypothesis: Log SP500_SA is a random walk				
Sample: 2000M01 2015M06				
Included observations: 185 (after adjustments)				
Standard error estimates assume no heteroskedasticity				
Use biased variance estimates				
User-specified lags: 2 5 10 30				
Test probabilities computed using wild bootstrap: dist=twopoint,				
reps=5000, rng=kn, seed=1000				
Joint Tests		**Value**	**df**	**Probability**
Max |z| (at period 10)		0.874643	185	0.8272
Wald (Chi-Square)		0.918241	4	0.9624
Individual Tests				
Period	**Var. Ratio**	**Std. Error**	**z-Stat**	**Probability**
2	1.05	0.07	0.67	0.58
5	1.12	0.16	0.72	0.55
10	1.22	0.25	0.87	0.47
30	1.33	0.45	0.73	0.6

*Probability approximation using studentised maximum modulus with parameter value 4 and infinite degrees of freedom

Appendix 4: Tabular Analysis of Literature

Appendix 4.1: Tabular Analysis of Literature - Objective 1

Objective1: to determine sets of macroeconomic variables those are statistically significant when predicting relevant stock market indices

no.	Authors	Years	Title	Country	Period	Stat.Test	Dep.Var(s)	Ind.Var(s)	Author's Objective	Results	Relevance to my research
1	**Campbell and Shiller**	1988	stock prices, earnings, and expected dividends	US	1871 to 1986	VAR	s&p500	dividends, interest rates,	to estimate the relationship between stock prices, earnings and expected dividends	evidence revealed that a long term moving average of real earnings predicts real dividends it investigates the relationship between macroeconomics variables and stock market and how the variables predict stock prices	it investigates the relationship between macroeconomics variables and stock market and how the variables predict stock prices
2	**Chen et al**	1986	economic factors and stock market	US	1953 to 1978	regression and algorithm	NUSE	gdp, ipi, ifr, inr, cpi, consumption, oil price,	to explore a set of economic variables as systematic on stock market returns and exam their influences on stock market	their results reveal that stock returns are exposed to systematic economic news and priced in accordance with their exposures and are also affected by some of the macroeconomic variables	it explains macroeconomic variables selection and impacts on stock returns
3	**Dritsaki**	2005	linkage between stock market and macroeconomic fundamentals: case study of Athens stock exchange	Greece		cointegration, granger causality	Greek stock market index (gen)	industrial production, inflation, interest rate	to empirically test the long-run relationship between Greek stock market and it fundamentals	evidence revealed the existence of a cointegration vector, which implies that the variables tend to evolve together over time.	cointegration and granger causality tests used to investigate relationship between stock index and economic variables
4	**Gallegati**	2005	stock market returns and economic activity: evidence from wavelet analysis	US	quarter 1 1961 - quarter 2 2005	wavelet analysis	DJIA	industrial production index	to investigate the relationship between stock market returns and economic activity.	the paper found that stock market tends to lead economic activity	the search for indicated macroeconomic variables which explains changes in the level of the economy.
5	**Humpe and Macmillan**	2007	can macroeconomic variables explain long term market movement? a comparison of the us and japan	US and Japan	January 1965 to June 2005	cointegration	us stock prices and japan stock prices	consumer price index, industrial production, money supply, interest rates	to investigate if a number of macroeconomic variables influence stock prices	they emphasise on the issue of selecting relevant variables and found out a positive relationship between industrial production and stock price and a negative relationship between stock price and consumer price index in the US.	use of apt and the stock prices of both countries.

Appendix 4.2: Tabular Analysis of Literature - Objective 2 (Page 1 of 2)

Objective 2: To identify any statistically significant long run relationship and - or linkage between selected sets of macroeconomic variables and their relevant stock market indices

No.	Authors	Years	Title	Country	Period	Stat.Test	Dep.var(s)	Ind.var(s)	Author's objective	Results	Relevance to my research
1	**Adam And Tweneboah**	2008	Macroeconomic Factors and Stock Market Movement: Evidence from Ghana	Ghana	1991 To 2006	Cointegration	Databank Stock Index	Inward Foreign Direct Debit, Treasury Bill, Consumer Price Index, Exchange Rate	To Investigate the role of macroeconomic variables On Stock prices movement	The Results Confirms That Exchange Rate Is Important in The Ghanaian Context to Predict Stock Returns.	Cointegration Test,
2	**Da Silva and Coronel**	2014	Causality and Cointegration Analysis between Macroeconomic Variables and the Bovespa	Brazil	1995 to 2010	Cointegration, Granger Causality	Bovespa	Exchange rate, interest rate, inflation, industrial production	To analyse long-term relationship macroeconomic variables and Bovespa index	Evidence indicated that a long-term relationship between macroeconomic variables and Bovespa existed	The analysis of the relationship between macroeconomic variables and Bovespa
3	**Gan Et Al**	2006	Macroeconomic Variables and Stock Market Interactions: New Zealand Evidence	New Zealand	1990 to 2003	Cointegration, granger, impulse response analysis	New Zealand stock market	Inflation rate, short term interest rate, long term interest rate, cpi, exchange rate, mi, gdp, domestic retail oil price	To determine whether New Zealand's stock index is a leading indicator for selected macroeconomic variables	Evidence suggested that there existed long run relationship between the stock index and all the macroeconomic variables	It explains the relationship between stock index and macroeconomic variables
4	**Jefferis and Okeahalam**	2000	The impact of economic fundamentals on stock markets in southern Africa	South Africa, Botswana and Zimbabwe	1985 to 1995	Cointegration and Error Correction Technique	FTSE/JALSH	Exchange rate, interest rate, GDP,	examines the impact of both domestic and foreign economic indicators on real stock market returns in three southern African stock markets	while in all cases stock markets are influenced by domestic economic growth, there are no common patterns beyond this	Methodology used and the sampled economy
5	**Maghaverch**	2003	Causal Relations Among Stock Prices and Macroeconomic Variables in Small Open Economy Of Jordan	Jordan	1987 To 2000	Cointegration	Jordanian Stock Index	Industrial Production Index, Export, Inflation, Foreign Reserves, Money Supply, Interest Rate,	To Investigate the Long Run Causal Relationship Between Jordanian Stock Market Returns and Selected Macroeconomic Variables.	The Paper Found That Stock Market Is Influenced by The Macroeconomic Variables	The Search for An Indicated Macroeconomic Variables Which Explains Changes In Stock Market Returns
6	Thornton 1998	1998	Real stock prices and the long-run demand for money in Germany	Germany	1960 to 1989	Cointegration, error correction model, granger causality	German stock market	real money balances, real income, interest rates	to test the hypothesis of a stationary relationship between real money balances, real income, interest rates and real stock prices in Germany	Evidence showed that real stock prices have significant and positive wealth effect on the long-run demand for real M1 balances	Sampled economy and methodology employed

Appendix 4.3: Tabular Analysis of Literature - Objective 2 (Page 2 of 2)

Objective 2: to identify any statistically significant long run relationship and - or linkage between selected sets of macroeconomic variables and their relevant stock market indices

No.	Authors	Years	Title	Country	Period	Stat.Test	Dep.var(s)	Ind.var(s)	Author's objective	Results	Relevance to my research
7	**Maysami et al**	2004	co-movement among sectoral stock market indices and cointegration among dually listed companies	Singapore	1989 to 2001	cointegration	composite stock index	ip, cpi, interest rates, money supply, exchange rate	to investigate the relationship between composite stock index, and selected macroeconomic variables	evidence indicated that the stock market and property index have significant long-run relationship with all the selected macroeconomic variables	cointegration test used and relationship between stock index and macroeconomic variables
8	**Moolman and du Toit**	2005	an econometric model of the south African stock market: economics.	South Africa	1978 to 2000	cointegration	JALSH / FTSE	interest rate, exchange rate, gold price, gdp	to investigate long- and short- term returns with economic indicators	evidence showed existence of short term relationship between the variables with the gdp highly significant in predicting JALSH / FTSE returns	cointegration test used and study is on a BRICS economy i.e. South Africa
9	**`Najand and Noronha**	1998	causal relations among stock returns, inflations, real activity and interest rate: evidence from japan	japan	1977 to 1994	cointegration	japan stock prices	consumer price index, industrial production, interest rates	to investigate the Japanese data concerning the existence and direction of granger causality among stock prices, inflation and interest rate	inflation has a significant negative effect on stock returns	use of apt and the stock prices of japan.
10	**Nasseh and Strauss**	2000	stock prices and domestic and international macroeconomic activity: a cointegration approach	France, Italy, Germany, UK, Netherlands, Switzerland	1962 to 1995	unit root test, cointegration, granger causality	stock market index	cpi, ip, short term interest rate, long term interest rate,	to examine the relationship between levels of stock prices and domestic and international macroeconomic activity	evidence concluded that stock prices are determined by macroeconomic activity.	some of the studied economies and the methodology used
11	**Ratanapakorn and Sharma**	2007	dynamic analysis between the us stock returns and the macroeconomic variables	US	1975 to 1999	cointegration, granger causality	sp500	exchange rate, money supply, industrial production, long term interest rate, short term interest rate, inflation	investigates the long-term and short-term relationships between the us stock price index (s&p 500) and six macroeconomic variables	stock prices negatively relate to the long-term interest rate, but positively relate to the money supply, industrial production, inflation, the exchange rate and the short-term interest rate	objective of the study and methodology used
12	**Yunus**	2012	modelling relationships among securitized property markets, stock markets, and macroeconomics variables	US, Canada, Japan, Australia, Germany, France, Italy, the Netherlands, Switzerland and the UK	1990 to 2007	cointegration, granger causality test, impulse response function	s&p 500 index; s&p tsx index; Australia all ordinaries index; nikkei 225 index; cac 40 ; dax ; s&p mib index; AEX index; swiss market index; and FTSE 100 index	inflation gdp, money supply, long term interest rate,	to investigates the dynamic interactions among securitized property markets, stock markets, and key macroeconomic factors for ten developed nations throughout north America, Europe, Australia, and Asia	results indicate that each property market is co-integrated with its respective stock market and with key macroeconomic factors in the long run and is also influenced by the overall economy in the short run.	both the methodology and objective of the study

Appendix 4.4: Tabular Analysis of Literature – Objective 3 (Page 1 of 2)

Objective 3: To identify the directional and potentially causal relationship between sets of selected macroeconomic variables and their relevant stock market indices

No.	Authors	Years	Title	Country	Period	Stat.Test	Dep.var(s)	Ind.var(s)	Author's objective	Results	Relevance to my research
1	**Abdullah and Hayworth**	1993	macro econometrics of stock price fluctuations	USA		Granger causality, sims' innovation accounting, VAR	S&P500	Inflation, money growth, budget deficit, trade deficit, short term interest rate, long term interest rate, industrial production	To use SIMS' innovation accounting and granger causality test to explain stock market fluctuations within a VAR model	Evidence revealed that the stock index was determined by all the variables except industrial production	They employed granger causality and VAR model in the test analysis which is equally employed to achieve this objective
2	**Agrawal Et al**	2010	a study of exchange rates movement and stock market volatility	India, USA	2007 to 2009	unit root test, correlation, granger causality test	Nifty index	Exchange rate	To investigate the relationship between Indian-US dollar exchange rate and the NIFTY index	Evidence revealed that Nifty returns as well as Exchange Rates were non-normally distributed. unidirectional relationship between Nifty returns and Exchange Rates, running from the former towards the latter.	The usage of granger causality test and the countries study are crucial to this particular objective 3
3	**Asperm**	1998	stock prices, asset portfolios and macroeconomic variables in ten European countries	Denmark, Finland, France, Germany, Italy, Netherlands: Norway, Sweden, Switzerland, United Kingdom	1968 to 1984	Regression, correlation	(Denmark, Finland, France, Germany, Italy, Netherlands: Norway, Sweden, Switzerland, United Kingdom) stock indexes	employment, imports, inflation, interest rates, industrial production, money supply, CPI, IP, GDP, exchange rate, employment, yield on long term government bond	investigates the relationship between stock indices, asset portfolios and macroeconomic variables in ten European countries	Evidence revealed that the strongest relationships between the stock market and macroeconomic variables are found in France, Germany, Netherlands, Switzerland and U.K. The Dutch, German and Swiss markets react to a large extent similarly to the various economic factors.	Some of the countries researched in this thesis are featured in the research and the study investigates the relationship between stock market and other factors.
4	**Ahmed**	2008	aggregate economic variables and stock markets in India	India	1995 To 2007	Granger Causality and Cointegration	NSE NIFFTY And BSE SENSEX	industrial production index, export rate, fdi, money supply, exchange rate, interest rate	to investigate the nature of the causal relationship between stock prices & key macroeconomic variables	the author concluded that a long term causal relationship was present between variables	Granger Causality Test and India
5	**Mahmood and Dinniah**	2007	stock returns and macroeconomic variables: evidence from six Asian-pacific countries	Malaysia, Korea, Thailand, Hong Kong, Japan, and Australia	1993 to 2002	Cointegration, error correction model	Stock market indexes for the countries	exchange rate, industrial production, cpi,	investigates the dynamics relationship between stock prices and economic variables in six asian-pacific selected countries	It indicates the existing of a long run equilibrium relationship between and among variables in only four countries, i.e., Japan, Korea, Hong Kong and Australia	It studies the dynamic relationship between stock markets and macro-variables
6	**Mallards and Urrutia**	1991	an empirical investigation among real, monetary and financial variables	USA	1970 to 1989	GRANGER causality test	S&P500	industrial production index, money supply	Investigate relationships among real, monetary and financial variables of the economy	Evidence indicates that money Supply and S&P 500 exhibit contemporaneous causality, Money Supply seems to lead the S&P 500 Index and, the S&P 500 Index seems to lead the Industrial Production Index	The use of granger causality test

Appendix 4.5: Tabular Analysis of Literature – Objective 3 (Page 2 of 2)

Objective 3: To identify the directional and potentially causal relationship between sets of selected macroeconomic variables and their relevant stock market indices

No.	Authors	Years	Title	Country	Period	Stat.Test	Dep.var(s)	Ind.var(s)	Author's objective	Results	Relevance to my research
7	**Darrat**	1990	stock returns, money and fiscal policy	Canada	1972 to 1987	granger causality tests	Canadian stock index	real income, exchange rate, money base, interest rates, interest rate volatility, inflation, fiscal deficits	to investigate changes in the Canadian stock returns predicted by selected macroeconomic variables	evidence revealed that the current stock prices fully incorporate available information from monetary policy instruments	it studies relationship between stock market and macroeconomic variables and employs granger causality test
8	**Darrat and Dickens**	1999	on the interrelationships among real, monetary, and financial variables	USA		cointegration, error correction model, granger causality	s&p500,	industrial production, money supply, inflation, interest rates,	to investigate causality between stock index and selected macroeconomic variables.	evidence indicate that the stock market is a key leading indicator of both monetary policy and real economic activity	the use of granger causality test is relevant to this particular objective.
9	**Hashemzadeh and Taylor**	1988	stock prices, money supply, and interest rates: the question of causality	USA	1980 TO 1986	granger – sims' causality test	s&p500	money supply, interest rate	to examine the statistical relationship between the supply of money and stock price levels and between the level of interest rates and stock prices	evidence indicate that a relationship between existed between money supply and s&p500, the causality seems to be mostly running from interest rates to stock prices, and not the other way around	use of granger causality test
10	**Iltuzer And Tas**	2012	analysis of bidirectional causality between stock market volatility and macroeconomic volatility	Turkey, Czech Rep, Brazil, And India	1992 To 2010	granger causality	stock market index	consumer price index, industrial production, money supply, and interest rate	to analyse the bidirectional causal relationships between the stock market and macroeconomic variables.	they found the presence of bidirectional causality between stock prices and interest rate	it uses granger causality to achieve its objective and this is based on a set of emerging economies which is relevant to this research.
11	**Okunev Et Al**	2000	the causal relationship between real estate and stock markets	USA	1972 to 1998	linear and nonlinear causality tests	s&p500	real estate,	to examine the dynamic relationship that exists between the us real estate and s&p 500 stock markets	evidence indicated that the linear relationships to be spuriously affected by structural shifts which are inherent within the data	methodology and sampled country involved
12	**Shahbaz**	2008	stock market development and economic growth: ardl causality in Pakistan	Pakistan	1997 To 2006	ADF and PP tests; granger causality test	gnpc, mc	gdp	to investigate if there is a relationship between stock market and economic growth	results reveal that there is a very strong positive relationship between stock market development and economic growth. a bi-direction relationship exits in the long run while a one way causality is present from the stock market	use of apt and granger causality
13	**Thornton, J.**	1993	money, output and stock prices in the UK	UK	1963 to 1990	granger causality,	ftse 100	gdp, money supply	to investigate lead-lag relationships among the money supply, real output and stock prices in the UK	evidence concluded that the causal relationship among real and monetary variables was not statistically significant in the UK	the use granger causality test

Appendix 4.6: Tabular Analysis of Literature – Objective 4 (Page 1 of 2)

Objective 4: To determine intensities of the volatility of selected macroeconomic variables on their relevant stock market indices

No.	Authors	Years	Title	Country	Period	Stat.Test	Dep.var(s)	Ind.var(s)	Author's objective	Results	Relevance to my research
1	**Choo Et Al.**	2011	macroeconomic uncertainty and performance of GARCH models in forecasting japan stock market volatility	Japan	1997 to 2009	GARCH	Nikkei 225,	gold, crude oil, and exchange rate	to investigates the behaviour of Japanese stock market volatility with respect to a few macroeconomic variables	reviews that macroeconomic variables used in this research have no impact on the volatility of Japanese stock markets	the use of GARCH and the study was conducted on japan
2	**David Morelli**	2002	the relationship between conditional stock market volatility and conditional macroeconomic volatility: empirical evidence based on UK data	UK	1967 TO 1995	GARCH / ARCH	FTSE500	industrial production index, cpi, money supply, inflation rate, exchange rate	to examine the volatility macroeconomic variables in the UK	he concluded that his selected variables were not able to explain the ftse100 volatility, recommending that different variables be explored in assessing the UK index volatility.	use of ARCH / GARCH and ftse500
3	**Dhakal Et Al**	1993	causality between the money supply and share prices: a VAR investigation	USA	1973 To 1991	VAR	S&P500	cpi, industrial production index, money supply, interest rate	to examine the validity of theoretical links underlying the interaction and draw implications concerning policies designed to curb stock market volatility	the VAR models indicated that share price changes are directly affected by money supply; the inflation rate and the interest rate indirectly impact on the price of stocks.	use of VAR
4	**Agrawal et al**	2010	a study of exchange rate movements and stock market volatility	India	2007 To 2009	Granger Causality	Indian Stock Prices	exchange rate	to investigate the relationship between stock prices and exchange rate movement in India	an increase in stock return causes a decrease in the exchange rates	use of apt and the stock prices of both countries.
5	**Kapital**	1998		US	1978 TO 1996	GARCH-X	S&P500	cpi, exchange rate, money supply, real oil prices, income	to examine us stock market volatility and the effects of short term deviations between selected macroeconomic variables and the stock market	evidence revealed that the macroeconomic variables had significant and positive effect on volatility of the us stock market	the methodology employed: GARCH
6	**Leon**	2008	the effects of interest rates volatility on stock returns and volatility: evidence from Korea	Korea	1992 to 1998	GARCH	Korean Stock Price Index 200 (KOSPI)	interest rates,	to determine the relationship between Korean stock price index 200 (kospi) and negotiable certificates of deposits (Korea ncd 91-day yield	reveals that the conditional market returns have a negative and significant relation with the interest rates	methodology employed

Appendix 4.7: Tabular Analysis of Literature – Objective 4 (Page 2 of 2)

Objective 4: To determine intensities of the volatility of selected macroeconomic variables on their relevant stock market indices

No.	Authors	Years	Title	Country	Period	Stat.Test	Dep.var(s)	Ind.var(s)	Author’s objective	Results	Relevance to my research
7	**Liljeblom and Stenius**	1997	macroeconomic volatility and stock market volatility: empirical evidence on Finnish data	FINLAND	1920 to 1991	VAR	Stock market index	Cpi, money supply, industrial production, trade variable		Evidence indicated a predictive power from the direction of the stock volatility to macroeconomic volatility and the direction of macroeconomic volatility to stock market volatility.	The research investigated macroeconomic volatility in stock market
8	**Morelli**	2002	the relationship between conditional stock market volatility and conditional macroeconomic volatility empirical evidence based on UK data	UK		GARCH	FTSE100	industrial production, real retail sales, money supply, inflation, and an exchange rate variable		Research shows that the macroeconomic variables couldn’t explain FTSE100 volatility	The use of GARCH to investigate stock market volatility
9	**Rahman and Mustafa**	2008	influences of money supply and oil price on US stock markets	US	1974 to 2006	Granger causality, VECM, COINTEGRATION,	S&P500	money supply and oil price		Evidence indicated that the current stock market volatility was fuelled by its previous volatility and the negative shocks of monetary and oil prices.	The analysis on the volatility in stock market
10	**Schwert**	1990	stock returns and real activity: a century of evidence	US	1889 to 1989	Correlation, regression	Stock index	Treasury bill, industrial production		Results indicated that the financial assets volatility helped in predicting future volatility in macroeconomic variables	Investigated the relationship between stock volatility and macroeconomic volatility

Appendix 4.8: Tabular Analysis of Literature – Objective 5 (Page 1 of 2)

Objective 5: To determine the comparable effectiveness of the VAR or VECM models as compared to GARCH models when predicting relevant stock market indices

No.	Authors	Years	Title	Country	Period	Stat.Test	Dep.var(s)	Ind.var(s)	Author's objective	Results	Relevance to my research
1	**Abdullah**	1998	money growth variability and stock returns: an innovations accounting analysis	UK		Error variance decomposition	London share price index	M1, CPI, IP, long term interest rate, budget deficits and surpluses	to analyse the impacts of selected macroeconomic variables on UK stock returns	further evidence of this study indicated that some of the macro-variables (statistically) significantly explains UK stock market variance	it did explain the variance in the stock market
2	**Asgharian et al**	2013	the importance of the macroeconomic variables in forecasting stock return variance: a GARCH-MIDAS approach	US	1991to 2008	GARCH-MIDAS	S&P500	Unemployment rate, industrial index growth rate, inflation, exchange rate, default rate, short term interest rate, the slope of the yield curve	to examine whether macroeconomic variables could explain or predict both short- and long-term components of return variance	evidence showed that the macroeconomic variables significantly enhance the forecast ability of the model in the long run.	the methodology employed.
3	**Chaudhuri and Smiles**	2004	stock market and aggregate economic activity: evidence from Australia	Australia	1960 to 1998	Cointegration, impulse response function and forecast error correction model	Australian stock index	Money supply, GDP, world oil price, private personal consumption expenditures	to examine the relationship between the australian stock index and macroeconomic variables	their results showed that there exists a long run relationship between all the variables	objective of the study and the methodology employed
4	**Dhakal Et Al**	1993	causality between the money supply and share prices: a var investigation	USA	1973 To 1991	VAR	S&P500	CPI, Industrial Production Index, Money Supply, Interest Rate	to examine the validity of theoretical links underlying the interaction and draw implications concerning policies designed to curb stock market volatility	the var models indicated that share price changes are directly affected by money supply; the inflation rate and the interest rate indirectly impact on the price of stocks.	use of VAR
5	**Abugri**	2008	empirical relational between macroeconomic volatility and stock returns: evidence from Latin American markets	Brazil, Mexico, Argentina, Chile; USA	1986 To 2001	VAR	MSCI World Index	Exchange Rate, Interest Rate, Money Supply, Industrial Production Index	to investigate whether key macroeconomic variables are significantly related to stock returns in the different markets	results reveal that domestic macroeconomic shocks have different effects within each of the Latin markets	use of VAR
6	**Verma et al**	2005	are emerging equity markets responsive to cross-country macroeconomic movements? evidence from Latin America	Brazil, Mexico, Argentina, Chile		VAR	Country specific stock market	MONEY SUPPLY, CPI, interest rate, and exchange rate	to investigate the impact of macroeconomic variables on stock prices within the latin context	results indicated that brazil, Mexico and Argentina's stock returns present high and chile presents low volatility	VAR

Appendix 4.9 Tabular Analysis of Literature – Objective 5 (Page 2 of 2)

Objective 5: To determine the comparable effectiveness of the VAR or VECM models as compared to GARCH models when predicting relevant stock market indices

No.	Authors	Years	Title	Country	Period	Stat.Test	Dep.var(s)	Ind.var(s)	Author's objective	Results	Relevance to my research
7	**Fedorova et al**	2010	influence of macroeconomic factors on the Russian stock market	Russia		EGARCH	Russian index	gdp, exchange rate, net capital movement, net capital movement,	to examine the effects of macroeconomic variables on the Russian stock market	the results indicated that the Russian index was mainly affected by oil price and the us dollar exchange rate	they analyse the volatility of the Russian index
8	**Gjerde et al**	1999	causal relations among stock returns and macroeconomic variables in a small, open economy	Norway	1974 to 1994	VAR	Norway stock index	consumption, ip, interest rate, inflation, OECD industrial production index, exchange rate, oil price	to investigate the relationship between stock returns macroeconomic variables	evidences concluded that the stock market reacted significantly to changes in oil price and changes in interest rate were influenced by inflation and stock returns	methodology employed
8	**Hising et al**	2011	macroeconomic determinants of the stock market index for a major Latin American country and policy implication	Argentina	1998 To 2011	GARCH	ARGNTINE Stock Index	gdp, ir, ms, exr, ifr	to determine potential impacts of several selected macroeconomic variables in the stock index	the paper found that stock market is influenced by some macroeconomic variables	use of GARCH
9	**Hondroiannis et al**	2001	macroeconomic influences on the stock market	Greece	1984 to 1999	VAR	S&P500	ip, interest rates, exchange rate, real oil prices,	analysed the dynamic relationships between the Greek stock returns and selected macroeconomic indicators	evidence revealed that the stock returns didn't lead changes in macro-variables and the macro-variables and foreign stock market only partially explained the stock market movements	VAR methodology used
10	**Iltuzer et al**	2012	analysis of bidirectional causality between stock market volatility and macroeconomic volatility	Turkey, Czech Rep, Brazil, And India	1992 To 2010	Granger Causality	Country specific stock market index	consumer price index, industrial production, money supply, and interest rate	to analyse the bidirectional causal relationships between the stock market and macroeconomic variables.	they found the presence of bidirectional causality between stock prices and interest rate	it uses granger causality to achieve its objective and the study is based on a set of emerging economies which is relevant to this research.
11	**Mukher jee et al**	1995	dynamic relations between macroeconomic variables and the Japanese stock market: an application of a vector error correction model	Japan	1971 to 1990	VECM	Tokyo stock exchange rate	inflation, exchange rate, ip, money supply, long term government bond rate, call money rate	to analyse the effects of selected macroeconomic variables on the Japanese stock market	their results indicated that the macro-variables were integrated with the stock prices	sampled country and VECM methodology used

Appendix 4.10: Tabular Analysis of Literature – Objective 6

Objective 6: To determine any significant reactive effect of the 2008 financial crisis on relevant stock market indices

No.	Authors	Years	Title	Country	Period	Stat.Test	Dep.var(s)	Ind.var(s)	Author's objective	Results	Relevance to my research
1	**Aweda et al**	2014	empirical analysis of the elasticity of real money demand to macroeconomic variables in the United Kingdom with 200 financial crisis effects	UK	2000 TO 2012	VECM And Cointegration	Real Money Demand	industrial production index, consumer price index, short-term interest rate, exchange rate and narrow money supply	to estimate the elasticity of real money demand to macroeconomic variable and also to capture structural breaks inherent in the series	the financial crisis of 2008 has negative effect on the UK economy.	the application of cointegration and the analysis of the effect of the 2008 financial crisis on the UK market
2	**Chong**	2011	effect of subprime crisis on us stock market return and volatility	America	2006 to 2009	GARCH & ARMA	S&P500	volatility	investigated the impacts of recent financial crisis on the American stock market	evidence revealed that the s&p500 index dividend yield was affected by negatively and significantly	methodology employed by the study and its objective
3	**Junkin**	2011	macroeconomic determinant of stock market behaviour in south Africa	South Africa	1995 to 2010	Cointegration	JALSH	consumer price index, money supply, brent crude oil price, industrial production, exchange rate, treasury bills, dummy variables, us gdp	to analyses the long –run and the short-run influences of macroeconomic variables stock price in the south African context	the result of the estimated VECM models showed that each stock index corrects back to long-run equilibrium, given a short-run disequilibrium. it was also found that a number of the macroeconomic variables shared long-run co-movements with the stock indices under investigation	south African index and cointegration test
4	**Bong-Han Kim et al**	2015	spill over effects of the US. financial crisis on financial markets in emerging Asian countries	Korea, Taiwan, Thailand, Indonesia, Philippines	2007 to 2009	Correlation, GARCH	Stock market index	exchange rate	to examine the impact of the financial crisis on five emerging Asian countries	they concluded that the markets were vulnerable and fragile and agreed on the existence of the financial contagion around the fall of the Lehman brothers	its objective and methodology
5	**Neaime**	2012	the global financial crisis, financial linkages and correlations in returns and volatilities in emerging MENA stock markets	US, UK, France, Egypt, Jordan, Morocco, Kuwait, Saudi Arabia, Tunisia, UAE,	2007 TO 2010	GARCH, TARCH, ARCH-M	S&P500, FTSE100, CAC40, EGX30, Amman stock exchange, madex, Kuwait stock market index, Tadawul stock index, Tunindex, DFMGI-IND	volatility	to examine the transmission channels of the global financial crisis on the MENA region	results indicated that most of the countries were affected because they are correlated with developed countries that were mostly affected by the financial crisis except Saudi Arabia and Tunisia due to strong fiscal stance and firm appropriate foreign exchange reserves mechanisms	its methodology, objective and some of the sampled developed economies
6	**Rachdi et al**	2013	the impact of the international financial crisis on the stock market return: the case of Tunisian stock exchange	Tunisia	2005 To 2010	ARGH, GARCH, TGARCH, EGARCH	Tunisian Stock Index	industrial production index, gdp, inflation	to investigate impact of the recent financial crisis on the yield	results reveal that the Tunisian index returns were not directly affected by the international financial crisis	the use of GARCH and ARCH
7	**Naouui et al**	2010	crises and financial contagion: the subprime crisis	Argentina, Brazil, Korea, Hong Kong, Indonesia, Malaysia, Mexico, Shanghai, Singapore, Taiwan	2005 To 2010	Correlation Test, DCC GARCH (1, 1)	Stock Index for All Markets	American Stock Market	To Examine Financial Contagion	There Exist a Significant Conditional Correlation Between All the Emerging Market Returns	More Information About the Emerging Markets

Appendix 4.11: Tabular Analysis of Literature – Objective 7

Objective 7: To determine the impact of the (US) quantitative easing monetary policy during the 2008 financial crisis on the relevant stock market indices

No.	Authors	Years	Title	Country	Period	Stat.Test	Dep.var(s)	Ind.var(s)	Author's objective	Results	Relevance to my research
1	**Kurihara**	2006	the relationship between exchange rate and stock prices during the quantitative easing in Japan	Japan USA	2001 To 2005	Cointegration	Japan Stock Price And S&P500	Exchange Rate, Japan Interest Rate	To Investigate the Effects of Quantitative Easing and Relationship Between Macroeconomic Variable and Stock Market Price	The Interest Rate Have Not Impacted Japanese Stock Prices but The Exchange Rate and USA Did.	The Use of Cointegration And Japan Stock Index
2	**Berkmen**	2012	bank of Japan's quantitative and credit easing: are they now more effective	Japan	1998 To 2010	VAR	Japan Stock Index	Industrial Production Index, GDP, Inflation	To Investigate the Impact of Monetary Easing on Economic Activity	The Paper Found Bank of Japan 'S Monetary Policy Had an Impact on Economic Activity	The Use of Quantitative Easing Policy in Japan And Its Impact
3	**Fujiki et al**	2002	policy duration effect under the zero-interest rate policy in 1999-2000: evidence from Japan's money market data	Japan	1999 to 2000	instantaneous forward rate curve	Japanese financial markets	Interest rate	To quantify the "policy duration" effect on the restoration of proper market functioning in the interbank market, with special emphasis on its liquidity effect based on the Japan's experience	Results revealed that the effect of the policy duration observed in Japanese financial markets emerged via the expectations channel on the future course of monetary policy actions, supplemented significantly by liquidity effects in the severe financial conditions	Its objective
4	**Kurihn**	2006	recent Japanese monetary policy: an evaluation of the quantitative easing	JAPAN	1992 TO 2004	Cointegration	Japan Stock Prices	Money Supply, GDP, Money Base	To Investigate the Effectiveness of The Quantitative Easing in Japan	Results Reveal That It Was Effective but Limited to Scope	More Information on The Quantitative Easing Policy

Appendix 4.12: Tabular Analysis of Literature – Objective 8 (1 of 2)

Objective 8: To determine the nature of association (if any) between and across the relevant stock market indices

No.	Authors	Years	Title	Country	Period	Stat.Test	Dep.var(s)	Ind.var(s)	Author's objective	Results	Relevance to my research
1	**Arshanapalli et al**	1993	international stock market linkages: evidence from the pre-and post-October 1987 period	US, UK, Japan, France, Germany	1980 to 1980	cointegration, error correction model, unit root test	country specific stock market index	country specific stock market index	to provide new methods of testing the linkages and dynamic interactions among stock market fluctuations	evidence indicated that the degree of international co-movements in stock price indices has changed significantly since the 1987 crash, with the nikkei index the only exception.	the methodology and objective of this study are relevant to this present research
2	**Everaert et al**	2014	the dynamics of European financial market integration	Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the UK	1970 - 2012	CAPM	country specific stock market index	country specific stock market index	to investigate financial market integration and dynamic movements across stock markets	the results suggest that integration has increased in all countries from the 1980s onward until the great recession and that countries belonging to the EU and the euro area have not experienced higher integration than other European economies.	focus on dynamic linkage between stock markets
3	**Nikkinen et al**	2006	global stock market reactions to scheduled us macroeconomic news announcements	G7 countries, the European countries other than G7 countries, developed Asian countries, emerging Asian countries, Latin American countries and countries from Transition economies	1995 to 2002	GARCH, cross-sectional regression analysis	country specific stock market	consumer confidence, consumer price index, employment cost index, employment situation, gross domestic product, import and export price indices, napm: manufacturing and non-manufacturing, producer price index and retail sales.	to investigate how global stock markets are integrated with respect to the US macroeconomic news announcements	in general, evidence show that cpi, eci, es and napm US news releases have a global effect on stock market uncertainty among the integrated stock markets. this implies that market participants closely follow this news and use them as a relevant source of information in the pricing of stocks	Focus on developed and emerging countries
4	**Palamalai et al**	2013	stock market linkages in emerging Asia-pacific markets	India, Malaysia, Hong Kong, Singapore, South Korea, Taiwan, Japan, China and Indonesia	1992 To 2009	cointegration, variance decomposition	selected countries stock indices	stock indexes	to examine the stock market integration of emerging Asia-pacific economies	the paper confirmed a well-defined long-run equilibrium relationship among the stock markets. the variance decomposition revealed stock market interdependencies and dynamic interaction among markets	the analysis using emerging stock markets for market integration

Appendix 4.13: Tabular Analysis of Literature – Objective 8 (2 of 2)

Objective 8: To determine the nature of association (if any) between and across the relevant stock market indices

No.	Authors	Years	Title	Country	Period	Stat.Test	Dep.var(s)	Ind.var(s)	Author's objective	Results	Relevance to my research
5	**Raj et al**	2008	integration of India's stock market with global and major regional markets	India, US, UK, Japan, Singapore, Hong Kong	1993 to 2008	correlation, VECM and cointegration,	county specific stock market	county specific stock market	to gauge the integration of the Indian's stock market with global markets	results indicated that the presence on international integration of the Indian stock market in terms of the us dollar but not in its local currency	its objective to analyse the integration of financial markets
6	**Tripathi et al**	2012	inter linkages of Indian stock markets with advanced emerging markets	Brazil, Hungary, Taiwan, Mexico, Poland, South Africa And India	1992 - 2009	Johannsen cointegration test	bovespa, budapest stock index, twse taiex index, indice Mexico, wse wig index, ftse/jse top 40 index, cnx nifty 50	bovespa, budapest stock index, twse taiex index, indice Mexico, wse wig index, ftse/jse top 40 index, cnx nifty 50	to examine the short - run and long-run inter linkage of the Indian stock market with those of advanced emerging markets.	the cointegration test documented the existence of a long -run and short -run between the Indian stock markets and the markets of the advanced emerging countries.	comparing emerging stock market inter linkage.
7	**Singh**	2010	Chinese and Indian stock market linkages with developed stock market	Indian, China, Hong Kong, USA JAPAN, UK,	2000 To 2009	granger causality, correlation, cointegration	djia, niffty, shcomp, ftse, hsc, sensex, nikkei	djia, niffty, shcomp, ftse, hsc, sensex, nikkei	to investigate if a number of macroeconomic variables influence stock prices	Chinese and Indian markets have at least had a unilateral causality with all four the developed markets	use of apt and the stock prices of all countries.

Appendix 4.14: Tabular Analysis of Literature – Objective 9)

Objective 9: To determine any dynamic relationship between the relevant stock market indices and the selected macroeconomic variables

No.	Authors	Years	Title	Country	Period	Stat.Test	Dep.var(s)	Ind.var(s)	Author's objective	Results	Relevance to my research
1	**Balgacem et al**	2012	more on the impact of us macroeconomic announcements: evidence from French and German stock market volatility	US, France, Germany	2000 to 2011	GARCH	CAC40, DAX, S&P500	consumer price index, unemployment, ip, gold price, ppi, cce, hss, tbe, mfg	to investigate the impact of the us macroeconomic variables on us, France and Germany	evidence showed a direct reaction of French and German investors to some common as well as specific macroeconomic news	objective of the research and the methodology employed
2	**Bjørnland et al**	2005	identifying the interdependence between us monetary policy and the stock market	US	1983 TO 2002	VAR, impulse response function	Stock market index (S&P500)	cpi, ip, interest rates,	to estimate the inter-dependence between us monetary policy and the s&p 500	evidence showed a substantial degree of inter-dependence between monetary policy decisions and stock prices and a shock to either sector has a strong and immediate impact on the other sector.	methodology and the objective adopted by this research
3	**Li et al**	2007	impact of monetary policy shocks on stock prices evidence from Canada and US	Canada USA	1988 To 2003	VAR	S&P500 TSE300	industrial production index, cpi	to examine whether the response of stock market to changes in monetary policy differ significantly between small and large economies	results reveal that monetary policy shocks lead to a decrease in stock prices in both countries but has more impact on bigger economies as they stock prices fall significantly lower compared to small economies	test for the presence and effects of shocks
4	**Thorbecke**	1975	on stock market returns and monetary policy	US	1979 To 1982	VAR	Stock Index	ipi, inflation, cpi, interest rate	to examine the effects of monetary policy innovations on stock price	positive monetary policy increase stock returns	the use of VAR and variables used
5	**Iglesias et al**	2011	interaction between monetary policy and stock prices: a comparison between the Caribbean and the us	USA, Barbados, Jamaica And Trinidad And Tobago	1990 To 2009	Cointegration	US and The Caribbean Stock Prices	consumer price index, industrial production, gdp, interest rates	to explore if the same interdependence exists between stock prices and the Caribbean countries	effects of monetary policy shocks are greater in the US while the effect of stock market is smaller in the US than in the Caribbean	use of apt and the stock prices of US
6	**Sadorsky**	1999	oil price shocks and stock market activity	US	1947 to 1996	VAR	US Stock market	price of oil shocks, ip, interest rate	to analyse the effects of the price of oil shocks, ip, and the interest rate on US stock market returns	evidence showed that oil prices and oil price volatility both play crucial roles in affecting real stock returns	objective of the research and its methodology

Appendix 4.15: Tabular Analysis of Literature – Objective 10 (Page 1 of 2)

Objective 10: To determine any dynamic relationship across sets of relevant stock market indices

No.	Authors	Years	Title	Country	Period	Stat.Test	Dep.var(s)	Ind.var(s)	Author's objective	Results	Relevance to my research
1	**Arshanap**	1993	international stock market linkages: evidence from the pre- and post-October 1987 period	US, Germany, UK, Japan and France	1990 - 1990	Cointegration	Dow Jones, FAZ General Price, FTSE 100, Nikkei 225 and CAC40	Dow Jones, FAZ General Price, FTSE 100, Nikkei 225 and CAC40	to study the linkages among stock prices in major world stock exchanges	the results show that the degree of international co-movements among stock price indices has increased substantially, with the Nikkei index the only exception. furthermore, the us stock market is found to have a considerable impact on the French, German and UK markets in the post-crash period.	test for dynamic effects of relevant markets
2	**Ghosh et al**	1999	who moves the Asia - pacific stock markets—us or japan? empirical evidence based on the theory of cointegration	US, Japan	1997 (9 months)	cointegration	Stock market index	Stock market index	to investigate which developing markets are moved by the markets of japan and the united states	evidence suggests that some countries are dominated by the us, some are dominated by japan, and the remaining countries are dominated by neither during the time period investigate	methodology used and the two principal sampled economies
3	**Malik et al**	2007	shock and volatility transmission in the oil, us and gulf equity markets.	Kuwait, Saudi Arabia, Bahrain, US	1994 TO 2001	multivariate GARCH model	Stock market index, Global crude oil market index	Stock market index, Global crude oil market index	to investigate the volatility and shock transmission mechanism	evidence showed that the gulf equity markets were influenced by world oil market volatility but the us indirectly influenced volatility in the gulf economies	the objective of the research and the methodology used
4	**Masihand et al**	2010	a comparative analysis of the propagation of stock market fluctuations in alternative models of dynamic causal linkages	Taiwan, South Africa, Singapore, Hong Kong, US, Japan, UK and Germany	1982 - 1994	Cointegration, VECM and Variance Decomposition	Country Specific stock market Index	Country Specific stock market Index	to examine the patterns of dynamic linkages among national stock prices of four Asian newly industrializing countries stock markets and established stock markets. .	the results suggested that established markets and Hong Kong, consistently were the initial receptors of exogenous shocks to the (long-term) equilibrium relationships and the other newly industrialised countries stock markets, particularly the Singaporean and Taiwanese markets had to bear most of the burden of short-run adjustment to re-establish the long-term equilibrium relationship	focus on dynamic linkage between stock markets
5	**Phylaktis et al**	2002	measuring financial and economic integration with equity prices in emerging markets	: Japan, the US, Hong Kong, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan and Thailand	1980 TO 1998	Covariance, correlation,	Stock market index	Stock market index	to examine real and financial links simultaneously at the regional and global level for a group of pacific-basin countries	results showed that the international investors would benefit from portfolio diversification by investing in most of the pacific basin economies since short run benefits exist due to the substantial transitory fluctuations	the methodology, objective and sampled economies

Appendix 4.16: Tabular Analysis of Literature – Objective 10 (Page 2 of 2)

Objective 10: To determine any dynamic relationship across sets of relevant stock market indices

No.	Authors	Years	Title	Country	Period	Stat.Test	Dep.var(s)	Ind.var(s)	Author's objective	Results	Relevance to my research
6	**Everaert et al**	2014	The dynamics of European financial market integration	Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the UK	1970 - 2012	Cointegration, granger causality, variance decomposition analysis	Country Specific stock market Index	Country Specific stock market Index	To investigate financial market integration and dynamic movements across stock markets	The results suggest that integration has increased in all countries from the 1980s onward until the Great Recession and that countries belonging to the EU and the euro area have not experienced higher integration than other European economies.	Advanced Economies
7	**Sheng et al**	2000	A study of cointegration and variance decomposition among national equity indices before and during the period of the Asian financial crisis.	Thailand, Korea, Singapore, Taiwan, Australia, Philippines, China, Japan, Hong Kong, US, Malaysia, Indonesia	1996 to 1998	Cointegration, granger causality, variance decomposition analysis	Stock market index	Stock market index	to examine the linkages among the stock markets of 12 Asia–Pacific countries, before and during the period of the Asian financial crisis	Evidence revealed that the co-integral relationship never existed until the Asian financial crisis of 1997	Emerging countries
8	**Yang et al**	2004	Crisis, contagion, and East Asian stock markets	Hong Kong Indonesia Japan Korea Malaysia Philippines Singapore Taiwan Thailand	1990 TO 2000	Granger causality, correlation, cointegration, VECM, VAR	Stock market index	Stock market index	to analyse the degree to which a change in one economy's stock price exerts an influence on a change in other economies' stock price series	The research presents evidence that no long-term co-movements exist among East Asian stock markets, only short-term correlations	Emerging countries

Appendix 5: Tabular Analysis of Literature – Selected Countries

Appendix 5.1: Tabular Analysis of Literature -Developed Countries

No.	Authors	Years	Title	Country	Period	Stat.Test	Dep.var(s)	Ind.var(s)	Author's objective	Results	Relevance to my research
1	**Apergis et al**	2009	do structural oil-market shocks affect stock prices?	Australia, Canada, France, Germany, Italy, Japan, UK, US	1981 to 2007	VECM, VAR	Selected country indices	cpi, oil prices, global index of dry cargo single voyage freight rates	to investigate explicit structural shocks that characterise the endogenous oil price changes affect stock-market returns in a sample of eight countries	evidence indicated that different oil-market structural shocks play a significant role in explaining the adjustments in stock-market returns	methodology employed and the study is conducted on developed economies
2	**Choo et al**	2011	macroeconomic uncertainty and performance of garch models in forecasting japan stock market volatility	Japan	1997 - 2009 = 12 years	GARCH Procedure	NIKKEI225	gdp, cdo and exr	to investigate the behaviour of Japanese stock market volatility with respect to macroeconomic variables	reveal that macroeconomic variables used in this research have no impact on the volatility of Japanese stock return and GARCH models yields the best results	Japanese stock market, GARCH methods used in this s research
3	**Talla**	2013	impact of macroeconomic variables on the stock market prices of the stockholm stock exchange (omxs30)."	Sweden	1993 to 2012	Unit root test, multivariate regression model, granger causality test,	Stockholm stock exchange	exchange rate, cpi, interest rate, money supply	to investigate the effects of changes in macroeconomic variables on the Stockholm stock index	results concluded that inflation (cpi) and exchange rate are relatively significant and likely to influence the stock prices of the Stockholm stock exchange	the methodology used by this research
4	**Masudu et al**	2012	impact of the macroeconomic variables on the stock market returns: the case of Germany and the United Kingdom	Germany, UK	1999 to 2011	cointegration, error correction model,	Stock market index	industrial production, exchange rate, inflation, money supply,	to investigate the long-run relationship and the short-run dynamics among macroeconomic fundamentals and the stock returns	evidences indicate that the UK and German stock returns and the selected five macroeconomic variables are co-integrated	the research was conducted on developed economies
5	**Humpe et al**	2009	can macroeconomic variables explain long term market movement? a comparison of the us and japan	Japan, US	1965 To 2005	Cointegration	US Stock Prices and Japan Stock Prices	consumer price index, industrial production, money supply, interest rates	to investigate if a number of macroeconomic variables influence stock prices	they emphasize on the issue of selecting relevant variables and found out a positive relationship between industrial production and stock price and a negative relationship between stock price and consumer price index in the US	use of apt and the stock prices of both countries.
6	Park et al	2008	oil price shocks and stock markets in the us and 13 European countries.	Germany, Belgium, Spain, Greece, Sweden, U.K., Finland, Italy, Denmark, Norway, Austria, Netherlands, France, US	1986 to 2005	VAR	Stock market index	Real oil prices, interest rate, short term interest rates, consumer prices, and industrial production	To investigate the effects of oil prices shocks on the US and thirteen European countries	Evidence showed that oil price shocks have a statistically significant impact on real stock returns in the same month or within one month and that this result is robust to reasonable changes in the VAR model of variable order and inclusion of other additional variable	The use of VAR and some of the countries involved
7	Shubita et al	2003	a study of size effect and macroeconomics factors in New York stock exchange stock return	US	1964 – 2010	Cointegration	NYSE	RIR, GRP and IFR	To look at the size-effect question using a large sample drawn from the New York Stock Exchange prices.	The research reveals that size had an impact on stock returns. It is also concluded that economic activity affects stock prices positively.	US Index used with the Cointegration technique

Appendix 5.2: Tabular Analysis of Literature –BRICS Countries (Page 1 of 2)

No.	Authors	Years	Title	Country	Period	Stat.Test	Dep.var(s)	Ind.var(s)	Author's objective	Results	Relevance to my research
1	**Agrawal**	2010	a study of exchange rate movement and stock market volatility	India	2007 to 2009	Cointegration	NIFTY	EXR	to analyse the relationship between the nifty returns and Indian rupee-us dollar exchange rat	the paper demonstrated that nifty and exchange rate were not normally distributed. data were stationary from itself. correlation between nifty and exchange rate was negative	India stock market and cointegration use within this study.
2	**Hosseini et al**	2011	the role of macroeconomic variables on stock market index in china and India	China, India	1999 to 2009	Multivariate Cointegration and Vector Error Correction Model technique		crude oil price, money supply, industrial production, inflation rate	investigates the relationships between stock market indices and four macroeconomics variables	evidence indicated that there are both long and short run linkages between macro-variable and stock market index in each of these two countries	countries involved and the methodology used
3	**Jefferis and Okeahalam**		the impact of economic fundamentals on stock markets in southern Africa	South Africa, Botswana and Zimbabwe	1985 to 1995	Cointegration and Error Correction Technique	FTSE/JALSH	Exchange rate, interest rate, GDP,	to examine the impact of both domestic and foreign economic indicators on real stock market returns in the three-selected southern African stock markets	while in all cases stock markets are influenced by domestic economic growth, there are no common patterns beyond this	the methodology employed
4	**Tabak**	2006	the dynamic relationship between stock prices and exchange rates: evidence for brazil.	Brazil	1994 to 2002	Unit root, Cointegration, VAR, Granger causality test	Ibovespa	Exchange rate	to analyse the dynamic relationship between stock prices and exchange rates in the Brazilian economy	evidence indicate that there was no long-term relationship between the two variables	the sampled country and selected macroeconomic variable are crucial to this research.
5	**Alagidede et al**	2010	can common stocks provide a hedge against inflation? evidence from African countries	Kenya, Egypt, Morocco, Nigeria, South Africa and Tunisia	1990 to 2007	Cointegration, unit root test	Stock market index	consumer price indices	the extent to which the stock market provides a hedge to investors against inflation is examined for African stock markets	evidence concluded that stock prices were not affected by the permanent changes in inflation	methodology employed and some of the sample countries used.

Appendix 5.3: Tabular Analysis of Literature –BRICS Countries (Page 2 of 2)

No.	Authors	Years	Title	Country	Period	Stat.Test	Dep.var(s)	Ind.var(s)	Author's objective	Results	Relevance to my research
6	**Alam et al**	2009	relationship between interest rate and stock price: empirical evidence from developed and developing countries	Australia, Bangladesh, Canada, Chile, Colombia, Germany, Italy, Jamaica, Japan, Malaysia, Mexico, Philippine, S. Africa, Spain, and Venezuela	1988 to 2003	Unit roots test	Stock market index	Interest rates	examines the market efficiency of fifteen countries and also looks about the effect of interest rate on share price and changes of interest rate on changes of share price.	for all of the countries it is found that interest rate has significant negative relationship with share price and for six countries it is found that changes of interest rate has significant negative relationship with changes of share price.	the research sheds light on the relationship between interest rate and stock market in both developed and developing economies
7	**Chinzara**	2011	macroeconomic uncertainty and conditional stock market volatility in south Africa	South African	1997 TO 2009	AR-GARCH, VAR	JALSH	inflation, the gold price and the oil price, short-term interest rates and exchange rates	to analyses how systematic risk emanating from the macroeconomy is transmitted into stock market volatility	findings show that macroeconomic uncertainty significantly influences stock market volatility and also that financial crises increase volatility in the stock market and in most macroeconomic variables	the methodology used in the research and sampled economy
8	**Hsing**	2011	the stock market and macroeconomic variables in BRICS country and policy implications	South Africa	1980 to 2010	Cointegration	JALSH	GDP, MOS, EXR	to examine the effects of selected macroeconomics variables on the market index in south Africa.	the south African stock market index appears to be more sensitive to a per cent change in the money supply / gdp ratio or the us stock market index than other variables.	south African index and cointegration test

Appendix 6: Unit Root Test Results

Appendix 6.1: Unit Root Test Results for BRICS Countries (Page 1 of 3)

UNIT ROOT TESTS: BRICS COUNTRIES

	ADF Statistics	Critical Value-5%	p-value	ADF Statistics	Critical Value-5%	p-value	ADF Statistics	Critical Value-5%	p-value	ADF Statistics	Critical Value-5%	p-value	ADF Statistics	Critical Value-5%	p-value	ADF Statistics	Critical Value-5%	p-value	ADF Statistics	Critical Value-5%	p-value
Brazil																					
ADF	**LogIBO**			**LogGDP**			**LogINR**			**LogEXR**			**LogIFR**			**LogCON**			**LogHPI**		
Intercept	-12.91	-2.88	0.00	-13.49	-2.88	0.00	-4.67	-2.88	0.00	-13.94	-2.88	0.00	-6.73	-2.88	0.00	-13.94	-2.88	0.00	-14.13	-2.88	0.00
Trend and Intercept	-12.88	-3.43	0.00	-13.47	-3.43	0.00	-4.67	-3.43	0.00	-13.92	-3.43	0.00	-6.72	-3.43	0.00	-14.05	-3.43	0.00	-14.08	-3.44	0.00
None	-12.93	-1.94	0.00	-13.53	-1.94	0.00	-4.69	-1.94	0.00	-13.93	-1.94	0.00	-6.74	-1.94	0.00	-2.38	-1.94	0.02	-14.18	-1.94	0.00
Stationarity Level	**I(1)**			**I(1)**			**I(1)**			**I(1)**			**I(1)**			**I(1)**			**I(1)**		
PP	**LogIBO**			**LogGDP**			**LogINR**			**LogEXR**			**LogIFR**			**LogCON**			**LogHPI**		
Intercept	-12.96	-2.88	0.00	-13.60	-2.88	0.00	-8.53	-2.88	0.00	-14.05	-2.88	0.00	-6.62	-2.88	0.00	-13.98	-2.88	0.00	-38.18	-2.88	0.00
Trend and Intercept	-12.93	-3.43	0.00	-13.57	-3.43	0.00	-8.57	-3.43	0.00	-14.02	-3.43	0.00	-6.62	-3.43	0.00	-14.08	-3.43	0.00	-39.31	-3.44	0.00
None	-12.97	-1.94	0.00	-13.63	-1.94	0.00	-8.54	-1.94	0.00	-14.08	-1.94	0.00	-6.69	-1.94	0.00	-8.96	-1.94	0.00	-38.29	-1.94	0.00
Stationarity Level	**I(1)**			**I(1)**			**I(1)**			**I(1)**			**I(1)**			**I(1)**			**I(1)**		
Russia																					
ADF	**LogRTS**			**LogGDP**			**LogINR**			**LogEXR**			**LogIFR**			**LogCON**			**LogHPI**		
Intercept	-10.91	-2.88	0.00	-12.09	-2.88	0.00	-4.37	-2.88	0.00	-10.08	-2.88	0.00	-7.20	-2.88	0.00	-15.77	-2.88	0.00	-10.07	-2.88	0.00
Trend and Intercept	-11.05	-3.43	0.00	-12.52	-3.44	0.00	-13.95	-3.43	0.00	-10.22	-3.43	0.00	-7.25	-3.43	0.00	-15.66	-3.44	0.00	-10.04	-3.44	0.00
None	-10.85	-1.94	0.00	-12.12	-1.94	0.00	-4.16	-1.94	0.00	-10.02	-1.94	0.00	-7.22	-1.94	0.00	-15.74	-1.94	0.00	-10.07	-1.94	0.00
Stationarity Level	I(1)			I(1)			I(1)			I(1)			I(1)			I(2)			I(2)		
PP	**LogRTS**			**LogGDP**			**LogINR**			**LogEXR**			**LogIFR**			**LogCON**			**LogHPI**		
Intercept	-10.88	-2.88	0.00	-12.11	-2.88	0.00	-13.80	-2.88	0.00	-9.81	-2.88	0.00	-7.20	-2.88	0.00	-15.38	-2.88	0.00	-5.52	-2.88	0.00
Trend and Intercept	-10.96	-3.43	0.00	-12.52	-3.44	0.00	-14.24	-3.43	0.00	-9.87	-3.43	0.00	-7.24	-3.43	0.00	-18.09	-3.43	0.00	-6.34	-3.43	0.00
None	-10.87	-1.94	0.00	-12.14	-1.94	0.00	-13.43	-1.94	0.00	-9.81	-1.94	0.00	-7.22	-1.94	0.00	-12.90	-1.94	0.00	-5.24	-1.94	0.00
Stationarity Level	I(1)			I(1)			I(1)			I(1)			I(1)			I(1)			I(1)		

Appendix 6.2: Unit Root Test Results for BRICS Countries (Page 2 of 3)

UNIT ROOT TESTS: BRICS COUNTRIES																					
	ADF Statistics	**Critical Value-5%**	**p-value**	**ADF Statistics**	**Critical Value-5%**	**p-value**	**ADF Statistics**	**Critical Value-5%**	**p-value**	**ADF Statistics**	**Critical Value-5%**	**p-value**	**ADF Statistics**	**Critical Value-5%**	**p-value**	**ADF Statistics**	**Critical Value-5%**	**p-value**	**ADF Statistics**	**Critical Value-5%**	**p-value**
India																					
ADF	**LogNIFTY**			**LogGDP**			**LogINR**			**LogEXR**			**LogIFR**			**LogCON**			**LogHPI**		
Intercept	-13.89	-2.88	0.00	-11.71	-2.88	0.00	-3.54	-2.88	0.01	-12.29	-2.88	0.00	-4.34	-2.89	0.00	-10.11	-2.89	0.00	-8.75	-2.90	0.00
Trend and Intercept	-13.86	-3.43	0.00	-11.93	-3.45	0.00	-3.52	-3.44	0.04	-12.33	-3.43	0.00	-4.41	-3.45	0.00	-10.08	-3.45	0.00	-8.79	-3.46	0.00
None	-13.79	-1.94	0.00	-11.45	-1.94	0.00	-3.55	-1.94	0.00	-12.22	-1.94	0.00	-4.35	-1.94	0.00	-10.16	-1.94	0.00	-8.65	-1.94	0.00
Stationarity Level	I(1)			I(1)			I(1)			I(1)			I(1)			I(2)			I(1)		
PP	**LogNIFTY**			**LogGDP**			**LogINR**			**LogEXR**			**LogIFR**			**LogCON**			**LogHPI**		
Intercept	-13.89	-2.88	0.00	-11.70	-2.88	0.00	-6.29	-2.88	0.00	-12.40	-2.88	0.00	-7.56	-2.89	0.00	-11.71	-2.88	0.00	-8.74	-2.90	0.00
Trend and Intercept	-13.86	-3.43	0.00	-11.93	-3.45	0.00	-6.31	-3.44	0.00	-12.41	-3.43	0.00	-7.61	-3.45	0.00	-12.16	-3.45	0.00	-8.77	-3.46	0.00
None	-13.80	-1.94	0.00	-11.45	-1.94	0.00	-6.31	-1.94	0.00	-12.31	-1.94	0.00	-7.57	-1.94	0.00	-7.90	-1.94	0.00	-8.63	-1.94	0.00
Stationarity Level	I(1)			I(1)			I(1)			I(1)			I(1)			I(1)			I(1)		
China																					
ADF	**LogSHCOMP**			**LogGDP**			**LogINR**			**LogEXR**			**LogIFR**			**LogCON**			**LogHPI**		
Intercept	-4.15	-2.88	0.00	-32.50	-2.88	0.00	-8.84	-2.88	0.00	-6.31	-2.88	0.00	-15.22	-2.88	0.00	-10.99	-2.88	0.00	-4.16	-2.88	0.00
Trend and Intercept	-4.24	-3.43	0.00	-32.40	-3.44	0.00	-8.87	-3.43	0.00	-6.33	-3.43	0.00	-15.19	-3.43	0.00	-10.99	-3.44	0.00	-12.33	-3.43	0.00
None	-4.10	-1.94	0.00	-32.60	-1.94	0.00	-8.84	-1.94	0.00	-5.62	-1.94	0.00	-15.26	-1.94	0.00	-11.03	-1.94	0.00	-4.12	-1.94	0.00
Stationarity Level	I(1)			I(2)			I(1)			I(1)			I(1)			I(2)			I(1)		
PP	**LogSHCOMP**			**LogGDP**			**LogINR**			**LogEXR**			**LogIFR**			**LogCON**			**LogHPI**		
Intercept	-13.36	-2.88	0.00	-13.88	-2.88	0.00	-9.28	-2.88	0.00	-10.08	-2.88	0.00	-15.51	-2.88	0.00	-16.26	-2.88	0.00	-13.03	-2.88	0.00
Trend and Intercept	-13.37	-3.43	0.00	-13.90	-3.44	0.00	-9.31	-3.43	0.00	-10.10	-3.43	0.00	-15.49	-3.43	0.00	-16.41	-3.44	0.00	-13.05	-3.43	0.00
None	-13.32	-1.94	0.00	-11.74	-1.94	0.00	-9.28	-1.94	0.00	-9.51	-1.94	0.00	-15.56	-1.94	0.00	-12.49	-1.94	0.00	-13.01	-1.94	0.00
Stationarity Level	I(1)			I(1)			I(1)			I(1)			I(1)			I(1)			I(1)		

Appendix 6.3: Unit Root Test Results for BRICS Countries (Page 3 of 3)

UNIT ROOT TESTS: BRICS COUNTRIES																					
	ADF Statistics	**Critical Value-5%**	**p-value**	**ADF Statistics**	**Critical Value-5%**	**p-value**	**ADF Statistics**	**Critical Value-5%**	**p-value**	**ADF Statistics**	**Critical Value-5%**	**p-value**	**ADF Statistics**	**Critical Value-5%**	**p-value**	**ADF Statistics**	**Critical Value-5%**	**p-value**	**ADF Statistics**	**Critical Value-5%**	**p-value**
South Africa																					
ADF	**LogJALSH**			**LogGDP**			**LogINR**			**LogEXR**			**LogIFR**			**LogCON**			**LogHPI**		
Intercept	-13.60	-2.88	0.00	-35.63	-2.88	0.00	-3.98	-2.88	0.00	-13.47	-2.88	0.00	-12.09	-2.88	0.00	-19.66	-2.88	0.00	-6.83	-2.88	0.00
Trend and Intercept	-13.57	-3.43	0.00	-35.56	-3.44	0.00	-3.97	-3.43	0.01	-13.44	-3.43	0.00	-12.07	-3.43	0.00	-19.60	-3.44	0.00	-6.81	-3.44	0.00
None	-13.45	-1.94	0.00	-35.74	-1.94	0.00	-3.95	-1.94	0.00	-13.41	-1.94	0.00	-12.12	-1.94	0.00	-19.73	-1.94	0.00	-6.84	-1.94	0.00
Stationarity Level	I(1)			I(2)			I(1)			I(1)			I(1)			I(2)			I(2)		
PP	**LogJALSH**			**LogGDP**			**LogINR**			**LogEXR**			**LogIFR**			**LogCON**			**LogHPI**		
Intercept	-13.60	-2.88	0.00	-14.23	-2.88	0.00	-13.24	-2.88	0.00	-13.50	-2.88	0.00	-12.36	-2.88	0.00	-12.50	-2.88	0.00	-15.20	-2.88	0.00
Trend and Intercept	-13.57	-3.43	0.00	-14.20	-3.44	0.00	-13.22	-3.43	0.00	-13.47	-3.43	0.00	-12.34	-3.43	0.00	-12.64	-3.44	0.00	-15.16	-3.43	0.00
None	-13.45	-1.94	0.00	-14.02	-1.94	0.00	-13.21	-1.94	0.00	-13.45	-1.94	0.00	-12.39	-1.94	0.00	-4.07	-1.94	0.00	-15.23	-1.94	0.00
Stationarity Level	I(1)			I(1)			I(1)			I(1)			I(1)			I(1)			I(2)		

Appendix 6.4: Unit Root Test Results for Developed Countries (Page 1 of 3)

UNIT ROOT TESTS: DEVELOPED COUNTRIES																					
	ADF Statistics	Critical Value-5%	p-value	ADF Statistics	Critical Value-5%	p-value	ADF Statistics	Critical Value-5%	p-value	ADF Statistics	Critical Value-5%	p-value	ADF Statistics	Critical Value-5%	p-value	ADF Statistics	Critical Value-5%	p-value	ADF Statistics	Critical Value-5%	p-value
France																					
ADF	**LogCAC**			**LogGDP**			**LogINR**			**LogEXR**			**LogIFR**			**LogCON**			**LogHPI**		
Intercept	-13.88	-2.88	0.00	-13.41	-2.88	0.00	-3.15	-2.88	0.02	-3.79	-2.88	0.00	-2.95	-2.88	0.04	-13.35	-2.88	0.00	-16.25	-2.88	0.00
Trend and Intercept	-13.89	-3.43	0.00	-13.59	-3.43	0.00	-3.59	-3.44	0.03	-4.26	-3.44	0.00	-3.64	-3.43	0.03	-13.62	-3.43	0.00	-16.21	-3.43	0.00
None	-13.91	-1.94	0.00	-13.36	-1.94	0.00	-2.71	-1.94	0.01	-3.76	-1.94	0.00	-2.85	-1.94	0.00	-13.15	-1.94	0.00	-16.29	-1.94	0.00
Stationarity Level	I(1)			I(1)			I(1)			I(1)			I(0)			I(1)			I(2)		
PP	**LogCAC**			**LogGDP**			**LogINR**			**LogEXR**			**LogIFR**			**LogCON**			**LogHPI**		
Intercept	-13.87	-2.88	0.00	-13.47	-2.88	0.00	-12.08	-2.88	0.00	-5.14	-2.88	0.00	-11.29	-2.88	0.00	-13.35	-2.88	0.00	-16.09	-2.88	0.00
Trend and Intercept	-13.88	-3.43	0.00	-13.72	-3.43	0.00	-21.82	-3.43	0.00	-5.35	-3.43	0.00	-11.27	-3.43	0.00	-13.75	-3.43	0.00	-16.06	-3.43	0.00
None	-13.91	-1.94	0.00	-13.39	-1.94	0.00	-11.68	-1.94	0.00	-5.15	-1.94	0.00	-11.32	-1.94	0.00	-13.16	-1.94	0.00	-16.13	-1.94	0.00
Stationarity Level	I(1)			I(1)			I(1)			I(1)			I(1)			I(1)			I(2)		
Germany																					
ADF	**LogDAX**			**LogGDP**			**LogINR**			**LogEXR**			**LogIFR**			**LogCON**			**LogHPI**		
Intercept	-13.41	-2.88	0.00	-13.58	-2.88	0.00	-3.15	-2.88	0.02	-3.18	-2.88	0.02	-3.35	-2.88	0.01	-13.56	-2.88	0.00	-3.31	-2.88	0.02
Trend and Intercept	-13.51	-3.43	0.00	-13.69	-3.43	0.00	-3.59	-3.44	0.03	-4.10	-3.44	0.01	-3.49	-3.43	0.04	-13.69	-3.43	0.00	-3.91	-3.44	0.01
None	-13.41	-1.94	0.00	-13.54	-1.94	0.00	-2.71	-1.94	0.01	-3.08	-1.94	0.00	-3.32	-1.94	0.00	-13.42	-1.94	0.00	-2.39		
Stationarity Level	I(1)			I(1)			I(1)			I(1)			I(0)			I(1)			I(1)		
PP	**LogDAX**			**LogGDP**			**LogINR**			**LogEXR**			**LogIFR**			**LogCON**			**LogHPI**		
Intercept	-13.44	-2.88	0.00	-13.69	-2.88	0.00	-12.08	-2.88	0.00	-5.16	-2.88	0.00	-3.29	-2.88	0.02	-13.58	-2.88	0.00	-6.20	-2.88	0.00
Trend and Intercept	-13.52	-3.43	0.00	-13.83	-3.43	0.00	-21.82	-3.43	0.00	-5.36	-3.43	0.00	-3.44	-3.43	0.05	-13.78	-3.43	0.00	-6.41	-3.43	0.00
None	-13.45	-1.94	0.00	-13.64	-1.94	0.00	-11.68	-1.94	0.00	-5.16	-1.94	0.00	-3.24	-1.94	0.00	-13.43	-1.94	0.00	-5.53	-1.94	0.00
Stationarity Level	I(1)			I(1)			I(1)			I(1)			I(0)			I(1)			I(1)		

Appendix 6.5: Unit Root Test Results for Developed Countries (Page 2 of 3)

UNIT ROOT TESTS: DEVELOPED COUNTRIES																					
	ADF Statistics	Critical Value-5%	p-value	ADF Statistics	Critical Value-5%	p-value	ADF Statistics	Critical Value-5%	p-value	ADF Statistics	Critical Value-5%	p-value	ADF Statistics	Critical Value-5%	p-value	ADF Statistics	Critical Value-5%	p-value	ADF Statistics	Critical Value-5%	p-value
Japan																					
ADF	**LogNIKKEY**			**LogGDP**			**LogINR**			**LogEXR**			**LogIFR**			**LogCON**			**LogHPI**		
Intercept	-13.17	-2.88	0.00	-34.74	-2.88	0.00	-10.70	-2.88	0.00	-13.54	-2.88	0.00	-10.08	-2.88	0.00	-12.69	-2.88	0.00	-12.98	-2.88	0.00
Trend and Intercept	-13.50	-3.43	0.00	-34.64	-3.44	0.00	-10.67	-3.43	0.00	-13.57	-3.43	0.00	-10.08	-3.44	0.00	-12.65	-3.44	0.00	-12.94	-3.43	0.00
None	-13.20	-1.94	0.00	-34.84	-1.94	0.00	-10.73	-1.94	0.00	-13.57	-1.94	0.00	-10.10	-1.94	0.00	-12.73	-1.94	0.00	-12.96	-1.94	0.00
Stationarity Level	I(1)			I(2)			I(1)			I(1)			I(1)			I(1)			I(1)		
PP	**LogNIKKEY**			**LogGDP**			**LogINR**			**LogEXR**			**LogIFR**			**LogCON**			**LogHPI**		
Intercept	-13.17	-2.88	0.00	-14.13	-2.88	0.00	-17.33	-2.88	0.00	-13.54	-2.88	0.00	-10.22	-2.88	0.00	-12.69	-2.88	0.00	-12.99	-2.88	0.00
Trend and Intercept	-13.50	-3.43	0.00	-14.14	-3.44	0.00	-17.26	-3.43	0.00	-13.57	-3.43	0.00	-10.23	-3.44	0.00	-12.66	-3.44	0.00	-12.95	-3.43	0.00
None	-13.20	-1.94	0.00	-14.15	-1.94	0.00	-17.39	-1.94	0.00	-13.57	-1.94	0.00	-10.24	-1.94	0.00	-12.73	-1.94	0.00	-12.97	-1.94	0.00
Stationarity Level	I(1)			I(1)			I(1)			I(1)			I(1)			I(1)			I(1)		
UK																					
ADF	**LogFTSE100**			**LogGDP**			**LogINR**			**LogEXR**			**LogIFR**			**LogCON**			**LogHPI**		
Intercept	-12.81	-2.88	0.00	-13.44	-2.88	0.00	-4.83	-2.88	0.00	-11.63	-2.88	0.00	-11.24	-2.88	0.00	-10.43	-2.88	0.00	-12.77	-2.88	0.00
Trend and Intercept	-12.87	-3.43	0.00	-13.60	-3.43	0.00	-4.81	-3.43	0.00	-11.62	-3.43	0.00	-11.45	-3.43	0.00	-10.52	-3.44	0.00	-12.74	-3.43	0.00
None	-12.85	-1.94	0.00	-13.34	-1.94	0.00	-4.76	-1.94	0.00	-11.67	-1.94	0.00	-11.24	-1.94	0.00	-8.63	-1.94	0.00	-12.81	-1.94	0.00
Stationarity Level	I(1)			I(1)			I(1)			I(1)			I(1)			I(1)			I(2)		
PP	**LogFTSE100**			**LogGDP**			**LogINR**			**LogEXR**			**LogIFR**			**LogCON**			**LogHPI**		
Intercept	-13.07	-2.88	0.00	-13.52	-2.88	0.00	-7.10	-2.88	0.00	-11.93	-2.88	0.00	-11.24	-2.88	0.00	-27.54	-2.88	0.00	-12.52	-2.88	0.00
Trend and Intercept	-13.04	-3.43	0.00	-13.84	-3.43	0.00	-7.08	-3.43	0.00	-11.90	-3.43	0.00	-11.32	-3.43	0.00	-46.67	-3.43	0.00	-12.69	-3.43	0.00
None	-13.10	-1.94	0.00	-13.41	-1.94	0.00	-7.01	-1.94	0.00	-11.96	-1.94	0.00	-11.25	-1.94	0.00	-13.57	-1.94	0.00	-12.05	-1.94	0.00
Stationarity Level	I(1)			I(1)			I(1)			I(1)			I(1)			I(1)			I(1)		

Appendix 6.6: Unit Root Test Results for Developed Countries (Page 3 of 3)

UNIT ROOT TESTS: DEVELOPED COUNTRIES																					
	ADF Statistics	Critical Value-5%	p-value	ADF Statistics	Critical Value-5%	p-value	ADF Statistics	Critical Value-5%	p-value	ADF Statistics	Critical Value-5%	p-value	ADF Statistics	Critical Value-5%	p-value	ADF Statistics	Critical Value-5%	p-value	ADF Statistics	Critical Value-5%	p-value
US																					
ADF	**LogSP500**			**LogGDP**			**LogINR**			**LogEXR**			**LogIFR**			**LogCNS**			**LogHPI**		
Intercept	-12.78	-2.88	0.00	-32.93	-2.88	0.00	-6.70	-2.88	0.00	-13.50	-2.88	0.00	-9.34	-2.88	0.00	-13.76	-2.88	0.00	-9.24	-2.88	0.00
Trend and Intercept	-13.06	-3.43	0.00	-32.84	-3.44	0.00	-6.69	-3.43	0.00	-13.62	-3.43	0.00	-9.44	-3.43	0.00	-13.73	-3.43	0.00	-9.27	-3.44	0.00
None	-12.77	-1.94	0.00	-33.03	-1.94	0.00	-6.60	-1.94	0.00	-13.53	-1.94	0.00	-9.29	-1.94	0.00	-13.78	-1.94	0.00	-9.27	-1.94	0.00
Stationarity Level	I(1)			I(2)			I(1)			I(1)			I(1)			I(1)			I(2)		
PP	**LogSP500**			**LogGDP**			**LogINR**			**LogEXR**			**LogIFR**			**LogCNS**			**LogHPI**		
Intercept	-12.79	-2.88	0.00	-14.28	-2.88	0.00	-12.28	-2.88	0.00	-13.50	-2.88	0.00	-8.81	-2.88	0.00	-13.82	-2.88	0.00	-9.24	-2.88	0.00
Trend and Intercept	-13.05	-3.43	0.00	-14.21	-3.44	0.00	-12.25	-3.43	0.00	-13.62	-3.43	0.00	-8.85	-3.43	0.00	-13.79	-3.43	0.00	-9.27	-3.44	0.00
None	-12.81	-1.94	0.00	-14.28	-1.94	0.00	-12.22	-1.94	0.00	-13.53	-1.94	0.00	-8.79	-1.94	0.00	-13.84	-1.94	0.00	-9.27	-1.94	0.00
Stationarity Level	I(1)			I(1)			I(1)			I(1)			I(1)			I(1)			I(2)		

Appendix 6.7: Unit Root Test Results with Contradictories

Data Series	ADF Test Result	PP Test Result	KPSS Test Result
Russia - LogCON	I(2)	**I(1)**	**I(1)**
Russia - LogHPI	I(2)	**I(1)**	**I(1)**
India - LogCON	I(2)	**I(1)**	**I(1)**
China - LogGDP	I(2)	I(1)	KPSS cannot confirm (run model under ADF and PP separately, choose the one with better residuals).
China - LogCON	I(2)	I(1)	KPSS cannot confirm (run model under ADF and PP separately, choose the one with better residuals).
South Africa – LogGDP	I(2)	**I(1)**	**I(1)**
South Africa – LogCON	I(2)	**I(1)**	**I(1)**
France - LogIFR	I(0)	**I(1)**	**I(1)**
Japan - LogGDP	I(2)	I(1)	KPSS cannot confirm (run model under ADF and PP separately, choose the one with better residuals).
UK - LogHPI	**I(2)**	I(1)	**I(2)**
US - LogGDP	I(2)	**I(1)**	**I(1)**

Appendix 7: Descriptive Statistics

Appendix 7.1: Descriptive Statistics – Brazil

	DLOGIBOV	DLOGGDP	DLOGINR	DLOGEXR	DLOGIFR	DLOGCON	DLOGHPI
Mean	0.0039	-0.0006	-0.0017	0.0029	0.0000	0.0089	0.0029
Median	0.0159	0.0000	0.0011	-0.0016	0.0052	0.0089	-0.0012
Maximum	0.2807	0.1981	0.1362	0.2219	0.2498	0.0656	3.4420
Minimum	-0.3081	-0.2805	-0.1088	-0.1586	-0.2391	-0.0223	-3.1252
Std. Dev.	0.1001	0.0480	0.0373	0.0484	0.0678	0.0080	0.5140
Skewness	-0.5919	-1.3838	-0.0559	0.9496	-0.1921	1.3088	0.4917
Kurtosis	3.9816	14.5502	4.5559	6.8378	4.5351	18.2778	25.6210
Jarque-Bera	18	1,087	19	141	19	1,852	2,969
Probability	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sum	0.7244	-0.1151	-0.3196	0.5391	0.0069	1.6553	0.4094
Sum Sq. Dev.	1.8454	0.4243	0.2562	0.4308	0.8447	0.0119	36.4561
Observations	185	185	185	185	185	185	139

Appendix 7.2: Descriptive Statistics – Russia

	DLOGRTS	DLOGGDP	DLOGINR	DLOGEXR	DLOGIFR	DLOGCON	DLOGHPI
Mean	0.0093	-0.0011	-0.0091	0.0036	-0.0035	0.0138	0.0092
Median	0.0118	0.0000	-0.0021	0.0006	-0.0030	0.0145	0.0139
Maximum	0.2840	0.1030	0.0839	0.1996	0.2775	0.1156	0.0605
Minimum	-0.2954	-0.3532	-0.3129	-0.1156	-0.3643	-0.1621	-0.1317
Std. Dev.	0.0938	0.0409	0.0362	0.0372	0.0698	0.0247	0.0282
Skewness	-0.1597	-4.7535	-4.2404	1.8478	0.1344	-2.1785	-1.8295
Kurtosis	3.6705	40.3811	32.0245	12.1849	8.3617	22.2583	8.2392
Jarque-Bera	4	9,236	7,048	756	222	3,005	311
Probability	0.12	0.00	0.00	0.00	0.00	0.00	0.00
Sum	1.7173	-0.1625	-1.6903	0.6704	-0.6511	2.5566	1.6865
Sum Sq. Dev.	1.6172	0.2476	0.2409	0.2541	0.8976	0.1120	0.1446
Observations	185	149	185	185	185	185	183

Appendix 7.3: Descriptive Statistics – India

	DLOGNIFTY	DLOGGDP	DLOGINR	DLOGEX	DLOGIFR	DLOGCON	DLOGHPI
Mean	0.0074	0.0045	-0.0003	0.0020	-0.0126	0.0112	-0.0227
Median	0.0102	0.0030	0.0010	0.0002	-0.0050	0.0117	-0.0171
Maximum	0.2593	0.1474	0.0674	0.0793	1.1324	0.0771	0.6605
Minimum	-0.2505	-0.0872	-0.2014	-0.0811	-0.7495	-0.0329	-0.5909
Std. Dev.	0.0752	0.0283	0.0274	0.0207	0.2252	0.0120	0.1730
Skewness	-0.0790	2.2735	-2.3633	0.2607	1.2569	1.0476	0.2898
Kurtosis	4.3905	13.6477	19.5800	6.5434	11.6128	12.7002	6.2854
Jarque-Bera	15	698	2,105	99	382	513	40
Probability	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sum	1.3771	0.5648	-0.0505	0.3729	-1.4328	1.4005	-1.9765
Sum Sq. Dev.	1.0409	0.0991	0.1273	0.0790	5.7315	0.0179	2.5747
Observation	185	125	170	185	114	125	87

Appendix 7.4: Descriptive Statistics – China

	DLOGSHCOMP	DLOGGDP	DLOGINR	DLOGEXR	DLOGIFR	DLOGCON	DLOGHPI
Mean	0.0071	0.0125	-0.0010	-0.0016	0.0023	0.0096	0.0091
Median	0.0053	0.0108	0.0001	-0.0004	-0.0107	0.0097	0.0032
Maximum	0.2080	0.1392	0.0503	0.0111	1.9143	0.0772	0.3243
Minimum	-0.2316	-0.0260	-0.1585	-0.0200	-2.0171	-0.0613	-0.2641
Std. Dev.	0.0730	0.0199	0.0206	0.0042	0.4062	0.0124	0.0995
Skewness	-0.0626	3.3639	-3.2072	-1.0163	-0.2373	-1.6987	0.3786
Kurtosis	4.0377	20.5225	23.7828	7.1759	12.8711	20.4694	4.0047
Jarque-Bera	8	2,495	3,647	166	749	2,362	12
Probability	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Sum	1.3065	2.1229	-0.1881	-0.2940	0.4289	1.7270	1.6781
Sum Sq. Dev.	0.9801	0.0667	0.0780	0.0033	30.1889	0.0275	1.8201
Observations	185	170	185	185	184	179	185

Appendix 7.5: Descriptive Statistics – South Africa

	DLOGJALSH	DLOGGDP	DLOGINR	DLOGEX	DLOGIFR	DLOGCON	DLOGHPI
Mean	0.0067	0.0053	-0.0038	0.0039	0.0027	0.0083	0.0091
Median	0.0132	0.0068	0.0013	0.0019	0.0032	0.0085	0.0100
Maximum	0.1213	0.0665	0.1068	0.1582	1.6543	0.0336	0.0275
Minimum	-0.2279	-0.0636	-0.2210	-0.1304	-1.2480	-0.0125	-0.0092
Std. Dev.	0.0611	0.0228	0.0367	0.0450	0.2239	0.0045	0.0076
Skewness	-0.7801	-0.3191	-1.8802	0.3937	0.7316	-0.0467	-0.0860
Kurtosis	3.9403	4.6926	11.9944	4.3911	25.7779	13.4861	3.2366
Jarque-Bera	26	23	733	20	4,016	683	1
Probability	0.00	0.00	0.00	0.00	0.00	0.00	0.72
Sum	1.2479	0.8962	-0.7096	0.7168	0.4906	1.2413	1.6565
Sum Sq. Dev.	0.6875	0.0878	0.2474	0.3720	9.2222	0.0030	0.0105
Observations	185	170	185	185	185	149	183

Appendix 7.6: Descriptive Statistics – France

	DLOGCAC	DLOGGDP	DLOGINR	DLOGEXR	DLOGIFR	DLOGCON	DLOGHPI
Mean	0.0000	0.0018	-0.0205	-0.0007	-0.0090	0.0031	0.0034
Median	0.0085	0.0018	-0.0014	-0.0042	-0.0012	0.0033	0.0044
Maximum	0.1303	0.1707	2.0011	0.0478	1.2132	0.1729	0.0118
Minimum	-0.1657	-0.0769	-1.3925	-0.0239	-1.4623	-0.0823	-0.0126
Std. Dev.	0.0528	0.0224	0.2380	0.0144	0.2756	0.0224	0.0057
Skewness	-0.6783	1.9836	2.0319	0.7129	-1.3861	2.0507	-0.5618
Kurtosis	3.6881	21.2017	40.0251	3.3522	12.9991	21.6916	2.8883
Jarque-Bera	18	2,675	10,694	16	830	2,823	10
Probability	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Sum	0.0092	0.3338	-3.7890	-0.1191	-1.6667	0.5676	0.6291
Sum Sq. Dev.	0.5129	0.0925	10.4221	0.0376	13.9718	0.0927	0.0059
Observations	185	185	185	183	185	185	183

Appendix 7.7: Descriptive Statistics – Germany

	DLOGDAX	DLOGGDP	DLOGINR	DLOGEXR	LOGIFR	DLOGCON	DLOGHPI
Mean	0.0035	0.0018	-0.0205	0.0006	0.2258	0.0025	0.0014
Median	0.0116	0.0024	-0.0014	0.0041	0.4023	0.0018	0.0014
Maximum	0.1487	0.1666	2.0011	0.0252	1.1980	0.1776	0.0118
Minimum	-0.2062	-0.1005	-1.3925	-0.0434	-4.5947	-0.0845	-0.0051
Std. Dev.	0.0593	0.0227	0.2380	0.0144	0.8684	0.0222	0.0027
Skewness	-0.7156	1.1642	2.0319	-0.6926	-3.1724	2.5769	0.4680
Kurtosis	3.7840	20.4541	40.0251	3.2813	15.3155	25.0674	5.1739
Jarque-Bera	21	2,390	10,694	15	1,487	3,958	43
Probability	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sum	0.6560	0.3312	-3.7890	0.1178	41.9903	0.4703	0.2470
Sum Sq. Dev.	0.6481	0.0952	10.4221	0.0377	139.5269	0.0904	0.0013
Observations	185	185	185	183	186	185	183

Appendix 7.8: Descriptive Statistics – Japan

	DLOGNIKKEY	DLOGGDP	DLOGINR	DLOGEX	DLOGIFR	DLOGCON	DLOGHPI
Mean	-0.0005	-0.0005	-0.0009	0.0009	0.0243	-0.0001	0.0045
Median	0.0009	-0.0014	-0.0185	0.0005	0.0431	0.0003	0.0085
Maximum	0.1254	0.1227	4.4353	0.0784	1.5421	0.0142	0.2557
Minimum	-0.1700	-0.0616	-2.3657	-0.0714	-1.9553	-0.0250	-0.2221
Std. Dev.	0.0514	0.0212	0.7546	0.0259	0.4561	0.0045	0.0780
Skewness	-0.4034	2.5627	1.5585	0.1386	-0.8950	-2.2766	-0.0199
Kurtosis	4.0725	17.2505	11.6911	3.7101	8.5959	14.5293	3.8133
Jarque-Bera	14	1,625	657	4	196	973	5
Probability	0.00	0.00	0.00	0.11	0.00	0.00	0.08
Sum	-0.0930	-0.0815	-0.1645	0.1615	3.3057	-0.0156	0.8284
Sum Sq. Dev.	0.4860	0.0763	104.7617	0.1236	28.0800	0.0031	1.1194
Observations	185	170	185	185	136	152	185

Appendix 7.9: Descriptive Statistics – UK

	DLOGFTSE100	DLOGDP	DLOGINR	DLOGEXR	DLOGIFR	DLOGCON	DDLOGHPI
Mean	0.0003	0.0024	-0.0132	-0.0002	-0.0101	0.0032	0.0001
Median	0.0044	0.0018	0.0004	0.0004	-0.0031	0.0039	-0.0011
Maximum	0.0916	0.1732	0.2307	0.1028	0.6094	0.1351	0.0544
Minimum	-0.1578	-0.0725	-0.6171	-0.1102	-1.4300	-0.1509	-0.0470
Std. Dev.	0.0360	0.0228	0.0851	0.0222	0.2064	0.0210	0.0163
Skewness	-0.8072	2.1959	-3.1367	-0.3414	-1.6784	-1.1771	0.2342
Kurtosis	4.5291	21.0665	20.0391	7.8528	14.8182	26.2964	5.5624
Jarque-Bera	38	2,665	2,541	185	1,157	4,226	52
Probability	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sum	0.0562	0.4380	-2.4459	-0.0307	-1.8564	0.6001	0.0206
Sum Sq. Dev.	0.2386	0.0957	1.3323	0.0909	7.7957	0.0812	0.0485
Observations	185	185	185	185	184	185	184

Appendix 7.10: Descriptive Statistics – US

	DLOGSP500	DDLOGGDP	DLOGINR	DLOGEXR	DLOGIFR	DLOGCON	DDLOGHPI
Mean	0.0023	0.0000	-0.0168	0.0007	-0.0260	0.0009	0.0000
Median	0.0045	0.0007	-0.0023	0.0000	0.0019	-0.0002	-0.0001
Maximum	0.0901	0.0950	0.3587	0.1165	1.7500	0.1818	0.0138
Minimum	-0.1091	-0.0951	-1.2391	-0.1083	-2.3170	-0.1341	-0.0147
Std. Dev.	0.0391	0.0233	0.1429	0.0298	0.3264	0.0273	0.0027
Skewness	-0.3912	0.0118	-3.9576	0.0153	-1.5418	1.3249	0.3052
Kurtosis	3.4564	8.9229	33.0865	7.8510	20.1127	17.2900	12.9488
Jarque-Bera	6	247	7,460	181	2,331	1,628	753
Probability	0.04	0.00	0.00	0.00	0.00	0.00	0.00
Sum	0.4188	0.0032	-3.1039	0.1335	-4.8021	0.1679	-0.0004
Sum Sq. Dev.	0.2809	0.0914	3.7581	0.1637	19.5993	0.1367	0.0014
Observations	185	169	185	185	185	185	182

Appendix 8: Correlation between the Stock Market Indices and Macroeconomic Variables

Appendix 8.1: Correlation of Selected Variables – Brazil

	DLOGIBOV	DLOGGDP	DLOGINR	DLOGEXR	DLOGIFR	DLOGCON	DLOGHPI
DLOGIBOV	1	0.19	-0.19	-0.83	0.05	0.15	0.18
DLOGGDP	0.19	1	-0.11	-0.17	0.07	0.38	0.01
DLOGINR	-0.19	-0.11	1	0.12	0.28	-0.10	-0.07
DLOGEXR	-0.83	-0.17	0.12	1	-0.03	-0.13	-0.08
DLOGIFR	0.05	0.07	0.28	-0.03	1	0.03	0.05
DLOGCON	0.15	0.38	-0.10	-0.13	0.03	1	-0.11
DLOGHPI	0.18	0.01	-0.07	-0.08	0.05	-0.11	1

Appendix 8.2: Correlation of Selected Variables – Russia

	DLOGRTS	DLOGGDP	DLOGINR	DLOGEXR	DLOGIFR	DLOGCON	DLOGHPI
DLOGRTS	1	0.07	-0.23	-0.61	-0.04	0.11	0.18
DLOGGDP	0.07	1	0.00	-0.23	0.03	0.11	0.41
DLOGINR	-0.23	0.00	1	0.14	0.16	-0.10	-0.05
DLOGEXR	-0.61	-0.23	0.14	1	0.17	-0.32	-0.35
DLOGIFR	-0.04	0.03	0.16	0.17	1	-0.11	-0.19
DLOGCON	0.11	0.11	-0.10	-0.32	-0.11	1	0.19
DLOGHPI	0.18	0.41	-0.05	-0.35	-0.19	0.19	1

Appendix 8.3: Correlation of Selected Variables – India

	DLOGNIFTY	DLOGGDP	DLOGINR	DLOGEXR	DLOGIFR	DLOGCON	DLOGHPI
DLOGNIFTY	1	-0.01	-0.12	-0.81	0.06	-0.04	0.87
DLOGGDP	-0.01	1	-0.06	0.08	-0.06	0.18	0.00
DLOGINR	-0.12	-0.06	1	-0.03	0.27	0.16	-0.06
DLOGEXR	-0.81	0.08	-0.03	1	-0.17	-0.03	-0.69
DLOGIFR	0.06	-0.06	0.27	-0.17	1	-0.02	0.05
DLOGCON	-0.04	0.18	0.16	-0.03	-0.02	1	0.08
DLOGHPI	0.87	0.00	-0.06	-0.69	0.05	0.08	1

Appendix 8.4: Correlation of Selected Variables – China

	DLOGSHCOMP	DLOGGDP	DLOGINR	DLOGEXR	DLOGIFR	DLOGCON	DLOGHPI
DLOGSHCOMP	1	-0.13	0.09	0.12	0.13	-0.13	0.73
DLOGGDP	-0.13	1	-0.02	-0.28	0.00	0.16	-0.11
DLOGINR	0.09	-0.02	1	-0.14	0.15	0.00	-0.05
DLOGEXR	0.12	-0.28	-0.14	1	0.00	-0.08	0.09
DLOGIFR	0.13	0.00	0.15	0.00	1	0.04	0.13
DLOGCON	-0.13	0.16	0.00	-0.08	0.04	1	-0.03
DLOGHPI	0.73	-0.11	-0.05	0.09	0.13	-0.03	1

Appendix 8.5: Correlation of Selected Variables – South Africa

	DLOGJALSH	DLOGRGDP	DLOGINR	DLOGEXR	DLOGIFR	DLOGCON	DLOGHPI
DLOGJALSH	1	-0.10	-0.06	-0.65	0.01	0.04	0.09
DLOGGDP	-0.10	1	-0.11	0.13	-0.08	-0.12	0.06
DLOGINR	-0.06	-0.11	1	0.13	0.24	0.14	0.04
DLOGEXR	-0.65	0.13	0.13	1	-0.02	-0.08	-0.05
DLOGIFR	0.01	-0.08	0.24	-0.02	1	0.14	0.03
DLOGCON	0.04	-0.12	0.14	-0.08	0.14	1	0.22
DLOGHPI	0.09	0.06	0.04	-0.05	0.03	0.22	1

Appendix 8.6: Correlation of Selected Variables – France

	DLOGCAC	DLOGGDP	DLOGINR	DLOGEXR	DLOGIFR	DLOGCON	DLOGHPI
DLOGCAC	1	0.00	0.06	-0.06	-0.05	0.01	0.07
DLOGGDP	0.00	1	0.02	-0.06	0.02	0.99	0.00
DLOGINR	0.06	0.02	1	-0.06	-0.11	0.02	0.12
DLOGEXR	-0.06	-0.06	-0.06	1	-0.08	-0.07	-0.30
DLOGIFR	-0.05	0.02	-0.11	-0.08	1	0.04	0.22
DLOGCON	0.01	0.99	0.02	-0.07	0.04	1	0.02
DLOGHPI	0.07	0.00	0.12	-0.30	0.22	0.02	1

Appendix 8.7: Correlation of Selected Variables – Germany

	DLOGDAX	DLOGGDP	DLOGINR	DLOGEXR	LOGIFR	DLOGCON	DLOGHPI
DLOGDAX	1	-0.04	0.04	0.04	-0.12	-0.09	-0.08
DLOGGDP	-0.04	1	0.02	0.07	0.10	0.96	0.00
DLOGINR	0.04	0.02	1	0.06	0.03	0.01	-0.03
DLOGEXR	0.04	0.07	0.06	1	-0.02	0.06	-0.11
LOGIFRIT	-0.12	0.10	0.03	-0.02	1	0.13	0.13
DLOGCON	-0.09	0.96	0.01	0.06	0.13	1	0.01
DLOGHPI	-0.08	0.00	-0.03	-0.11	0.13	0.01	1

Appendix 8.8: Correlation of Selected Variables – Japan

	DLOGNIKKEY	DLOGGDP	DLOGINR	DLOGEXR	DLOGIFR	DLOGCON	DLOGHPI
DLOGNIKKEY	1	-0.09	-0.08	-0.01	-0.03	0.21	0.72
DLOGGDP	-0.09	1	-0.13	0.00	0.03	-0.20	0.10
DLOGINR	-0.08	-0.13	1	0.16	-0.16	-0.11	-0.12
DLOGEXR	-0.01	0.00	0.16	1	0.02	0.01	0.00
DLOGIFR	-0.03	0.03	-0.16	0.02	1	0.18	0.05
DLOGCON	0.21	-0.20	-0.11	0.01	0.18	1	0.17
DLOGHPI	0.72	0.10	-0.12	0.00	0.05	0.17	1

Appendix 8.9: Correlation of Selected Variables – UK

	DLOGFTSE100	DLOGGDP	DLOGINR	DLOGEXR	DLOGIFR	DLOGCON	DDLOGHPI
DLOGFTSE100	1	-0.11	0.04	0.13	-0.06	-0.04	0.07
DLOGGDP	-0.11	1	-0.03	-0.14	-0.06	0.74	-0.07
DLOGINR	0.04	-0.03	1	0.12	0.13	0.04	-0.08
DLOGEXR	0.13	-0.14	0.12	1	0.06	-0.14	0.06
DLOGIFR	-0.06	-0.06	0.13	0.06	1	-0.08	-0.06
DLOGCON	-0.04	0.74	0.04	-0.14	-0.08	1	-0.17
DDLOGHPI	0.07	-0.07	-0.08	0.06	-0.06	-0.17	1

Appendix 8.10: Correlation of Selected Variables – US

	DLOGSP500	DDLOGGDP	DLOGINR	DLOGEXR	DLOGIFR	DLOGCON	DDLOGHPI
DLOGSP500	1	-0.07	0.01	-0.02	-0.06	-0.03	-0.08
DDLOGGDP	-0.07	1	-0.19	-0.17	0.15	0.39	0.04
DLOGINR	0.01	-0.19	1	-0.05	0.38	-0.25	-0.14
DLOGEXR	-0.02	-0.17	-0.05	1	0.08	-0.60	-0.16
DLOGIFR	-0.06	0.15	0.38	0.08	1	-0.06	-0.02
DLOGCON	-0.03	0.39	-0.25	-0.60	-0.06	1	0.40
DDLOGHPI	-0.08	0.04	-0.14	-0.16	-0.02	0.40	1

Appendix 9: OLS Regression Results

Appendix 9.1: OLS Summary – Brazil

Dependent Variable	**DLOGIBOV**
Regression without Dummy Variables	
Statistically Significant Macroeconomic Variables	DLOGEXR DLOGHPI
R-squared	0.70
F-stat p-value	0
Akaike info criterion	-3.14
Schwarz criterion	-2.99
Regression with Dummy Variables	
Statistically Significant Macroeconomic Variables	DLOGEXR DLOGHPI
R-squared	0.70
F-stat p-value	0
Akaike info criterion	-3.11
Schwarz criterion	-2.92

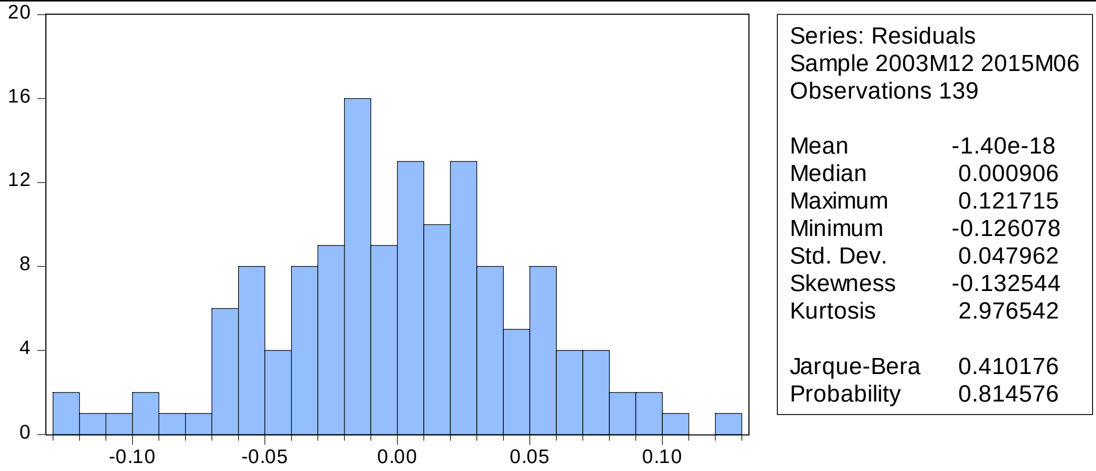
Appendix 9.1a: OLS Regression Results: Brazil

Dependent Variable: DLOGIBOV – Excluding Dummy Variables				
Variable	**Coefficien**	**Std. Error**	**t-Statistic**	**Prob.**
DLOGGDP	0.062494	0.116013	0.538682	0.591
DLOGINR	-0.22608	0.129181	-1.75011	0.0824
DLOGEXR	-1.64351	0.100808	-16.3033	0
DLOGIFR	0.056089	0.072097	0.777959	0.438
DLOGCON	0.528114	0.723433	0.73001	0.4667
DLOGHPI	0.017963	0.008259	2.174915	0.0314
C	0.003478	0.007546	0.460897	0.6456
R-squared	0.70329	n dependent var		0.007876
Adjusted R-squared	0.689804	dependent var		0.08805
S.E. of regression	0.04904	ke info criterion		-3.14332
Sum squared resid	0.317446	warz criterion		-2.99555
Log likelihood	225.461	an-Quinn criter.		-3.08327
F-statistic	52.14655	bin-Watson stat		2.10591
Prob(F-statistic)	0			
Dependent Variable: DLOGIBOV - Including Dummy Variables				
Method: Least Squares				
Variable	**Coefficien**	**Std. Error**	**t-Statistic**	**Prob.**
DLOGGDP	0.065357	0.117928	0.554208	0.5804
DLOGINR	-0.22719	0.130461	-1.74141	0.084
DLOGEXR	-1.64529	0.101906	-16.1452	0
DLOGIFR	0.057448	0.074107	0.775205	0.4396
DLOGCON	0.540011	0.730985	0.738744	0.4614
DLOGHPI	0.018016	0.008332	2.16226	0.0324
FCR	-0.00069	0.010629	-0.06449	0.9487
QEG	-0.00176	0.012045	-0.14597	0.8842
C	0.003959	0.008077	0.490174	0.6248
R-squared	0.703394	n dependent var		0.007876
Adjusted R-squared	0.685142	dependent var		0.08805
S.E. of regression	0.049407	ke info criterion		-3.1149
Sum squared resid	0.317335	warz criterion		-2.9249
Log likelihood	225.4854	an-Quinn criter.		-3.03769
F-statistic	38.53654	bin-Watson stat		2.107715
Prob(F-statistic)	0			

Appendix 9.1b: OLS Regression Residuals: Brazil

Excluding Dummy Variables

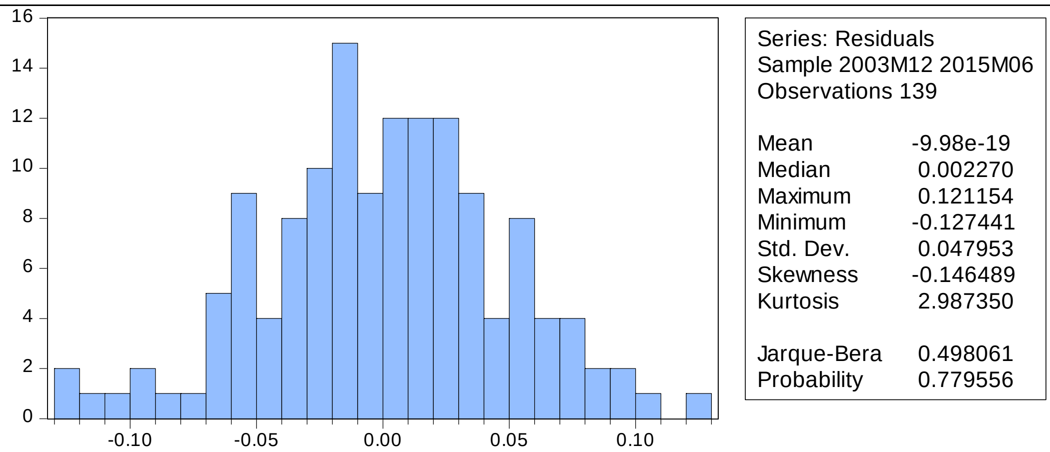
Normal Distribution Hypothesis



Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.406378	Prob. F(2,130)	0.6669
Obs*R-squared	0.863624	Prob. Chi-Square(2)	0.6493
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.893347	Prob. F(6,132)	0.5019
Obs*R-squared	5.424076	Prob. Chi-Square(6)	0.4907
Scaled explained SS	4.834149	Prob. Chi-Square(6)	0.5653

Including Dummy Variables

Normal Distribution Hypothesis



Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.417183	Prob. F(2,128)	0.6598
Obs*R-squared	0.900201	Prob. Chi-Square(2)	0.6376
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.226866	Prob. F(8,130)	0.2884
Obs*R-squared	9.757722	Prob. Chi-Square(8)	0.2824
Scaled explained SS	8.481054	Prob. Chi-Square(8)	0.3879

Appendix 9.2: OLS Summary – Russia

Dependent Variable	**DLOGRTS**
Regression without Dummy Variables	
Statistically Significant Macroeconomic Variables	DLOGINR DLOGEXR
R-squared	0.41
F-stat p-value	0
Akaike info criterion	-2.42
Schwarz criterion	-2.28
Regression with Dummy Variables	
Statistically Significant Macroeconomic Variables	DLOGINR DLOGEXR
R-squared	0.43
F-stat p-value	0
Akaike info criterion	-2.41
Schwarz criterion	-2.23

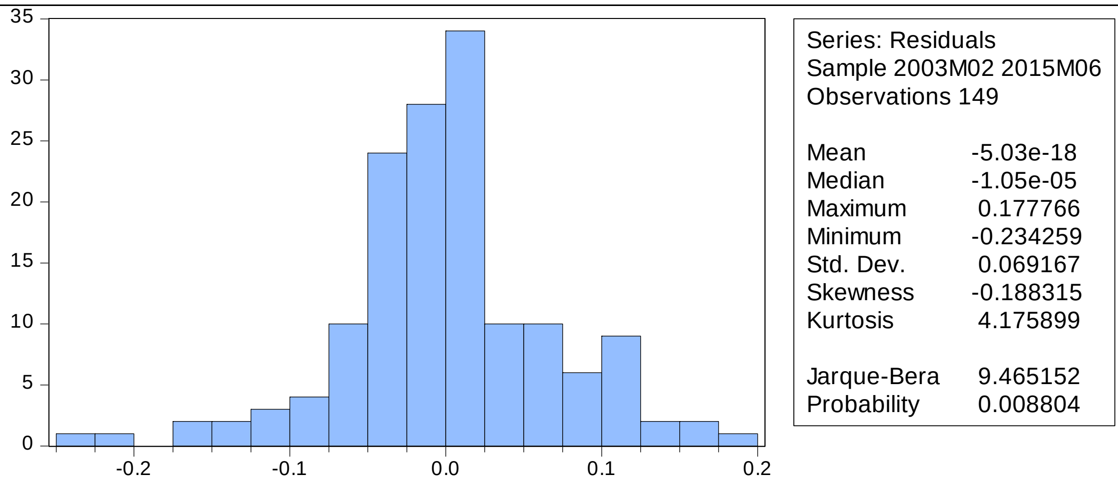
Appendix 9.2a: OLS Regression Results: Russia

Dependent Variable: DLOGRTS – Excluding Dummy Variables				
Method: Least Squares				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOGGDP	-0.160546	0.158217	-1.01472	0.312
DLOGINR	-0.582923	0.228356	-2.55269	0.0117
DLOGEXR	-1.409177	0.158353	-8.89897	0
DLOGIFR	0.10868	0.083119	1.307529	0.1931
DLOGCON	-0.684522	0.464588	-1.4734	0.1429
DLOGHPI	0.033256	0.224108	0.148395	0.8822
C	0.017119	0.008514	2.01066	0.0463
R-squared	0.414127	Mean dependent var		0.007326
Adjusted R-squared	0.389372	S.D. dependent var		0.090365
S.E. of regression	0.070614	Akaike info criterion		-2.41735
Sum squared resid	0.70805	Schwarz criterion		-2.27623
Log likelihood	187.0926	Hannan-Quinn criter.		-2.36001
F-statistic	16.72889	Durbin-Watson stat		1.779125
Prob(F-statistic)	0			
Dependent Variable: DLOGRTS – Including Dummy Variables				
Method: Least Squares				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
DLOGGDP	-0.197377	0.159262	-1.23932	0.2173
DLOGINR	-0.55722	0.227865	-2.4454	0.0157
DLOGEXR	-1.368855	0.159297	-8.5931	0
DLOGIFR	0.146903	0.08544	1.719365	0.0878
DLOGCON	-0.56186	0.469927	-1.19563	0.2339
DLOGHPI	0.200096	0.241399	0.828903	0.4086
FCR	-0.021897	0.015253	-1.4356	0.1533
QEG	0.032954	0.018946	1.739324	0.0842
C	0.014729	0.009774	1.507004	0.1341
R-squared	0.427701	Mean dependent var		0.007326
Adjusted R-squared	0.394998	S.D. dependent var		0.090365
S.E. of regression	**0.070287**	**Akaike info criterion**		**-2.41395**
Sum squared resid	0.691646	Schwarz criterion		-2.2325
Log likelihood	188.8389	Hannan-Quinn criter.		-2.34023
F-statistic	13.0784	Durbin-Watson stat		1.814189
Prob(F-statistic)	0			

Appendix 9.2b: OLS Regression Residuals: Russia

Excluding Dummy Variables

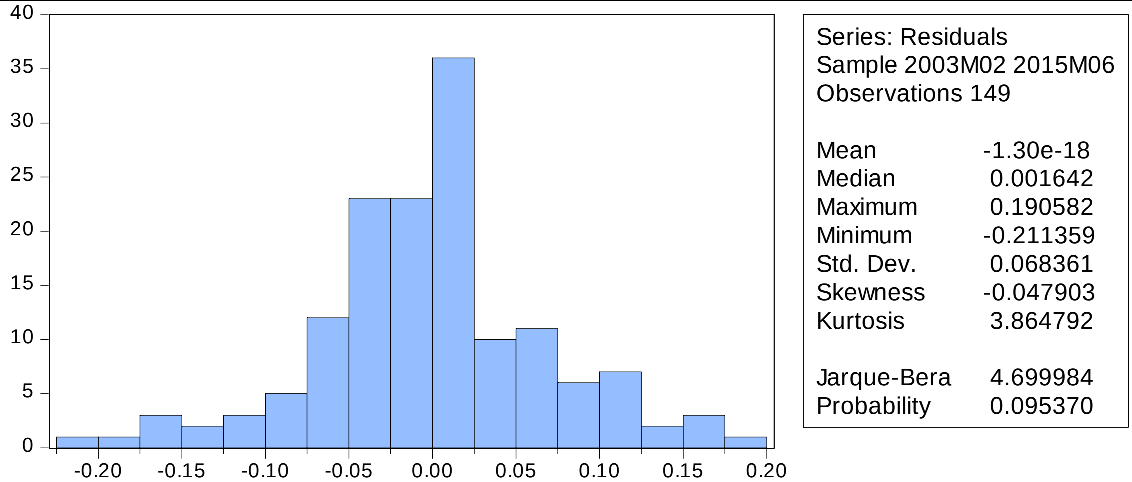
Normal Distribution Hypothesis



Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.228654	Prob. F(2,140)	0.2958
Obs*R-squared	2.570166	Prob. Chi-Square(2)	0.2766
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.327865	Prob. F(6,142)	0.2485
Obs*R-squared	7.915809	Prob. Chi-Square(6)	0.2443
Scaled explained SS	11.41658	Prob. Chi-Square(6)	0.0763

Including Dummy Variables

Normal Distribution Hypothesis



Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.987148	Prob. F(2,138)	0.3753
Obs*R-squared	2.1016	Prob. Chi-Square(2)	0.3497
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.41319	Prob. F(8,140)	0.196
Obs*R-squared	11.13325	Prob. Chi-Square(8)	0.1943
Scaled explained SS	14.0789	Prob. Chi-Square(8)	0.0797

Appendix 9.3: OLS Summary – India

Dependent Variable	**DLOGNIFTY**
Regression without Dummy Variables	
Statistically Significant Macroeconomic Variables	DLOGEXR
	DLOGCON
	DLOGHPI
R-squared	0.86
F-stat p-value	0
Akaike info criterion	-3.94
Schwarz criterion	-3.73
Regression with Dummy Variables	
Statistically Significant Macroeconomic Variables	DLOGEXR
	DLOGCON
	DLOGHPI
R-squared	0.87
F-stat p-value	0
Akaike info criterion	-3.92
Schwarz criterion	-3.64

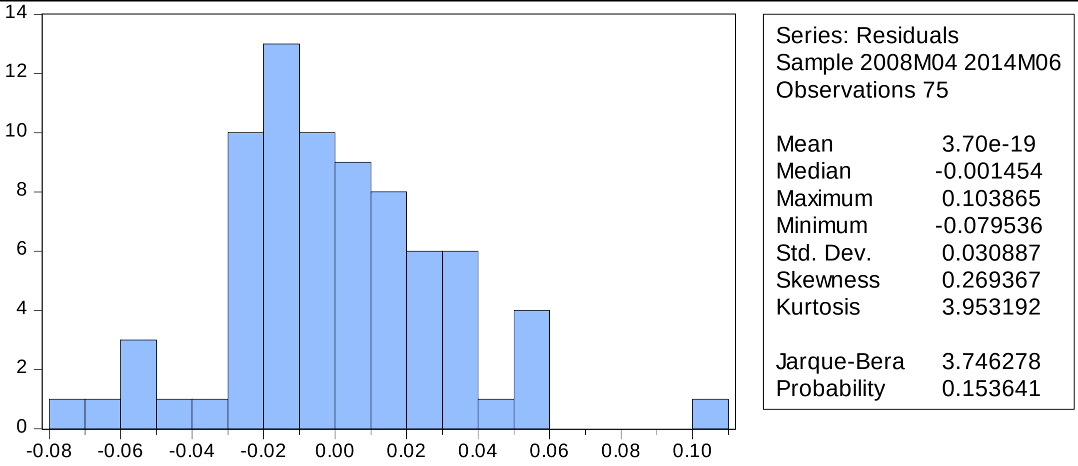
Appendix 9.3a: OLS Regression Results: India

Dependent Variable: DLOGNIFTY – Excluding Dummy Variables				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOGGDP	0.092861	0.129972	0.714469	0.4774
DLOGINR	-0.14635	0.102093	-1.43352	0.1563
DLOGEXR	-1.19092	0.180224	-6.60802	0
DLOGIFR	-0.00805	0.016251	-0.49516	0.6221
DLOGCON	-0.77528	0.368057	-2.10643	0.0389
DLOGHPI	0.266716	0.028847	9.245927	0
C	0.023438	0.005535	4.234675	0.0001
R-squared	0.860863	Mean dependent var		0.002705
Adjusted R-squared	0.848586	S.D. dependent var		0.082805
S.E. of regression	0.032221	Akaike info criterion		-3.94372
Sum squared resid	0.070597	Schwarz criterion		-3.72742
Log likelihood	154.8895	Hannan-Quinn criter.		-3.85735
F-statistic	70.12107	Durbin-Watson stat		2.067857
Prob(F-statistic)	0			
Dependent Variable: DLOGNIFTY – Including Dummy Variables				
Method: Least Squares				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
DLOGRGDP	0.053647	0.134069	0.40014	0.6903
DLOGINR	-0.12183	0.103644	-1.17547	0.244
DLOGEXR	-1.13988	0.183492	-6.21214	0
DLOGIFR	-0.00939	0.016276	-0.57717	0.5658
DLOGCON	-0.81639	0.375248	-2.17561	0.0332
DLOGHPI	0.272452	0.029154	9.345123	0
FCR	0.008638	0.009621	0.89785	0.3725
QEG	0.004462	0.009666	0.461654	0.6458
C	0.018279	0.006547	2.792054	0.0068
R-squared	0.865351	Mean dependent var		0.002705
Adjusted R-squared	0.84903	S.D. dependent var		0.082805
S.E. of regression	0.032174	Akaike info criterion		-3.92318
Sum squared resid	0.068319	Schwarz criterion		-3.64508
Log likelihood	156.1191	Hannan-Quinn criter.		-3.81214
F-statistic	53.02054	Durbin-Watson stat		2.115175
Prob(F-statistic)	0			

Appendix 9.3b: OLS Regression Residuals: India

Excluding Dummy Variables

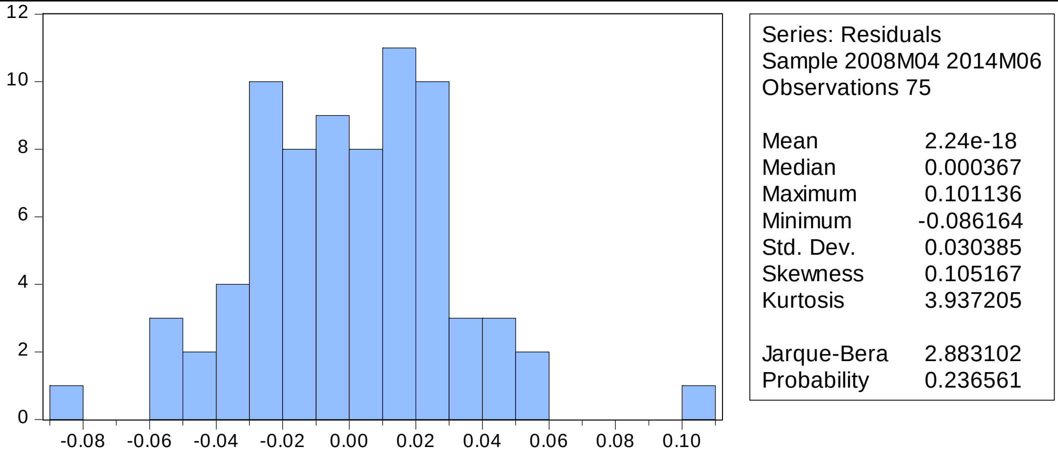
Normal Distribution Hypothesis



Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	2.439906	Prob. F(2,66)	0.095
Obs*R-squared	5.163471	Prob. Chi-Square(2)	0.0756
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.10176	Prob. F(6,68)	0.996
Obs*R-squared	0.66742	Prob. Chi-Square(6)	0.9952
Scaled explained SS	0.810133	Prob. Chi-Square(6)	0.9918

Including Dummy Variables

Normal Distribution Hypothesis



Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	3.203351	Prob. F(2,64)	0.0472
Obs*R-squared	6.824672	Prob. Chi-Square(2)	0.033
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.851528	Prob. F(8,66)	0.5614
Obs*R-squared	7.016913	Prob. Chi-Square(8)	0.5348
Scaled explained SS	7.980235	Prob. Chi-Square(8)	0.4354

Appendix 9.4: OLS Summary – China

Dependent Variable	**DLOGSHCOMP**
Regression without Dummy Variables	
Statistically Significant Macroeconomic Variables	DLOGINR DLOGHPI
R-squared	0.57
F-stat p-value	0
Akaike info criterion	-3.16
Schwarz criterion	-3.03
Regression with Dummy Variables	
Statistically Significant Macroeconomic Variables	DLOGINR DLOGHPI
R-squared	0.57
F-stat p-value	0
Akaike info criterion	-3.14
Schwarz criterion	-2.98

Appendix 9.4a: OLS Regression Results: China

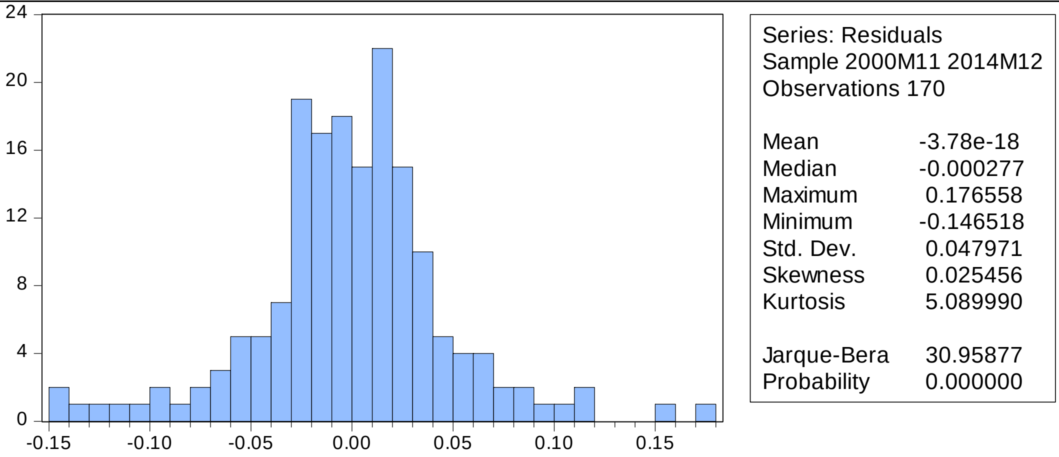
Dependent Variable: DLOGSHCOMP – Excluding Dummy Variables				
Method: Least Squares				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
DLOGGDP	-0.061416	0.200412	-0.30645	0.7597
DLOGINR	0.451654	0.1865	2.421742	0.0165
DLOGEXR	0.921896	0.936162	0.984762	0.3262
DLOGIFR	0.00429	0.009233	0.464638	0.6428
DLOGCON	-0.573681	0.299067	-1.91824	0.0568
DLOGHPI	0.529893	0.038215	13.86618	0
C	0.008097	0.005185	1.561745	0.1203
R-squared	0.568398	an dependent var		0.003963
Adjusted R-squared	0.552511	). dependent var		0.07302
S.E. of regression	0.048846	aike info criterion		-3.15997
Sum squared resid	0.388913	chwarz criterion		-3.03085
Log likelihood	275.5973	nan-Quinn criter.		-3.10757
F-statistic	35.77711	rbin-Watson stat		2.286757
Prob(F-statistic)	0			

Dependent Variable: DLOGSHCOMP – Including Dummy Variables				
Method: Least Squares				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOGGDP	-0.084755	0.209778	-0.40402	0.6867
DLOGINR	0.461641	0.187537	2.461594	0.0149
DLOGEXR	1.054503	0.969495	1.087682	0.2784
DLOGIFR	0.004326	0.009268	0.466795	0.6413
DLOGCON	-0.580996	0.301758	-1.92537	0.0559
DLOGHPI	0.527471	0.038453	13.71728	0
FCR	0.005858	0.010981	0.533478	0.5944
QEG	0.003405	0.012318	0.276454	0.7826
C	0.006533	0.0055	1.187739	0.2367
R-squared	**0.570518**	**Mean dependent var**		**0.00396**
Adjusted R-squared	0.549178	S.D. dependent var		0.07302
S.E. of regression	0.049028	Akaike info criterion		-3.14136
Sum squared resid	0.387002	Schwarz criterion		-2.97535
Log likelihood	276.0159	Hannan-Quinn criter.		-3.074
F-statistic	26.73381	Durbin-Watson stat		2.294606
Prob(F-statistic)	0			

Appendix 9.4b: OLS Regression Residuals: China

Excluding Dummy Variables

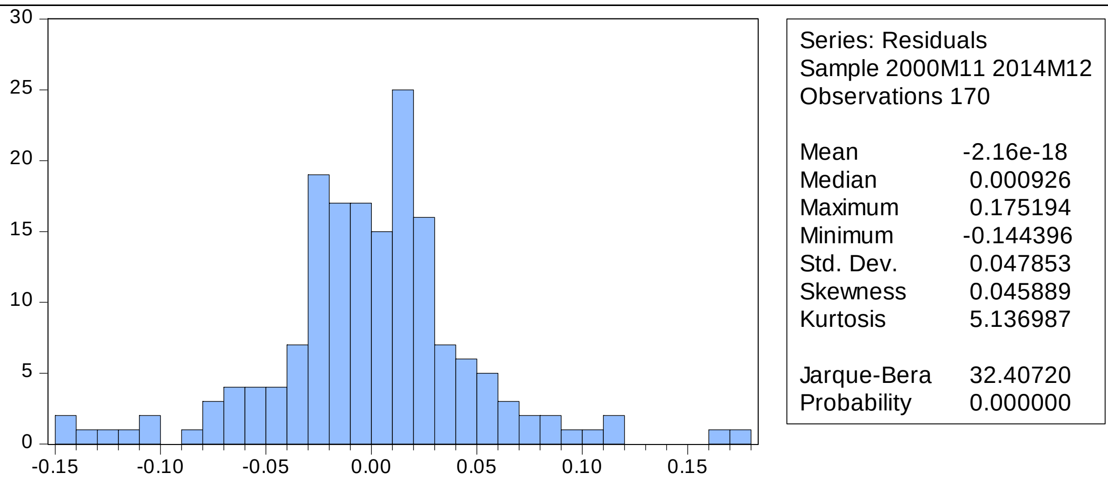
Normal Distribution Hypothesis



Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	4.129812	Prob. F(2,161)	0.0178
Obs*R-squared	8.295753	Prob. Chi-Square(2)	0.0158
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	5.04877	Prob. F(6,163)	0.0001
Obs*R-squared	26.64222	Prob. Chi-Square(6)	0.0002
Scaled explained SS	50.08874	Prob. Chi-Square(6)	0

Including Dummy Variables

Normal Distribution Hypothesis



Breusch-Godfrey Serial Correlation LM Test			
F-statistic	4.473588	Prob. F(2,159)	0.0129
Obs*R-squared	9.056538	Prob. Chi-Square(2)	0.0108
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	4.076962	Prob. F(8,161)	0.0002
Obs*R-squared	28.63749	Prob. Chi-Square(8)	0.0004
Scaled explained SS	53.13039	Prob. Chi-Square(8)	0

Appendix 9.5: OLS Summary – South Africa

Regression without Dummy Variables	
Dependent Variable	**DLOGJALSH**
Statistically Significant Macroeconomic Variables	DLOGEXR
R-squared	0.43
F-stat p-value	0
Akaike info criterion	-3.05
Schwarz criterion	-2.90
Regression with Dummy Variables	
Dependent Variable	**DLOGJALSH**
Statistically Significant Macroeconomic Variables	DLOGEXR
R-squared	0.43
F-stat p-value	0
Akaike info criterion	-3.03
Schwarz criterion	-2.84

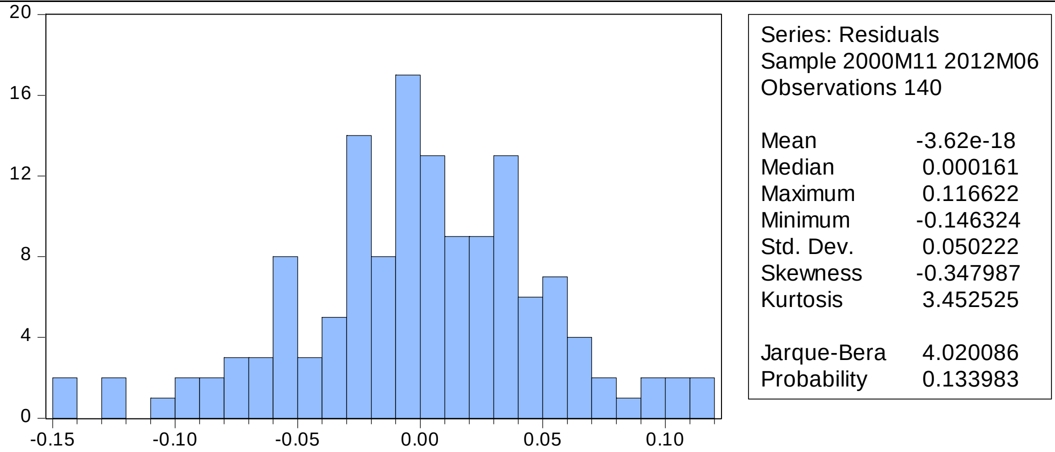
Appendix 9.5a: OLS Regression Results: South Africa

Dependent Variable: DLOGJALSH – Excluding Dummy Variables				
Method: Least Squares				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
DLOGGDP	-0.063346	0.186411	-0.33982	0.7345
DLOGINR	0.039594	0.114772	0.344978	0.7307
DLOGEXR	-0.887999	0.091141	-9.74311	0
DLOGIFR	-0.003242	0.017941	-0.18071	0.8569
DLOGCON	-0.424103	1.004152	-0.42235	0.6735
DLOGHPI	0.473375	0.526687	0.898778	0.3704
C	0.009408	0.009954	0.94511	0.3463
R-squared	0.431362	Mean dependent var		0.008914
Adjusted R-squared	0.405709	S.D. dependent var		0.0666
S.E. of regression	0.051342	Akaike info criterion		-3.05192
Sum squared resid	0.350586	Schwarz criterion		-2.90483
Log likelihood	220.634	Hannan-Quinn criter.		-2.99215
F-statistic	16.81536	Durbin-Watson stat		2.16967
Prob(F-statistic)	0			
Dependent Variable: DLOGJALSH – Including Dummy Variables				
Method: Least Squares				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
DLOGGDP	-0.070767	0.190569	-0.37135	0.711
DLOGINR	0.05587	0.117902	0.473867	0.6364
DLOGEXR	-0.879052	0.092248	-9.52922	0
DLOGIFR	-0.003859	0.018047	-0.21381	0.831
DLOGCON	-0.275452	1.02558	-0.26858	0.7887
DLOGHPI	0.667318	0.605498	1.102098	0.2724
FCR	0.003437	0.012051	0.285175	0.776
QEG	0.007659	0.012995	0.589408	0.5566
C	0.003781	0.012625	0.299497	0.765
R-squared	0.434293	Mean dependent var		0.008914
Adjusted R-squared	0.399746	S.D. dependent var		0.0666
S.E. of regression	0.051599	Akaike info criterion		-3.02851
Sum squared resid	0.348779	Schwarz criterion		-2.83941
Log likelihood	220.9958	Hannan-Quinn criter.		-2.95166
F-statistic	12.57107	Durbin-Watson stat		2.177328
Prob(F-statistic)	0			

Appendix 9.5b: OLS Regression Residuals: South Africa

Excluding Dummy Variables

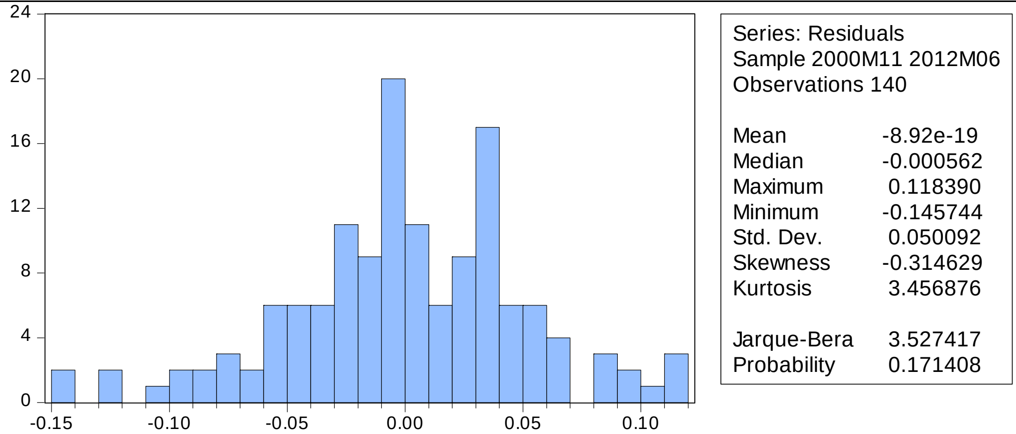
Normal Distribution Hypothesis



Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.800988	Prob. F(2,131)	0.4511
Obs*R-squared	1.691353	Prob. Chi-Square(2)	0.4293
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.24722	Prob. F(6,133)	0.2864
Obs*R-squared	7.457573	Prob. Chi-Square(6)	0.2806
Scaled explained SS	8.253309	Prob. Chi-Square(6)	0.2201

Including Dummy Variables

Normal Distribution Hypothesis



Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.861118	Prob. F(2,129)	0.4251
Obs*R-squared	1.844468	Prob. Chi-Square(2)	0.3976
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.241381	Prob. F(8,131)	0.2801
Obs*R-squared	9.865438	Prob. Chi-Square(8)	0.2746
Scaled explained SS	10.61099	Prob. Chi-Square(8)	0.2247

Appendix 9.6: OLS Summary – France

Regression without Dummy Variables	
Dependent Variable	**DLOGCAC**
Statistically Significant Macroeconomic Variables	No one of the selected macroeconomic variables is statistically significant in describing the stock market index.
R-squared	0.02
F-stat p-value	0.79
Akaike info criterion	-2.99
Schwarz criterion	-2.88
Regression with Dummy Variables	
Statistically Significant Macroeconomic Variables	No one of the selected macroeconomic variables is statistically significant in describing the stock market index.
R-squared	0.03
F-stat p-value	0.67
Akaike info criterion	-2.99
Schwarz criterion	-2.84

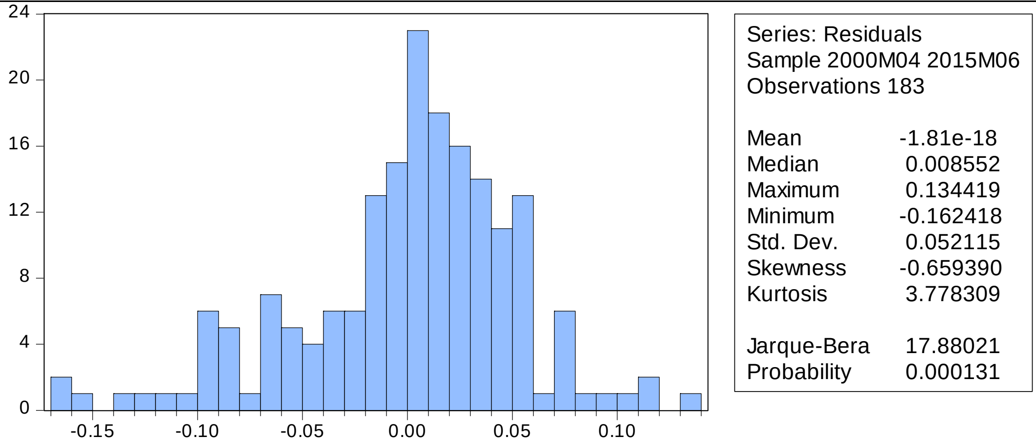
Appendix 9.6a: OLS Regression Results: France

Dependent Variable: DLOGCAC – Excluding Dummy Variables				
Method: Least Squares				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
DLOGRGDP	-1.21132	1.294139	-0.936	0.3506
DLOGINR	0.008309	0.016721	0.496957	0.6198
DLOGEXR	-0.18393	0.28744	-0.6399	0.5231
DLOGIFR	-0.01312	0.014724	-0.89131	0.374
DLOGCON	1.209862	1.29178	0.936585	0.3503
DLOGHPI	0.508731	0.749927	0.678374	0.4984
C	-0.00369	0.004952	-0.74475	0.4574
R-squared	**0.01765**	**Mean dependent var**		**-0.00032**
Adjusted R-squared	-0.01584	S.D. dependent var		0.052581
S.E. of regression	0.052996	Akaike info criterion		-2.99972
Sum squared resid	0.494301	Schwarz criterion		-2.87695
Log likelihood	281.4742	Hannan-Quinn criter.		-2.94995
F-statistic	0.527038	Durbin-Watson stat		2.017617
Prob(F-statistic)	0.787281			
Dependent Variable: DLOGCAC – Including Dummy Variables				
Method: Least Squares				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
DLOGRGDP	-1.57659	1.315277	-1.19868	0.2323
DLOGINR	0.008452	0.016706	0.505948	0.6135
DLOGEXR	-0.19716	0.289131	-0.6819	0.4962
DLOGIFR	-0.0129	0.014802	-0.87144	0.3847
DLOGCON	1.626377	1.31992	1.232179	0.2195
DLOGHPI	0.5111	0.820211	0.623132	0.534
FCR	-0.01207	0.011632	-1.0379	0.3008
QEG	0.021253	0.013162	1.614666	0.1082
C	-0.00466	0.006104	-0.76405	0.4459
R-squared	0.032451	Mean dependent var		-0.00032
Adjusted R-squared	-0.01203	S.D. dependent var		0.052581
S.E. of regression	0.052896	Akaike info criterion		-2.99304
Sum squared resid	0.486853	Schwarz criterion		-2.8352
Log likelihood	282.8633	Hannan-Quinn criter.		-2.92906
F-statistic	0.72949	Durbin-Watson stat		2.01575
Prob(F-statistic)	0.665326			

Appendix 9.6b: OLS Regression Residuals: France

Excluding Dummy Variables

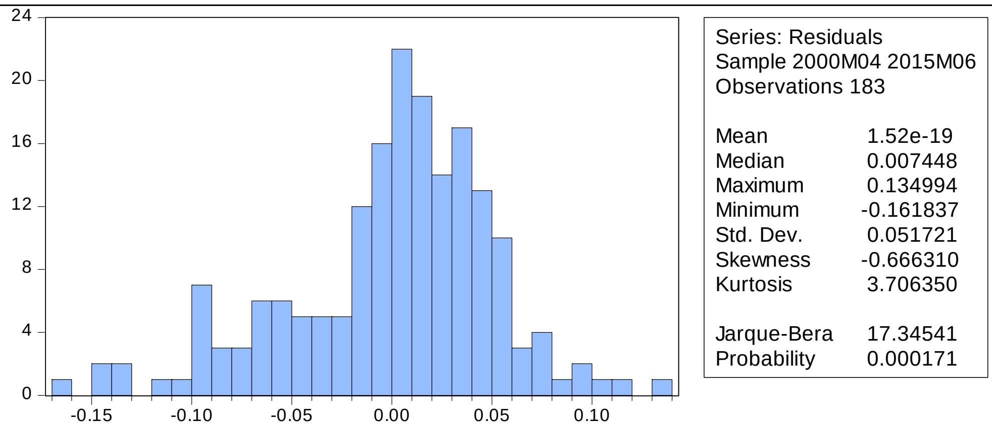
Normal Distribution Hypothesis



Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.373413	Prob. F(2,174)	0.6889
Obs*R-squared	0.782098	Prob. Chi-Square(2)	0.6763
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.925595	Prob. F(6,176)	0.4779
Obs*R-squared	5.597817	Prob. Chi-Square(6)	0.4697
Scaled explained SS	7.192707	Prob. Chi-Square(6)	0.3034

Including Dummy Variables

Normal Distribution Hypothesis



Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.354022	Prob. F(2,172)	0.7024
Obs*R-squared	0.750238	Prob. Chi-Square(2)	0.6872
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.853808	Prob. F(8,174)	0.5568
Obs*R-squared	6.912416	Prob. Chi-Square(8)	0.5461
Scaled explained SS	8.456296	Prob. Chi-Square(8)	0.3902

Appendix 9.7: OLS Summary – Germany

Dependent Variable	**DLOGDAX**
Regression without Dummy Variables	
Statistically Significant Macroeconomic Variables	DLOGRGDP DLOGCON
R-squared	0.05
F-stat p-value	0.20
Akaike info criterion	-2.80
Schwarz criterion	-2.68
Regression with Dummy Variables	
Statistically Significant Macroeconomic Variables	DLOGRGDP DLOGCON
R-squared	0.05
F-stat p-value	0.34
Akaike info criterion	-2.78
Schwarz criterion	-2.62

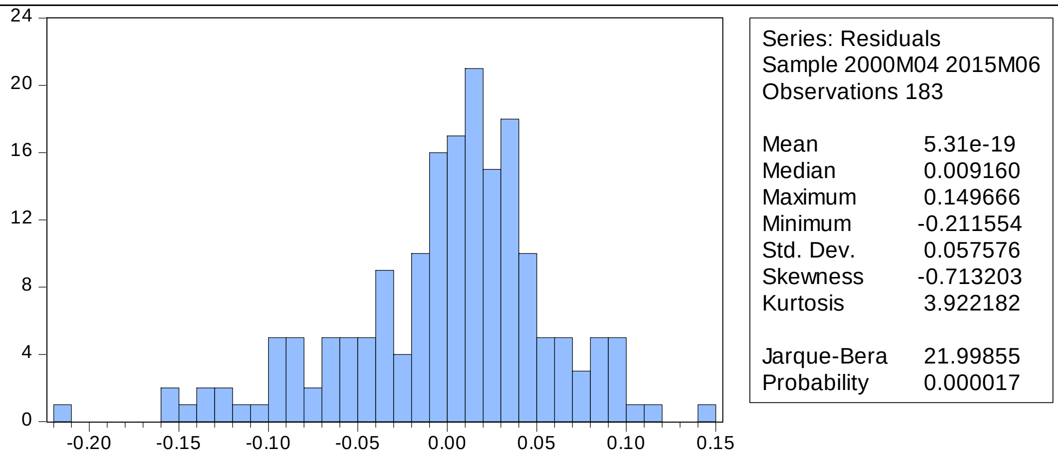
Appendix 9.7a: OLS Regression Results: Germany

Dependent Variable: DLOGDAX – Excluding Dummy Variables				
Method: Least Squares				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
DLOGGDP	1.306236	0.652072	2.003207	0.0467
DLOGINR	0.009594	0.018208	0.526888	0.5989
DLOGEXR	0.086912	0.304831	0.285117	0.7759
LOGIFRIT	-0.00609	0.005059	-1.20452	0.23
DLOGCON	-1.48164	0.670107	-2.21105	0.0283
DLOGHPI	-1.2601	1.655866	-0.76099	0.4477
C	0.007572	0.004986	1.518553	0.1307
R-squared	0.047315	Mean dependent var		0.002913
Adjusted R-squared	0.014837	S.D. dependent var		0.058989
S.E. of regression	0.058549	Akaike info criterion		-2.8004
Sum squared resid	0.603331	Schwarz criterion		-2.67763
Log likelihood	263.2362	Hannan-Quinn criter.		-2.75063
F-statistic	1.456844	Durbin-Watson stat		2.045028
Prob(F-statistic)	0.19566			
Dependent Variable: DLOGDAX – Including Dummy Variables				
Method: Least Squares				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
DLOGGDP	1.307476	0.65584	1.993589	0.0478
DLOGINR	0.009674	0.018288	0.528984	0.5975
DLOGEXR	0.100039	0.306763	0.326112	0.7447
LOGIFRIT	-0.00446	0.00562	-0.79417	0.4282
DLOGCON	-1.47459	0.67663	-2.17931	0.0307
DLOGHPI	-1.15899	1.67107	-0.69356	0.4889
FCR	-0.00209	0.012167	-0.17193	0.8637
QEG	0.010319	0.015638	0.659849	0.5102
C	0.005934	0.006007	0.987879	0.3246
R-squared	**0.049915**	**Mean dependent var**		**0.002913**
Adjusted R-squared	0.006233	S.D. dependent var		0.058989
S.E. of regression	0.058804	Akaike info criterion		-2.78127
Sum squared resid	0.601685	Schwarz criterion		-2.62343
Log likelihood	263.4862	Hannan-Quinn criter.		-2.71729
F-statistic	1.14268	Durbin-Watson stat		2.038678
Prob(F-statistic)	0.337124			

Appendix 9.7b: OLS Regression Residuals: Germany

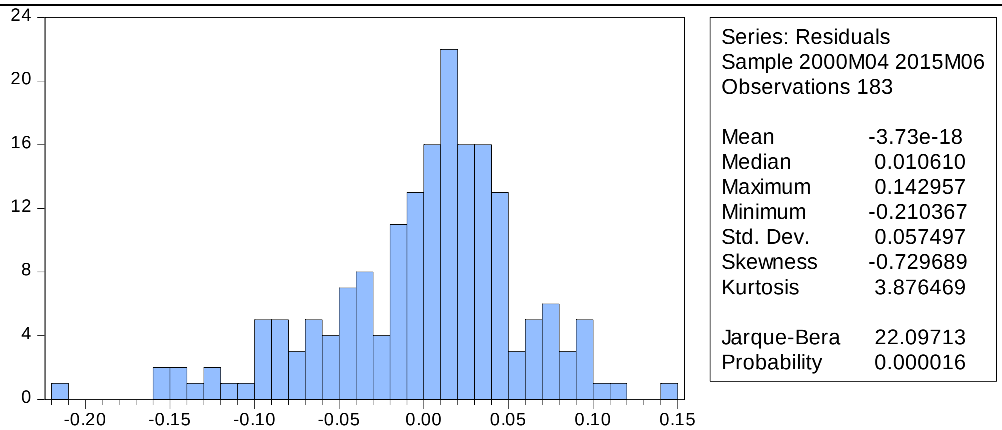
Excluding Dummy Variables

Normal Distribution Hypothesis



Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.5784	Prob. F(2,174)	0.5619
Obs*R-squared	1.208599	Prob. Chi-Square(2)	0.5465
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.638814	Prob. F(6,176)	0.699
Obs*R-squared	3.900384	Prob. Chi-Square(6)	0.6902
Scaled explained SS	5.271181	Prob. Chi-Square(6)	0.5095

Normal Distribution Hypothesis



Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.461726	Prob. F(2,172)	0.631
Obs*R-squared	0.977262	Prob. Chi-Square(2)	0.6135
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.587003	Prob. F(8,174)	0.7878
Obs*R-squared	4.809133	Prob. Chi-Square(8)	0.7778
Scaled explained SS	6.253062	Prob. Chi-Square(8)	0.6189

Appendix 9.8: OLS Summary – Japan

Dependent Variable	**DLOGNIKKEY**
Regression without Dummy Variables	
Statistically Significant Macroeconomic Variables	DLOGGDP DLOGHPI
R-squared	0.55
F-stat p-value	0
Akaike info criterion	-4.05
Schwarz criterion	-3.88
Regression with Dummy Variables	
Statistically Significant Macroeconomic Variables	DLOGRGDP DLOGHPI
R-squared	0.58
F-stat p-value	0
Akaike info criterion	-4.07
Schwarz criterion	-3.84

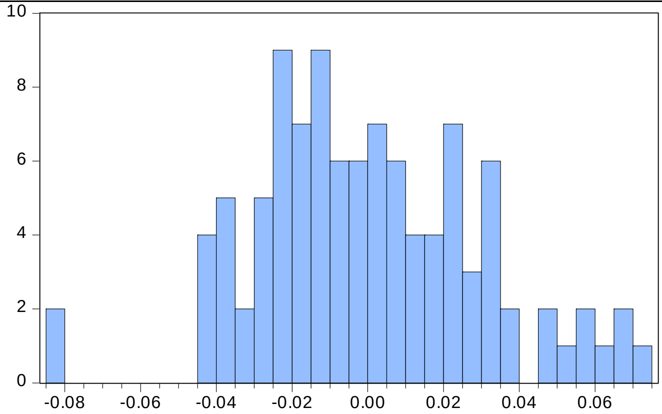
Appendix 9.8a: OLS Regression Results: Japan

Dependent Variable: DLOGNIKKEY – Excluding Dummy Variables				
Method: Least Squares				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
DLOGGDP	-0.28972	0.133929	-2.16327	0.033
DLOGINR	-0.00113	0.004457	-0.25232	0.8013
DLOGEXR	-0.00752	0.117532	-0.064	0.9491
DLOGIFR	-0.00683	0.006564	-1.04101	0.3005
DLOGCON	0.563463	0.635776	0.88626	0.3777
DLOGHPI	0.40281	0.038857	10.36654	0
C	0.001906	0.003126	0.609748	0.5435
R-squared	0.554248	Mean dependent var		0.00271
Adjusted R-squared	0.526388	S.D. dependent var		0.044811
S.E. of regression	0.030839	Akaike info criterion		-4.05454
Sum squared resid	0.0913	Schwarz criterion		-3.87548
Log likelihood	215.8087	Hannan-Quinn criter.		-3.98201
F-statistic	19.89438	Durbin-Watson stat		2.372668
Prob(F-statistic)	0			
Dependent Variable: DLOGNIKKEY – Including Dummy Variables				
Method: Least Squares				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOGRGDP	-0.32316	0.137784	-2.3454	0.0211
DLOGINR	-0.00019	0.004421	-0.04313	0.9657
DLOGEXR	0.03233	0.11782	0.274405	0.7844
DLOGIFR	-0.00469	0.006571	-0.71361	0.4772
DLOGCON	0.607055	0.627564	0.967319	0.3359
DLOGHPI	0.414021	0.039023	10.60971	0
FCR	0.008865	0.007171	1.23625	0.2194
QEG	0.008178	0.007633	1.071406	0.2867
C	-0.00424	0.004213	-1.00613	0.3169
R-squared	0.575826	Mean dependent var		0.00271
Adjusted R-squared	0.539726	S.D. dependent var		0.044811
S.E. of regression	0.030402	Akaike info criterion		-4.06532
Sum squared resid	0.08688	Schwarz criterion		-3.8351
Log likelihood	218.3641	Hannan-Quinn criter.		-3.97208
F-statistic	15.95091	Durbin-Watson stat		2.462129
Prob(F-statistic)	0			

Appendix 9.8b: OLS Regression Residuals: Japan

Excluding Dummy Variables

Normal Distribution Hypothesis



Series: Residuals
Sample 2004M03 2012M09
Observations 103

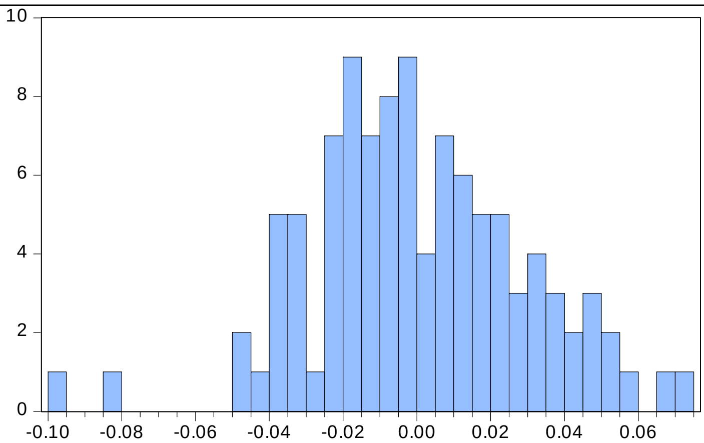
Mean	0.000000
Median	-0.003726
Maximum	0.072647
Minimum	-0.084507
Std. Dev.	0.029918
Skewness	0.150502
Kurtosis	3.215938
Jarque-Bera	0.588956
Probability	0.744920

Appendix 9.8b: OLS Regression Residuals: Japan (Page 2 of 2)

Breusch-Godfrey Serial Correlation LM Test			
F-statistic	4.186484	Prob. F(2,94)	0.0181
Obs*R-squared	8.424252	**Prob. Chi-Square(2)**	0.0148
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.128413	Prob. F(6,96)	0.3518
Obs*R-squared	6.7856	Prob. Chi-Square(6)	0.3411
Scaled explained SS	6.531064	Prob. Chi-Square(6)	0.3664

Including Dummy Variables

Normal Distribution Hypothesis



Series: Residuals
Sample 2004M03 2012M09
Observations 103

Mean	2.22e-18
Median	-0.001686
Maximum	0.073587
Minimum	-0.096178
Std. Dev.	0.029185
Skewness	-0.097058
Kurtosis	3.666383
Jarque-Bera	2.067498
Probability	0.355671

Breusch-Godfrey Serial Correlation LM Test			
F-statistic	6.097655	Prob. F(2,92)	0.0033
Obs*R-squared	12.05541	Prob. Chi-Square(2)	0.0024
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	2.034616	Prob. F(8,94)	0.0505
Obs*R-squared	15.20285	Prob. Chi-Square(8)	0.0553
Scaled explained SS	16.88102	Prob. Chi-Square(8)	0.0314

Appendix 9.9: OLS Summary – UK

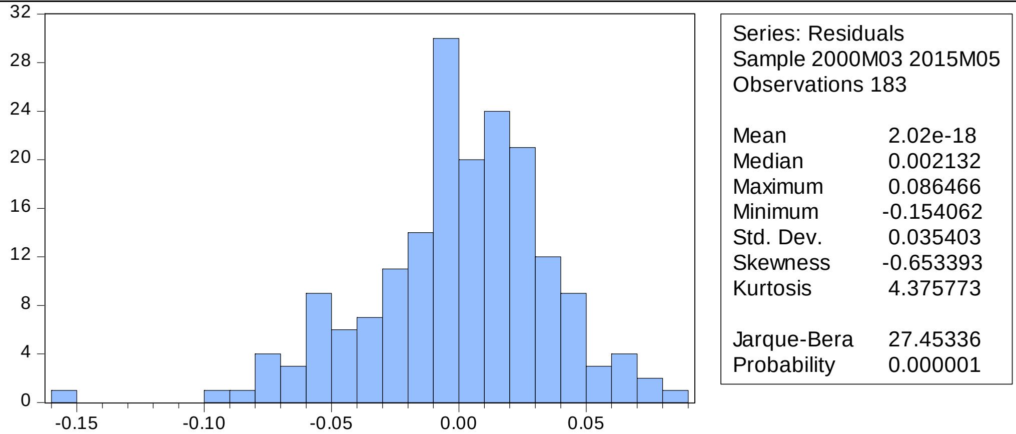
Dependent Variable	**DLOGFTSE100**
Regression without Dummy Variables	
Statistically Significant Macroeconomic Variables	No one of the selected macroeconomic variables is statistically significant in describing the stock market index.
R-squared	0.04
F-stat p-value	0.27
Akaike info criterion	-3.77
Schwarz criterion	-3.65
Regression with Dummy Variables	
Statistically Significant Macroeconomic Variables	No one of the selected macroeconomic variables is statistically significant in describing the stock market index.
R-squared	0.05
F-stat p-value	0.29
Akaike info criterion	-3.76
Schwarz criterion	-3.61

Appendix 9.9a: OLS Regression Results: UK

Dependent Variable: DLOGFTSE100 – Excluding Dummy Variables				
Method: Least Squares				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOGGDP	-0.27957	0.173451	-1.6118	0.1088
DLOGINR	0.011372	0.031952	0.355906	0.7223
DLOGEXR	0.197837	0.122311	1.617493	0.1076
DLOGIFR	-0.01219	0.013097	-0.93051	0.3534
DLOGCON	0.19479	0.190968	1.020009	0.3091
DDLOGHPI	0.141768	0.167468	0.846538	0.3984
C	0.000551	0.002732	0.20184	0.8403
R-squared	**0.041539**	**Mean dependent var**		**0.00047**
Adjusted R-squared	0.008864	S.D. dependent var		0.036162
S.E. of regression	0.036001	Akaike info criterion		-3.77302
Sum squared resid	0.228112	Schwarz criterion		-3.65026
Log likelihood	352.2317	Hannan-Quinn criter.		-3.72326
F-statistic	1.271284	Durbin-Watson stat		2.020574
Prob(F-statistic)	0.272854			
Dependent Variable: DLOGFTSE100 – Including Dummy Variables				
Method: Least Squares				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOGGDP	-0.25117	0.175804	-1.4287	0.1549
DLOGINR	0.021109	0.033407	0.631863	0.5283
DLOGEXR	0.191333	0.122959	1.556068	0.1215
DLOGIFR	-0.01255	0.013136	-0.95524	0.3408
DLOGCON	0.190876	0.192062	0.993825	0.3217
DDLOGHPI	0.131675	0.16767	0.785324	0.4333
FCR	-0.00484	0.007525	-0.64316	0.521
QEG	0.013065	0.008939	1.461597	0.1457
C	-0.00023	0.00316	-0.07229	0.9425
R-squared	0.053262	Mean dependent var		0.00047
Adjusted R-squared	0.009734	S.D. dependent var		0.036162
S.E. of regression	0.035985	Akaike info criterion		-3.76347
Sum squared resid	0.225322	Schwarz criterion		-3.60563
Log likelihood	353.3577	Hannan-Quinn criter.		-3.69949
F-statistic	1.223615	Durbin-Watson stat		2.044974
Prob(F-statistic)	0.287748			

Appendix 9.9b: OLS Regression Residuals: UK
Excluding Dummy Variables

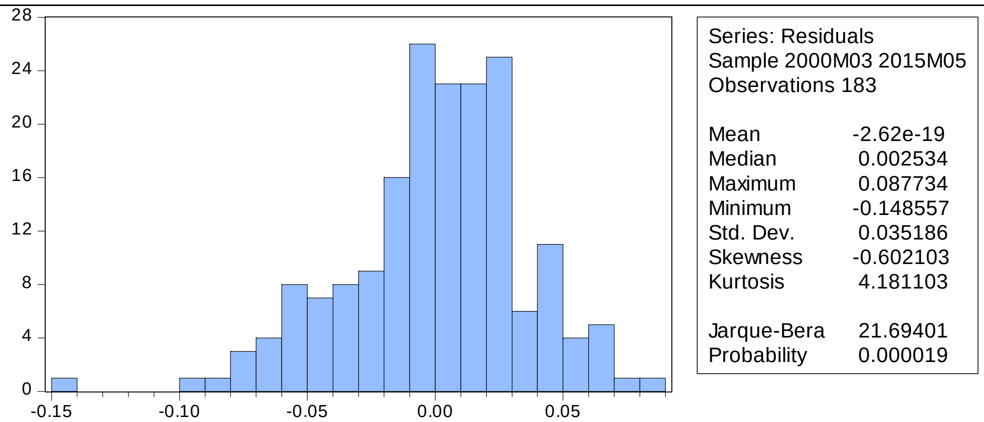
Normal Distribution Hypothesis



Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.400282	Prob. F(2,174)	0.6707
Obs*R-squared	0.838115	Prob. Chi-Square(2)	0.6577
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.147351	Prob. F(6,176)	0.3369
Obs*R-squared	6.888471	Prob. Chi-Square(6)	0.3313
Scaled explained SS	10.75447	Prob. Chi-Square(6)	0.0963

Including Dummy Variables

Normal Distribution Hypothesis



Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.306099	Prob. F(2,172)	0.7367
Obs*R-squared	0.649041	Prob. Chi-Square(2)	0.7229
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.534982	Prob. F(8,174)	0.1482
Obs*R-squared	12.06364	Prob. Chi-Square(8)	0.1484
Scaled explained SS	17.34693	Prob. Chi-Square(8)	0.0267

Appendix 9.10: OLS Summary – US

Dependent Variable	**DLOGSP500**
Regression without Dummy Variables	
Statistically Significant Macroeconomic Variables	No one of the selected macroeconomic variables is statistically significant in describing the stock market index.
R-squared	0.01
F-stat p-value	0.88
Akaike info criterion	-3.56
Schwarz criterion	-3.43
Regression with Dummy Variables	
Statistically Significant Macroeconomic Variables	No one of the selected macroeconomic variables is statistically significant in describing the stock market index.
R-squared	0.03
F-stat p-value	0.84
Akaike info criterion	-3.55
Schwarz criterion	-3.38

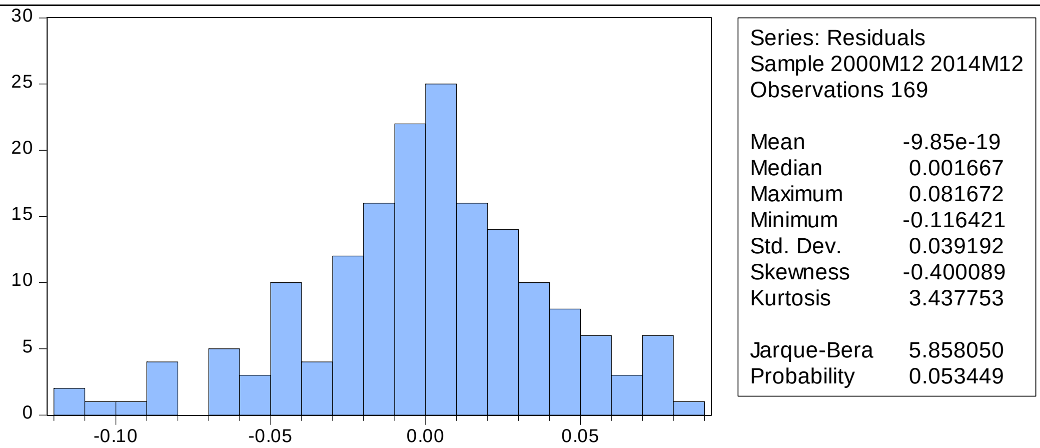
Appendix 9.10a: OLS Regression Results: US

Dependent Variable: DLOGSP500 – Excluding Dummy Variables				
Method: Least Squares				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
DDLOGGDP	-0.10684	0.151041	-0.70739	0.4803
DLOGINR	0.001934	0.024614	0.078553	0.9375
DLOGEXR	-0.04539	0.136933	-0.3315	0.7407
DLOGIFR	-0.00653	0.010791	-0.60497	0.546
DLOGCON	0.009715	0.173742	0.055915	0.9555
DDLOGHPI	-1.13492	1.205323	-0.94159	0.3478
C	0.002196	0.003101	0.707932	0.48
R-squared	0.014339	Mean dependent var		0.002154
Adjusted R-squared	-0.02217	S.D. dependent var		0.039476
S.E. of regression	0.039911	Akaike info criterion		-3.56379
Sum squared resid	0.258048	Schwarz criterion		-3.43415
Log likelihood	308.1404	Hannan-Quinn criter.		-3.51118
F-statistic	0.392794	Durbin-Watson stat		1.953984
Prob(F-statistic)	0.882882			
Dependent Variable: DLOGSP500 – Including Dummy Variables				
Method: Least Squares				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
DDLOGGDP	-0.10728	0.151777	-0.70683	0.4807
DLOGINR	0.003517	0.025153	0.139833	0.889
DLOGEXR	-0.01254	0.139213	-0.09007	0.9283
DLOGIFR	-0.00686	0.010852	-0.63214	0.5282
DLOGCON	0.055489	0.177623	0.312395	0.7551
DDLOGHPI	-1.21169	1.211091	-1.0005	0.3186
FCR	-0.00632	0.008421	-0.7502	0.4542
QEG	0.013197	0.009855	1.339155	0.1824
C	0.001618	0.003643	0.444094	0.6576
R-squared	**0.025273**	**Mean dependent var**		**0.002154**
Adjusted R-squared	-0.02346	S.D. dependent var		0.039476
S.E. of regression	0.039936	Akaike info criterion		-3.55128
Sum squared resid	0.255185	Schwarz criterion		-3.3846
Log likelihood	309.0829	Hannan-Quinn criter.		-3.48364
F-statistic	0.518558	Durbin-Watson stat		1.975706
Prob(F-statistic)	0.841297			

Appendix 9.10: OLS Regression Residuals: US

Excluding Dummy Variables

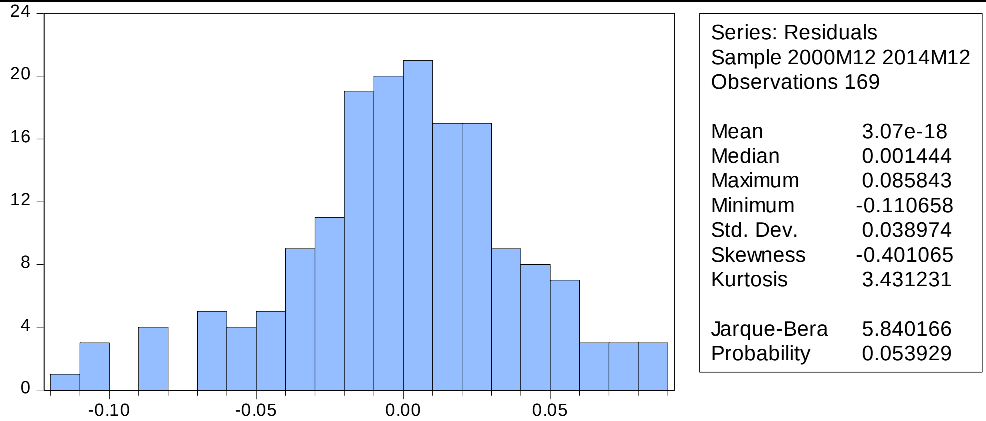
Normal Distribution Hypothesis



Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.042304	Prob. F(2,160)	0.9586
Obs*R-squared	0.08932	Prob. Chi-Square(2)	0.9563
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.93462	Prob. F(6,162)	0.4718
Obs*R-squared	5.654303	Prob. Chi-Square(6)	0.463
Scaled explained SS	6.332794	Prob. Chi-Square(6)	0.387

Including Dummy Variables

Normal Distribution Hypothesis



Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.02404	Prob. F(2,158)	0.9763
Obs*R-squared	0.051412	Prob. Chi-Square(2)	0.9746
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.69959	Prob. F(8,160)	0.6916
Obs*R-squared	5.71174	Prob. Chi-Square(8)	0.6795
Scaled explained SS	6.22345	Prob. Chi-Square(8)	0.6222

Appendix 10: Lag Selection Criteria: Country Index & Macroeconomic Variables

Appendix 10.1: Lag Selection Criteria: Brazil

VAR Lag Order Selection Criteria						
Endogenous variables : LOGIBOV LOGGDP LOGINR LOGEXR LOGIFR LOGCON LOGHPI						
Exogenous variables: C						
Lag	**LogL**	**LR**	**FPE**	**AIC**	**SC**	**HQ**
0	295.5805	NA	2.98E-11	-4.372432	-4.21956	-4.31031
1	1641.24	2528.209	8.75E-20	-24.01879	-22.79578*	-23.52181*
2	1699.838	103.8784	7.61E-20	-24.16421	-21.8711	-23.2324
3	1747.166	78.87923	7.92E-20	-24.13887	-20.7756	-22.7722
4	1811.258	100.0235	6.49e-20*	-24.36755	-19.9342	-22.566
5	1854.837	63.38697	7.39E-20	-24.28541	-18.7819	-22.049
6	1909.421	73.60563	7.31E-20	-24.37001	-17.7964	-21.6988
7	1967.263	71.86394	7.10E-20	-24.50398	-16.8602	-21.3979
8	2026.674	67.51357*	7.02E-20	-24.66173*	-15.9478	-21.1208

Appendix 10.2: Lag Selection Criteria: Russia

VAR Lag Order Selection Criteria						
Endogenous variables : LOGRTS LOGGDP LOGINR LOGEXR LOGIFR LOGCON LOGHPI						
Exogenous variables: C						
Lag	**LogL**	**LR**	**FPE**	**AIC**	**SC**	**HQ**
0	400.8997	NA	9.19E-12	-5.547883	-5.402174	-5.488673
1	2034.231	3082.625	1.87E-21	-27.86241	-26.69673*	-27.38872
2	2142.938	194.4482	8.12E-22	-28.70335	-26.51771	-27.81519*
3	2201.452	98.89767	7.18e-22*	-28.83736	-25.63174	-27.53473
4	2251.446	79.56721*	7.25E-22	-28.85135*	-24.62577	-27.13425
5	2290.427	58.19763	8.68E-22	-28.71025	-23.46469	-26.57867
6	2332.027	58.00503	1.02E-21	-28.60601	-22.34049	-26.05996
7	2371.865	51.62145	1.26E-21	-28.47698	-21.19149	-25.51645
8	2417.981	55.20888	1.47E-21	-28.43635	-20.13089	-25.06135

Appendix 10.3: Lag Selection Criteria: India

VAR Lag Order Selection Criteria						
Endogenous variables : LOGNIFTY LOGGDP LOGINR LOGEXR LOGIFRIT LOGCON LOGHPI						
Exogenous variables: C						
Lag	**LogL**	**LR**	**FPE**	**AIC**	**SC**	**HQ**
0	352.8171	NA	1.21E-13	-9.880489	-9.65564	-9.791176
1	971.1733	1095.374	1.05e-20*	-26.14781	-24.34901*	-25.43330*
2	1010.18	61.29696	1.45E-20	-25.8623	-22.48956	-24.5226
3	1056.179	63.08376	1.76E-20	-25.77654	-20.82985	-23.81166
4	1119.206	73.83130*	1.46E-20	-26.17731	-19.65667	-23.58723
5	1164.612	44.10929	2.39E-20	-26.07464	-17.98006	-22.85937
6	1242.854	60.35791	2.01E-20	-26.91012*	-17.24159	-23.06966

Appendix 10.4: Lag Selection Criteria: China

VAR Lag Order Selection Criteria						
Endogenous variables : LOGSHCOMP LOGGDP LOGINR LOGEXR LOGIFRIT LOGCON LOGHPI						
Exogenous variables: C						
Lag	**LogL**	**LR**	**FPE**	**AIC**	**SC**	**HQ**
0	674.6853	NA	6.53E-13	-8.192458	-8.059597	-8.138518
1	2445.676	3368.141	4.35E-22	-29.32117	-28.25829*	-28.88966*
2	2488.985	78.64788	4.68E-22	-29.25135	-27.25845	-28.44225
3	2538.574	85.7918	4.69E-22	-29.25858	-26.33565	-28.0719
4	2626.615	144.7549	2.95e-22*	-29.73761*	-25.88466	-28.17335
5	2659.263	50.87515	3.69E-22	-29.53698	-24.754	-27.59514
6	2690.13	45.4473	4.79E-22	-29.31448	-23.60148	-26.99506
7	2723.077	45.68171	6.15E-22	-29.11751	-22.47449	-26.42052
8	2787.895	84.30322*	5.45E-22	-29.3116	-21.73855	-26.23702

Appendix 10.5: Lag Selection Criteria: South Africa

VAR Lag Order Selection Criteria						
Endogenous variables : LOGJALSH LOGGDP LOGINR LOGEXR LOGIFR LOGCON LOGHPI						
Exogenous variables: C						
Lag	**LogL**	**LR**	**FPE**	**AIC**	**SC**	**HQ**
0	366.3116	NA	1.06E-11	-5.403182	-5.251059	-5.341365
1	2145.476	3344.293	5.34E-23	-31.42069	-30.20370*	-30.92615
2	2226.087	143.0396	3.34E-23	-31.89604	-29.61419	-30.96879*
3	2280.32	90.52411	3.13E-23	-31.97473	-28.62801	-30.61476
4	2363.68	130.3676	1.92E-23	-32.49143	-28.07984	-30.69873
5	2403.712	58.39327	2.30E-23	-32.35658	-26.88013	-30.13116
6	2456.413	71.32403	2.34E-23	-32.41222	-25.87091	-29.75408
7	2515.178	73.34533	2.24E-23	-32.55906	-24.95288	-29.4682
8	2587.119	82.21892*	1.83e-23*	-32.90405*	-24.233	-29.38046

Appendix 10.6: Lag Selection Criteria: France

VAR Lag Order Selection Criteria						
Endogenous variables : LOGCAC LOGGDP LOGINR LOGEXR LOGIFRIT LOGCON LOGHPI						
Exogenous variables: C						
Lag	**LogL**	**LR**	**FPE**	**AIC**	**SC**	**HQ**
0	711.2348	NA	7.89E-13	-8.002669	-7.87657	-7.951523
1	2765.697	3922.156	1.00E-22	-30.79202	-29.78323	-30.38286
2	3049.438	519.1168	6.96E-24	-33.45953	-31.56804*	-32.69235*
3	3121.788	126.6117	5.37e-24*	-33.72486*	-30.95069	-32.59967
4	3162.411	67.85944	5.98E-24	-33.62967	-29.97281	-32.14647
5	3207.454	71.659	6.38E-24	-33.5847	-29.04515	-31.74348
6	3240.747	50.31859	7.86E-24	-33.40622	-27.98397	-31.20698
7	3290.229	70.84846*	8.15E-24	-33.41169	-27.10675	-30.85444
8	3331.006	55.1412	9.47E-24	-33.31825	-26.13061	-30.40298

Appendix 10.7: Lag Selection Criteria: Germany

VAR Lag Order Selection Criteria						
Endogenous variables: DLOGDAX DLOGGDP DLOGINR DLOGEXR LOGIFRIT DLOGCON DLOGHPI						
Exogenous variables: C						
Lag	**LogL**	**LR**	**FPE**	**AIC**	**SC**	**HQ**
0	2353.791	NA	5.31E-21	-26.82047	-26.69388	-26.76912
1	2615.808	500.078	4.65E-22	-29.25495	-28.24222*	-28.84416*
2	2648.799	60.32595	5.60E-22	-29.07199	-27.17312	-28.30175
3	2716.66	118.6593	4.54E-22	-29.28754	-26.50253	-28.15786
4	2791.857	125.4721	3.41e-22*	-29.58694	-25.91579	-28.09781
5	2824.548	51.93178	4.19E-22	-29.40055	-24.84326	-27.55198
6	2880.291	84.09229	4.00E-22	-29.47761	-24.03418	-27.2696
7	2938.88	83.69913*	3.74E-22	-29.58720*	-23.25763	-27.01975
8	2962.258	31.52639	5.31E-22	-29.29438	-22.07867	-26.36748

Appendix 10.8: Lag Selection Criteria: Japan

VAR Lag Order Selection Criteria						
Endogenous variables : LOGNIKKEY LOGGDP LOGINRIT LOGEXR LOGIFRIT LOGCON LOGHPI						
Exogenous variables: C						
Lag	**LogL**	**LR**	**FPE**	**AIC**	**SC**	**HQ**
0	426.9985	NA	3.74E-13	-8.749969	-8.562985	-8.674387
1	1029.725	1104.998	3.66E-18	-20.28593	-18.79006*	-19.68127*
2	1075.262	76.84497	4.00E-18	-20.2138	-17.40904	-19.08007
3	1126.747	79.37212	3.95E-18	-20.26556	-16.15192	-18.60276
4	1190.374	88.81333*	3.15e-18*	-20.5703	-15.14777	-18.37843
5	1239.373	61.2486	3.60E-18	-20.57028	-13.83886	-17.84933
6	1276.78	41.30271	5.65E-18	-20.32874	-12.28844	-17.07872
7	1337.379	58.07463	6.07E-18	-20.5704	-11.22121	-16.79131
8	1401.918	52.43794	6.98E-18	-20.89413*	-10.23606	-16.58596

Appendix 10.9: Lag Selection Criteria: UK

VAR Lag Order Selection Criteria						
Endogenous variables: DLOGFTSE100 DLOGGDP DLOGINR DLOGEXR DLOGIFR DLOGCON DDLOGHPI						
Exogenous variables: C						
Lag	**LogL**	**LR**	**FPE**	**AIC**	**SC**	**HQ**
0	616.5298	NA	2.41E-12	-6.887343	-6.761732	-6.8364
1	2554.494	3700.745	1.29E-21	-28.23157	-27.22669*	-27.82403
2	2606.377	94.97296	1.26E-21	-28.26415	-26.37999	-27.50001
3	2660.302	94.44391	1.20E-21	-28.31979	-25.55636	-27.19905
4	2821.524	269.6155	3.40e-22*	-29.58785*	-25.94514	-28.11051*
5	2865.979	70.82538	3.65E-22	-29.53648	-25.01451	-27.70254
6	2895.205	44.25295	4.70E-22	-29.31306	-23.91181	-27.12252
7	2946.276	73.28707	4.79E-22	-29.33645	-23.05593	-26.78931
8	2999.4	72.03355*	4.83E-22	-29.38305	-22.22326	-26.47932

Appendix 10.10: Lag Selection Criteria: US

VAR Lag Order Selection Criteria						
Endogenous variables: DLOGSP500 DDLOGGDP DLOGINR DLOGEXR DLOGIFR DLOGCON DDLOGHPI						
Exogenous variables: C						
Lag	**LogL**	**LR**	**FPE**	**AIC**	**SC**	**HQ**
0	2204.79	NA	3.28E-21	-27.30174	-27.16777	-27.24734
1	2306.843	193.9639	1.70E-21	-27.96078	-26.88899	-27.52559
2	2463.976	284.9863	4.44E-22	-29.30405	-27.29444*	-28.48806*
3	2519.693	96.20733	4.12E-22	-29.38749	-26.44006	-28.19072
4	2550.762	50.94602	5.23E-22	-29.16475	-25.2795	-27.58718
5	2606.24	86.14598	4.95E-22	-29.24522	-24.42216	-27.28686
6	2688.541	120.6391*	3.41e-22*	-29.65889*	-23.89801	-27.31974
7	2729.674	56.71703	3.97E-22	-29.56116	-22.86246	-26.84122
8	2771.833	54.46676	4.66E-22	-29.47618	-21.83966	-26.37545

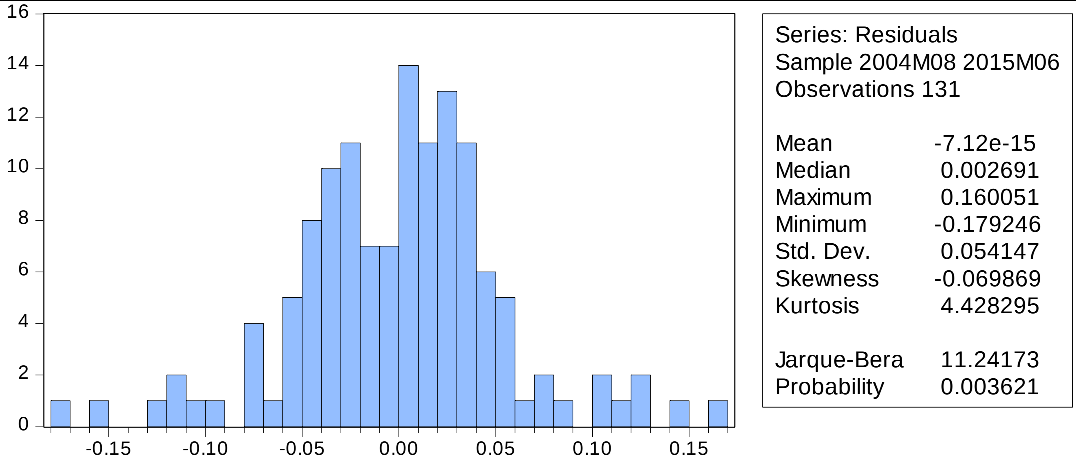
Appendix 11: VECM Model Results: Country Index & Macroeconomic Variables

Appendix 11.1: VECM - Summary Results: Brazil

Dependent Variable: D(LOGIBOV)			
	Statistically Significant Coefficients	**Statistically Significant Endogenous Variables**	**Number of Co-integrated Equations**
Long-Run Relationships	-0.26	LOGIBOV(-1) LOGIFR(-1) LOGCONS(-1) LOGHPI(-1)	Trace Test – 4 Max Eigenvalue Test - 4
	1.14	LOGRGDP(-1) LOGIFR(-1) LOGCONS(-1) LOGHPI(-1)	
	0.50	LOGINR(-1) LOGIFR(-1) LOGCONS(-1) LOGHPI(-1)	
	1.30	LOGEX(-1) LOGIFR(-1) LOGCONS(-1) LOGHPI(-1)	
Short-Run Adjustments	-0.74	D(LOGRGDP(-1))	n/a
	-1.28	D(LOGINR(-2))	
	-1.47	D(LOGINR(-3))	
	-0.77	D(LOGINR(-8))	
	-1.06	D(LOGEX(-1))	
	0.57	D(LOGIFR(-3))	
	0.60	D(LOGIFR(-5))	
	0.66	D(LOGIFR(-8))	
	6.64	D(LOGCONS(-1))	
	-0.24	D(LOGHPI(-1))	
	-0.21	D(LOGHPI(-2))	
	-0.14	D(LOGHPI(-3))	
	-0.12	D(LOGHPI(-4))	
	-0.12	D(LOGHPI(-5))	
R-squared 0.62	**F-stat. p-value 0.01**		

Appendix 11.1a: VECM Model Residuals: Brazil

Normal Distribution Hypothesis



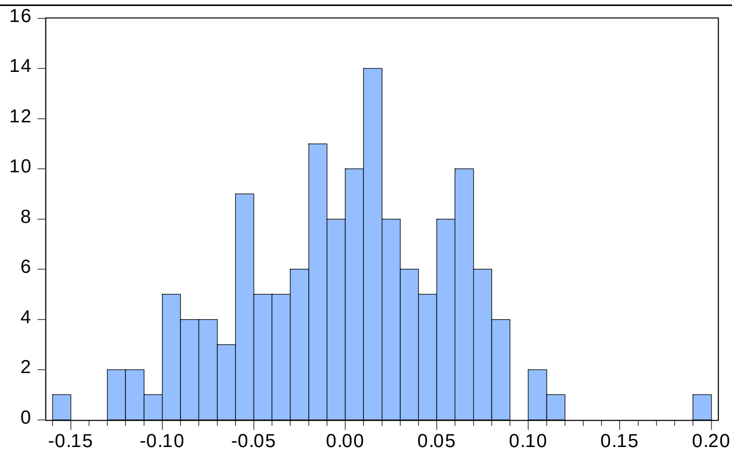
Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.364683	Prob. F(2,68)	0.6958
Obs*R-squared	1.390192	Prob. Chi-Square(2)	0.499
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.909235	Prob. F(63,67)	0.6477
Obs*R-squared	60.37823	Prob. Chi-Square(63)	0.5703
Scaled explained SS	29.55167	Prob. Chi-Square(63)	0.9999

Appendix 11.2: VECM - Summary Results: Russia

Dependent Variable: D(LOGRTS)			
	Statistically Significant Coefficients	Statistically Significant Endogenous Variables	Number of Co-integrated Equations
Long-Run Relationships	No one of the identified four co-integrated equations is statistically significant at 5% significance level.		Trace Test – 4 Max Eigenvalue Test - 4
Short-Run Adjustments	0.31	D(LOGRTS(-3))	n/a
	1.04	D(LOGEX(-4))	
	0.39	D(LOGIFR(-4))	
	-1.56	D(LOGCONS(-3))	
R-squared 0.59	**F-stat. p-value 0**		

Appendix 11.2a: VECM Model Residuals: Russia

Normal Distribution Hypothesis



Series: Residuals
Sample 2003M10 2015M06
Observations 141

Mean	-8.80e-18
Median	0.001573
Maximum	0.193092
Minimum	-0.153212
Std. Dev.	0.058061
Skewness	-0.064413
Kurtosis	3.040337
Jarque-Bera	0.107060
Probability	0.947877

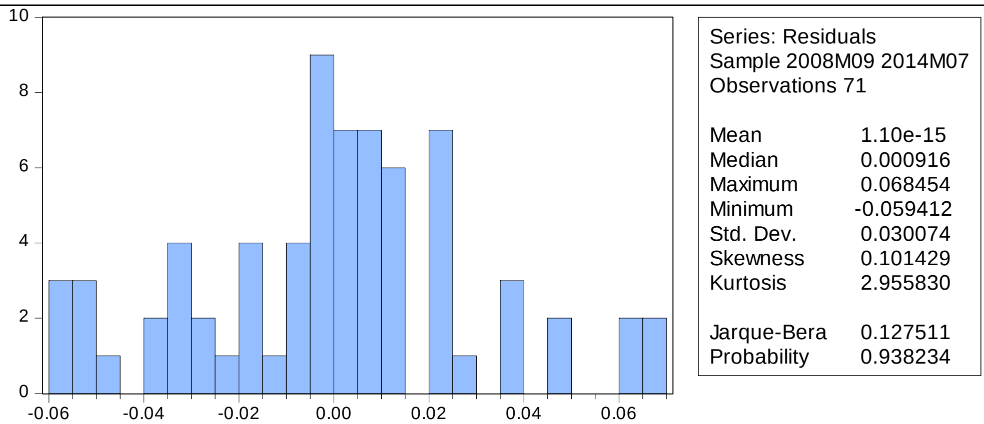
Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.137605	Prob. F(2,78)	0.8717
Obs*R-squared	0.495746	Prob. Chi-Square(2)	0.7805
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.718379	Prob. F(63,77)	0.912
Obs*R-squared	52.19591	Prob. Chi-Square(63)	0.8323
Scaled explained SS	17.14156	Prob. Chi-Square(63)	1

Appendix 11.3: VECM - Summary Results: India

Dependent Variable: D(LOGNIFTY)			
	Statistically Significant Coefficients	Statistically Significant Endogenous Variables	Number of Co-integrated Equations
Long-Run Relationships	No one of the identified six co-integrated equations is statistically significant at 5% significance level.		**Trace Test – 6** Max Eigenvalue Test - 4
Short-Run Adjustments	1.05	D(LOGRGDP(-5))	n/a
	-0.15	D(LOGIFRIT(-1))	
R-squared 0.86	**F-stat. p-value 0**		

Appendix 11.3a: VECM Model Residuals: India

Normal Distribution Hypothesis



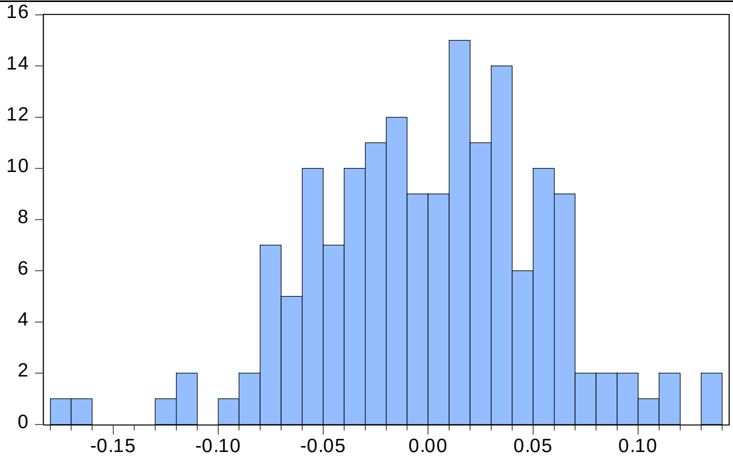
Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.146805	Prob. F(2,27)	0.8641
Obs*R-squared	0.763778	Prob. Chi-Square(2)	0.6826
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.83672	Prob. F(42,28)	0.705
Obs*R-squared	39.51554	Prob. Chi-Square(42)	0.5806
Scaled explained SS	6.446862	Prob. Chi-Square(42)	1

Appendix 11.4: VECM - Summary Results: China

Dependent Variable: D(LOGSHCOMP)			
	Statistically Significant Coefficients	Statistically Significant Endogenous Variables	Number of Co-integrated Equations
Long-Run Relationships	3.08	LOGEX(-1) LOGIFRIT(-1) LOGCONS(-1) LOGHPI(-1)	**Trace Test – 4** Max Eigenvalue Test - 3
Short-Run Adjustments	-1.67	D(LOGRGDP(-2))	n/a
	1.31	D(LOGCONS(-3))	
	1.27	D(LOGCONS(-7))	
R-squared 0.46	**F-stat. p-value 0.01**		

Appendix 11.4a: VECM Model Residuals: China

Normal Distribution Hypothesis



Series: Residuals			
Sample 2001M06 2015M01			
Observations 164			
Mean	-6.15e-17		
Median	0.006417		
Maximum	0.136942		
Minimum	-0.178510		
Std. Dev.	0.053935		
Skewness	-0.231291		
Kurtosis	3.489243		
Jarque-Bera	3.097838		
Probability	0.212478		

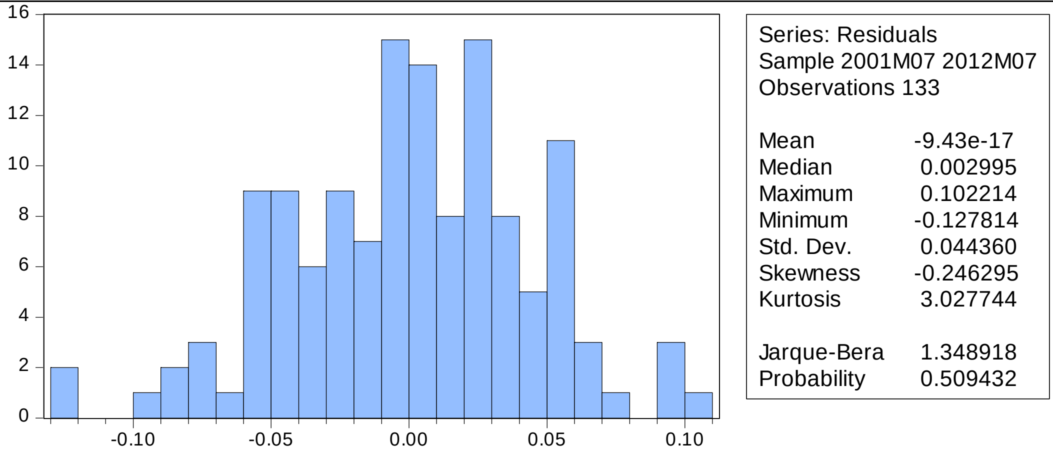
Breusch-Godfrey Serial Correlation LM Test			
F-statistic	1.676789	Prob. F(2,108)	0.1918
Obs*R-squared	4.939102	Prob. Chi-Square(2)	0.0846
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.91203	Prob. F(56,107)	0.6433
Obs*R-squared	52.98846	Prob. Chi-Square(56)	0.5896
Scaled explained SS	29.66992	Prob. Chi-Square(56)	0.9985

Appendix 11.5: VECM - Summary Results: South Africa

Dependent Variable: D(LOGJALSH)			
	Statistically Significant Coefficients	Statistically Significant Endogenous Variables	Number of Co-integrated Equations
Long-Run Relationships	-0.22	LOGINR(-1) LOGCON(-1) LOGHPI(-1)	Trace Test – 5 Max Eigenvalue Test - 5
Short-Run Adjustments	1.15	D(LOGGDP(-1))	n/a
	-4.07	D(LOGCON(-7))	
	-6.60	D(LOGHPI(-3))	
R-squared 0.54	**F-stat. p-value 0.10**		

Appendix 11.5a: VECM Model Residuals: South Africa

Normal Distribution Hypothesis



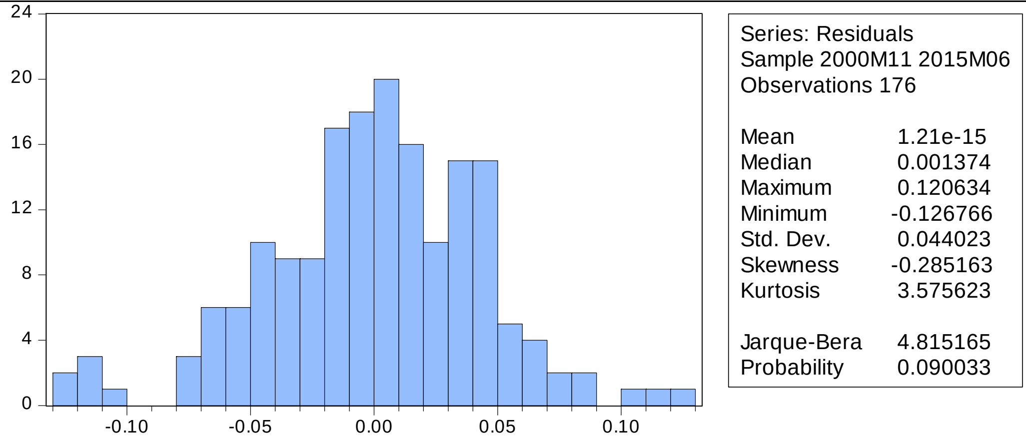
Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.04807	Prob. F(2,69)	0.9531
Obs*R-squared	0.185054	Prob. Chi-Square(2)	0.9116
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.788968	Prob. F(63,69)	0.8294
Obs*R-squared	55.69067	Prob. Chi-Square(63)	0.7318
Scaled explained SS	16.09085	Prob. Chi-Square(63)	1

Appendix 11.6: VECM - Summary Results: France (Page 1 of 2)

Dependent Variable: D(LOGCAC)			
	Statistically Significant Coefficients	Statistically Significant Endogenous Variables	Number of Co-integrated Equations
Long-Run Relationships	-0.07	LOGCAC(-1) LOGINR(-1) LOGEXR(-1) LOGIFRIT(-1) LOGCON(-1) LOGHPI(-1)	Trace Test – 4 **Max Eigenvalue Test - 2**
	-3.63	LOGGDP(-1) LOGINR(-1) LOGEXR(-1) LOGIFRIT(-1) LOGCON(-1) LOGHPI(-1)	
Dependent Variable: D(LOGCAC)			
	Statistically Significant Coefficients	Statistically Significant Endogenous Variables	Number of Co-integrated Equations
Short-Run Adjustments	6.06	D(LOGGDP(-1))	n/a
	5.52	D(LOGGDP(-2))	
	5.19	D(LOGGDP(-3))	
	-0.07	D(LOGINR(-1))	
	0.06	D(LOGIFRIT(-2))	
	-5.55	D(LOGCON(-1))	
	-4.73	D(LOGCON(-2))	
	-5.11	D(LOGCON(-3))	
	9.19	D(LOGHPI(-4))	
R-squared 0.32	**F-stat. p-value 0.28**		

Appendix 11.6a: VECM Model Residuals: France

Normal Distribution Hypothesis



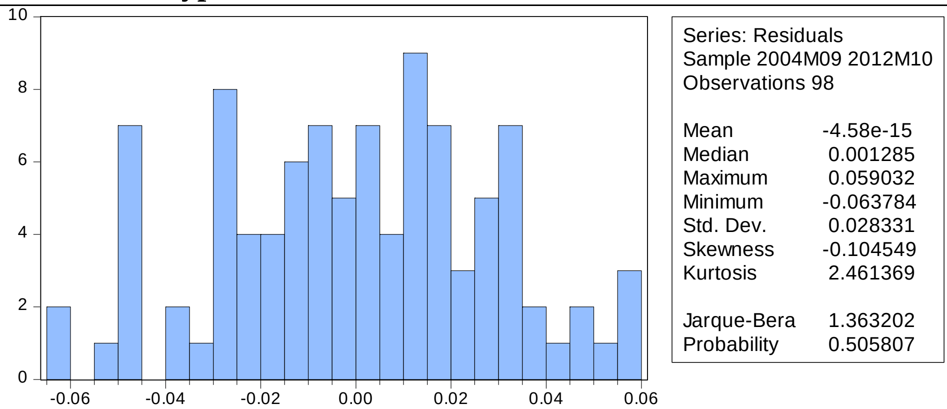
Breusch-Godfrey Serial Correlation LM Test			
F-statistic	1.168425	Prob. F(2,122)	0.3143
Obs*R-squared	3.307835	Prob. Chi-Square(2)	0.1913
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.867338	Prob. F(56,119)	0.7211
Obs*R-squared	51.0141	Prob. Chi-Square(56)	0.6636
Scaled explained SS	32.61073	Prob. Chi-Square(56)	0.9948

Appendix 11.7: VECM - Summary Results: Japan

Dependent Variable: D(LOGNIKKEY)			
	Statistically Significant Coefficients	Statistically Significant Endogenous Variables	Number of Co-integrated Equations
Long-Run Relationships	-0.29	LOGNIKKEY(-1) LOGEXR(-1) LOGIFRIT(-1) LOGCON(-1) LOGHPI(-1)	**Trace Test – 3** Max Eigenvalue Test - 1
	0.75	LOGGDP(-1) LOGEXR(-1) LOGIFRIT(-1) LOGCON(-1) LOGHPI(-1)	
Short-Run Adjustments	0.04	D(LOGIFRIT(-1))	n/a
	0.05	D(LOGIFRIT(-2))	
	0.04	D(LOGIFRIT(-4))	
	0.04	D(LOGIFRIT(-6))	
R-squared 0.59	**F-stat. p-value 0.03**		

Appendix 11.7a: VECM Model Residuals: Japan

Normal Distribution Hypothesis



Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.020226	Prob. F(2,50)	0.98
Obs*R-squared	0.079223	Prob. Chi-Square(2)	0.9612
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.730552	Prob. F(49,48)	0.8615
Obs*R-squared	41.86437	Prob. Chi-Square(49)	0.7552
Scaled explained SS	8.612494	Prob. Chi-Square(49)	1

Appendix 12: Causality Assessment: Country Stock Index & Macroeconomic Variables

Appendix 12.1: VAR Granger Causality/Block Exogeneity Wald Test and Pairwise Granger Causality Test Summary Results (Page 1 of 4)

	VAR Granger Causality/Block Exogeneity Wald Tests	Pairwise Granger Causality Tests
Brazil: D(LOGIBOV)	**From macroeconomic variable to IBOV / From IBOV to macroeconomic variable**	
D(LOGGDP)	+ / -	- / +
D(LOGINR)	+ / +	- / +
D(LOGEXR)	- / +	- / -
D(LOGIFR)	+ / +	- / -
D(LOGCON)	+ / +	- / -
D(LOGHPI)	+ / -	- / +
ALL	+	
Russia: D(LOGRTS)	**From macroeconomic variable to RTS / From RTS to macroeconomic variable**	
D(LOGGDP)	- / -	+ / -
D(LOGINR)	- / -	- / -
D(LOGEXR)	+ / -	- / -
D(LOGIFR)	- / +	+ / -
D(LOGCON)	- / -	- / -
D(LOGHPI)	- / -	+ / -
ALL	+	

Appendix 12.2: VAR Granger Causality/Block Exogeneity Wald Test and Pairwise Granger Causality Test Summary Results (Page 2 of 4)

	VAR Granger Causality/Block Exogeneity Wald Tests	Pairwise Granger Causality Tests
India: D(LOGNIFTY)	**From macroeconomic variable to NIFTY / From NIFTY to macroeconomic variable**	
D(LOGGDP)	- / -	- / -
D(LOGINR)	- / -	- / +
D(LOGEXR)	- / -	+ / -
D(LOGIFRIT)	+ / -	+ / -
D(LOGCON)	- / -	- / -
D(LOGHPI)	- / -	- / -
ALL	+	
China: D(LOGSHCOMP)	**From macroeconomic variable to SHCOMP / From SHCOMP to macroeconomic variable**	
D(LOGGDP)	- / -	+ / -
D(LOGINR)	- / -	- / -
D(LOGEXR)	- / -	- / -
D(LOGIFRIT)	- / +	- / -
D(LOGCON)	- / -	- / -
D(LOGHPI)	- / +	+ / -
ALL	-	
South Africa: D(LOGJALSH)	**From macroeconomic variable to JALSH / From JALSH to macroeconomic variable**	
D(LOGGDP)	- / -	- / -
D(LOGINR)	- / -	- / -
D(LOGEXR)	- / -	- / -
D(LOGIFR)	- / +	- / -
D(LOGCON)	- / -	- / -
D(LOGHPI)	- / +	- / -
ALL	-	

Appendix 12.3: VAR Granger Causality/Block Exogeneity Wald Test and Pairwise Granger Causality Test Summary Results (Page 3 of 4)

	VAR Granger Causality/Block Exogeneity Wald Tests	Pairwise Granger Causality Tests
France: D(LOGCAC)	**From macroeconomic variable to CAC / From CAC to macroeconomic variable**	
D(LOGGDP)	- / -	- / +
D(LOGINR)	- / -	- / -
D(LOGEXR)	- / -	- / +
D(LOGIFRIT)	- / -	- / +
D(LOGCON)	- / -	- / +
D(LOGHPI)	+ / +	- / +
ALL	-	
Germany: D(LOGDAX)	**From macroeconomic variable to DAX / From DAX to macroeconomic variable**	
D(LOGGDP)	- / -	- / +
D(LOGINR)	- / -	- / -
D(LOGEXR)	- / -	- / +
LOGIFRIT	- / -	- / -
D(LOGCON)	- / -	- / -
D(LOGHPI)	- / -	- / -
ALL	-	
Japan: D(LOGNIKKEY)	**From macroeconomic variable to NIKKEY / From NIKKEY to macroeconomic variable**	
D(LOGGDP)	- / -	- / -
D(LOGINRIT)	- / -	- / -
D(LOGEXR)	- / -	- / -
D(LOGIFRIT)	+ / -	- / -
D(LOGCON)	- / -	- / -
D(LOGHPI)	- / -	- / -
ALL	-	

Appendix 12.4: VAR Granger Causality/Block Exogeneity Wald Test and Pairwise Granger Causality Test Summary Results (Page 4 of 4)

	VAR Granger Causality/Block Exogeneity Wald Tests	Pairwise Granger Causality Tests
UK: D(LOGFTSE100)	**From macroeconomic variable to FTSE100 / From FTSE100 to macroeconomic variable**	
D(LOGGDP)	+ / -	- / +
D(LOGINR)	- / -	- / +
D(LOGEXR)	- / +	- / +
D(LOGIFR)	+ / -	- / -
D(LOGCON)	- / -	- / -
DD(LOGHPI)	- / -	- / -
ALL	-	
US: D(LOGS&P500)	**From macroeconomic variable to S&P500 / From S&P500 to macroeconomic variable**	
DD(LOGGDP)	- / -	- / -
D(LOGINR)	- / +	+ / -
D(LOGEXR)	- / -	+ / -
D(LOGIFR)	- / -	- / -
D(LOGCON)	- / -	+ / +
DD(LOGHPI)	+ / -	- / +
ALL	+	

Appendix 12.5: VEC Granger Causality/Block Exogeneity Wald Tests: Brazil

VEC Granger Causality/Block Exogeneity Wald Tests			
Dependent variable: D(LOGIBOV)			
Excluded	**Chi-sq**	**df**	**Prob.**
D(LOGGDP)	15.99865	8	**0.0424**
D(LOGINR)	26.48991	8	**0.0009**
D(LOGEXR)	9.963704	8	0.2676
D(LOGIFR)	21.6459	8	**0.0056**
D(LOGCON)	17.90369	8	**0.022**
D(LOGHPI)	20.84758	8	**0.0076**
All	75.68375	48	**0.0066**

Appendix 12.6: Pairwise Granger Causality Tests: Brazil

Pairwise Granger Causality Tests			
Null Hypothesis:	**Obs**	**F-Statistic**	**Prob.**
LOGGDP does not Granger Cause LOGIBOV	184	2.84657	0.0607
LOGIBOV does not Granger Cause LOGGDP		7.03272	**0.0011**
LOGINR does not Granger Cause LOGIBOV	184	2.2218	0.1114
LOGIBOV does not Granger Cause LOGINR		3.42095	**0.0348**
LOGEXR does not Granger Cause LOGIBOV	184	1.48634	0.229
LOGIBOV does not Granger Cause LOGEXR		2.89408	0.0579
LOGIFR does not Granger Cause LOGIBOV	184	0.67701	0.5094
LOGIBOV does not Granger Cause LOGIFR		2.06269	0.1301
LOGCON does not Granger Cause LOGIBOV	184	0.325	0.723
LOGIBOV does not Granger Cause LOGCON		1.65076	0.1948
LOGHPI does not Granger Cause LOGIBOV	138	0.80005	0.4515
LOGIBOV does not Granger Cause LOGHPI		6.23586	**0.0026**

Appendix 12.7: VEC Granger Causality/Block Exogeneity Wald Tests: Russia

VEC Granger Causality/Block Exogeneity Wald Tests			
Dependent variable: D(LOGRTS)			
Excluded	**Chi-sq**	**df**	**Prob.**
D(LOGGDP)	12.23013	8	0.1412
D(LOGINR)	11.376	8	0.1813
D(LOGEXR)	21.5393	8	**0.0058**
D(LOGIFR)	11.35068	8	0.1826
D(LOGCON)	10.91671	8	0.2065
D(LOGHPI)	8.063468	8	0.4273
All	94.94492	48	**0.0001**

Appendix 12.8: Pairwise Granger Causality Tests: Russia

Pairwise Granger Causality Tests			
Null Hypothesis:	**Obs**	**F-Statistic**	**Prob.**
DLOGGDP does not Granger Cause DLOGRTS	147	3.66997	**0.0279**
DLOGRTS does not Granger Cause DLOGGDP		0.195	0.8231
DLOGINR does not Granger Cause DLOGRTS	183	0.17603	0.8387
DLOGRTS does not Granger Cause DLOGINR		1.17004	0.3127
DLOGEXR does not Granger Cause DLOGRTS	183	0.32674	0.7217
DLOGRTS does not Granger Cause DLOGEXR		0.67829	0.5088
DLOGIFR does not Granger Cause DLOGRTS	183	3.41647	**0.035**
DLOGRTS does not Granger Cause DLOGIFR		2.68442	0.071
DLOGCON does not Granger Cause DLOGRTS	183	0.61946	0.5394
DLOGRTS does not Granger Cause DLOGCON		0.93154	0.3959
DLOGHPI does not Granger Cause DLOGRTS	181	5.14585	**0.0067**
DLOGRTS does not Granger Cause DLOGHPI		0.1743	0.8402

Appendix 12.9: VEC Granger Causality/Block Exogeneity Wald Tests: India

VEC Granger Causality/Block Exogeneity Wald Tests			
Dependent variable: D(LOGNIFTY)			
Excluded	**Chi-sq**	**df**	**Prob.**
D(LOGGDP)	10.56944	5	0.0606
D(LOGINR)	5.277297	5	0.383
D(LOGEXR)	3.730944	5	0.5888
D(LOGIFRIT)	12.79998	5	**0.0253**
D(LOGCON)	6.965276	5	0.2232
D(LOGHPI)	5.552638	5	0.3522
All	66.54294	30	**0.0001**

Appendix 12.10: Pairwise Granger Causality Tests: India

Pairwise Granger Causality Tests			
Null Hypothesis:	**Obs**	**F-Statistic**	**Prob.**
DLOGGDP does not Granger Cause DLOGNIFTY	123	1.16799	0.3146
DLOGNIFTY does not Granger Cause DLOGGDP		0.17973	0.8357
DLOGINR does not Granger Cause DLOGNIFTY	168	0.5883	0.5564
DLOGNIFTY does not Granger Cause DLOGINR		3.09069	**0.0481**
DLOGEXR does not Granger Cause DLOGNIFTY	183	3.98143	**0.0203**
DLOGNIFTY does not Granger Cause DLOGEXR		0.98306	0.3762
DLOGIFR does not Granger Cause DLOGNIFTY	112	3.37757	**0.0378**
DLOGNIFTY does not Granger Cause DLOGIFR		0.08237	0.921
DLOGCON does not Granger Cause DLOGNIFTY	123	0.76645	0.467
DLOGNIFTY does not Granger Cause DLOGCON		0.07352	0.9292
DLOGHPI does not Granger Cause DLOGNIFTY	85	0.09214	0.9121
DLOGNIFTY does not Granger Cause DLOGHPI		0.158	0.8541

Appendix 12.13: VEC Granger Causality/Block Exogeneity Wald Tests: China

VEC Granger Causality/Block Exogeneity Wald Tests			
Dependent variable: D(LOGSHCOMP)			
Excluded	Chi-sq	df	Prob.
D(LOGGDP)	12.32667	7	0.0903
D(LOGINR)	8.77303	7	0.2694
D(LOGEXR)	6.002804	7	0.5394
D(LOGIFRIT)	4.117177	7	0.7662
D(LOGCON)	11.12889	7	0.1331
D(LOGHPI)	4.054251	7	0.7735
All	51.9449	42	0.1398

Appendix 12.14: Pairwise Granger Causality Tests: China

Pairwise Granger Causality Tests			
Null Hypothesis:	**Obs**	**F-Statistic**	**Prob.**
DLOGGDP does not Granger Cause DLOGSHCOMP	168	4.67744	**0.0106**
DLOGSHCOMP does not Granger Cause DLOGGDP		2.02757	0.135
DLOGINR does not Granger Cause DLOGSHCOMP	183	1.78912	0.1701
DLOGSHCOMP does not Granger Cause DLOGINR		1.28059	0.2804
DLOGEXR does not Granger Cause DLOGSHCOMP	183	0.32601	0.7222
DLOGSHCOMP does not Granger Cause DLOGEXR		0.47516	0.6226
DLOGIFR does not Granger Cause DLOGSHCOMP	182	0.02207	0.9782
DLOGSHCOMP does not Granger Cause DLOGIFR		0.96023	0.3848
DLOGCON does not Granger Cause DLOGSHCOMP	177	0.37213	0.6898
DLOGSHCOMP does not Granger Cause DLOGCON		1.02463	0.3611
DLOGHPI does not Granger Cause DLOGSHCOMP	183	7.62007	**0.0007**
DLOGSHCOMP does not Granger Cause DLOGHPI		0.80315	0.4495

Appendix 12.15: VEC Granger Causality/Block Exogeneity Wald Tests: South Africa

VEC Granger Causality/Block Exogeneity Wald Tests			
Dependent variable: D(LOGJALSH)			
Excluded	**Chi-sq**	**df**	**Prob.**
D(LOGGDP)	10.33611	8	0.2422
D(LOGINR)	9.450647	8	0.3057
D(LOGEXR)	4.779561	8	0.7809
D(LOGIFR)	5.253815	8	0.7301
D(LOGCON)	14.29377	8	0.0744
D(LOGHPI)	8.153258	8	0.4186
All	54.31591	48	0.2464

Appendix 12.16: Pairwise Granger Causality Tests: South Africa

Pairwise Granger Causality Tests			
Null Hypothesis:	**Obs**	**F-Statistic**	**Prob.**
DLOGGDP does not Granger Cause DLOGJALSH	168	1.08411	0.3406
DLOGJALSH does not Granger Cause DLOGGDP		1.0541	0.3509
DLOGINR does not Granger Cause DLOGJALSH	183	2.91014	0.0571
DLOGJALSH does not Granger Cause DLOGINR		1.15968	0.3159
DLOGEXR does not Granger Cause DLOGJALSH	183	1.85726	0.1591
DLOGJALSH does not Granger Cause DLOGEXR		1.65809	0.1934
DLOGIFR does not Granger Cause DLOGJALSH	183	0.38013	0.6843
DLOGJALSH does not Granger Cause DLOGIFR		0.5344	0.587
DLOGCON does not Granger Cause DLOGJALSH	147	0.09319	0.9111
DLOGJALSH does not Granger Cause DLOGCON		0.44233	0.6434
DLOGHPI does not Granger Cause DLOGJALSH	181	1.17089	0.3125
DLOGJALSH does not Granger Cause DLOGHPI		2.57486	0.079

Appendix 12.17: VEC Granger Causality/Block Exogeneity Wald Tests: France

VEC Granger Causality/Block Exogeneity Wald Tests			
Dependent variable: D(LOGCAC)			
Excluded	**Chi-sq**	**df**	**Prob.**
D(LOGGDP)	13.44846	7	0.0619
D(LOGINR)	10.09872	7	0.183
D(LOGEXR)	9.111917	7	0.2447
D(LOGIFRIT)	13.1914	7	0.0676
D(LOGCON)	13.54871	7	0.0598
D(LOGHPI)	17.76206	7	**0.0131**
All	48.40365	42	0.2303

Appendix 12.18: Pairwise Granger Causality Tests: France

Pairwise Granger Causality Tests			
Null Hypothesis:	**Obs**	**F-Statistic**	**Prob.**
DLOGGDP does not Granger Cause DLOGCAC	183	1.84508	0.161
DLOGCAC does not Granger Cause DLOGGDP		3.11174	**0.047**
DLOGINR does not Granger Cause DLOGCAC	183	0.18155	0.8341
DLOGCAC does not Granger Cause DLOGINR		1.71415	0.1831
DLOGEXR does not Granger Cause DLOGCAC	181	0.69954	0.4982
DLOGCAC does not Granger Cause DLOGEXR		4.12377	**0.0178**
DLOGIFR does not Granger Cause DLOGCAC	183	0.22482	0.7989
DLOGCAC does not Granger Cause DLOGIFR		5.61819	**0.0043**
DLOGCON does not Granger Cause DLOGCAC	183	1.49493	0.2271
DLOGCAC does not Granger Cause DLOGCON		3.30023	**0.0391**
DLOGHPI does not Granger Cause DLOGCAC	181	0.49008	0.6134
DLOGCAC does not Granger Cause DLOGHPI		4.72307	**0.01**

Appendix 12.19: VEC Granger Causality/Block Exogeneity Wald Tests: Germany

VAR Granger Causality/Block Exogeneity Wald Tests			
Dependent variable: DLOGDAX			
Excluded	**Chi-sq**	**df**	**Prob.**
DLOGGDP	7.76742	7	0.3535
DLOGINR	2.902328	7	0.8939
DLOGEXR	4.454916	7	0.7261
LOGIFRIT	1.662741	7	0.9761
DLOGCON	8.083517	7	0.3253
DLOGHPI	5.450975	7	0.6051
All	34.20061	42	0.7985

Appendix 12.20: Pairwise Granger Causality Tests: Germany

Pairwise Granger Causality Tests			
Null Hypothesis:	**Obs**	**F-Statistic**	**Prob.**
DLOGGDP does not Granger Cause DLOGDAX	183	0.97241	0.3802
DLOGDAX does not Granger Cause DLOGGDP		3.42376	**0.0348**
DLOGINR does not Granger Cause DLOGDAX	183	0.2592	0.772
DLOGDAX does not Granger Cause DLOGINR		0.65492	0.5207
DLOGEXR does not Granger Cause DLOGDAX	181	0.97244	0.3802
DLOGDAX does not Granger Cause DLOGEXR		3.84264	**0.0233**
LOGIFRIT does not Granger Cause DLOGDAX	183	2.20782	0.1129
DLOGDAX does not Granger Cause LOGIFRIT		0.07217	0.9304
DLOGCON does not Granger Cause DLOGDAX	183	1.11451	0.3304
DLOGDAX does not Granger Cause DLOGCON		2.75611	0.0663
DLOGHPI does not Granger Cause DLOGDAX	181	1.11798	0.3292
DLOGDAX does not Granger Cause DLOGHPI		0.52986	0.5896

Appendix 12.21: VEC Granger Causality/Block Exogeneity Wald Tests: Japan

VEC Granger Causality/Block Exogeneity Wald Tests			
Dependent variable: D(LOGNIKKEY)			
Excluded	**Chi-sq**	**df**	**Prob.**
D(LOGGDP)	6.991228	6	0.3217
D(LOGINRIT)	4.719239	6	0.5803
D(LOGEXR)	3.58699	6	0.7324
D(LOGIFRIT)	15.94109	6	**0.0141**
D(LOGCON)	3.846771	6	0.6974
D(LOGHPI)	3.608605	6	0.7295
All	47.58504	36	0.0937

Appendix 12.22: Pairwise Granger Causality Tests: Japan

Pairwise Granger Causality Tests			
Null Hypothesis:	**Obs**	**F-Statistic**	**Prob.**
DLOGGDP does not Granger Cause DLOGNIKKEY	168	1.98653	0.14
DLOGNIKKEY does not Granger Cause DLOGGDP		2.08504	0.13
DLOGINR does not Granger Cause DLOGNIKKEY	183	0.07409	0.93
DLOGNIKKEY does not Granger Cause DLOGINR		0.12461	0.88
DLOGEXR does not Granger Cause DLOGNIKKEY	183	2.75949	0.07
DLOGNIKKEY does not Granger Cause DLOGEXR		0.68237	0.51
DLOGIFR does not Granger Cause DLOGNIKKEY	134	0.67845	0.51
DLOGNIKKEY does not Granger Cause DLOGIFR		2.30108	0.10
DLOGCON does not Granger Cause DLOGNIKKEY	150	0.13785	0.87
DLOGNIKKEY does not Granger Cause DLOGCON		0.35963	0.70
DLOGHPI does not Granger Cause DLOGNIKKEY	183	0.83197	0.44
DLOGNIKKEY does not Granger Cause DLOGHPI		0.13091	0.88

Appendix 12.23: VEC Granger Causality/Block Exogeneity Wald Tests: UK

VAR Granger Causality/Block Exogeneity Wald Tests			
Dependent variable: DLOGFTSE100			
Excluded	**Chi-sq**	**df**	**Prob.**
DLOGGDP	16.69489	8	**0.0334**
DLOGINR	6.982413	8	0.5385
DLOGEXR	10.11466	8	0.2571
DLOGIFR	21.60801	8	**0.0057**
DLOGCON	11.16626	8	0.1925
DDLOGHPI	8.406549	8	0.3948
All	64.35253	48	0.0575

Appendix 12.24: Pairwise Granger Causality Tests: UK

Pairwise Granger Causality Tests			
Null Hypothesis:	**Obs**	**F-Statistic**	**Prob.**
DLOGGDP does not Granger Cause DLOGFTSE100	183	0.31401	0.7309
DLOGFTSE100 does not Granger Cause DLOGGDP		4.61436	**0.0111**
DLOGINR does not Granger Cause DLOGFTSE100	183	0.36976	0.6914
DLOGFTSE100 does not Granger Cause DLOGINR		11.9316	**0.0000**
DLOGEXR does not Granger Cause DLOGFTSE100	183	0.7057	0.4951
DLOGFTSE100 does not Granger Cause DLOGEXR		4.78451	**0.0095**
DLOGIFR does not Granger Cause DLOGFTSE100	182	0.42079	0.6572
DLOGFTSE100 does not Granger Cause DLOGIFR		0.36524	0.6946
DLOGCON does not Granger Cause DLOGFTSE100	183	1.17347	0.3117
DLOGFTSE100 does not Granger Cause DLOGCON		2.87486	0.059
DDLOGHPI does not Granger Cause DLOGFTSE100	182	0.11717	0.8895
DLOGFTSE100 does not Granger Cause DDLOGHPI		0.50418	0.6049

Appendix 12.25: VEC Granger Causality/Block Exogeneity Wald Tests: US

VAR Granger Causality/Block Exogeneity Wald Tests			
Dependent variable: DLOGSP500			
Excluded	**Chi-sq**	**df**	**Prob.**
DDLOGGDP	5.624949	8	0.6892
DLOGINR	7.553752	8	0.4782
DLOGEXR	7.792913	8	0.454
DLOGIFR	4.272133	8	0.8318
DLOGCON	4.904043	8	0.7678
DDLOGHPI	15.93303	8	**0.0433**
All	67.34133	48	**0.0341**

Appendix 12.26: Pairwise Granger Causality Tests: US

Pairwise Granger Causality Tests			
Null Hypothesis:	**Obs**	**F-Statistic**	**Prob.**
DDLOGGDP does not Granger Cause DLOGSP500	167	1.27141	0.2832
DLOGSP500 does not Granger Cause DDLOGGDP		0.20267	0.8168
DLOGINR does not Granger Cause DLOGSP500	183	4.03511	**0.0193**
DLOGSP500 does not Granger Cause DLOGINR		2.95544	0.0546
DLOGEXR does not Granger Cause DLOGSP500	183	4.15482	**0.0172**
DLOGSP500 does not Granger Cause DLOGEXR		0.09306	0.9112
DLOGIFR does not Granger Cause DLOGSP500	183	2.49549	0.0853
DLOGSP500 does not Granger Cause DLOGIFR		1.86425	0.158
DLOGCON does not Granger Cause DLOGSP500	183	3.33019	**0.038**
DLOGSP500 does not Granger Cause DLOGCON		5.53751	**0.0046**
DDLOGHPI does not Granger Cause DLOGSP500	180	0.16433	0.8486
DLOGSP500 does not Granger Cause DDLOGHPI		5.58816	**0.0044**

Appendix 13: GARCH (1,1) Model Results

Appendix 13.1: Summary Results of the GARCH Model – Brazil

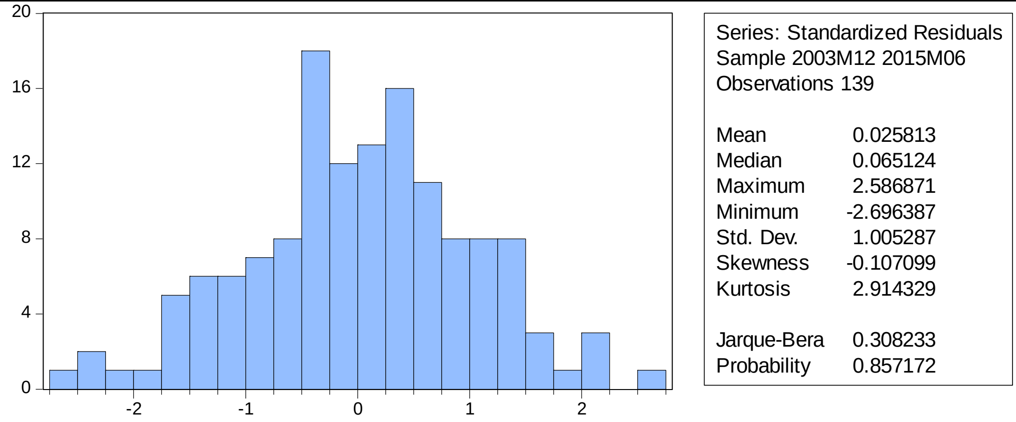
	Method: ML - ARCH (Marquardt) - Normal distribution	Method: ML - ARCH (Marquardt) - Student's t distribution	Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)
Dependent Variable: DLOGIBOV			
Significant Macroeconomic Variables	**DLOGEX** **DLOGHPI**	DLOGEXR DLOGHPI	DLOGEXR DLOGHPI
Variance Equation			
ARCH effect			
GARCH effect	**V**	V	V
R-squared	**0.70**	**0.70**	**0.70**

Appendix 13.1a: GARCH(1,1) Model: Normal Distribution: Brazil

Dependent Variable: DLOGIBOV				
Method: ML - ARCH (Marquardt) - Normal distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	Coefficient	Std. Error	z-Statistic	Prob.
DLOGGDP	0.088454	0.078981	1.119928	0.26
DLOGINR	-0.235328	0.129727	-1.814029	0.07
DLOGEXR	-1.636356	0.107894	-15.16635	-
DLOGIFR	0.047799	0.063728	0.750047	0.45
DLOGCON	0.692398	0.841258	0.82305	0.41
DLOGHPI	0.017391	0.008181	2.125809	0.03
C	3.19E-06	0.008753	0.000364	1.00
Variance Equation				
C	0.000257	0.000391	0.656944	0.51
RESID(-1)^2	0.100408	0.090431	1.110325	0.27
GARCH(-1)	0.790102	0.21922	3.604158	0.00
R-squared	0.70237	Mean dependent var		0.007876
Adjusted R-squared	0.688839	S.D. dependent var		0.08805
S.E. of regression	0.049116	Akaike info criterion		(3.12132)
Sum squared resid	0.318433	Schwarz criterion		(2.91021)
Log likelihood	226.9318	Hannan-Quinn criter.		-3.03553
Durbin-Watson stat	2.097778			

Appendix 13.1b: GARCH(1,1) Model Residual Diagnostics: Normal Distribution: Brazil (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.118949	Prob. F(1,136)	0.7307
Obs*R-squared	0.120592	Prob. Chi-Square(1)	0.7284

Appendix 13.1b: GARCH(1,1) Model Residual Diagnostics: Normal Distribution: Brazil

(Page 2 of 2)

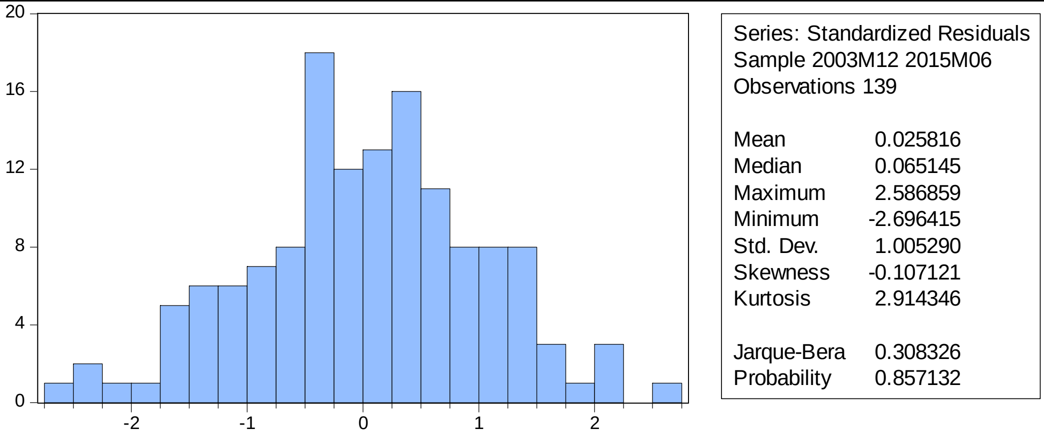
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob**
.|. |	.|. |	1	-0.062	-0.062	0.5547	0.456
.|. |	.|. |	2	-0.034	-0.038	0.7228	0.697
.|* |	.|* |	3	0.092	0.088	1.9409	0.585
*|. |	*|. |	4	-0.082	-0.073	2.9287	0.57
*|. |	*|. |	5	-0.068	-0.073	3.6089	0.607
.|. |	.|. |	6	-0.019	-0.041	3.6629	0.722
.|. |	.|. |	7	0.048	0.055	4.012	0.778
.|. |	.|. |	8	0.014	0.025	4.0417	0.853
.|. |	.|. |	9	-0.01	-0.011	4.0564	0.908
.|. |	.|. |	10	0.007	-0.013	4.0631	0.944
.|. |	.|. |	11	0.018	0.018	4.1106	0.967
.|* |	.|* |	12	0.08	0.097	5.1096	0.954
*|. |	*|. |	13	-0.123	-0.11	7.4449	0.878
.|. |	.|. |	14	-0.016	-0.035	7.4864	0.914
.|. |	*|. |	15	-0.043	-0.07	7.779	0.932
.|. |	.|* |	16	0.051	0.089	8.1888	0.943
.|. |	.|. |	17	-0.05	-0.049	8.5871	0.952
.|. |	.|. |	18	0.046	0.036	8.9225	0.962
.|. |	.|. |	19	0.064	0.023	9.5824	0.963
.|. |	.|. |	20	0.015	0.05	9.6199	0.975
.|. |	.|. |	21	0.003	0.01	9.6218	0.983
.|. |	.|. |	22	0.021	0.02	9.6982	0.989
.|. |	.|. |	23	-0.033	-0.038	9.8834	0.992
*|. |	*|. |	24	-0.098	-0.096	11.521	0.985
.|. |	.|. |	25	-0.036	-0.024	11.748	0.988
.|* |	.|. |	26	0.081	0.072	12.883	0.985
.|. |	.|. |	27	-0.025	-0.004	12.99	0.989
.|. |	.|. |	28	0.047	0.01	13.383	0.991
.|. |	.|. |	29	0.038	0.027	13.634	0.993
*|. |	*|. |	30	-0.13	-0.144	16.691	0.976
.|. |	.|. |	31	0.013	0.023	16.722	0.983
*|. |	*|. |	32	-0.099	-0.116	18.519	0.972
.|. |	.|* |	33	0.047	0.093	18.92	0.976
.|* |	.|. |	34	0.094	0.072	20.557	0.966
*|. |	.|. |	35	-0.085	-0.052	21.916	0.959
.|. |	.|. |	36	0.043	0.011	22.268	0.965

Appendix 13.1c: GARCH(1,1) Model: Student's t Distribution: Brazil

Dependent Variable: DLOGIBOV				
Method: ML - ARCH (Marquardt) - Student's t distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	0.088462	0.084879	1.042217	0.30
DLOGINR	-0.235339	0.129586	-1.816086	0.07
DLOGEXR	-1.63635	0.10866	-15.05931	-
DLOGIFR	0.047784	0.063769	0.749333	0.45
DLOGCON	0.692402	0.845149	0.819267	0.41
DLOGHPI	0.01739	0.008301	2.095082	0.04
C	2.87E-06	0.008836	0.000325	1.00
Variance Equation				
C	0.000257	0.000397	0.646859	0.52
RESID(-1)^2	0.100369	0.090422	1.110005	0.27
GARCH(-1)	0.790171	0.220046	3.590941	0.00
T-DIST. DOF	24267202	7.27E+13	3.34E-07	1
R-squared	0.70237	Mean dependent var		0.007876
Adjusted R-squared	0.688839	S.D. dependent var		0.08805
S.E. of regression	0.049116	Akaike info criterion		(3.10693)
Sum squared resid	0.318433	Schwarz criterion		(2.87471)
Log likelihood	226.9318	Hannan-Quinn criter.		-3.012563
Durbin-Watson stat	2.097781			

Appendix 13.1d: GARCH(1,1) Model Residual Diagnostics: Student's t Distribution: Brazil (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.119202	Prob. F(1,136)	0.7304
Obs*R-squared	0.120849	Prob. Chi-Square(1)	0.7281

Appendix 13.1d: GARCH (1,1) Model Residual Diagnostics: Student's t Distribution: Brazil (Page 2 of 2)

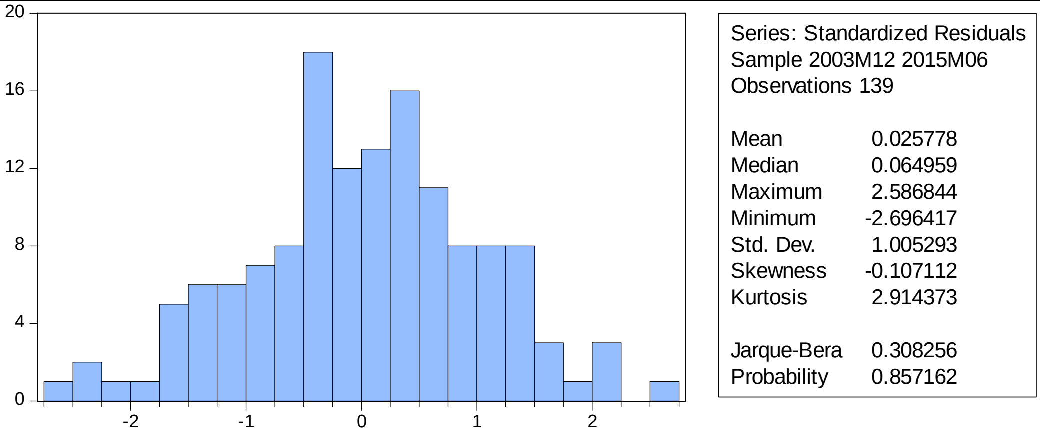
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob**
.|. |	.|. |	1	-0.062	-0.062	0.5548	0.456
.|. |	.|. |	2	-0.034	-0.038	0.7229	0.697
.|* |	.|* |	3	0.092	0.088	1.9411	0.585
*|. |	*|. |	4	-0.082	-0.073	2.9291	0.57
*|. |	*|. |	5	-0.068	-0.073	3.6092	0.607
.|. |	.|. |	6	-0.019	-0.041	3.6633	0.722
.|. |	.|. |	7	0.048	0.055	4.0123	0.778
.|. |	.|. |	8	0.014	0.025	4.0421	0.853
.|. |	.|. |	9	-0.01	-0.011	4.0568	0.908
.|. |	.|. |	10	0.007	-0.013	4.0635	0.944
.|. |	.|. |	11	0.018	0.018	4.111	0.967
.|* |	.|* |	12	0.08	0.097	5.1103	0.954
*|. |	*|. |	13	-0.123	-0.11	7.4456	0.878
.|. |	.|. |	14	-0.016	-0.035	7.4871	0.914
.|. |	*|. |	15	-0.043	-0.07	7.7796	0.932
.|. |	.|* |	16	0.051	0.089	8.1894	0.943
.|. |	.|. |	17	-0.05	-0.049	8.5876	0.952
.|. |	.|. |	18	0.046	0.036	8.923	0.961
.|. |	.|. |	19	0.064	0.023	9.5828	0.962
.|. |	.|. |	20	0.015	0.05	9.6203	0.975
.|. |	.|. |	21	0.003	0.01	9.6222	0.983
.|. |	.|. |	22	0.021	0.02	9.6986	0.989
.|. |	.|. |	23	-0.033	-0.038	9.8838	0.992
*|. |	*|. |	24	-0.098	-0.096	11.521	0.985
.|. |	.|. |	25	-0.036	-0.024	11.748	0.988
.|* |	.|. |	26	0.081	0.072	12.883	0.985
.|. |	.|. |	27	-0.025	-0.004	12.991	0.989
.|. |	.|. |	28	0.047	0.01	13.384	0.991
.|. |	.|. |	29	0.038	0.027	13.634	0.993
*|. |	*|. |	30	-0.13	-0.144	16.692	0.976
.|. |	.|. |	31	0.013	0.023	16.722	0.983
*|. |	*|. |	32	-0.099	-0.116	18.52	0.972
.|. |	.|* |	33	0.047	0.093	18.921	0.976
.|* |	.|. |	34	0.094	0.072	20.557	0.966
*|. |	.|. |	35	-0.085	-0.052	21.916	0.959
.|. |	.|. |	36	0.043	0.011	22.269	0.965

Appendix 13.1e: GARCH(1,1) Model: Generalized Error Distribution: Brazil

Dependent Variable: DLOGIBOV				
Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	Coefficient	Std. Error	z-Statistic	Prob.
DLOGGDP	0.088448	0.082358	1.07394	0.28
DLOGINR	-0.23524	0.129718	-1.813479	0.07
DLOGEXR	-1.636409	0.108213	-15.12213	-
DLOGIFR	0.047765	0.063846	0.748125	0.45
DLOGCON	0.692342	0.845359	0.818992	0.41
DLOGHPI	0.017392	0.008284	2.099403	0.04
C	5.48E-06	0.008816	0.000622	1.00
Variance Equation				
C	0.000257	0.000394	0.651333	0.51
RESID(-1)^2	0.10041	0.09048	1.109751	0.27
GARCH(-1)	0.790103	0.219773	3.595082	0.00
GED PARAMETER	1.998575	0.485567	4.115957	-
R-squared	0.70237	Mean dependent var		0.007876
Adjusted R-squared	0.688841	S.D. dependent var		0.08805
S.E. of regression	0.049116	Akaike info criterion		(3.10693)
Sum squared resid	0.318432	Schwarz criterion		(2.87471)
Log likelihood	226.9318	Hannan-Quinn criter.		-3.012563
Durbin-Watson stat	2.097777			

Appendix 13.1f: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: Brazil (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	**0.118901**	**Prob. F(1,136)**	**0.7308**
Obs*R-squared	0.120544	Prob. Chi-Square(1)	0.7284

Appendix 13.1f: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: Brazil (Page 2 of 2)

Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob**
.|. |	.|. |	1	-0.062	-0.062	0.5547	0.456
.|. |	.|. |	2	-0.034	-0.038	0.7227	0.697
.|* |	.|* |	3	0.092	0.088	1.9407	0.585
*|. |	*|. |	4	-0.082	-0.073	2.9284	0.57
*|. |	*|. |	5	-0.068	-0.073	3.6086	0.607
.|. |	.|. |	6	-0.019	-0.041	3.6627	0.722
.|. |	.|. |	7	0.048	0.055	4.0119	0.778
.|. |	.|. |	8	0.014	0.025	4.0416	0.853
.|. |	.|. |	9	-0.01	-0.011	4.0564	0.908
.|. |	.|. |	10	0.007	-0.013	4.063	0.944
.|. |	.|. |	11	0.018	0.018	4.1105	0.967
.|* |	.|* |	12	0.08	0.097	5.1093	0.954
*|. |	*|. |	13	-0.123	-0.11	7.4445	0.878
.|. |	.|. |	14	-0.016	-0.035	7.486	0.914
.|. |	*|. |	15	-0.043	-0.07	7.7787	0.932
.|. |	.|* |	16	0.051	0.089	8.1886	0.943
.|. |	.|. |	17	-0.05	-0.049	8.5868	0.952
.|. |	.|. |	18	0.045	0.036	8.9219	0.962
.|. |	.|. |	19	0.064	0.023	9.5816	0.963
.|. |	.|. |	20	0.015	0.05	9.6191	0.975
.|. |	.|. |	21	0.003	0.01	9.621	0.983
.|. |	.|. |	22	0.021	0.02	9.6973	0.989
.|. |	.|. |	23	-0.033	-0.038	9.8824	0.992
*|. |	*|. |	24	-0.098	-0.096	11.52	0.985
.|. |	.|. |	25	-0.036	-0.024	11.747	0.988
.|* |	.|. |	26	0.081	0.072	12.882	0.985
.|. |	.|. |	27	-0.025	-0.004	12.989	0.989
.|. |	.|. |	28	0.047	0.01	13.382	0.991
.|. |	.|. |	29	0.038	0.027	13.633	0.993
*|. |	*|. |	30	-0.13	-0.144	16.689	0.976
.|. |	.|. |	31	0.013	0.023	16.72	0.983
*|. |	*|. |	32	-0.099	-0.115	18.517	0.972
.|. |	.|* |	33	0.047	0.093	18.918	0.976
.|* |	.|. |	34	0.094	0.072	20.555	0.966
*|. |	.|. |	35	-0.085	-0.052	21.914	0.959
.|. |	.|. |	36	0.043	0.011	22.266	0.965

Appendix 13.2: Summary Results of the GARCH Model – Russia

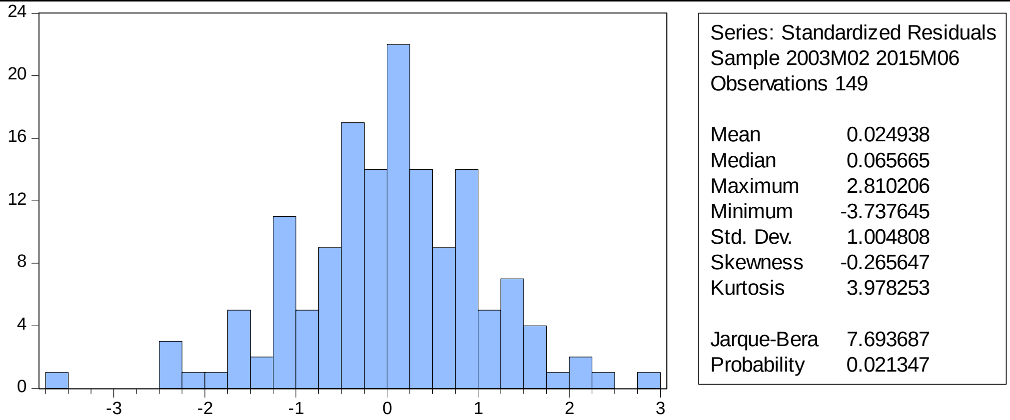
	Method: ML - ARCH (Marquardt) - Normal distribution	Method: ML - ARCH (Marquardt) - Student's t distribution	Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)
Dependent Variable: DLOGRTS			
Significant Macroeconomic Variables	DLOGEXR	DLOGEXR DLOGIFR	**DLOGEXR** **DLOGIFR** **DLOGCON**
Variance Equation			
ARCH effect	V		
GARCH effect	V	V	**V**
R-squared	0.41	0.41	0.41

Appendix 13.2a: GARCH(1,1) Model: Normal Distribution: Russia

Dependent Variable: DLOGRTS				
Method: ML - ARCH (Marquardt) - Normal distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	Coefficient	Std. Error	z-Statistic	Prob.
DLOGGDP	-0.075138	0.167368	-0.44894	0.65
DLOGINR	-0.667236	0.373024	-1.78872	0.07
DLOGEXR	-1.314823	0.142884	-9.20204	-
DLOGIFR	0.120907	0.071166	1.69895	0.09
DLOGCON	-0.858622	0.452666	-1.89681	0.06
DLOGHPI	0.008855	0.209492	0.04227	0.97
C	0.01486	0.00677	2.194838	0.03
Variance Equation				
C	0.000242	0.000159	1.518797	0.13
RESID(-1)^2	0.252419	0.118068	2.137909	0.03
GARCH(-1)	0.710624	0.093792	7.576584	-
R-squared	0.408044	Mean dependent var		0.007326
Adjusted R-squared	0.383032	S.D. dependent var		0.090365
S.E. of regression	0.070979	Akaike info criterion		(2.603411)
Sum squared resid	0.715402	Schwarz criterion		(2.401803)
Log likelihood	203.9541	Hannan-Quinn criter.		-2.521501
Durbin-Watson stat	1.781182			

Appendix 13.2b: GARCH(1,1) Model Residual Diagnostics: Normal Distribution: Russia (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.424877	Prob. F(1,146)	0.5155
Obs*R-squared	0.429447	Prob. Chi-Square(1)	0.5123

Appendix 13.2c: GARCH (1,1) Model Residual Diagnostics: Normal Distribution: Russia

(Page 2 of 2)

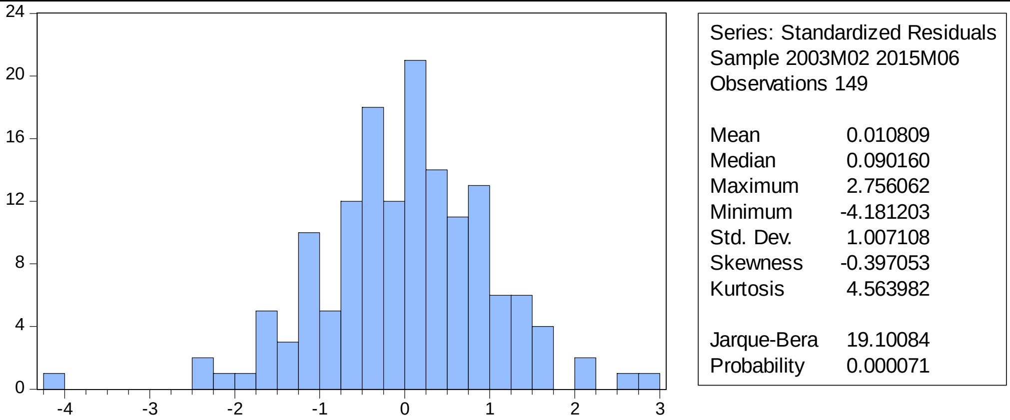
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob**
.|. |	.|. |	1	0.044	0.044	0.2929	0.588
*|. |	*|. |	2	-0.128	-0.13	2.7921	0.248
.|. |	.|. |	3	0.045	0.058	3.1079	0.375
.|. |	.|. |	4	0.063	0.042	3.7258	0.444
*|. |	*|. |	5	-0.125	-0.12	6.1631	0.291
*|. |	*|. |	6	-0.097	-0.075	7.6362	0.266
.|* |	.|* |	7	0.124	0.103	10.075	0.184
.|. |	.|. |	8	0.061	0.039	10.673	0.221
.|. |	.|. |	9	-0.007	0.033	10.682	0.298
.|. |	.|. |	10	-0.029	-0.036	10.82	0.372
.|* |	.|. |	11	0.093	0.068	12.216	0.348
*|. |	*|. |	12	-0.078	-0.085	13.211	0.354
.|. |	.|. |	13	-0.039	0.02	13.462	0.413
.|. |	.|. |	14	-0.004	-0.028	13.466	0.49
.|. |	.|. |	15	-0.032	-0.05	13.64	0.553
.|. |	.|. |	16	-0.018	-0.004	13.697	0.621
.|* |	.|* |	17	0.09	0.093	15.082	0.59
.|* |	.|* |	18	0.128	0.097	17.877	0.464
*|. |	*|. |	19	-0.163	-0.159	22.453	0.262
.|. |	.|. |	20	0.019	0.054	22.519	0.313
.|. |	*|. |	21	-0.02	-0.078	22.588	0.366
.|. |	.|* |	22	0.057	0.105	23.16	0.393
.|. |	.|. |	23	-0.064	-0.027	23.885	0.41
*|. |	*|. |	24	-0.121	-0.151	26.535	0.327
.|* |	.|* |	25	0.108	0.078	28.67	0.278
*|. |	*|. |	26	-0.069	-0.111	29.536	0.287
.|. |	.|* |	27	0.028	0.119	29.68	0.329
.|. |	.|. |	28	-0.013	-0.053	29.713	0.377
.|* |	.|* |	29	0.107	0.077	31.866	0.326
.|. |	.|. |	30	-0.018	0.003	31.927	0.371
.|. |	.|. |	31	-0.032	-0.027	32.121	0.411
*|. |	*|. |	32	-0.165	-0.156	37.375	0.236
.|. |	.|. |	33	0.052	0.071	37.901	0.256
.|. |	*|. |	34	-0.011	-0.07	37.926	0.295
*|. |	.|. |	35	-0.079	-0.027	39.149	0.289
.|. |	.|. |	36	0.045	0.021	39.546	0.315

Appendix 13.2d: GARCH (1,1) Model: Student’s t Distribution: Russia

Dependent Variable: DLOGRTS				
Method: ML - ARCH (Marquardt) - Student's t distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	Coefficient	Std. Error	z-Statistic	Prob.
DLOGGDP	-0.021216	0.114644	-0.18506	0.85
DLOGINR	-0.558811	0.347235	-1.60932	0.11
DLOGEXR	-1.287116	0.1203	-10.6993	-
DLOGIFR	0.138839	0.059072	2.350348	0.02
DLOGCON	-0.640339	0.403742	-1.58601	0.11
DLOGHPI	0.052469	0.165231	0.317549	0.75
C	0.013071	0.006463	2.022357	0.04
Variance Equation				
C	0.000254	0.000196	1.294036	0.20
RESID(-1)^2	0.275034	0.148993	1.845952	0.06
GARCH(-1)	0.693828	0.113959	6.08841	-
T-DIST. DOF	7.168604	4.543573	1.577746	0.1146
R-squared	0.406101	Mean dependent var		0.007326
Adjusted R-squared	0.381006	S.D. dependent var		0.090365
S.E. of regression	0.071096	Akaike info criterion		(2.619871)
Sum squared resid	0.71775	Schwarz criterion		(2.398103)
Log likelihood	206.1804	Hannan-Quinn criter.		-2.52977
Durbin-Watson stat	1.764923			

Appendix 13.2e: GARCH (1,1) Model Residual Diagnostics: Student's t Distribution: Russia (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.385333	Prob. F(1,146)	0.5357
Obs*R-squared	0.389584	Prob. Chi-Square(1)	0.5325

Appendix 13.2e: GARCH (1,1) Model Residual Diagnostics: Student's t Distribution: Russia (Page 2 of 2)

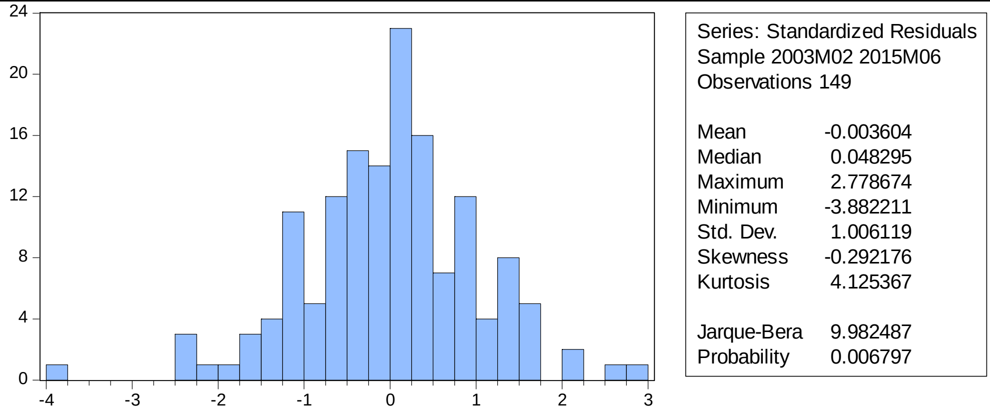
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob**
.|. |	.|. |	1	0.042	0.042	0.27	0.603
*|. |	*|. |	2	-0.107	-0.109	2.0354	0.361
.|. |	.|. |	3	0.055	0.065	2.4957	0.476
.|. |	.|. |	4	0.056	0.039	2.9839	0.561
*|. |	*|. |	5	-0.113	-0.107	4.9848	0.418
*|. |	*|. |	6	-0.097	-0.081	6.4722	0.372
.|* |	.|* |	7	0.13	0.115	9.1623	0.241
.|. |	.|. |	8	0.064	0.046	9.822	0.278
.|. |	.|. |	9	-0.007	0.031	9.8291	0.364
.|. |	.|. |	10	-0.029	-0.039	9.9668	0.443
.|* |	.|* |	11	0.117	0.092	12.182	0.35
*|. |	*|. |	12	-0.093	-0.104	13.594	0.327
.|. |	.|. |	13	-0.048	0.018	13.968	0.376
.|. |	.|. |	14	-0.006	-0.035	13.973	0.452
.|. |	.|. |	15	-0.04	-0.057	14.244	0.507
.|. |	.|. |	16	-0.015	0.003	14.28	0.578
.|* |	.|* |	17	0.081	0.089	15.394	0.567
.|* |	.|* |	18	0.131	0.093	18.335	0.434
*|. |	*|. |	19	-0.169	-0.171	23.261	0.226
.|. |	.|. |	20	0.006	0.037	23.267	0.276
.|. |	*|. |	21	-0.044	-0.095	23.607	0.312
.|. |	.|* |	22	0.043	0.09	23.93	0.351
*|. |	.|. |	23	-0.072	-0.034	24.856	0.358
*|. |	*|. |	24	-0.135	-0.163	28.145	0.254
.|* |	.|. |	25	0.096	0.055	29.829	0.231
*|. |	*|. |	26	-0.084	-0.116	31.106	0.224
.|. |	.|* |	27	0.014	0.096	31.142	0.265
.|. |	.|. |	28	-0.021	-0.056	31.223	0.307
.|* |	.|. |	29	0.09	0.058	32.726	0.289
.|. |	.|. |	30	-0.039	-0.01	33.009	0.322
.|. |	.|. |	31	-0.026	-0.018	33.138	0.363
*|. |	*|. |	32	-0.172	-0.169	38.807	0.19
.|. |	.|* |	33	0.055	0.079	39.401	0.205
.|. |	*|. |	34	-0.011	-0.074	39.424	0.24
*|. |	.|. |	35	-0.085	-0.025	40.849	0.229
.|. |	.|. |	36	0.047	0.007	41.295	0.25

Appendix 13.2f: GARCH(1,1) Model: Generalized Error Distribution: Russia

Dependent Variable: DLOGRTS				
Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	Coefficient	Std. Error	z-Statistic	Prob.
DLOGGDP	-0.094306	0.124799	-0.75567	0.45
DLOGINR	-0.560728	0.289376	-1.93772	0.05
DLOGEXR	-1.321187	0.116098	-11.3799	-
DLOGIFR	0.146594	0.057426	2.552764	0.01
DLOGCON	-0.87861	0.404528	-2.17194	0.03
DLOGHPI	0.095543	0.159943	0.597355	0.55
C	0.016848	0.006474	2.602667	0.01
Variance Equation				
C	0.000264	0.000206	1.285624	0.20
RESID(-1)^2	0.262797	0.154756	1.698139	0.09
GARCH(-1)	0.698285	0.121956	5.725721	-
GED PARAMETER	1.368982	0.252392	5.424037	0
R-squared	0.408551	Mean dependent var		0.007326
Adjusted R-squared	0.383561	S.D. dependent var		0.090365
S.E. of regression	0.070949	Akaike info criterion		(2.620765)
Sum squared resid	0.714788	Schwarz criterion		(2.398997)
Log likelihood	206.247	Hannan-Quinn criter.		-2.530664
Durbin-Watson stat	1.772459			

Appendix 13.2g: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: Russia (Page 1 of 2)

Normal distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.413238	Prob. F(1,146)	0.5213
Obs*R-squared	0.417716	Prob. Chi-Square(1)	0.5181

Appendix 13.2g: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: Russia (Page 2 of 2)

Correlogram						
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.|. |	.|. |	1	0.045	0.045	0.3058	0.58
*|. |	*|. |	2	-0.108	-0.111	2.1056	0.349
.|. |	.|. |	3	0.061	0.072	2.6774	0.444
.|. |	.|. |	4	0.07	0.052	3.4333	0.488
*|. |	*|. |	5	-0.13	-0.124	6.0563	0.301
*|. |	.|. |	6	-0.084	-0.063	7.1581	0.306
.|* |	.|* |	7	0.131	0.11	9.8805	0.195
.|. |	.|. |	8	0.051	0.036	10.293	0.245
.|. |	.|. |	9	-0.004	0.038	10.295	0.327
.|. |	.|. |	10	-0.032	-0.049	10.459	0.401
.|* |	.|* |	11	0.099	0.074	12.063	0.359
*|. |	*|. |	12	-0.077	-0.081	13.035	0.366
.|. |	.|. |	13	-0.039	0.016	13.288	0.426
.|. |	.|. |	14	-0.008	-0.032	13.299	0.503
.|. |	.|. |	15	-0.04	-0.059	13.565	0.559
.|. |	.|. |	16	-0.012	0.008	13.588	0.629
.|* |	.|* |	17	0.094	0.098	15.09	0.589
.|* |	.|* |	18	0.133	0.107	18.144	0.446
*|. |	*|. |	19	-0.168	-0.169	23.046	0.235
.|. |	.|. |	20	0.01	0.031	23.062	0.286
.|. |	*|. |	21	-0.036	-0.089	23.291	0.329
.|. |	.|* |	22	0.049	0.105	23.717	0.362
*|. |	.|. |	23	-0.072	-0.031	24.649	0.369
*|. |	*|. |	24	-0.118	-0.156	27.144	0.298
.|* |	.|. |	25	0.1	0.065	28.968	0.265
*|. |	*|. |	26	-0.086	-0.122	30.316	0.255
.|. |	.|* |	27	0.021	0.118	30.401	0.296
.|. |	.|. |	28	-0.021	-0.056	30.481	0.341
.|* |	.|. |	29	0.097	0.057	32.233	0.31
.|. |	.|. |	30	-0.034	-0.002	32.455	0.347
.|. |	.|. |	31	-0.029	-0.029	32.614	0.387
*|. |	*|. |	32	-0.165	-0.153	37.826	0.221
.|. |	.|* |	33	0.056	0.077	38.435	0.237
.|. |	*|. |	34	-0.012	-0.074	38.462	0.275
*|. |	.|. |	35	-0.089	-0.038	40.018	0.257
.|. |	.|. |	36	0.028	0.003	40.171	0.291

Appendix 13.3: Summary Results of the GARCH Model – India

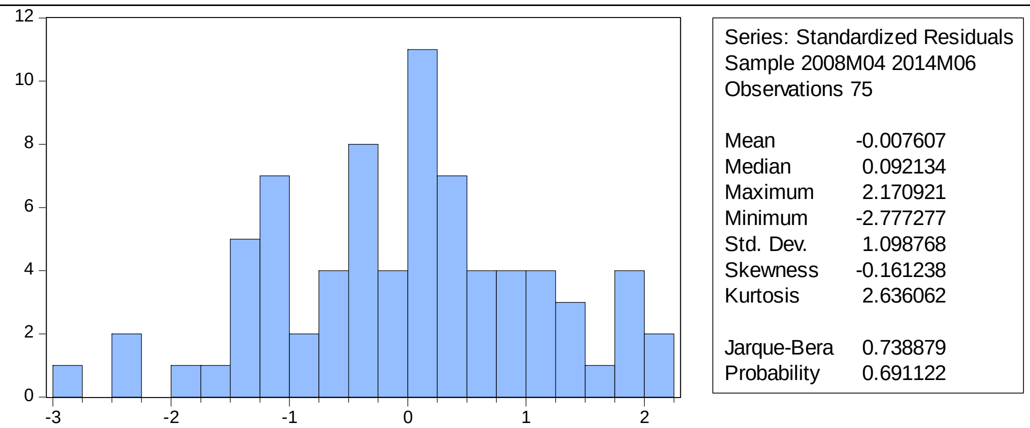
	Method: ML - ARCH (Marquardt) - Normal distribution	Method: ML - ARCH (Marquardt) - Student's t distribution	Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)
Dependent Variable: DLOGNIFTY			
Significant Macroeconomic Variables	**DLOGEXR** **DLOGHPI**	DLOGGDP DLOGINR DLOGEXR DLOGHPI	DLOGGDP DLOGINR DLOGEXR DLOGHPI
Variance Equation			
ARCH effect		V	V
GARCH effect	**V**	V	V
R-squared	**0.85**	**0.83**	**0.83**

Appendix 13.3a: GARCH(1,1) Model: Normal Distribution: India

Dependent Variable: DLOGNIFTY				
Method: ML - ARCH (Marquardt) - Normal distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.014953	0.065292	-0.229022	0.82
DLOGINR	-0.200681	0.107525	-1.866369	0.06
DLOGEXR	-1.196638	0.104209	-11.48302	-
DLOGIFR	0.000788	0.01876	0.041996	0.97
DLOGCON	-0.573565	0.336433	-1.704844	0.09
DLOGHPI	0.232601	0.007431	31.30127	-
C	0.02012	0.00476	4.227251	-
Variance Equation				
C	9.52E-06	1.70E-05	0.560715	0.58
RESID(-1)^2	-0.097183	0.059521	-1.632751	0.10
GARCH(-1)	1.076861	0.081459	13.21962	-
R-squared	0.853548	Mean dependent var		0.002705
Adjusted R-squared	0.840626	S.D. dependent var		0.082805
S.E. of regression	0.033057	Akaike info criterion		(4.161727)
Sum squared resid	0.074308	Schwarz criterion		(3.852729)
Log likelihood	166.0648	Hannan-Quinn criter.		-4.038348
Durbin-Watson stat	1.999037			

Appendix 13.3b: GARCH (1,1) Model Residual Diagnostics: Normal Distribution: India (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	1.45838	Prob. F(1,72)	0.2311
Obs*R-squared	1.469132	Prob. Chi-Square(1)	0.2255

Appendix 13.3b: GARCH (1,1) Model Residual Diagnostics: Normal Distribution: India

(Page 2 of 2)

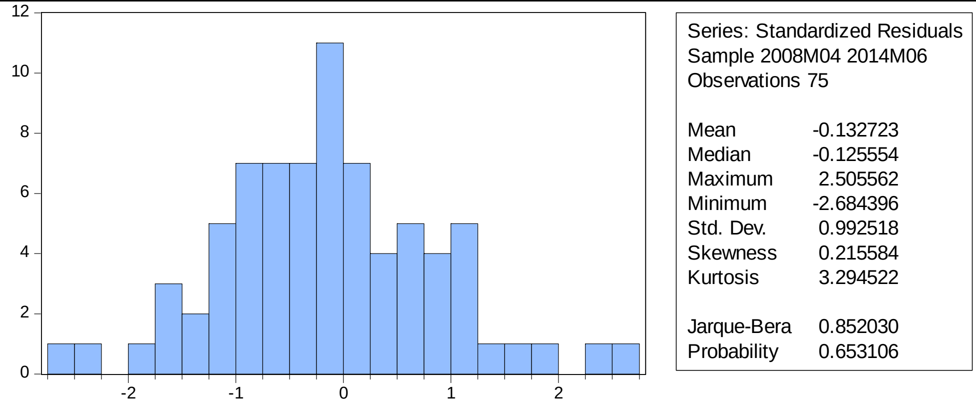
<table>
<tr><th colspan="7">Correlogram</th></tr>
<tr><th>Autocorrelation</th><th colspan="2">Partial Correlation</th><th>AC</th><th>PAC</th><th>Q-Stat</th><th>Prob</th></tr>
<tr><td>.*| . |</td><td>.*| . |</td><td>1</td><td>-0.092</td><td>-0.092</td><td>0.6582</td><td>0.417</td></tr>
<tr><td>.*| . |</td><td>.*| . |</td><td>2</td><td>-0.173</td><td>-0.183</td><td>3.0295</td><td>0.22</td></tr>
<tr><td>. |*. |</td><td>. |*. |</td><td>3</td><td>0.147</td><td>0.116</td><td>4.7606</td><td>0.19</td></tr>
<tr><td>. | . |</td><td>. | . |</td><td>4</td><td>-0.036</td><td>-0.044</td><td>4.8634</td><td>0.302</td></tr>
<tr><td>**| . |</td><td>.*| . |</td><td>5</td><td>-0.226</td><td>-0.198</td><td>9.0677</td><td>0.106</td></tr>
<tr><td>. |*. |</td><td>. | . |</td><td>6</td><td>0.078</td><td>0.013</td><td>9.5803</td><td>0.143</td></tr>
<tr><td>. |*. |</td><td>. | . |</td><td>7</td><td>0.091</td><td>0.045</td><td>10.276</td><td>0.173</td></tr>
<tr><td>.*| . |</td><td>.*| . |</td><td>8</td><td>-0.156</td><td>-0.095</td><td>12.369</td><td>0.135</td></tr>
<tr><td>. | . |</td><td>. | . |</td><td>9</td><td>0.028</td><td>-0.002</td><td>12.436</td><td>0.19</td></tr>
<tr><td>. |*. |</td><td>. |*. |</td><td>10</td><td>0.185</td><td>0.114</td><td>15.484</td><td>0.115</td></tr>
<tr><td>. | . |</td><td>. | . |</td><td>11</td><td>-0.021</td><td>0.06</td><td>15.525</td><td>0.16</td></tr>
<tr><td>. | . |</td><td>. |*. |</td><td>12</td><td>0.028</td><td>0.09</td><td>15.595</td><td>0.211</td></tr>
<tr><td>. |*. |</td><td>. | . |</td><td>13</td><td>0.119</td><td>0.071</td><td>16.918</td><td>0.203</td></tr>
<tr><td>. | . |</td><td>. | . |</td><td>14</td><td>-0.03</td><td>0.03</td><td>17.003</td><td>0.256</td></tr>
<tr><td>.*| . |</td><td>.*| . |</td><td>15</td><td>-0.198</td><td>-0.129</td><td>20.759</td><td>0.145</td></tr>
<tr><td>. |*. |</td><td>. |*. |</td><td>16</td><td>0.123</td><td>0.079</td><td>22.234</td><td>0.136</td></tr>
<tr><td>.*| . |</td><td>.*| . |</td><td>17</td><td>-0.084</td><td>-0.113</td><td>22.936</td><td>0.151</td></tr>
<tr><td>.*| . |</td><td>.*| . |</td><td>18</td><td>-0.152</td><td>-0.081</td><td>25.264</td><td>0.118</td></tr>
<tr><td>. |*. |</td><td>. |*. |</td><td>19</td><td>0.206</td><td>0.137</td><td>29.62</td><td>0.057</td></tr>
<tr><td>. | . |</td><td>. | . |</td><td>20</td><td>0.072</td><td>0.025</td><td>30.159</td><td>0.067</td></tr>
<tr><td>. | . |</td><td>. |*. |</td><td>21</td><td>-0.026</td><td>0.093</td><td>30.231</td><td>0.087</td></tr>
<tr><td>. | . |</td><td>. | . |</td><td>22</td><td>0.014</td><td>-0.049</td><td>30.252</td><td>0.112</td></tr>
<tr><td>.*| . |</td><td>.*| . |</td><td>23</td><td>-0.077</td><td>-0.185</td><td>30.91</td><td>0.125</td></tr>
<tr><td>. | . |</td><td>. | . |</td><td>24</td><td>-0.003</td><td>0.066</td><td>30.911</td><td>0.156</td></tr>
<tr><td>. | . |</td><td>.*| . |</td><td>25</td><td>-0.058</td><td>-0.071</td><td>31.295</td><td>0.179</td></tr>
<tr><td>. | . |</td><td>.*| . |</td><td>26</td><td>-0.036</td><td>-0.081</td><td>31.452</td><td>0.212</td></tr>
<tr><td>. | . |</td><td>. | . |</td><td>27</td><td>0.011</td><td>0.045</td><td>31.466</td><td>0.252</td></tr>
<tr><td>. |*. |</td><td>. |*. |</td><td>28</td><td>0.111</td><td>0.148</td><td>32.972</td><td>0.237</td></tr>
<tr><td>. | . |</td><td>. | . |</td><td>29</td><td>-0.062</td><td>-0.04</td><td>33.454</td><td>0.26</td></tr>
<tr><td>. | . |</td><td>.*| . |</td><td>30</td><td>-0.06</td><td>-0.109</td><td>33.924</td><td>0.284</td></tr>
<tr><td>. |*. |</td><td>. | . |</td><td>31</td><td>0.085</td><td>0.013</td><td>34.876</td><td>0.289</td></tr>
<tr><td>.*| . |</td><td>.*| . |</td><td>32</td><td>-0.118</td><td>-0.197</td><td>36.751</td><td>0.258</td></tr>
</table>

Appendix 13.3c: GARCH (1,1) Model: Student's t Distribution: India

Dependent Variable: DLOGNIFTY				
Method: ML - ARCH (Marquardt) - Student's t distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.253912	0.124723	-2.035801	0.04
DLOGINR	-0.209509	0.073742	-2.841111	0.00
DLOGEXR	-1.183293	0.11512	-10.27874	-
DLOGIFR	-0.002347	0.013298	-0.176497	0.86
DLOGCON	-0.303551	0.35146	-0.863687	0.39
DLOGHPI	0.217135	0.018077	12.01163	-
C	0.021707	0.00359	6.046789	-
Variance Equation				
C	0.000614	0.000172	3.569608	0.00
RESID(-1)^2	0.864736	0.299542	2.88686	0.00
GARCH(-1)	-0.232127	0.072314	-3.209991	0.00
T-DIST. DOF	101.3587	1820.032	0.055691	0.9556
R-squared	0.832022	Mean dependent var		0.002705
Adjusted R-squared	0.817201	S.D. dependent var		0.082805
S.E. of regression	0.035403	Akaike info criterion		(4.111247)
Sum squared resid	0.08523	Schwarz criterion		(3.771349)
Log likelihood	165.1718	Hannan-Quinn criter.		-3.975529
Durbin-Watson stat	1.904568			

Appendix 13.3d: GARCH(1,1) Model Residual Diagnostics: Student's t Distribution: India (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	1.993246	Prob. F(1,72)	0.1623
Obs*R-squared	1.993428	Prob. Chi-Square(1)	0.158

Appendix 13.3d: GARCH (1,1) Model Residual Diagnostics: Student's t Distribution: India (Page 2 of 2)

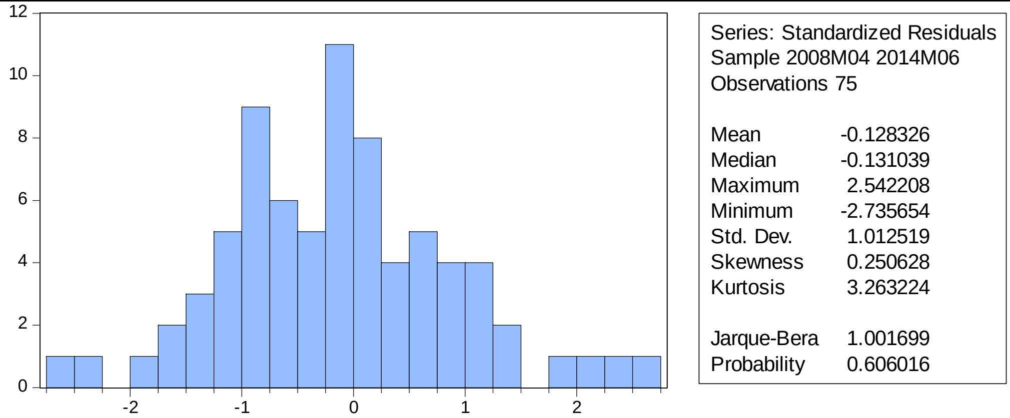
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob**
. | . |	. | . |	1	-0.047	-0.047	0.1707	0.679
.*| . |	.*| . |	2	-0.173	-0.175	2.5295	0.282
. |*. |	. |*. |	3	0.146	0.133	4.2438	0.236
. | . |	. | . |	4	0.066	0.05	4.5987	0.331
**| . |	.*| . |	5	-0.213	-0.171	8.3424	0.138
. |*. |	. |*. |	6	0.15	0.148	10.223	0.116
. |*. |	. |*. |	7	0.145	0.087	12.006	0.1
.*| . |	.*| . |	8	-0.167	-0.088	14.408	0.072
. | . |	. | . |	9	-0.05	-0.036	14.625	0.102
. |** |	. |*. |	10	0.224	0.132	19.091	0.039
. | . |	. | . |	11	-0.032	0.027	19.185	0.058
. | . |	. |*. |	12	0.033	0.128	19.284	0.082
. |*. |	. | . |	13	0.108	0.015	20.372	0.086
. | . |	. | . |	14	-0.054	-0.052	20.653	0.111
**| . |	.*| . |	15	-0.225	-0.158	25.539	0.043
. |*. |	. | . |	16	0.132	0.055	27.251	0.039
. | . |	.*| . |	17	-0.028	-0.1	27.329	0.053
.*| . |	.*| . |	18	-0.156	-0.086	29.802	0.039
. |*. |	. |*. |	19	0.121	0.097	31.314	0.037
. | . |	. | . |	20	0.055	-0.031	31.626	0.047
. | . |	. |*. |	21	-0.048	0.112	31.872	0.06
. | . |	. | . |	22	0.014	-0.027	31.892	0.079
. | . |	.*| . |	23	-0.04	-0.168	32.066	0.099
. | . |	. | . |	24	-0.057	0.01	32.438	0.116
. | . |	. | . |	25	-0.027	-0.004	32.522	0.143
. | . |	. | . |	26	0.042	-0.002	32.733	0.17
. | . |	. | . |	27	-0.027	0.053	32.823	0.203
. | . |	. |*. |	28	0.054	0.097	33.175	0.229
. | . |	. | . |	29	0.01	-0.003	33.188	0.27
.*| . |	.*| . |	30	-0.104	-0.098	34.576	0.258
. | . |	.*| . |	31	-0.028	-0.068	34.679	0.297
. | . |	.*| . |	32	-0.039	-0.186	34.885	0.332

Appendix 13.3e: GARCH(1,1) Model: Generalized Error Distribution: India

Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.238369	0.108323	-2.200541	0.03
DLOGINR	-0.213266	0.05842	-3.650569	0.00
DLOGEXR	-1.181657	0.100258	-11.7861	-
DLOGIFR	-0.004729	0.012226	-0.38684	0.70
DLOGCON	-0.269505	0.31736	-0.849209	0.40
DLOGHPI	0.21993	0.012376	17.77069	-
C	0.021106	0.004377	4.822551	-
Variance Equation				
C	0.000588	0.000159	3.693434	0.00
RESID(-1)^2	0.856539	0.301915	2.837017	0.00
GARCH(-1)	-0.235234	0.061106	-3.849587	0.00
GED PARAMETER	1.714351	0.526308	3.257315	0.0011
R-squared	0.834444	Mean dependent var		0.002705
Adjusted R-squared	0.819836	S.D. dependent var		0.082805
S.E. of regression	0.035147	Akaike info criterion		(4.079603)
Sum squared resid	0.084001	Schwarz criterion		(3.739705)
Log likelihood	163.9851	Hannan-Quinn criter.		-3.943886
Durbin-Watson stat	1.909994			

Appendix 13.3f: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: India (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	**2.297146**	**Prob. F(1,72)**	**0.134**
Obs*R-squared	2.287959	Prob. Chi-Square(1)	0.1304

Appendix 13.3f: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: India (Page 2 of 2)

<table>
<tr><th colspan="7">Correlogram</th></tr>
<tr><th>Autocorrelation</th><th colspan="2">Partial Correlation</th><th>AC</th><th>PAC</th><th>Q-Stat</th><th>Prob</th></tr>
<tr><td>. | . |</td><td>. | . |</td><td>1</td><td>-0.05</td><td>-0.05</td><td>0.1936</td><td>0.66</td></tr>
<tr><td>.*| . |</td><td>.*| . |</td><td>2</td><td>-0.188</td><td>-0.191</td><td>2.9927</td><td>0.224</td></tr>
<tr><td>. |*. |</td><td>. |*. |</td><td>3</td><td>0.148</td><td>0.132</td><td>4.7385</td><td>0.192</td></tr>
<tr><td>. | . |</td><td>. | . |</td><td>4</td><td>0.07</td><td>0.05</td><td>5.1388</td><td>0.273</td></tr>
<tr><td>.*| . |</td><td>.*| . |</td><td>5</td><td>-0.197</td><td>-0.149</td><td>8.3326</td><td>0.139</td></tr>
<tr><td>. |*. |</td><td>. |*. |</td><td>6</td><td>0.153</td><td>0.154</td><td>10.291</td><td>0.113</td></tr>
<tr><td>. |*. |</td><td>. |*. |</td><td>7</td><td>0.142</td><td>0.085</td><td>12.002</td><td>0.1</td></tr>
<tr><td>.*| . |</td><td>.*| . |</td><td>8</td><td>-0.166</td><td>-0.084</td><td>14.379</td><td>0.072</td></tr>
<tr><td>.*| . |</td><td>. | . |</td><td>9</td><td>-0.066</td><td>-0.055</td><td>14.756</td><td>0.098</td></tr>
<tr><td>. |** |</td><td>. |*. |</td><td>10</td><td>0.222</td><td>0.129</td><td>19.117</td><td>0.039</td></tr>
<tr><td>. | . |</td><td>. | . |</td><td>11</td><td>-0.03</td><td>0.02</td><td>19.197</td><td>0.058</td></tr>
<tr><td>. | . |</td><td>. |*. |</td><td>12</td><td>0.015</td><td>0.111</td><td>19.219</td><td>0.083</td></tr>
<tr><td>. |*. |</td><td>. | . |</td><td>13</td><td>0.109</td><td>0.024</td><td>20.335</td><td>0.087</td></tr>
<tr><td>. | . |</td><td>. | . |</td><td>14</td><td>-0.039</td><td>-0.037</td><td>20.478</td><td>0.116</td></tr>
<tr><td>**| . |</td><td>.*| . |</td><td>15</td><td>-0.23</td><td>-0.162</td><td>25.572</td><td>0.043</td></tr>
<tr><td>. |*. |</td><td>. | . |</td><td>16</td><td>0.144</td><td>0.072</td><td>27.601</td><td>0.035</td></tr>
<tr><td>. | . |</td><td>.*| . |</td><td>17</td><td>-0.019</td><td>-0.109</td><td>27.637</td><td>0.049</td></tr>
<tr><td>.*| . |</td><td>.*| . |</td><td>18</td><td>-0.16</td><td>-0.082</td><td>30.238</td><td>0.035</td></tr>
<tr><td>. |*. |</td><td>. |*. |</td><td>19</td><td>0.112</td><td>0.097</td><td>31.538</td><td>0.035</td></tr>
<tr><td>. | . |</td><td>. | . |</td><td>20</td><td>0.064</td><td>-0.027</td><td>31.965</td><td>0.044</td></tr>
<tr><td>. | . |</td><td>. |*. |</td><td>21</td><td>-0.045</td><td>0.121</td><td>32.177</td><td>0.056</td></tr>
<tr><td>. | . |</td><td>. | . |</td><td>22</td><td>0.01</td><td>-0.019</td><td>32.189</td><td>0.074</td></tr>
<tr><td>. | . |</td><td>.*| . |</td><td>23</td><td>-0.035</td><td>-0.156</td><td>32.325</td><td>0.094</td></tr>
<tr><td>. | . |</td><td>. | . |</td><td>24</td><td>-0.058</td><td>-0.006</td><td>32.7</td><td>0.111</td></tr>
<tr><td>. | . |</td><td>. | . |</td><td>25</td><td>-0.027</td><td>-0.003</td><td>32.784</td><td>0.137</td></tr>
<tr><td>. | . |</td><td>. | . |</td><td>26</td><td>0.043</td><td>-0.017</td><td>32.999</td><td>0.162</td></tr>
<tr><td>. | . |</td><td>. | . |</td><td>27</td><td>-0.024</td><td>0.043</td><td>33.066</td><td>0.195</td></tr>
<tr><td>. | . |</td><td>. |*. |</td><td>28</td><td>0.044</td><td>0.099</td><td>33.306</td><td>0.225</td></tr>
<tr><td>. | . |</td><td>. | . |</td><td>29</td><td>0.01</td><td>-0.002</td><td>33.318</td><td>0.265</td></tr>
<tr><td>.*| . |</td><td>.*| . |</td><td>30</td><td>-0.094</td><td>-0.088</td><td>34.453</td><td>0.263</td></tr>
<tr><td>. | . |</td><td>. | . |</td><td>31</td><td>-0.038</td><td>-0.063</td><td>34.638</td><td>0.298</td></tr>
<tr><td>. | . |</td><td>.*| . |</td><td>32</td><td>-0.037</td><td>-0.19</td><td>34.82</td><td>0.335</td></tr>
</table>

Appendix 13.4: Summary Results of the GARCH Model – China

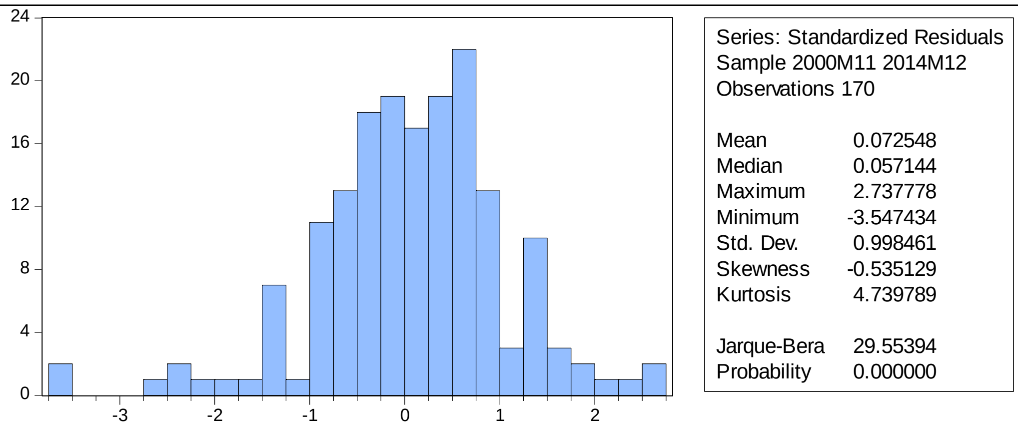
	Method: ML - ARCH (Marquardt) - Normal distribution	Method: ML - ARCH (Marquardt) - Student's t distribution	Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)
Dependent Variable: DLOGSHCOMP			
Significant Macroeconomic Variables	DLOGINR DLOGCON DLOGHPI	**DLOGINR DLOGCON DLOGHPI**	DLOGINR DLOGHPI
Variance Equation			
ARCH effect	V		
GARCH effect	V	**V**	V
R-squared	**0.56**	**0.56**	**0.55**

Appendix 13.4a: GARCH (1,1) Model: Normal Distribution: China

Dependent Variable: DLOGSHCOMP				
Method: ML - ARCH (Marquardt) - Normal distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.17751	0.143569	-1.23643	0.22
DLOGINR	0.452281	0.214056	2.112908	0.03
DLOGEXR	0.543399	0.73913	0.735187	0.46
DLOGIFR	0.003941	0.010082	0.390882	0.70
DLOGCON	-0.48198	0.21779	-2.21306	0.03
DLOGHPI	0.557933	0.038929	14.33211	-
C	0.003451	0.004111	0.839396	0.40
Variance Equation				
C	0.000215	9.62E-05	2.233033	0.03
RESID(-1)^2	0.296596	0.137137	2.162765	0.03
GARCH(-1)	0.639866	0.121901	5.249073	-
R-squared	0.562015	Mean dependent var		0.003963
Adjusted R-squared	0.545893	S.D. dependent var		0.07302
S.E. of regression	0.049206	Akaike info criterion		-3.34654
Sum squared resid	0.394665	Schwarz criterion		-3.16208
Log likelihood	294.4556	Hannan-Quinn criter.		-3.27169
Durbin-Watson stat	2.294884			

Appendix 13.4b: GARCH(1,1) Model Residual Diagnostics: Normal Distribution: China (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.04971	Prob. F(1,167)	0.8238
Obs*R-squared	0.050291	Prob. Chi-Square(1)	0.8226

Appendix 13.4b: GARCH(1,1) Model Residual Diagnostics: Normal Distribution: China

(Page 2 of 2)

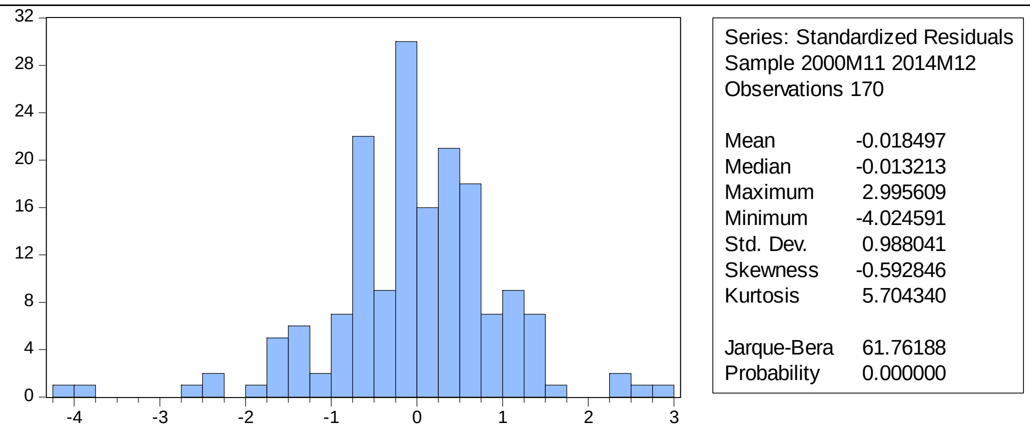
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob**
*|. |	*|. |	1	-0.099	-0.099	1.7036	0.192
*|. |	*|. |	2	-0.079	-0.09	2.8006	0.247
.|. |	*|. |	3	-0.063	-0.082	3.5046	0.32
.|. |	.|. |	4	0.048	0.025	3.9133	0.418
*|. |	*|. |	5	-0.14	-0.148	7.3882	0.193
.|. |	.|. |	6	0.071	0.043	8.2865	0.218
.|. |	.|. |	7	0.024	0.015	8.3935	0.299
.|* |	.|* |	8	0.144	0.144	12.125	0.146
.|* |	.|* |	9	0.082	0.143	13.351	0.147
*|. |	.|. |	10	-0.074	-0.043	14.358	0.157
.|. |	.|* |	11	0.026	0.077	14.481	0.207
.|. |	.|. |	12	-0.006	0.001	14.487	0.271
*|. |	*|. |	13	-0.178	-0.165	20.384	0.086
.|. |	.|. |	14	-0.018	-0.043	20.446	0.117
.|* |	.|* |	15	0.188	0.112	27.141	0.028
.|. |	.|. |	16	0.019	0.018	27.212	0.039
*|. |	*|. |	17	-0.145	-0.157	31.21	0.019
.|. |	.|. |	18	0.035	-0.008	31.453	0.026
.|. |	.|. |	19	0.039	0.038	31.74	0.033
.|. |	.|. |	20	-0.041	-0.014	32.066	0.043
.|. |	.|. |	21	-0.038	0.013	32.347	0.054
.|. |	.|. |	22	-0.025	-0.034	32.466	0.07
.|. |	*|. |	23	-0.036	-0.092	32.726	0.086
.|. |	*|. |	24	-0.024	-0.069	32.843	0.107
.|. |	.|. |	25	-0.013	0.004	32.878	0.134
.|. |	*|. |	26	-0.035	-0.07	33.131	0.158
.|* |	.|. |	27	0.097	0.052	35.047	0.138
*|. |	.|. |	28	-0.097	-0.037	36.983	0.119
.|. |	.|. |	29	0.002	0.014	36.984	0.147
.|. |	.|. |	30	0.072	0.039	38.08	0.148
.|. |	.|. |	31	-0.034	-0.025	38.321	0.171
**|. |	*|. |	32	-0.212	-0.125	47.853	0.035
.|* |	.|. |	33	0.09	0.036	49.57	0.032
*|. |	*|. |	34	-0.07	-0.125	50.612	0.033
*|. |	*|. |	35	-0.092	-0.163	52.455	0.029
.|. |	.|. |	36	0.03	-0.023	52.649	0.036

Appendix 13.4c: GARCH(1,1) Model: Student's t Distribution: China

Dependent Variable: DLOGSHCOMP				
Method: ML - ARCH (Marquardt) - Student's t distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.18277	0.165692	-1.10306	0.27
DLOGINR	0.445411	0.176159	2.528466	0.01
DLOGEXR	0.98409	0.648249	1.518073	0.13
DLOGIFR	0.001466	0.006416	0.228457	0.82
DLOGCON	-0.34997	0.175376	-1.99554	0.05
DLOGHPI	0.593943	0.032813	18.10067	-
C	0.006213	0.003421	1.815893	0.07
Variance Equation				
C	8.51E-05	7.58E-05	1.122901	0.26
RESID(-1)^2	0.149882	0.094804	1.580963	0.11
GARCH(-1)	0.828986	0.094942	8.731519	-
T-DIST. DOF	4.18098	1.633715	2.559186	0.0105
R-squared	0.557893	Mean dependent var		0.003963
Adjusted R-squared	0.54162	S.D. dependent var		0.07302
S.E. of regression	0.049437	Akaike info criterion		-3.42491
Sum squared resid	0.398378	Schwarz criterion		-3.22201
Log likelihood	302.1173	Hannan-Quinn criter.		-3.34257
Durbin-Watson stat	2.311385			

Appendix 13.4d: GARCH(1,1) Model Residual Diagnostics: Student's t Distribution: China (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.009717	Prob. F(1,167)	0.9216
Obs*R-squared	0.009833	Prob. Chi-Square(1)	0.921

Appendix 13.4d: GARCH(1,1) Model Residual Diagnostics: Student's t Distribution: China (Page 2 of 2)

Correlogram

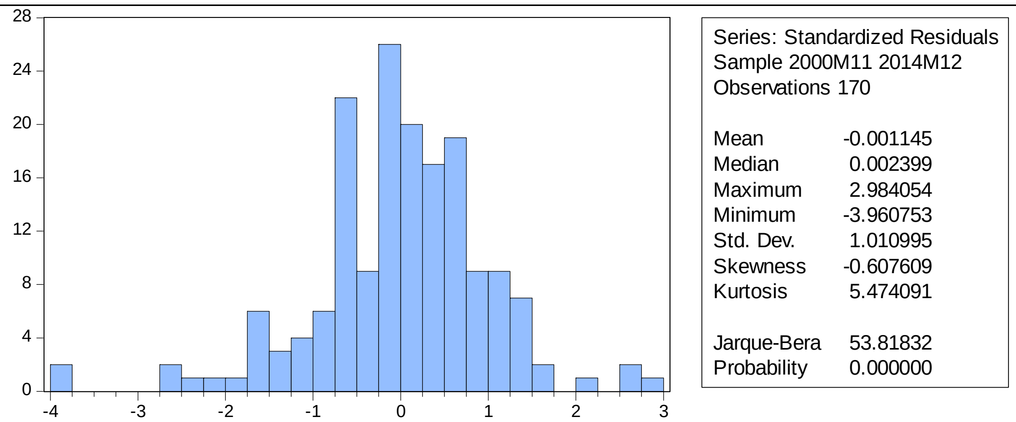
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
*|. |	*|. |	1	-0.111	-0.111	2.1145	0.146
*|. |	*|. |	2	-0.101	-0.115	3.8945	0.143
.|. |	*|. |	3	-0.06	-0.087	4.5149	0.211
.|. |	.|. |	4	0.064	0.035	5.2288	0.265
*|. |	*|. |	5	-0.129	-0.137	8.1873	0.146
.|. |	.|. |	6	0.063	0.038	8.892	0.18
.|. |	.|. |	7	0.011	0	8.915	0.259
.|* |	.|* |	8	0.151	0.151	13.035	0.111
.|* |	.|* |	9	0.075	0.142	14.046	0.121
*|. |	.|. |	10	-0.07	-0.027	14.943	0.134
.|. |	.|* |	11	0.031	0.087	15.123	0.177
.|. |	.|. |	12	0.025	0.031	15.241	0.229
*|. |	*|. |	13	-0.196	-0.174	22.381	0.05
.|. |	.|. |	14	-0.017	-0.046	22.433	0.07
.|* |	.|* |	15	0.191	0.116	29.331	0.015
.|. |	.|. |	16	0.015	0.009	29.376	0.022
*|. |	*|. |	17	-0.128	-0.125	32.506	0.013
.|. |	.|. |	18	0.035	-0.009	32.746	0.018
.|. |	.|. |	19	0.053	0.043	33.28	0.022
.|. |	.|. |	20	-0.02	0.002	33.362	0.031
.|. |	.|. |	21	-0.052	0.004	33.891	0.037
.|. |	.|. |	22	-0.013	0.001	33.923	0.05
.|. |	*|. |	23	-0.042	-0.106	34.274	0.061
.|. |	.|. |	24	-0.01	-0.057	34.293	0.08
.|. |	.|. |	25	-0.017	0.009	34.35	0.101
.|. |	*|. |	26	-0.029	-0.085	34.515	0.123
.|* |	.|. |	27	0.085	0.037	35.992	0.115
*|. |	.|. |	28	-0.093	-0.047	37.786	0.103
.|. |	.|. |	29	0	0.021	37.786	0.127
.|* |	.|. |	30	0.085	0.049	39.294	0.119
.|. |	.|. |	31	-0.031	-0.018	39.492	0.141
**|. |	*|. |	32	-0.221	-0.132	49.797	0.023
.|* |	.|* |	33	0.134	0.091	53.629	0.013
.|. |	*|. |	34	-0.054	-0.093	54.257	0.015
*|. |	*|. |	35	-0.093	-0.143	56.128	0.013
.|. |	.|. |	36	-0.003	-0.037	56.129	0.017

Appendix 13.4e: GARCH(1,1) Model: Generalized Error Distribution: China

Dependent Variable: DLOGSHCOMP				
Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.12892	0.164859	-0.78203	0.43
DLOGINR	0.478527	0.144666	3.307795	0.00
DLOGEXR	0.78492	0.627811	1.250248	0.21
DLOGIFR	-0.00056	0.005926	-0.09463	0.92
DLOGCON	-0.23727	0.1856	-1.27841	0.20
DLOGHPI	0.604239	0.031055	19.45717	-
C	0.003606	0.003426	1.052571	0.29
Variance Equation				
C	9.72E-05	8.23E-05	1.182029	0.24
RESID(-1)^2	0.147916	0.101642	1.455271	0.15
GARCH(-1)	0.814316	0.11215	7.260972	-
GED PARAMETER	1.158079	0.174788	6.625626	0
R-squared	0.554356	Mean dependent var		0.003963
Adjusted R-squared	0.537952	S.D. dependent var		0.07302
S.E. of regression	0.049635	Akaike info criterion		-3.41208
Sum squared resid	0.401566	Schwarz criterion		-3.20918
Log likelihood	301.0271	Hannan-Quinn criter.		-3.32975
Durbin-Watson stat	2.322078			

Appendix 13.4f: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: China (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.032824	Prob. F(1,167)	0.8565
Obs*R-squared	0.03321	Prob. Chi-Square(1)	0.8554

Appendix 13.4f: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: China (Page 2 of 2)

Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob**
*|. |	*|. |	1	-0.118	-0.118	2.413	0.12
*|. |	*|. |	2	-0.09	-0.106	3.8254	0.148
*|. |	*|. |	3	-0.074	-0.1	4.7781	0.189
.|. |	.|. |	4	0.061	0.029	5.4359	0.245
*|. |	*|. |	5	-0.127	-0.137	8.284	0.141
.|. |	.|. |	6	0.052	0.02	8.7662	0.187
.|. |	.|. |	7	0.009	-0.003	8.7805	0.269
.|* |	.|* |	8	0.16	0.153	13.38	0.099
.|. |	.|* |	9	0.073	0.142	14.349	0.11
*|. |	.|. |	10	-0.072	-0.026	15.296	0.122
.|. |	.|* |	11	0.035	0.09	15.519	0.16
.|. |	.|. |	12	0.02	0.033	15.59	0.211
*|. |	*|. |	13	-0.203	-0.18	23.239	0.039
.|. |	.|. |	14	-0.009	-0.039	23.253	0.056
.|* |	.|* |	15	0.183	0.115	29.555	0.014
.|. |	.|. |	16	0.012	0.001	29.585	0.02
*|. |	*|. |	17	-0.125	-0.13	32.575	0.013
.|. |	.|. |	18	0.013	-0.036	32.606	0.019
.|. |	.|. |	19	0.046	0.028	33.02	0.024
.|. |	.|. |	20	-0.022	-0.016	33.118	0.033
.|. |	.|. |	21	-0.06	-0.008	33.835	0.038
.|. |	.|. |	22	-0.001	0.015	33.835	0.051
.|. |	*|. |	23	-0.046	-0.121	34.255	0.062
.|. |	.|. |	24	-0.016	-0.062	34.307	0.079
.|. |	.|. |	25	-0.024	0.007	34.426	0.099
.|. |	*|. |	26	-0.035	-0.096	34.671	0.119
.|* |	.|. |	27	0.076	0.034	35.842	0.119
*|. |	.|. |	28	-0.084	-0.036	37.283	0.113
.|. |	.|. |	29	0.003	0.019	37.285	0.139
.|* |	.|. |	30	0.084	0.047	38.767	0.131
.|. |	.|. |	31	-0.035	-0.026	39.02	0.153
**|. |	*|. |	32	-0.218	-0.133	49.078	0.027
.|* |	.|* |	33	0.128	0.09	52.598	0.017
.|. |	*|. |	34	-0.061	-0.095	53.393	0.018
*|. |	*|. |	35	-0.102	-0.161	55.635	0.015
.|. |	.|. |	36	0.007	-0.039	55.646	0.019

Appendix 13.5: Summary Results of the GARCH Model – South Africa

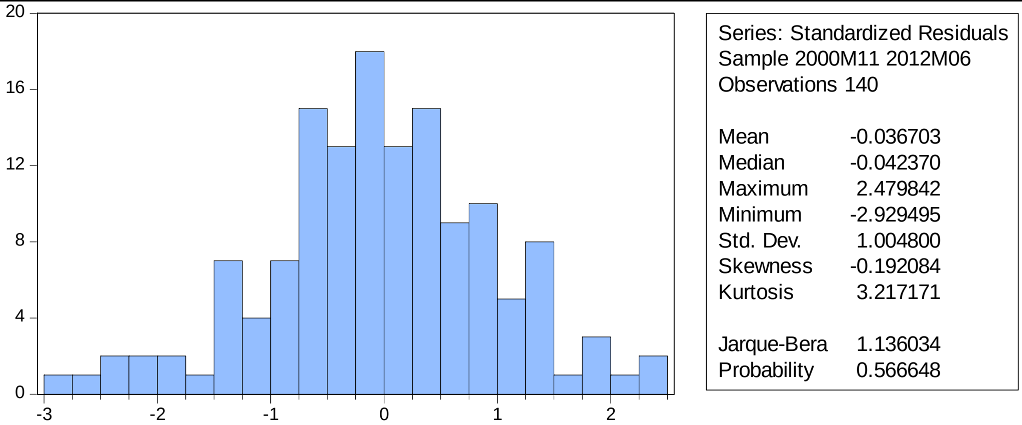
	Method: ML - ARCH (Marquardt) - Normal distribution	Method: ML - ARCH (Marquardt) - Student's t distribution	Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)
Dependent Variable: DLOGJALSH			
Significant Macroeconomic Variables	**DLOGEXR**	DLOGEXR	DLOGEXR
Variance Equation			
ARCH effect	**V**		
GARCH effect	**V**	V	V
R-squared	0.43	0.43	0.43

Appendix 13.5a: GARCH(1,1) Model: Normal Distribution: South Africa

Dependent Variable: DLOGJALSH				
Method: ML - ARCH (Marquardt) - Normal distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.16908	0.178479	-0.94736	0.34
DLOGINR	-0.02964	0.101177	-0.29292	0.77
DLOGEXR	-0.90238	0.077355	-11.6653	-
DLOGIFR	0.000363	0.02106	0.017237	0.99
DLOGCON	-0.39093	1.060184	-0.36874	0.71
DLOGHPI	0.47074	0.460334	1.022607	0.31
C	0.012126	0.011463	1.057842	0.29
Variance Equation				
C	0.000204	0.000187	1.091429	0.28
RESID(-1)^2	0.227425	0.101034	2.250964	0.02
GARCH(-1)	0.702198	0.115499	6.079714	-
R-squared	0.426688	Mean dependent var		0.008914
Adjusted R-squared	0.400825	S.D. dependent var		0.0666
S.E. of regression	0.051552	Akaike info criterion		-3.09101
Sum squared resid	0.353467	Schwarz criterion		-2.8809
Log likelihood	226.371	Hannan-Quinn criter.		-3.00563
Durbin-Watson stat	2.182356			

Appendix 13.5b: GARCH(1,1) Model Residual Diagnostics: Normal Distribution: South Africa (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	2.1908	Prob. F(1,137)	0.1411
Obs*R-squared	2.187797	Prob. Chi-Square(1)	0.1391

Appendix 13.5b: GARCH(1,1) Model Residual Diagnostics: Normal Distribution: South Africa (Page 2 of 2)

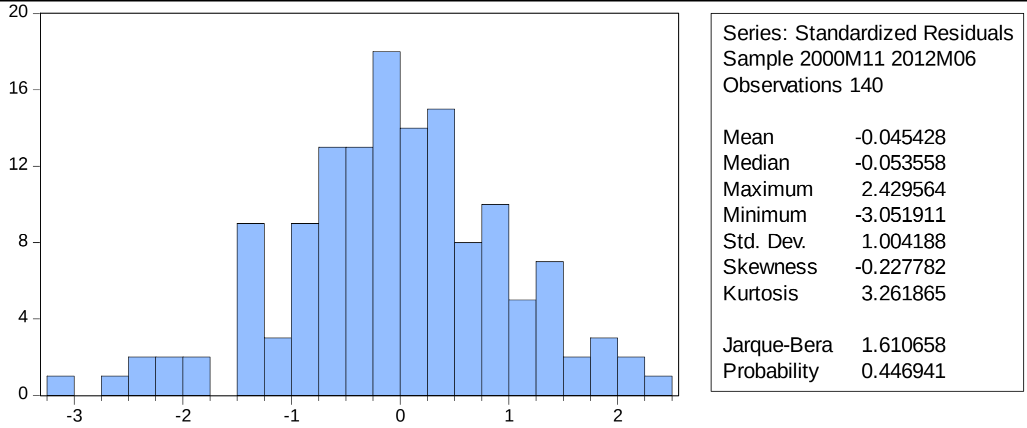
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob**
*|. |	*|. |	1	-0.112	-0.112	1.79	0.181
.|. |	.|. |	2	0.028	0.016	1.903	0.386
.|. |	.|. |	3	0.022	0.027	1.9727	0.578
.|. |	.|. |	4	-0.02	-0.015	2.0319	0.73
.|. |	.|. |	5	-0.018	-0.023	2.0772	0.838
.|. |	.|. |	6	0.001	-0.003	2.0773	0.912
.|. |	.|. |	7	0.007	0.009	2.085	0.955
.|. |	.|. |	8	0.053	0.056	2.5025	0.962
.|. |	.|. |	9	0.038	0.05	2.7271	0.974
.|. |	.|. |	10	-0.011	-0.005	2.7466	0.987
.|. |	.|. |	11	-0.021	-0.028	2.8162	0.993
.|. |	*|. |	12	-0.063	-0.07	3.4394	0.992
.|. |	.|. |	13	0.01	0	3.4541	0.996
.|. |	.|. |	14	0.022	0.031	3.5336	0.998
.|. |	.|. |	15	0.017	0.025	3.5814	0.999
.|* |	.|* |	16	0.137	0.137	6.6115	0.98
.|. |	.|. |	17	-0.06	-0.041	7.1987	0.981
*|. |	*|. |	18	-0.072	-0.097	8.0498	0.978
.|* |	.|* |	19	0.108	0.095	9.9637	0.954
.|. |	.|. |	20	-0.055	-0.011	10.461	0.959
.|. |	.|. |	21	-0.051	-0.055	10.903	0.965
.|. |	*|. |	22	-0.054	-0.081	11.393	0.969
.|. |	.|. |	23	0.049	0.029	11.796	0.974
.|. |	.|. |	24	0.009	0.009	11.809	0.982
*|. |	*|. |	25	-0.071	-0.079	12.687	0.98
.|. |	.|. |	26	0.01	0.009	12.705	0.986
.|. |	.|. |	27	-0.056	-0.045	13.249	0.988
.|. |	.|. |	28	0.068	0.073	14.067	0.987
.|. |	.|. |	29	0.049	0.07	14.501	0.989
*|. |	*|. |	30	-0.121	-0.128	17.148	0.971
.|. |	.|. |	31	0.017	-0.011	17.198	0.979
.|. |	*|. |	32	-0.049	-0.071	17.649	0.981
.|. |	.|. |	33	0.014	0.027	17.684	0.986
.|. |	.|. |	34	-0.033	-0.011	17.89	0.989
*|. |	*|. |	35	-0.123	-0.177	20.768	0.973
.|. |	.|. |	36	-0.036	-0.054	21.012	0.978

Appendix 13.5c: GARCH(1,1) Model: Student's t Distribution: South Africa (Page 1 of 2)

Dependent Variable: DLOGJALSH				
Method: ML - ARCH (Marquardt) - Student's t distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.15704	0.17448	-0.90006	0.37
DLOGINR	-0.01463	0.110143	-0.13281	0.89
DLOGEXR	-0.89053	0.074633	-11.9322	-
DLOGIFR	0.000713	0.018586	0.038374	0.97
DLOGCON	-0.43402	1.002588	-0.4329	0.67
DLOGHPI	0.464937	0.435515	1.067557	0.29
C	0.01287	0.010732	1.199207	0.23
Variance Equation				
C	0.000228	0.000219	1.045006	0.30
RESID(-1)^2	0.232191	0.119241	1.947245	0.052
GARCH(-1)	0.688326	0.131905	5.218332	-
T-DIST. DOF	15.53572	30.38716	0.511259	0.6092
R-squared	0.427365	Mean dependent var		0.008914
Adjusted R-squared	0.401532	S.D. dependent var		0.0666
S.E. of regression	0.051522	Akaike info criterion		-3.08062
Sum squared resid	0.35305	Schwarz criterion		-2.84949
Log likelihood	226.6432	Hannan-Quinn criter.		-2.98669
Durbin-Watson stat	2.17323			

Appendix 13.5d: GARCH (1,1) Model Residual Diagnostics: Student's t Distribution: South Africa (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	1.882923	Prob. F(1,137)	0.1722
Obs*R-squared	1.88451	Prob. Chi-Square(1)	0.1698

Appendix 13.5d: GARCH (1,1) Model Residual Diagnostics: Student’s t Distribution: South Africa (Page 2 of 2)

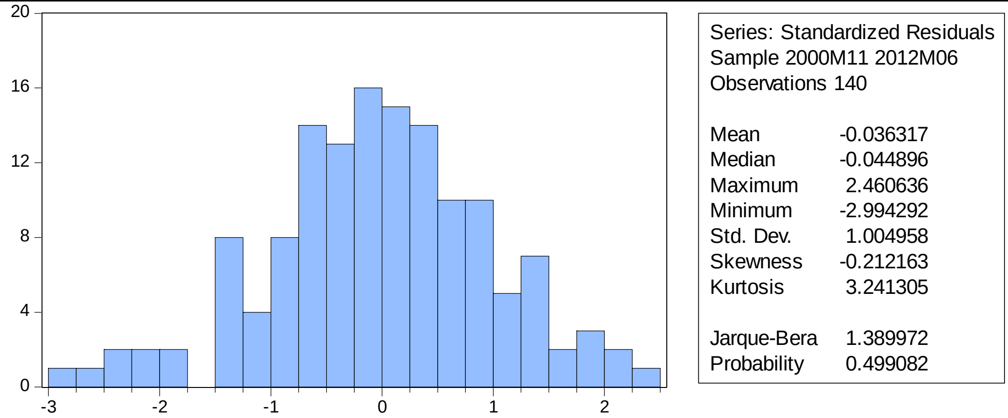
Correlogram						
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
*|. |	*|. |	1	-0.107	-0.107	1.6425	0.2
.|. |	.|. |	2	0.027	0.016	1.7497	0.417
.|. |	.|. |	3	0.022	0.026	1.8173	0.611
.|. |	.|. |	4	-0.018	-0.014	1.8667	0.76
.|. |	.|. |	5	-0.019	-0.024	1.9214	0.86
.|. |	.|. |	6	-0.002	-0.007	1.922	0.927
.|. |	.|. |	7	0.011	0.012	1.9395	0.963
.|. |	.|. |	8	0.048	0.052	2.2854	0.971
.|. |	.|. |	9	0.037	0.047	2.4923	0.981
.|. |	.|. |	10	-0.012	-0.007	2.5144	0.991
.|. |	.|. |	11	-0.025	-0.032	2.6089	0.995
.|. |	*|. |	12	-0.063	-0.07	3.225	0.994
.|. |	.|. |	13	0.007	-0.001	3.2333	0.997
.|. |	.|. |	14	0.021	0.029	3.3032	0.998
.|. |	.|. |	15	0.021	0.028	3.371	0.999
.|* |	.|* |	16	0.138	0.138	6.4127	0.983
.|. |	.|. |	17	-0.063	-0.044	7.0528	0.983
*|. |	*|. |	18	-0.073	-0.098	7.9306	0.98
.|* |	.|* |	19	0.112	0.101	10.004	0.953
.|. |	.|. |	20	-0.059	-0.015	10.573	0.957
.|. |	.|. |	21	-0.052	-0.056	11.031	0.962
.|. |	*|. |	22	-0.053	-0.079	11.505	0.967
.|. |	.|. |	23	0.048	0.027	11.899	0.972
.|. |	.|. |	24	0.004	0.005	11.902	0.981
*|. |	*|. |	25	-0.069	-0.076	12.724	0.98
.|. |	.|. |	26	0.008	0.007	12.734	0.986
.|. |	.|. |	27	-0.056	-0.046	13.295	0.987
.|. |	.|* |	28	0.07	0.075	14.159	0.986
.|. |	.|. |	29	0.049	0.07	14.589	0.988
*|. |	*|. |	30	-0.118	-0.126	17.1	0.971
.|. |	.|. |	31	0.016	-0.012	17.144	0.979
.|. |	*|. |	32	-0.05	-0.071	17.598	0.982
.|. |	.|. |	33	0.013	0.026	17.629	0.987
.|. |	.|. |	34	-0.036	-0.014	17.877	0.99
*|. |	*|. |	35	-0.123	-0.179	20.725	0.973
.|. |	.|. |	36	-0.041	-0.058	21.051	0.978

Appendix 13.5e: GARCH(1,1) Model: Generalized Error Distribution: South Africa

Dependent Variable: DLOGJALSH				
Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.14696	0.171089	-0.85897	0.39
DLOGINR	-0.01646	0.10757	-0.15301	0.88
DLOGEXR	-0.89703	0.074132	-12.1004	-
DLOGIFR	0.000307	0.017594	0.017441	0.99
DLOGCON	-0.44358	0.988741	-0.44863	0.65
DLOGHPI	0.462269	0.429144	1.077189	0.28
C	0.012487	0.010287	1.213876	0.22
Variance Equation				
C	0.000218	0.000224	0.974192	0.33
RESID(-1)^2	0.225397	0.118632	1.899963	0.06
GARCH(-1)	0.697734	0.135943	5.132533	-
GED PARAMETER	1.624333	0.36057	4.504906	0
R-squared	0.427926	Mean dependent var		0.008914
Adjusted R-squared	0.402118	S.D. dependent var		0.0666
S.E. of regression	0.051497	Akaike info criterion		-3.08528
Sum squared resid	0.352704	Schwarz criterion		-2.85415
Log likelihood	226.9693	Hannan-Quinn criter.		-2.99135
Durbin-Watson stat	2.176184			

Appendix 13.5f: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: South Africa (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	**2.062555**	**Prob. F(1,137)**	**0.1532**
Obs*R-squared	2.061627	Prob. Chi-Square(1)	0.151

Appendix 13.5f: GARCH (1,1) Model Residual Diagnostics: Generalized Error Distribution: South Africa (Page 2 of 2

Correlogram						
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
*|. |	*|. |	1	-0.108	-0.108	1.6741	0.196
.|. |	.|. |	2	0.029	0.017	1.793	0.408
.|. |	.|. |	3	0.022	0.028	1.8661	0.601
.|. |	.|. |	4	-0.019	-0.014	1.9171	0.751
.|. |	.|. |	5	-0.02	-0.025	1.9753	0.853
.|. |	.|. |	6	0	-0.004	1.9753	0.922
.|. |	.|. |	7	0.011	0.013	1.9939	0.96
.|. |	.|. |	8	0.048	0.052	2.3398	0.969
.|. |	.|. |	9	0.038	0.048	2.5632	0.979
.|. |	.|. |	10	-0.011	-0.005	2.5807	0.99
.|. |	.|. |	11	-0.024	-0.031	2.6683	0.994
.|. |	*|. |	12	-0.062	-0.069	3.2737	0.993
.|. |	.|. |	13	0.009	0	3.285	0.997
.|. |	.|. |	14	0.02	0.028	3.3473	0.998
.|. |	.|. |	15	0.019	0.026	3.4025	0.999
.|* |	.|* |	16	0.139	0.138	6.4969	0.982
.|. |	.|. |	17	-0.062	-0.043	7.1138	0.982
*|. |	*|. |	18	-0.073	-0.098	7.9929	0.979
.|* |	.|* |	19	0.109	0.097	9.9608	0.954
.|. |	.|. |	20	-0.058	-0.014	10.513	0.958
.|. |	.|. |	21	-0.053	-0.057	10.98	0.963
.|. |	*|. |	22	-0.052	-0.079	11.438	0.968
.|. |	.|. |	23	0.046	0.026	11.8	0.973
.|. |	.|. |	24	0.006	0.007	11.805	0.982
*|. |	*|. |	25	-0.068	-0.076	12.611	0.981
.|. |	.|. |	26	0.008	0.006	12.621	0.987
.|. |	.|. |	27	-0.056	-0.045	13.172	0.988
.|. |	.|* |	28	0.068	0.074	14.002	0.987
.|. |	.|. |	29	0.048	0.068	14.409	0.989
*|. |	*|. |	30	-0.12	-0.128	17.001	0.973
.|. |	.|. |	31	0.016	-0.012	17.047	0.98
.|. |	*|. |	32	-0.051	-0.072	17.528	0.982
.|. |	.|. |	33	0.013	0.026	17.56	0.987
.|. |	.|. |	34	-0.035	-0.012	17.794	0.99
*|. |	*|. |	35	-0.124	-0.18	20.716	0.973
.|. |	.|. |	36	-0.039	-0.057	21.011	0.978

Appendix 13.6: Summary Results of the GARCH Model – France

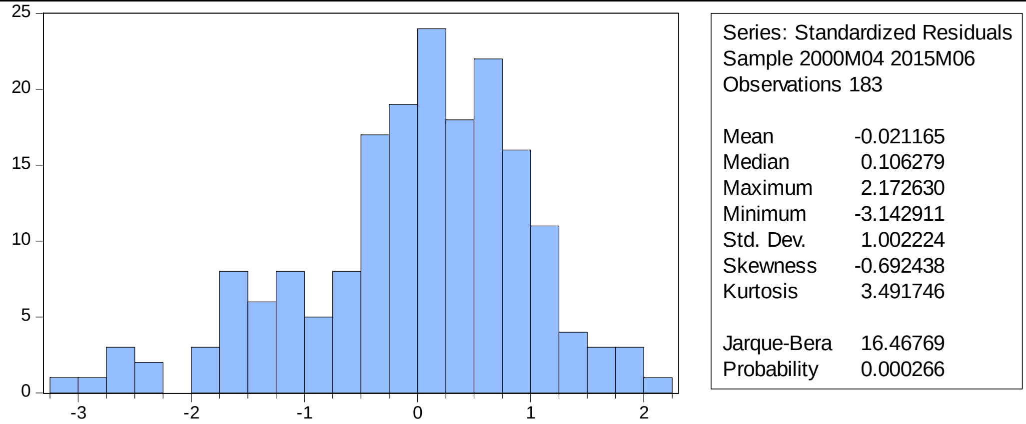
	Method: ML - ARCH (Marquardt) - Normal distribution	Method: ML - ARCH (Marquardt) - Student's t distribution	Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)
Dependent Variable: DLOGCAC			
Significant Macroeconomic Variables	NO	NO	NO
Variance Equation			
ARCH effect	V	V	V
GARCH effect			
R-squared	0.01	0.00	-0.01

Appendix 13.6a: GARCH(1,1) Model: Normal Distribution: France

Dependent Variable: DLOGCAC				
Method: ML - ARCH (Marquardt) - Normal distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	Coefficient	Std. Error	z-Statistic	Prob.
DLOGRGDP	-0.80757	1.281848	-0.63	0.53
DLOGINR	0.009214	0.020523	0.448978	0.65
DLOGEXR	-0.21314	0.238038	-0.89538	0.37
DLOGIFR	-0.01058	0.01493	-0.70892	0.48
DLOGCON	0.872428	1.281027	0.681038	0.50
DLOGHPI	0.485214	0.599478	0.809394	0.42
C	-0.00136	0.004229	-0.32166	0.75
	Variance Equation			
C	0.000891	0.000391	2.275491	0.02
RESID(-1)^2	0.439851	0.149465	2.942838	0.00
GARCH(-1)	0.278711	0.204831	1.360687	0.17
R-squared	0.014836	Mean dependent var		-0.00032
Adjusted R-squared	-0.01875	S.D. dependent var		0.052581
S.E. of regression	0.053071	Akaike info criterion		-3.09062
Sum squared resid	0.495717	Schwarz criterion		-2.91524
Log likelihood	292.792	Hannan-Quinn criter.		-3.01953
Durbin-Watson stat	2.013492			

Appendix 13.6b: GARCH (1,1) Model Residual Diagnostics: Normal Distribution: France (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.07295	Prob. F(1,180)	0.7874
Obs*R-squared	0.07373	Prob. Chi-Square(1)	0.786

Appendix 13.6b: GARCH (1,1) Model Residual Diagnostics: Normal Distribution: France

(Page 2 of 2)

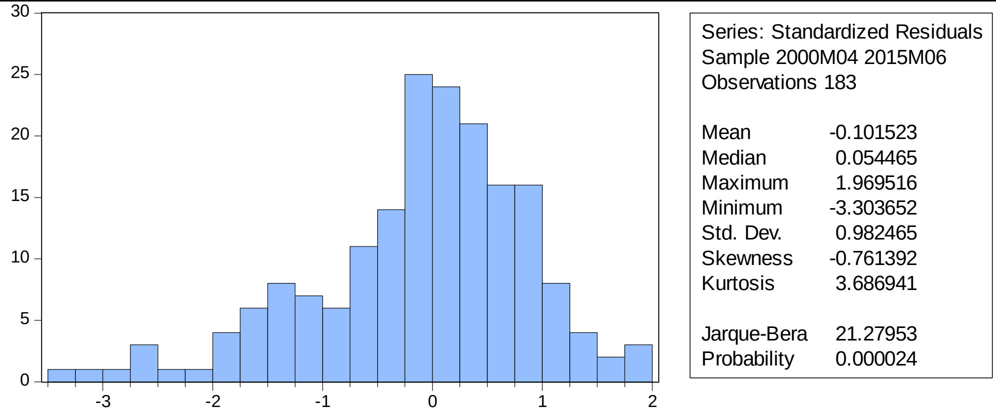
Correlogram						
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.|. |	.|. |	1	-0.021	-0.021	0.0801	0.777
.|. |	.|. |	2	-0.065	-0.065	0.8658	0.649
.|* |	.|* |	3	0.08	0.078	2.0748	0.557
.|* |	.|* |	4	0.084	0.084	3.4185	0.49
.|. |	.|. |	5	0.033	0.047	3.6197	0.605
.|. |	.|. |	6	0.058	0.065	4.2598	0.642
.|. |	.|. |	7	0.006	0.001	4.2664	0.749
.|* |	.|. |	8	0.077	0.073	5.4089	0.713
.|. |	.|. |	9	-0.043	-0.056	5.7611	0.764
.|. |	.|. |	10	-0.043	-0.05	6.1218	0.805
.|. |	.|. |	11	-0.007	-0.034	6.1309	0.864
*|. |	*|. |	12	-0.081	-0.102	7.4443	0.827
.|. |	.|. |	13	0.036	0.038	7.6984	0.863
.|. |	.|. |	14	0.007	0.001	7.707	0.904
.|. |	.|. |	15	-0.015	0.019	7.7515	0.933
.|. |	.|* |	16	0.06	0.079	8.4828	0.933
.|. |	.|. |	17	-0.035	-0.021	8.7333	0.948
.|. |	.|. |	18	-0.02	0.004	8.8122	0.964
.|* |	.|. |	19	0.084	0.065	10.252	0.946
.|. |	.|. |	20	-0.031	-0.031	10.452	0.959
.|. |	.|. |	21	0.063	0.06	11.288	0.957
.|. |	.|. |	22	0.052	0.028	11.849	0.96
.|. |	.|. |	23	-0.055	-0.054	12.498	0.962
*|. |	*|. |	24	-0.144	-0.176	16.924	0.852
.|. |	.|. |	25	-0.028	-0.062	17.089	0.879
*|. |	*|. |	26	-0.069	-0.103	18.125	0.871
.|* |	.|* |	27	0.096	0.102	20.13	0.825
.|. |	.|* |	28	0.048	0.116	20.64	0.84
.|. |	.|. |	29	-0.047	0.008	21.125	0.855
.|. |	.|. |	30	-0.017	0.031	21.186	0.882
.|. |	.|. |	31	-0.059	-0.052	21.962	0.884
.|. |	*|. |	32	-0.054	-0.067	22.623	0.89
.|. |	.|. |	33	-0.008	-0.035	22.638	0.912
.|* |	.|* |	34	0.086	0.077	24.301	0.89
.|. |	.|. |	35	-0.012	-0.043	24.331	0.912
*|. |	*|. |	36	-0.083	-0.097	25.899	0.893

Appendix 13.6c: GARCH(1,1) Model: Student's t Distribution: France

Dependent Variable: DLOGCAC				
Method: ML - ARCH (Marquardt) - Student's t distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.67039	1.11268	-0.6025	0.55
DLOGINR	0.009194	0.015003	0.612818	0.54
DLOGEXR	-0.1328	0.234986	-0.56514	0.57
DLOGIFR	-0.00961	0.012353	-0.77826	0.44
DLOGCON	0.760553	1.115794	0.681625	0.50
DLOGHPI	0.379092	0.618385	0.613037	0.54
C	0.002895	0.004236	0.683402	0.49
Variance Equation				
C	0.00072	0.000392	1.837149	0.07
RESID(-1)^2	0.453169	0.205516	2.205034	0.03
GARCH(-1)	0.370369	0.222907	1.661539	0.10
T-DIST. DOF	5.849644	3.606811	1.621833	0.1048
R-squared	0.003163	Mean dependent var		-0.00032
Adjusted R-squared	-0.03082	S.D. dependent var		0.052581
S.E. of regression	0.053385	Akaike info criterion		-3.10021
Sum squared resid	0.50159	Schwarz criterion		-2.90729
Log likelihood	294.6696	Hannan-Quinn criter.		-3.02201
Durbin-Watson stat	1.987967			

Appendix 13.6d: GARCH (1,1) Model Residual Diagnostics: Student's t Distribution: France (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.095935	Prob. F(1,180)	0.7571
Obs*R-squared	0.09695	Prob. Chi-Square(1)	0.7555

Appendix 13.6d: GARCH (1,1) Model Residual Diagnostics: Student’s t Distribution: France (Page 2 of 2)

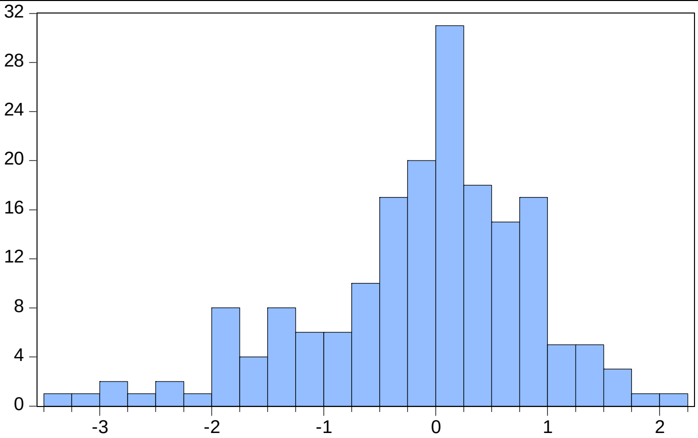
Correlogram						
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.|. |	.|. |	1	-0.022	-0.022	0.0903	0.764
*|. |	*|. |	2	-0.067	-0.067	0.9265	0.629
.|. |	.|. |	3	0.07	0.068	1.8609	0.602
.|* |	.|* |	4	0.079	0.079	3.0516	0.549
.|. |	.|. |	5	0.034	0.047	3.2719	0.658
.|. |	.|. |	6	0.062	0.07	3.9969	0.677
.|. |	.|. |	7	-0.005	-0.007	4.001	0.78
.|. |	.|. |	8	0.07	0.068	4.9446	0.763
.|. |	.|. |	9	-0.047	-0.061	5.3763	0.8
.|. |	.|. |	10	-0.052	-0.059	5.9003	0.824
.|. |	.|. |	11	-0.006	-0.032	5.9085	0.879
*|. |	*|. |	12	-0.082	-0.102	7.2366	0.842
.|. |	.|. |	13	0.034	0.039	7.4664	0.877
.|. |	.|. |	14	0.002	-0.002	7.4674	0.915
.|. |	.|. |	15	-0.022	0.013	7.5656	0.94
.|. |	.|. |	16	0.052	0.071	8.1194	0.945
.|. |	.|. |	17	-0.033	-0.02	8.3399	0.959
.|. |	.|. |	18	-0.032	-0.008	8.5458	0.969
.|. |	.|. |	19	0.073	0.053	9.6367	0.961
.|. |	.|. |	20	-0.036	-0.038	9.9121	0.97
.|. |	.|. |	21	0.063	0.06	10.741	0.968
.|. |	.|. |	22	0.044	0.023	11.144	0.973
.|. |	.|. |	23	-0.061	-0.053	11.926	0.972
*|. |	*|. |	24	-0.149	-0.175	16.629	0.864
.|. |	*|. |	25	-0.033	-0.066	16.868	0.887
*|. |	*|. |	26	-0.067	-0.097	17.84	0.882
.|* |	.|* |	27	0.107	0.109	20.306	0.818
.|. |	.|* |	28	0.046	0.113	20.774	0.835
.|. |	.|. |	29	-0.045	0.013	21.228	0.851
.|. |	.|. |	30	-0.026	0.018	21.376	0.876
.|. |	.|. |	31	-0.062	-0.06	22.223	0.876
.|. |	*|. |	32	-0.055	-0.076	22.897	0.882
.|. |	.|. |	33	-0.001	-0.037	22.897	0.906
.|* |	.|* |	34	0.09	0.08	24.746	0.877
.|. |	.|. |	35	-0.018	-0.043	24.824	0.899
*|. |	*|. |	36	-0.075	-0.081	26.109	0.887

Appendix 13.6e: GARCH(1,1) Model: Generalized Error Distribution: France

Dependent Variable: DLOGCAC				
Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	Coefficient	Std. Error	z-Statistic	Prob.
DLOGGDP	-0.28954	1.000405	-0.28942	0.77
DLOGINR	0.014722	0.013869	1.061465	0.29
DLOGEXR	-0.14222	0.225462	-0.63078	0.53
DLOGIFR	-0.01509	0.010617	-1.42133	0.16
DLOGCON	0.374672	1.00062	0.37444	0.71
DLOGHPI	0.331431	0.561533	0.590225	0.56
C	0.005586	0.00395	1.414415	0.16
Variance Equation				
C	0.000831	0.000477	1.743707	0.08
RESID(-1)^2	0.471236	0.237372	1.985219	0.05
GARCH(-1)	0.311135	0.267229	1.164302	0.24
GED PARAMETER	1.185683	0.204361	5.801916	0
R-squared	-0.00899	Mean dependent var		-0.00032
Adjusted R-squared	-0.04339	S.D. dependent var		0.052581
S.E. of regression	0.053709	Akaike info criterion		-3.11719
Sum squared resid	0.507704	Schwarz criterion		-2.92427
Log likelihood	296.2225	Hannan-Quinn criter.		-3.03899
Durbin-Watson stat	1.969458			

Appendix 13.6f: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: France (Page 1 of 2)

Normal Distribution



Series: Standardized Residuals
Sample 2000M04 2015M06
Observations 183

Mean	-0.142254
Median	0.016328
Maximum	2.007166
Minimum	-3.399605
Std. Dev.	0.988108
Skewness	-0.750845
Kurtosis	3.658755
Jarque-Bera	20.50385
Probability	0.000035

Heteroskedasticity Test: ARCH			
F-statistic	**0.228503**	**Prob. F(1,180)**	**0.6332**
Obs*R-squared	0.230749	Prob. Chi-Square(1)	0.631

Appendix 13.6f: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: France (Page 2 of 2)

Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob**
.|. |	.|. |	1	-0.022	-0.022	0.0908	0.763
*|. |	*|. |	2	-0.069	-0.07	0.9915	0.609
.|. |	.|. |	3	0.054	0.051	1.5341	0.674
.|* |	.|. |	4	0.075	0.073	2.5907	0.628
.|. |	.|. |	5	0.035	0.046	2.8228	0.727
.|. |	.|* |	6	0.065	0.076	3.6422	0.725
.|. |	.|. |	7	-0.003	-0.002	3.6439	0.82
.|. |	.|. |	8	0.053	0.054	4.1919	0.839
.|. |	.|. |	9	-0.043	-0.055	4.5476	0.872
.|. |	.|. |	10	-0.049	-0.058	5.0148	0.89
.|. |	.|. |	11	-0.002	-0.024	5.0153	0.93
*|. |	*|. |	12	-0.074	-0.093	6.1008	0.911
.|. |	.|. |	13	0.029	0.032	6.2708	0.936
.|. |	.|. |	14	-0.012	-0.017	6.2985	0.958
.|. |	.|. |	15	-0.019	0.008	6.3722	0.973
.|. |	.|. |	16	0.05	0.067	6.8744	0.976
.|. |	.|. |	17	-0.036	-0.024	7.1425	0.982
.|. |	.|. |	18	-0.039	-0.015	7.4538	0.986
.|. |	.|. |	19	0.072	0.056	8.5326	0.98
.|. |	.|. |	20	-0.038	-0.04	8.8276	0.985
.|. |	.|. |	21	0.062	0.065	9.6408	0.983
.|. |	.|. |	22	0.043	0.028	10.022	0.986
.|. |	.|. |	23	-0.06	-0.051	10.79	0.985
*|. |	*|. |	24	-0.153	-0.174	15.796	0.895
.|. |	*|. |	25	-0.033	-0.068	16.036	0.914
.|. |	*|. |	26	-0.064	-0.098	16.908	0.912
.|* |	.|* |	27	0.105	0.101	19.287	0.859
.|. |	.|* |	28	0.043	0.1	19.688	0.876
.|. |	.|. |	29	-0.049	0.007	20.207	0.886
.|. |	.|. |	30	-0.034	0.011	20.456	0.904
.|. |	.|. |	31	-0.053	-0.047	21.083	0.91
.|. |	.|. |	32	-0.043	-0.063	21.492	0.92
.|. |	.|. |	33	-0.006	-0.035	21.5	0.938
.|* |	.|. |	34	0.08	0.068	22.946	0.925
.|. |	.|. |	35	-0.013	-0.035	22.984	0.941
*|. |	*|. |	36	-0.072	-0.075	24.191	0.933

Appendix 13.7: Summary Results of the GARCH Model – Germany

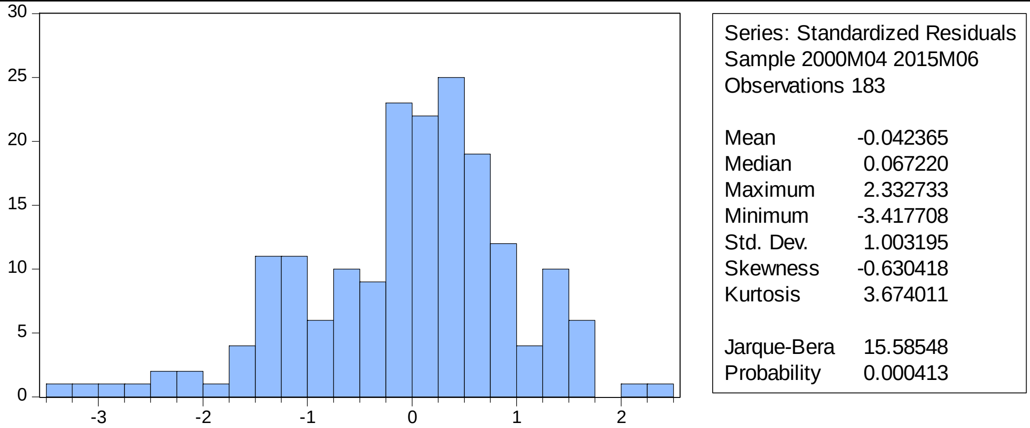
	Method: ML - ARCH (Marquardt) - Normal distribution	Method: ML - ARCH (Marquardt) - Student's t distribution	Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)
Dependent Variable: DLOGDAX			
Significant Macroeconomic Variables	NO	NO	NO
Variance Equation			
ARCH effect	V		
GARCH effect	V	V	
R-squared	0.03	0.02	0.02

Appendix 13.7a: GARCH(1,1) Model: Normal Distribution: Germany

Dependent Variable: DLOGDAX				
Method: ML - ARCH (Marquardt) - Normal distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	0.317684	0.729169	0.435679	0.66
DLOGINR	0.012206	0.020299	0.601304	0.55
DLOGEXR	0.288169	0.270909	1.063711	0.29
LOGIFRIT	-0.00534	0.003874	-1.37887	0.17
DLOGCON	-0.41602	0.744023	-0.55915	0.58
DLOGHPI	-1.6815	1.536105	-1.09465	0.27
C	0.011033	0.004572	2.412837	0.02
Variance Equation				
C	0.000829	0.000439	1.889258	0.06
RESID(-1)^2	0.250411	0.112561	2.22466	0.03
GARCH(-1)	0.498922	0.206232	2.419224	0.02
R-squared	0.025636	Mean dependent var		0.002913
Adjusted R-squared	-0.00758	S.D. dependent var		0.058989
S.E. of regression	0.059212	Akaike info criterion		-2.87195
Sum squared resid	0.61706	Schwarz criterion		-2.69657
Log likelihood	272.7835	Hannan-Quinn criter.		-2.80086
Durbin-Watson stat	1.999315			

Appendix 13.7b: GARCH(1,1) Model Residual Diagnostics: Normal Distribution: Germany (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	2.55E-05	Prob. F(1,180)	0.996
Obs*R-squared	2.58E-05	Prob. Chi-Square(1)	0.996

Appendix 13.7b: GARCH (1,1) Model Residual Diagnostics: Normal Distribution: Germany (Page 2 of 2)

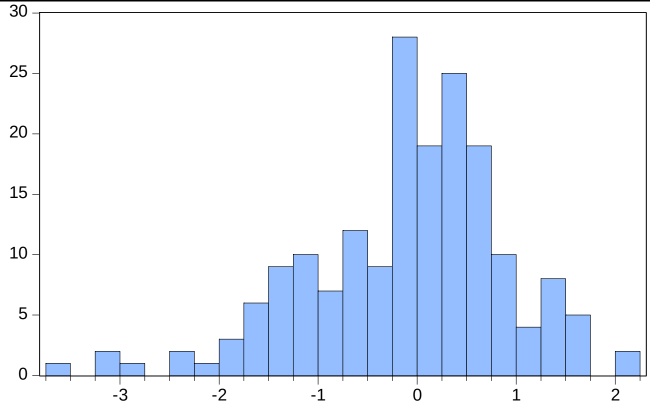
Correlogram						
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.|. |	.|. |	1	-0.032	-0.032	0.1872	0.665
*|. |	*|. |	2	-0.074	-0.075	1.2105	0.546
.|. |	.|. |	3	0.049	0.044	1.6614	0.646
.|. |	.|. |	4	0.067	0.065	2.5148	0.642
.|. |	.|. |	5	0.061	0.073	3.225	0.665
.|. |	.|. |	6	0	0.012	3.225	0.78
.|. |	.|. |	7	0.007	0.011	3.2353	0.862
.|. |	.|. |	8	0.06	0.051	3.9272	0.864
.|. |	.|. |	9	-0.003	-0.007	3.9286	0.916
*|. |	*|. |	10	-0.099	-0.099	5.8394	0.829
.|. |	.|. |	11	0.02	0.004	5.9188	0.879
*|. |	*|. |	12	-0.09	-0.114	7.5169	0.822
.|. |	.|. |	13	0.02	0.017	7.5933	0.869
.|. |	.|. |	14	0.061	0.062	8.343	0.871
.|* |	.|* |	15	0.096	0.131	10.195	0.807
.|* |	.|* |	16	0.081	0.117	11.517	0.776
.|. |	.|. |	17	-0.05	-0.016	12.029	0.798
.|. |	.|. |	18	-0.025	-0.028	12.16	0.839
.|* |	.|* |	19	0.152	0.114	16.93	0.595
.|. |	.|. |	20	0	-0.024	16.93	0.658
.|. |	.|. |	21	0.004	0.009	16.934	0.715
.|* |	.|. |	22	0.103	0.067	19.149	0.636
.|. |	*|. |	23	-0.063	-0.083	19.979	0.643
*|. |	*|. |	24	-0.115	-0.147	22.804	0.531
.|. |	.|. |	25	-0.042	-0.052	23.184	0.567
.|. |	.|. |	26	-0.016	-0.019	23.242	0.619
.|* |	.|* |	27	0.155	0.181	28.482	0.386
.|. |	.|. |	28	-0.013	0.055	28.52	0.437
*|. |	.|. |	29	-0.066	-0.011	29.486	0.44
.|. |	.|. |	30	0.036	-0.006	29.775	0.477
.|. |	.|. |	31	0.023	0.019	29.894	0.523
*|. |	*|. |	32	-0.129	-0.142	33.646	0.388
.|. |	.|. |	33	0.014	-0.011	33.691	0.434
.|. |	.|. |	34	0.053	-0.002	34.326	0.452
.|. |	.|. |	35	0.042	-0.02	34.727	0.481
.|. |	*|. |	36	-0.064	-0.095	35.666	0.484

Appendix 13.7c: GARCH (1,1) Model: Student's t Distribution: Germany

Dependent Variable: DLOGDAX				
Method: ML - ARCH (Marquardt) - Student's t distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	0.525791	0.647529	0.811996	0.42
DLOGINR	0.013994	0.015763	0.887752	0.37
DLOGEXR	0.258828	0.260037	0.995351	0.32
LOGIFRIT	-0.00386	0.003711	-1.03967	0.30
DLOGCON	-0.67829	0.664651	-1.02052	0.31
DLOGHPI	-2.00608	1.457222	-1.37665	0.17
C	0.014352	0.004265	3.36482	0.00
Variance Equation				
C	0.000677	0.000446	1.518044	0.13
RESID(-1)^2	0.252173	0.135215	1.864975	0.06
GARCH(-1)	0.558908	0.2106	2.653881	0.01
T-DIST. DOF	6.588033	3.882856	1.696698	0.0898
R-squared	0.020861	Mean dependent var		0.002913
Adjusted R-squared	-0.01252	S.D. dependent var		0.058989
S.E. of regression	0.059357	Akaike info criterion		-2.8864
Sum squared resid	0.620084	Schwarz criterion		-2.69348
Log likelihood	275.1052	Hannan-Quinn criter.		-2.8082
Durbin-Watson stat	1.986707			

Appendix 13.7d: GARCH(1,1) Model Residual Diagnostics: Student’s t Distribution: Germany (Page 1 of 2)

Normal Distribution



Series: Standardized Residuals
Sample 2000M04 2015M06
Observations 183

Mean	-0.097064
Median	0.019100
Maximum	2.168560
Minimum	-3.630871
Std. Dev.	0.992483
Skewness	-0.682447
Kurtosis	3.846363
Jarque-Bera	19.66691
Probability	0.000054

Heteroskedasticity Test: ARCH			
F-statistic	0.008603	Prob. F(1,180)	0.9262
Obs*R-squared	0.008698	Prob. Chi-Square(1)	0.9257

Appendix 13.7d: GARCH(1,1) Model Residual Diagnostics: Student's t Distribution: Germany (Page 2 of 2)

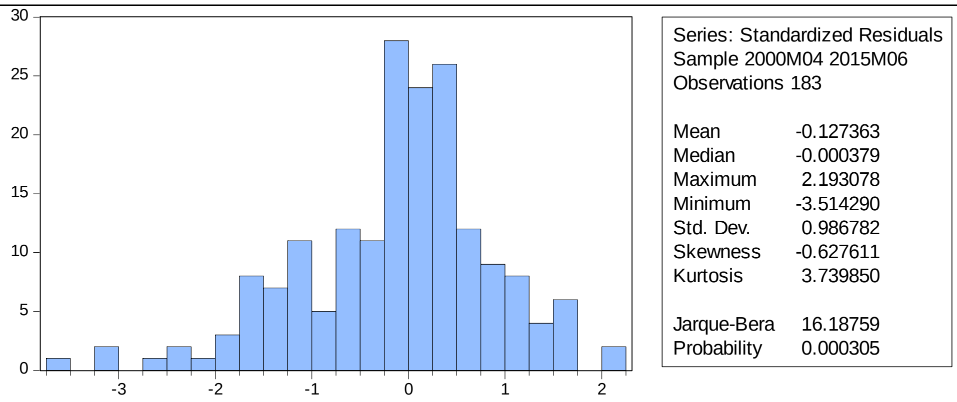
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob**
.|. |	.|. |	1	-0.041	-0.041	0.3186	0.572
*|. |	*|. |	2	-0.072	-0.074	1.2892	0.525
.|. |	.|. |	3	0.035	0.029	1.5198	0.678
.|. |	.|. |	4	0.065	0.063	2.3126	0.678
.|. |	.|. |	5	0.062	0.073	3.0408	0.694
.|. |	.|. |	6	0.004	0.019	3.0443	0.803
.|. |	.|. |	7	0.002	0.008	3.0451	0.881
.|. |	.|. |	8	0.054	0.048	3.6072	0.891
.|. |	.|. |	9	-0.008	-0.012	3.6193	0.935
*|. |	*|. |	10	-0.094	-0.096	5.3329	0.868
.|. |	.|. |	11	0.015	-0.001	5.3798	0.911
*|. |	*|. |	12	-0.092	-0.114	7.0432	0.855
.|. |	.|. |	13	0.017	0.009	7.1011	0.897
.|. |	.|. |	14	0.057	0.058	7.7524	0.902
.|* |	.|* |	15	0.089	0.122	9.3574	0.858
.|. |	.|* |	16	0.073	0.112	10.43	0.843
.|. |	.|. |	17	-0.05	-0.013	10.948	0.859
.|. |	.|. |	18	-0.033	-0.032	11.171	0.887
.|* |	.|* |	19	0.156	0.12	16.171	0.646
.|. |	.|. |	20	0.005	-0.014	16.177	0.706
.|. |	.|. |	21	0.007	0.011	16.187	0.759
.|* |	.|. |	22	0.098	0.071	18.22	0.693
.|. |	*|. |	23	-0.065	-0.082	19.119	0.694
*|. |	*|. |	24	-0.114	-0.148	21.884	0.586
.|. |	.|. |	25	-0.042	-0.058	22.264	0.62
.|. |	.|. |	26	-0.012	-0.019	22.296	0.672
.|* |	.|* |	27	0.156	0.176	27.587	0.432
.|. |	.|. |	28	-0.012	0.058	27.619	0.485
.|. |	.|. |	29	-0.061	-0.001	28.439	0.495
.|. |	.|. |	30	0.028	-0.002	28.618	0.538
.|. |	.|. |	31	0.022	0.023	28.723	0.584
*|. |	*|. |	32	-0.124	-0.137	32.152	0.459
.|. |	.|. |	33	0.013	-0.019	32.19	0.507
.|. |	.|. |	34	0.052	-0.001	32.805	0.526
.|. |	.|. |	35	0.05	-0.014	33.384	0.546
.|. |	*|. |	36	-0.055	-0.082	34.08	0.56

Appendix 13.7e: GARCH(1,1) Model: Generalized Error Distribution: Germany

Dependent Variable: DLOGDAX				
Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	0.838831	0.584295	1.43563	0.15
DLOGINR	0.021916	0.014587	1.502418	0.13
DLOGEXR	0.24905	0.235771	1.056321	0.29
LOGIFRIT	-0.00406	0.003642	-1.11544	0.26
DLOGCON	-0.98958	0.602392	-1.64275	0.10
DLOGHPI	-0.78387	1.217003	-0.6441	0.52
C	0.014621	0.003782	3.865334	0.00
Variance Equation				
C	0.00083	0.000583	1.424791	0.15
RESID(-1)^2	0.267808	0.169835	1.576872	0.11
GARCH(-1)	0.503065	0.265395	1.895538	0.06
GED PARAMETER	1.147251	0.194323	5.903834	0
R-squared	0.018224	Mean dependent var		0.002913
Adjusted R-squared	-0.01525	S.D. dependent var		0.058989
S.E. of regression	0.059436	Akaike info criterion		-2.90885
Sum squared resid	0.621754	Schwarz criterion		-2.71593
Log likelihood	277.1602	Hannan-Quinn criter.		-2.83065
Durbin-Watson stat	1.965825			

Appendix 13.7f: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: Germany (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.044248	Prob. F(1,180)	0.8336
Obs*R-squared	0.044729	Prob. Chi-Square(1)	0.8325

Appendix 13.7f: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: Germany (Page 2 of 2)

Correlogram						
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.|. |	.|. |	1	-0.036	-0.036	0.2353	0.628
*|. |	*|. |	2	-0.076	-0.077	1.3072	0.52
.|. |	.|. |	3	0.017	0.011	1.3609	0.715
.|. |	.|. |	4	0.053	0.049	1.8941	0.755
.|. |	.|. |	5	0.061	0.068	2.6062	0.76
.|. |	.|. |	6	0.001	0.013	2.6062	0.856
.|. |	.|. |	7	0.001	0.009	2.6063	0.919
.|. |	.|. |	8	0.057	0.054	3.2309	0.919
.|. |	.|. |	9	-0.025	-0.028	3.3569	0.948
*|. |	*|. |	10	-0.094	-0.095	5.099	0.884
.|. |	.|. |	11	0.012	-0.003	5.1297	0.925
*|. |	*|. |	12	-0.099	-0.121	7.0886	0.852
.|. |	.|. |	13	0.013	0.003	7.1207	0.896
.|. |	.|. |	14	0.058	0.057	7.7906	0.9
.|* |	.|* |	15	0.091	0.119	9.4702	0.852
.|* |	.|* |	16	0.082	0.119	10.842	0.819
.|. |	.|. |	17	-0.047	-0.003	11.294	0.841
.|. |	.|. |	18	-0.057	-0.049	11.964	0.849
.|* |	.|* |	19	0.14	0.104	15.993	0.658
.|. |	.|. |	20	-0.004	-0.031	15.997	0.717
.|. |	.|. |	21	0.007	0.002	16.008	0.769
.|* |	.|* |	22	0.099	0.076	18.067	0.702
*|. |	*|. |	23	-0.07	-0.081	19.105	0.695
*|. |	*|. |	24	-0.115	-0.14	21.936	0.583
.|. |	.|. |	25	-0.035	-0.036	22.203	0.624
.|. |	.|. |	26	-0.014	-0.013	22.245	0.675
.|* |	.|* |	27	0.148	0.166	27.022	0.463
.|. |	.|. |	28	-0.014	0.052	27.065	0.515
.|. |	.|. |	29	-0.051	-0.001	27.629	0.538
.|. |	.|. |	30	0.032	-0.005	27.855	0.578
.|. |	.|. |	31	0.032	0.038	28.084	0.617
*|. |	*|. |	32	-0.125	-0.141	31.569	0.488
.|. |	.|. |	33	0.017	-0.007	31.634	0.535
.|. |	.|. |	34	0.05	0.008	32.195	0.556
.|. |	.|. |	35	0.043	-0.027	32.61	0.584
.|. |	*|. |	36	-0.064	-0.093	33.56	0.585

Appendix 13.8: Summary Results of the GARCH Model – Japan

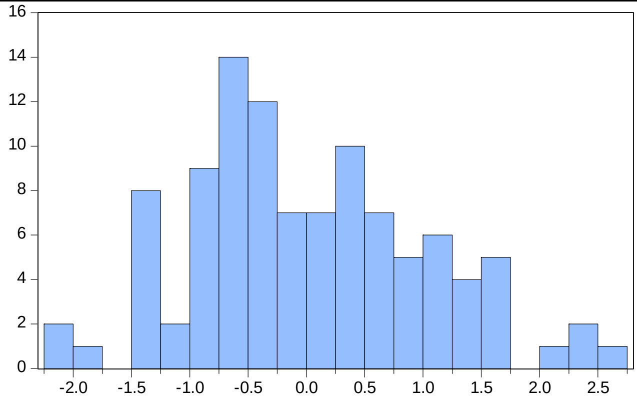
	Method: ML - ARCH (Marquardt) - Normal distribution	Method: ML - ARCH (Marquardt) - Student's t distribution	Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)
Dependent Variable: DLOGNIKKEY			
Significant Macroeconomic Variables	DLOGHPI	**DLOGHPI**	DLOGHPI
Variance Equation			
ARCH effect		**V**	
GARCH effect	V	**V**	V
R-squared	**0.55**	**0.55**	**0.55**

Appendix 13.8a: GARCH(1,1) Model: Normal Distribution: Japan

Dependent Variable: DLOGNIKKEY				
Method: ML - ARCH (Marquardt) - Normal distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.22199	0.180001	-1.23327	0.22
DLOGINR	-0.00012	0.004539	-0.0268	0.98
DLOGEXR	0.051869	0.111698	0.464369	0.64
DLOGIFR	-0.0037	0.0049	-0.75415	0.45
DLOGCON	0.546196	0.932956	0.585446	0.56
DLOGHPI	0.363006	0.041708	8.70361	-
C	0.000954	0.002898	0.329373	0.74
Variance Equation				
C	9.78E-05	9.87E-05	0.99114	0.32
RESID(-1)^2	0.185937	0.126214	1.473183	0.14
GARCH(-1)	0.712595	0.171816	4.147435	-
R-squared	0.54517	Mean dependent var		0.00271
Adjusted R-squared	0.516743	S.D. dependent var		0.044811
S.E. of regression	0.031151	Akaike info criterion		-4.1127
Sum squared resid	0.093159	Schwarz criterion		-3.8569
Log likelihood	221.804	Hannan-Quinn criter.		-4.00909
Durbin-Watson stat	2.327819			

Appendix 13.8b: GARCH (1,1) Model Residual Diagnostics: Normal Distribution: Japan (Page 1 of 2)

Normal Distribution



Series: Standardized Residuals
Sample 2004M03 2012M09
Observations 103

Mean	0.022452
Median	-0.058846
Maximum	2.669404
Minimum	-2.203867
Std. Dev.	1.002473
Skewness	0.336045
Kurtosis	2.825998
Jarque-Bera	2.068507
Probability	0.355492

Heteroskedasticity Test: ARCH			
F-statistic	0.017826	Prob. F(1,100)	0.8941
Obs*R-squared	0.018179	Prob. Chi-Square(1)	0.8927

Appendix 13.8b: GARCH (1,1) Model Residual Diagnostics: Normal Distribution: Japan (Page 2 of 2)

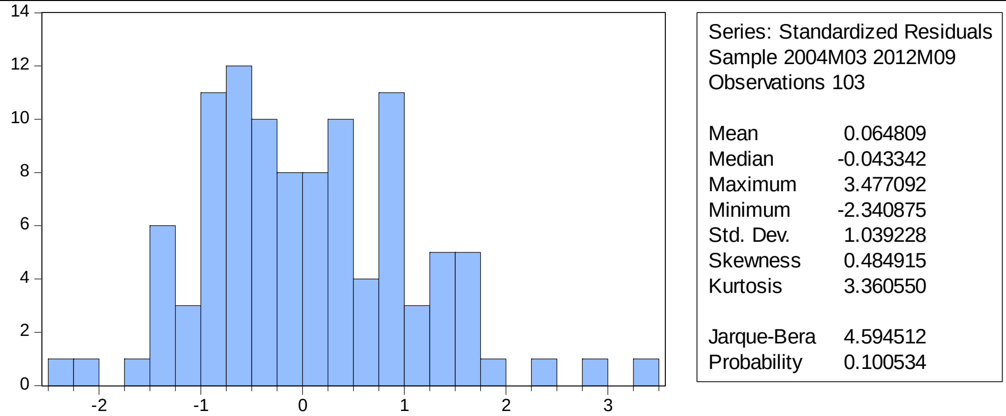
Correlogram						
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
*|. |	*|. |	1	-0.163	-0.163	2.8083	0.094
*|. |	*|. |	2	-0.109	-0.139	4.0714	0.131
.|* |	.|. |	3	0.088	0.048	4.9119	0.178
.|* |	.|* |	4	0.099	0.114	5.9878	0.2
*|. |	.|. |	5	-0.106	-0.055	7.22	0.205
.|. |	.|. |	6	0.026	0.016	7.2932	0.295
.|* |	.|. |	7	0.076	0.054	7.9505	0.337
.|* |	.|* |	8	0.111	0.149	9.3649	0.312
.|* |	.|* |	9	0.079	0.164	10.075	0.344
.|. |	.|. |	10	-0.053	-0.003	10.408	0.405
.|. |	.|. |	11	-0.015	-0.037	10.434	0.492
*|. |	**|. |	12	-0.194	-0.275	14.927	0.245
.|. |	*|. |	13	-0.014	-0.137	14.951	0.31
.|. |	.|. |	14	0.053	-0.006	15.296	0.358
.|. |	.|* |	15	0.05	0.084	15.606	0.409
.|. |	.|* |	16	0.036	0.122	15.767	0.469
.|. |	*|. |	17	-0.065	-0.087	16.302	0.503
.|. |	*|. |	18	-0.02	-0.077	16.354	0.568
.|. |	.|. |	19	0.041	0.053	16.571	0.619
*|. |	*|. |	20	-0.174	-0.068	20.515	0.426
.|. |	.|. |	21	-0.064	-0.006	21.062	0.455
.|* |	.|. |	22	0.112	0.024	22.727	0.417
.|. |	.|. |	23	-0.002	-0.053	22.727	0.477
.|. |	.|. |	24	-0.015	-0.051	22.758	0.534
.|. |	.|. |	25	0.058	0.03	23.223	0.565
*|. |	*|. |	26	-0.166	-0.128	27.074	0.405
.|. |	.|. |	27	0.04	0.073	27.296	0.448
.|. |	.|. |	28	-0.044	-0.004	27.57	0.487
.|. |	.|. |	29	-0.031	-0.017	27.706	0.534
.|. |	*|. |	30	-0.044	-0.088	27.993	0.571
.|. |	.|. |	31	0.05	-0.04	28.364	0.602
.|. |	.|. |	32	0.028	0.008	28.485	0.645
.|. |	.|* |	33	0.072	0.132	29.296	0.652
*|. |	.|. |	34	-0.109	0.005	31.145	0.608
.|. |	.|. |	35	-0.041	-0.039	31.416	0.642
.|. |	*|. |	36	0.01	-0.069	31.432	0.686

Appendix 13.8c: GARCH(1,1) Model: Student's t Distribution: Japan (Page 1 of 2)

Dependent Variable: DLOGNIKKEY				
Method: ML - ARCH (Marquardt) - Student's t distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.22679	0.137686	-1.64718	0.10
DLOGINR	-0.00274	0.002845	-0.96438	0.33
DLOGEXR	0.067462	0.072139	0.935159	0.35
DLOGIFR	-0.00163	0.005149	-0.31706	0.75
DLOGCON	0.24707	0.621143	0.397766	0.69
DLOGHPI	0.395794	0.025737	15.37862	-
C	0.000805	0.00238	0.338267	0.74
Variance Equation				
C	0.001504	0.000349	4.305996	-
RESID(-1)^2	0.200125	0.082266	2.432671	0.02
GARCH(-1)	-1.05794	0.023155	-45.6904	-
T-DIST. DOF	17.38446	40.88171	0.425238	0.6707
R-squared	0.545548	Mean dependent var		0.00271
Adjusted R-squared	0.517145	S.D. dependent var		0.044811
S.E. of regression	0.031138	Akaike info criterion		-4.15113
Sum squared resid	0.093082	Schwarz criterion		-3.86975
Log likelihood	224.7833	Hannan-Quinn criter.		-4.03716
Durbin-Watson stat	2.36561			

Appendix 13.8d: GARCH(1,1) Model Residual Diagnostics: Student's t Distribution: Japan (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.616505	Prob. F(1,100)	0.4342
Obs*R-squared	0.624982	Prob. Chi-Square(1)	0.4292

Appendix 13.8d: GARCH(1,1) Model Residual Diagnostics: Student's t Distribution: Japan (Page 2 of 2)

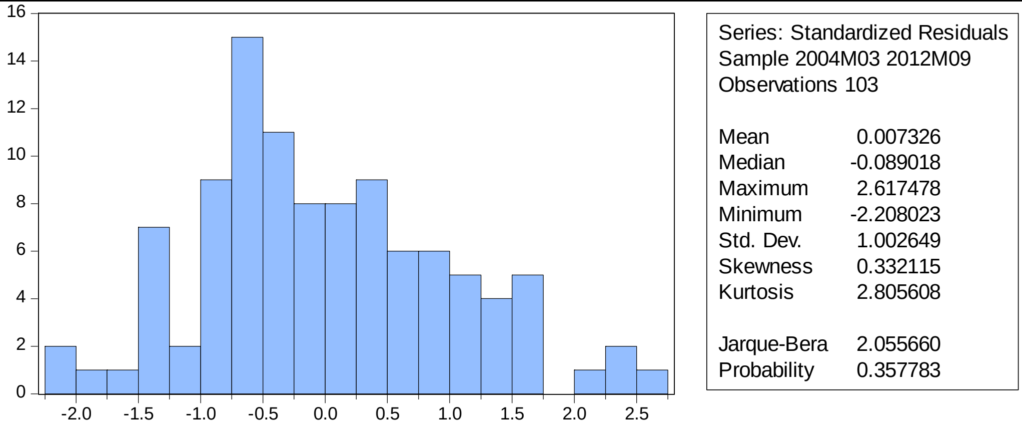
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob**
*|. |	*|. |	1	-0.173	-0.173	3.177	0.075
*|. |	*|. |	2	-0.107	-0.141	4.4048	0.111
.|. |	.|. |	3	0.006	-0.041	4.4092	0.221
.|* |	.|* |	4	0.132	0.116	6.3214	0.176
.|. |	.|. |	5	-0.027	0.02	6.4016	0.269
.|. |	.|. |	6	0	0.03	6.4016	0.38
.|. |	.|. |	7	0.003	0.009	6.4026	0.494
.|* |	.|* |	8	0.167	0.167	9.595	0.295
.|* |	.|** |	9	0.129	0.215	11.52	0.242
.|. |	.|* |	10	-0.031	0.089	11.629	0.311
.|. |	.|. |	11	-0.01	0.047	11.641	0.391
*|. |	**|. |	12	-0.161	-0.22	14.732	0.256
.|. |	*|. |	13	0.057	-0.086	15.124	0.3
.|. |	.|. |	14	0.043	-0.027	15.345	0.355
.|. |	.|. |	15	0.032	0.032	15.469	0.418
.|. |	.|* |	16	0.065	0.115	15.998	0.453
*|. |	*|. |	17	-0.074	-0.113	16.695	0.475
.|. |	.|. |	18	0.019	-0.051	16.741	0.541
.|. |	.|. |	19	0.042	0.014	16.974	0.592
*|. |	*|. |	20	-0.159	-0.099	20.25	0.442
*|. |	.|. |	21	-0.083	-0.048	21.162	0.449
.|* |	.|. |	22	0.084	0.001	22.111	0.453
.|. |	.|. |	23	0.002	-0.043	22.111	0.514
.|. |	*|. |	24	-0.028	-0.078	22.215	0.566
.|. |	.|. |	25	-0.018	-0.022	22.262	0.621
*|. |	*|. |	26	-0.182	-0.2	26.909	0.414
.|. |	.|. |	27	0.056	-0.009	27.353	0.445
.|. |	.|. |	28	-0.03	0.031	27.484	0.492
*|. |	.|. |	29	-0.079	-0.034	28.395	0.497
*|. |	*|. |	30	-0.097	-0.082	29.78	0.477
.|. |	.|. |	31	0.044	-0.039	30.075	0.513
.|. |	.|. |	32	0.023	-0.018	30.155	0.56
.|. |	.|* |	33	0.033	0.118	30.324	0.601
*|. |	.|. |	34	-0.158	0.002	34.22	0.457
.|. |	.|. |	35	-0.059	-0.047	34.781	0.479
.|. |	.|. |	36	0.032	-0.012	34.945	0.519

Appendix 13.8e: GARCH (1,1) Model: Generalized Error Distribution: Japan

Dependent Variable: DLOGNIKKEY				
Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.22231	0.205065	-1.08412	0.28
DLOGINR	0.000241	0.0047	0.051195	0.96
DLOGEXR	0.053024	0.118123	0.448888	0.65
DLOGIFR	-0.00354	0.005304	-0.667	0.50
DLOGCON	0.576947	1.058634	0.544992	0.59
DLOGHPI	0.366281	0.043048	8.508663	-
C	0.001339	0.002991	0.447877	0.65
Variance Equation				
C	9.90E-05	9.55E-05	1.03703	0.30
RESID(-1)^2	0.186849	0.118376	1.578439	0.11
GARCH(-1)	0.710369	0.157499	4.510296	-
GED PARAMETER	2.240063	0.746184	3.002024	0.0027
R-squared	0.545955	Mean dependent var		0.00271
Adjusted R-squared	0.517577	S.D. dependent var		0.044811
S.E. of regression	0.031124	Akaike info criterion		-4.09557
Sum squared resid	0.092998	Schwarz criterion		-3.81419
Log likelihood	221.922	Hannan-Quinn criter.		-3.9816
Durbin-Watson stat	2.331393			

Appendix 13.8f: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: Japan (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.022236	Prob. F(1,100)	0.8818
Obs*R-squared	0.022676	Prob. Chi-Square(1)	0.8803

Appendix 13.8f: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: Japan (Page 2 of 2)

Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob**
*|. |	*|. |	1	-0.163	-0.163	2.8152	0.093
*|. |	*|. |	2	-0.106	-0.136	4.0143	0.134
.|* |	.|. |	3	0.089	0.05	4.8741	0.181
.|* |	.|* |	4	0.101	0.117	5.9775	0.201
*|. |	.|. |	5	-0.104	-0.052	7.1609	0.209
.|. |	.|. |	6	0.027	0.018	7.2428	0.299
.|* |	.|. |	7	0.077	0.056	7.9182	0.34
.|* |	.|* |	8	0.112	0.15	9.3516	0.314
.|* |	.|* |	9	0.08	0.166	10.081	0.344
.|. |	.|. |	10	-0.052	-0.002	10.401	0.406
.|. |	.|. |	11	-0.013	-0.036	10.421	0.493
*|. |	**|. |	12	-0.192	-0.273	14.797	0.253
.|. |	*|. |	13	-0.013	-0.136	14.817	0.319
.|. |	.|. |	14	0.052	-0.007	15.147	0.368
.|. |	.|* |	15	0.049	0.082	15.444	0.42
.|. |	.|* |	16	0.039	0.123	15.63	0.479
.|. |	*|. |	17	-0.063	-0.083	16.136	0.514
.|. |	*|. |	18	-0.022	-0.076	16.196	0.579
.|. |	.|. |	19	0.042	0.054	16.422	0.629
*|. |	*|. |	20	-0.174	-0.071	20.355	0.436
.|. |	.|. |	21	-0.065	-0.009	20.915	0.464
.|* |	.|. |	22	0.11	0.022	22.521	0.429
.|. |	.|. |	23	-0.003	-0.053	22.522	0.489
.|. |	.|. |	24	-0.016	-0.051	22.556	0.546
.|. |	.|. |	25	0.057	0.029	23.012	0.577
*|. |	*|. |	26	-0.165	-0.127	26.817	0.419
.|. |	.|* |	27	0.041	0.075	27.058	0.461
.|. |	.|. |	28	-0.046	-0.003	27.367	0.498
.|. |	.|. |	29	-0.032	-0.015	27.518	0.544
.|. |	*|. |	30	-0.047	-0.091	27.843	0.579
.|. |	.|. |	31	0.051	-0.04	28.227	0.609
.|. |	.|. |	32	0.026	0.006	28.331	0.653
.|. |	.|* |	33	0.073	0.132	29.144	0.66
*|. |	.|. |	34	-0.109	0.005	30.997	0.616
.|. |	.|. |	35	-0.04	-0.038	31.251	0.65
.|. |	*|. |	36	0.008	-0.068	31.262	0.693

Appendix 13.9: Summary Results of the GARCH Model – UK

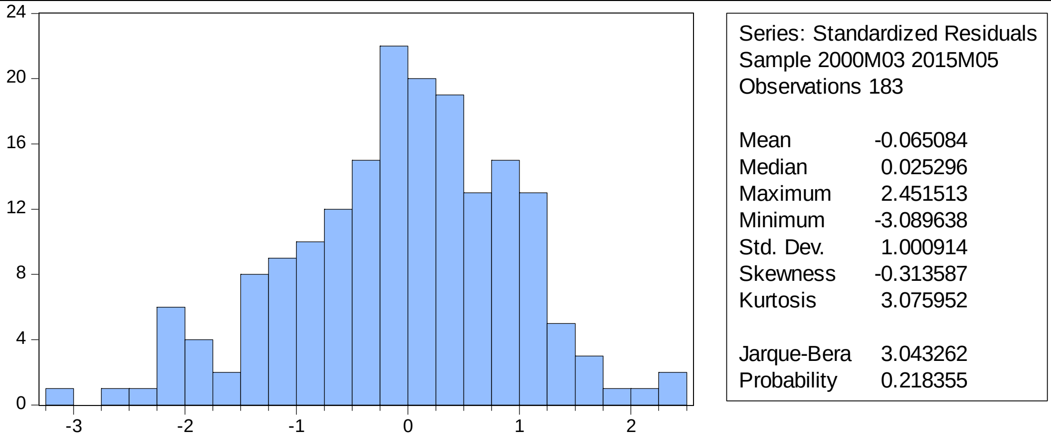
	Method: ML - ARCH (Marquardt) - Normal distribution	Method: ML - ARCH (Marquardt) - Student's t distribution	Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)
Dependent Variable: DLOGFTSE100			
Significant Macroeconomic Variables	NO	NO	NO
Variance Equation			
ARCH effect	V	V	V
GARCH effect	V	V	
R-squared	0.02	0.02	0.02

Appendix 13.9a: GARCH(1,1) Model: Normal Distribution: UK

Dependent Variable: DLOGFTSE100				
Method: ML - ARCH (Marquardt) - Normal distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.07804	0.123605	-0.63135	0.53
DLOGINR	0.021789	0.041158	0.529412	0.60
DLOGEXR	0.201678	0.104778	1.924807	0.054
DLOGIFR	-0.00396	0.012885	-0.30704	0.76
DLOGCON	0.051411	0.130028	0.395382	0.69
DDLOGHPI	0.104804	0.112813	0.929006	0.35
C	0.004147	0.002568	1.614708	0.11
Variance Equation				
C	0.000323	0.000133	2.433378	0.02
RESID(-1)^2	0.49075	0.171034	2.869316	0.00
GARCH(-1)	0.315959	0.149387	2.115029	0.03
R-squared	0.02231	Mean dependent var		0.00047
Adjusted R-squared	-0.01102	S.D. dependent var		0.036162
S.E. of regression	0.036361	Akaike info criterion		-3.86772
Sum squared resid	0.232689	Schwarz criterion		-3.69234
Log likelihood	363.8965	Hannan-Quinn criter.		-3.79663
Durbin-Watson stat	1.983829			

Appendix 13.9b: GARCH (1,1) Model Residual Diagnostics: Normal Distribution: UK (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.025918	Prob. F(1,180)	0.8723
Obs*R-squared	0.026203	Prob. Chi-Square(1)	0.8714

Appendix 13.9b: GARCH (1,1) Model Residual Diagnostics: Normal Distribution: UK

(Page 2 of 2)

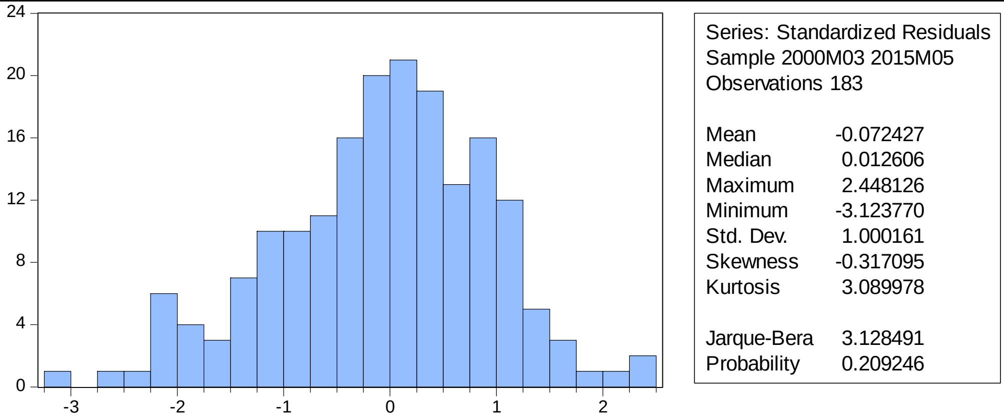
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob**
.|. |	.|. |	1	-0.056	-0.056	0.5801	0.446
.|. |	.|. |	2	0.072	0.069	1.5458	0.462
.|. |	.|. |	3	-0.032	-0.025	1.7396	0.628
.|* |	.|* |	4	0.126	0.119	4.7485	0.314
.|. |	.|. |	5	0.017	0.034	4.8051	0.44
.|. |	.|. |	6	0.034	0.021	5.0315	0.54
.|. |	.|* |	7	0.072	0.08	6.0301	0.536
.|. |	.|. |	8	0.032	0.023	6.2257	0.622
.|. |	.|. |	9	-0.017	-0.028	6.2787	0.712
*|. |	*|. |	10	-0.099	-0.111	8.1852	0.611
.|. |	.|. |	11	0.022	-0.006	8.2802	0.688
*|. |	*|. |	12	-0.092	-0.096	9.9558	0.62
.|. |	.|. |	13	0.017	-0.002	10.01	0.693
.|. |	.|. |	14	-0.005	0.028	10.014	0.761
.|* |	.|* |	15	0.121	0.125	12.985	0.603
.|. |	.|* |	16	0.057	0.112	13.648	0.625
*|. |	.|. |	17	-0.079	-0.063	14.91	0.602
*|. |	*|. |	18	-0.093	-0.106	16.676	0.545
.|* |	.|* |	19	0.134	0.116	20.357	0.373
*|. |	*|. |	20	-0.099	-0.124	22.395	0.319
.|. |	.|. |	21	-0.005	-0.047	22.401	0.377
.|. |	.|. |	22	0.039	0.046	22.713	0.418
.|. |	*|. |	23	-0.052	-0.094	23.287	0.444
*|. |	*|. |	24	-0.147	-0.144	27.9	0.264
.|. |	.|. |	25	-0.019	0.04	27.974	0.309
*|. |	.|. |	26	-0.07	-0.061	29.035	0.309
.|. |	.|. |	27	0.014	0.03	29.08	0.357
.|. |	.|* |	28	0.034	0.12	29.335	0.396
.|. |	.|. |	29	0.029	0.048	29.519	0.438
*|. |	*|. |	30	-0.085	-0.129	31.128	0.409
.|. |	.|. |	31	-0.034	-0.011	31.38	0.447
.|. |	.|. |	32	-0.044	-0.059	31.816	0.476
.|. |	.|. |	33	-0.008	-0.031	31.83	0.525
.|. |	.|. |	34	0.063	0.064	32.733	0.53
.|. |	.|. |	35	-0.014	-0.042	32.777	0.576
*|. |	*|. |	36	-0.1	-0.137	35.078	0.512

Appendix 13.9c: GARCH (1,1) Model: Student’s t Distribution: UK

Dependent Variable: DLOGFTSE100				
Method: ML - ARCH (Marquardt) - Student's t distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.07996	0.128362	-0.62295	0.53
DLOGINR	0.022117	0.04031	0.548687	0.58
DLOGEXR	0.192454	0.108706	1.770414	0.08
DLOGIFR	-0.0036	0.012755	-0.28214	0.78
DLOGCON	0.050928	0.130558	0.390076	0.70
DDLOGHPI	0.115997	0.117174	0.98996	0.32
C	0.004396	0.002503	1.756048	0.08
Variance Equation				
C	0.000322	0.000139	2.316013	0.02
RESID(-1)^2	0.490697	0.181288	2.706723	0.01
GARCH(-1)	0.317287	0.157745	2.011392	0.04
T-DIST. DOF	26.00535	68.4708	0.379802	0.7041
R-squared	0.021075	Mean dependent var		0.00047
Adjusted R-squared	-0.0123	S.D. dependent var		0.036162
S.E. of regression	0.036384	Akaike info criterion		-3.85826
Sum squared resid	0.232983	Schwarz criterion		-3.66534
Log likelihood	364.0306	Hannan-Quinn criter.		-3.78006
Durbin-Watson stat	1.979823			

Appendix 13.9d: GARCH(1,1) Model Residual Diagnostics: Student's t Distribution: UK (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.02925	Prob. F(1,180)	0.8644
Obs*R-squared	0.02957	Prob. Chi-Square(1)	0.8635

Appendix 13.9d: GARCH (1,1) Model Residual Diagnostics: Student's t Distribution: UK (Page 2 of 2)

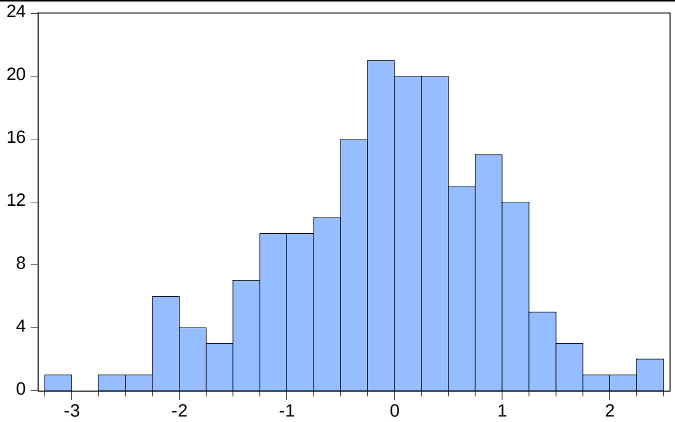
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob**
.|. |	.|. |	1	-0.056	-0.056	0.585	0.444
.|. |	.|. |	2	0.073	0.07	1.5731	0.455
.|. |	.|. |	3	-0.031	-0.024	1.7582	0.624
.|* |	.|* |	4	0.126	0.119	4.7659	0.312
.|. |	.|. |	5	0.017	0.033	4.8196	0.438
.|. |	.|. |	6	0.035	0.022	5.0597	0.536
.|. |	.|* |	7	0.072	0.079	6.0449	0.535
.|. |	.|. |	8	0.03	0.021	6.2195	0.623
.|. |	.|. |	9	-0.017	-0.029	6.2754	0.712
*|. |	*|. |	10	-0.098	-0.111	8.1623	0.613
.|. |	.|. |	11	0.02	-0.008	8.2428	0.691
*|. |	*|. |	12	-0.092	-0.095	9.9261	0.622
.|. |	.|. |	13	0.017	-0.001	9.983	0.695
.|. |	.|. |	14	-0.004	0.028	9.9863	0.763
.|* |	.|* |	15	0.12	0.124	12.9	0.61
.|. |	.|* |	16	0.057	0.112	13.561	0.631
*|. |	.|. |	17	-0.078	-0.062	14.811	0.609
*|. |	*|. |	18	-0.094	-0.107	16.607	0.55
.|* |	.|* |	19	0.133	0.116	20.274	0.378
*|. |	*|. |	20	-0.1	-0.125	22.332	0.323
.|. |	.|. |	21	-0.004	-0.047	22.336	0.38
.|. |	.|. |	22	0.038	0.046	22.645	0.422
.|. |	*|. |	23	-0.053	-0.094	23.231	0.447
*|. |	*|. |	24	-0.147	-0.143	27.815	0.268
.|. |	.|. |	25	-0.018	0.04	27.883	0.313
*|. |	.|. |	26	-0.071	-0.061	28.967	0.313
.|. |	.|. |	27	0.013	0.03	29.004	0.361
.|. |	.|* |	28	0.036	0.12	29.283	0.398
.|. |	.|. |	29	0.028	0.047	29.461	0.441
*|. |	*|. |	30	-0.085	-0.128	31.07	0.412
.|. |	.|. |	31	-0.034	-0.011	31.329	0.45
.|. |	.|. |	32	-0.042	-0.058	31.725	0.48
.|. |	.|. |	33	-0.009	-0.032	31.744	0.53
.|. |	.|. |	34	0.062	0.064	32.621	0.535
.|. |	.|. |	35	-0.013	-0.042	32.662	0.581
*|. |	*|. |	36	-0.1	-0.136	34.943	0.519

Appendix 13.9e: GARCH (1,1) Model: Generalized Error Distribution: UK

Dependent Variable: DLOGFTSE100				
Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.08573	0.128939	-0.66487	0.51
DLOGINR	0.020664	0.039192	0.527246	0.60
DLOGEXR	0.202972	0.105078	1.931622	0.053
DLOGIFR	-0.00345	0.012572	-0.27442	0.78
DLOGCON	0.04744	0.129564	0.366151	0.71
DDLOGHPI	0.113689	0.117013	0.971588	0.33
C	0.004556	0.00244	1.867093	0.06
Variance Equation				
C	0.00033	0.000147	2.24399	0.02
RESID(-1)^2	0.492913	0.187623	2.627149	0.01
GARCH(-1)	0.309407	0.162575	1.903171	0.06
GED PARAMETER	1.704766	0.3268	5.216537	0
R-squared	0.020729	Mean dependent var		0.00047
Adjusted R-squared	-0.01266	S.D. dependent var		0.036162
S.E. of regression	0.03639	Akaike info criterion		-3.86144
Sum squared resid	0.233065	Schwarz criterion		-3.66852
Log likelihood	364.3214	Hannan-Quinn criter.		-3.78324
Durbin-Watson stat	1.982089			

Appendix 13.9f: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: UK (Page 1 of 2)

Normal Distribution



Series: Standardized Residuals
Sample 2000M03 2015M05
Observations 183

Mean	-0.077132
Median	0.016594
Maximum	2.451269
Minimum	-3.101138
Std. Dev.	0.999861
Skewness	-0.306782
Kurtosis	3.085683
Jarque-Bera	2.926498
Probability	0.231483

Heteroskedasticity Test: ARCH			
F-statistic	0.031436	Prob. F(1,180)	0.8595
Obs*R-squared	0.03178	Prob. Chi-Square(1)	0.8585

Appendix 13.9f: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: UK (Page 2 of 2)

Correlogram						
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.|. |	.|. |	1	-0.057	-0.057	0.5954	0.44
.|. |	.|. |	2	0.073	0.07	1.5988	0.45
.|. |	.|. |	3	-0.031	-0.023	1.7784	0.62
.|* |	.|* |	4	0.126	0.119	4.786	0.31
.|. |	.|. |	5	0.015	0.032	4.8308	0.437
.|. |	.|. |	6	0.035	0.021	5.0697	0.535
.|. |	.|* |	7	0.07	0.078	6.0206	0.537
.|. |	.|. |	8	0.03	0.021	6.1993	0.625
.|. |	.|. |	9	-0.018	-0.03	6.2654	0.713
*|. |	*|. |	10	-0.098	-0.111	8.1565	0.614
.|. |	.|. |	11	0.019	-0.008	8.2309	0.692
*|. |	*|. |	12	-0.091	-0.094	9.8721	0.627
.|. |	.|. |	13	0.017	0	9.9286	0.7
.|. |	.|. |	14	-0.004	0.028	9.9326	0.767
.|* |	.|* |	15	0.12	0.125	12.844	0.614
.|. |	.|* |	16	0.059	0.113	13.541	0.633
*|. |	.|. |	17	-0.077	-0.062	14.764	0.612
*|. |	*|. |	18	-0.094	-0.108	16.569	0.553
.|* |	.|* |	19	0.133	0.115	20.234	0.381
*|. |	*|. |	20	-0.101	-0.126	22.357	0.321
.|. |	.|. |	21	-0.004	-0.047	22.36	0.379
.|. |	.|. |	22	0.039	0.047	22.677	0.42
.|. |	*|. |	23	-0.052	-0.094	23.251	0.446
*|. |	*|. |	24	-0.148	-0.143	27.914	0.264
.|. |	.|. |	25	-0.018	0.041	27.98	0.309
*|. |	.|. |	26	-0.07	-0.059	29.035	0.309
.|. |	.|. |	27	0.013	0.029	29.071	0.357
.|. |	.|* |	28	0.036	0.121	29.356	0.395
.|. |	.|. |	29	0.028	0.046	29.526	0.438
*|. |	*|. |	30	-0.084	-0.129	31.106	0.41
.|. |	.|. |	31	-0.033	-0.012	31.354	0.448
.|. |	.|. |	32	-0.04	-0.057	31.721	0.481
.|. |	.|. |	33	-0.01	-0.033	31.742	0.53
.|. |	.|. |	34	0.061	0.063	32.593	0.537
.|. |	.|. |	35	-0.012	-0.04	32.628	0.583
*|. |	*|. |	36	-0.1	-0.136	34.932	0.519

Appendix 13.10: Summary Results of the GARCH Model – US

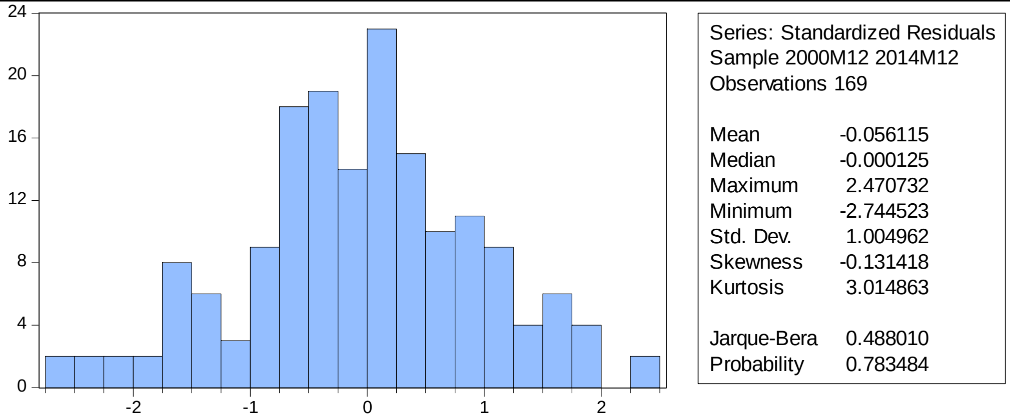
	Method: ML - ARCH (Marquardt) - Normal distribution	Method: ML - ARCH (Marquardt) - Student's t distribution	Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)
Dependent Variable: DLOGS&P500			
Significant Macroeconomic Variables	NO	NO	NO
Variance Equation			
ARCH effect	V	V	
GARCH effect	V	V	V
R-squared	-0.00	-0.00	-0.00

Appendix 13.10a: GARCH (1,1) Model: Normal Distribution: US

Dependent Variable: DLOGSP500				
Method: ML - ARCH (Marquardt) - Normal distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DDLOGGDP	-0.11206	0.099211	-1.129543	0.26
DLOGINR	0.033664	0.028975	1.161825	0.25
DLOGEXR	0.021065	0.124906	0.168649	0.87
DLOGIFR	-0.01516	0.01111	-1.364502	0.17
DLOGCON	0.128122	0.175448	0.730256	0.47
DDLOGHPI	-0.63437	1.417789	-0.447434	0.65
C	0.005508	0.002751	2.002286	0.05
Variance Equation				
C	0.000137	7.82E-05	1.751388	0.08
RESID(-1)^2	0.179633	0.087108	2.062191	0.04
GARCH(-1)	0.723131	0.089067	8.118932	-
R-squared	-0.00488	Mean dependent var		0.002154
Adjusted R-squared	-0.0421	S.D. dependent var		0.039476
S.E. of regression	0.040298	Akaike info criterion		-3.642665
Sum squared resid	0.26308	Schwarz criterion		-3.457464
Log likelihood	317.8052	Hannan-Quinn criter.		-3.567507
Durbin-Watson stat	1.949711			

Appendix 13.10b: GARCH (1,1) Model Residual Diagnostics: Normal Distribution: US (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	1.380595	Prob. F(1,166)	0.2417
Obs*R-squared	1.385704	Prob. Chi-Square(1)	0.2391

Appendix 13.10b: GARCH (1,1) Model Residual Diagnostics: Normal Distribution: US (Page 2 of 2)

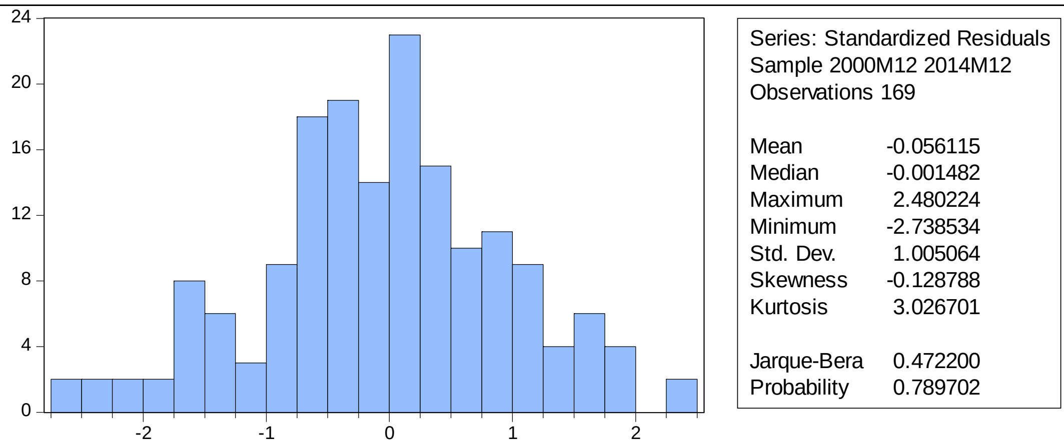
Correlogram						
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.|. |	.|. |	1	-0.031	-0.031	0.1664	0.683
.|. |	.|. |	2	-0.034	-0.035	0.3628	0.834
.|. |	.|. |	3	-0.004	-0.006	0.365	0.947
.|. |	.|. |	4	0.071	0.07	1.2498	0.87
.|. |	.|. |	5	0.029	0.034	1.4025	0.924
.|. |	.|. |	6	-0.016	-0.009	1.4464	0.963
.|. |	.|. |	7	-0.009	-0.007	1.4601	0.984
.|* |	.|* |	8	0.168	0.163	6.5378	0.587
*|. |	*|. |	9	-0.115	-0.112	8.9093	0.446
.|. |	.|. |	10	-0.054	-0.051	9.4384	0.491
.|* |	.|. |	11	0.074	0.072	10.447	0.491
.|. |	*|. |	12	-0.055	-0.082	11.005	0.528
.|. |	.|. |	13	-0.035	-0.034	11.236	0.591
.|. |	.|. |	14	-0.003	0.015	11.238	0.667
.|* |	.|* |	15	0.178	0.18	17.199	0.307
.|. |	.|. |	16	0.055	0.036	17.771	0.337
*|. |	.|. |	17	-0.104	-0.055	19.821	0.283
.|. |	.|. |	18	-0.011	0.002	19.844	0.342
.|* |	.|* |	19	0.172	0.123	25.533	0.144
*|. |	*|. |	20	-0.087	-0.082	27.015	0.135
.|. |	.|. |	21	-0.033	-0.03	27.225	0.164
.|. |	.|. |	22	0.011	0.012	27.251	0.202
.|. |	.|. |	23	0.041	-0.027	27.583	0.232
*|. |	*|. |	24	-0.127	-0.13	30.783	0.16
.|. |	.|* |	25	0.014	0.078	30.82	0.195
.|. |	.|. |	26	0.039	0.027	31.121	0.224
.|. |	.|. |	27	0.028	-0.025	31.286	0.26
.|. |	.|* |	28	0	0.102	31.286	0.305
.|. |	.|. |	29	0.044	0.072	31.685	0.334
.|* |	.|. |	30	0.082	0.007	33.079	0.319
.|. |	.|. |	31	0.058	0.062	33.794	0.334
*|. |	.|. |	32	-0.081	-0.013	35.179	0.32
.|. |	.|. |	33	0.021	-0.031	35.269	0.361
.|* |	.|. |	34	0.097	0.017	37.302	0.32
.|. |	.|. |	35	-0.048	-0.031	37.805	0.342
.|. |	.|. |	36	-0.05	-0.05	38.344	0.364

Appendix 13.10C: GARCH(1,1) Model: Student's t Distribution: US (Page 1 of 2)

Dependent Variable: DLOGSP500				
Method: ML - ARCH (Marquardt) - Student's t distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DDLOGGDP	-0.10909	0.100747	-1.082789	0.28
DLOGINR	0.033114	0.028588	1.158346	0.25
DLOGEXR	0.015074	0.126409	0.119249	0.91
DLOGIFR	-0.01501	0.010946	-1.371678	0.17
DLOGCON	0.114906	0.178544	0.643576	0.52
DDLOGHPI	-0.61021	1.397585	-0.436618	0.66
C	0.005517	0.002748	2.007629	0.04
Variance Equation				
C	0.000138	8.28E-05	1.668226	0.10
RESID(-1)^2	0.179722	0.088559	2.0294	0.04
GARCH(-1)	0.722332	0.092416	7.816088	-
T-DIST. DOF	65.68738	464.1636	0.141518	0.8875
R-squared	-0.00416	Mean dependent var		0.002154
Adjusted R-squared	-0.04135	S.D. dependent var		0.039476
S.E. of regression	0.040284	Akaike info criterion		-3.630999
Sum squared resid	0.26289	Schwarz criterion		-3.427278
Log likelihood	317.8194	Hannan-Quinn criter.		-3.548325
Durbin-Watson stat	1.950139			

Appendix 13.10d : GARCH (1,1) Model Residual Diagnostics: Student's t Distribution: US (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	1.345538	Prob. F(1,166)	0.2477
Obs*R-squared	1.3508	Prob. Chi-Square(1)	0.2451

Appendix 13.10d: GARCH (1,1) Model Residual Diagnostics: Student’s t Distribution: US (Page 1 of 2)

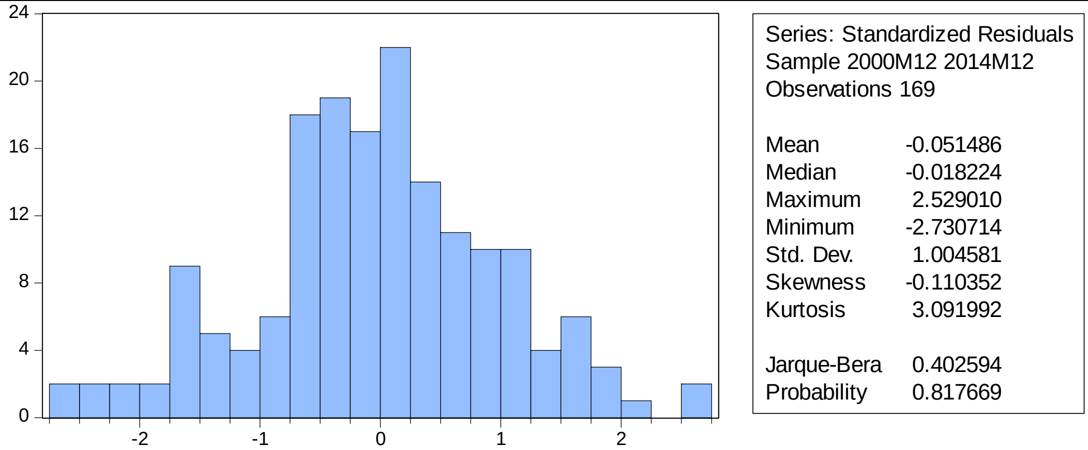
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob**
.|. |	.|. |	1	-0.031	-0.031	0.1643	0.685
.|. |	.|. |	2	-0.033	-0.034	0.3522	0.839
.|. |	.|. |	3	-0.003	-0.005	0.3539	0.95
.|. |	.|. |	4	0.07	0.069	1.2196	0.875
.|. |	.|. |	5	0.028	0.033	1.3601	0.929
.|. |	.|. |	6	-0.017	-0.01	1.4101	0.965
.|. |	.|. |	7	-0.009	-0.008	1.4241	0.985
.|* |	.|* |	8	0.168	0.163	6.5021	0.591
*|. |	*|. |	9	-0.115	-0.113	8.8877	0.448
.|. |	.|. |	10	-0.054	-0.051	9.4157	0.493
.|* |	.|. |	11	0.074	0.072	10.413	0.494
.|. |	*|. |	12	-0.055	-0.082	10.967	0.532
.|. |	.|. |	13	-0.035	-0.033	11.19	0.595
.|. |	.|. |	14	-0.003	0.015	11.192	0.671
.|* |	.|* |	15	0.178	0.18	17.152	0.31
.|. |	.|. |	16	0.056	0.037	17.747	0.339
*|. |	.|. |	17	-0.103	-0.054	19.747	0.287
.|. |	.|. |	18	-0.011	0.001	19.77	0.346
.|* |	.|* |	19	0.173	0.124	25.516	0.144
*|. |	*|. |	20	-0.088	-0.082	27.017	0.135
.|. |	.|. |	21	-0.033	-0.03	27.227	0.163
.|. |	.|. |	22	0.012	0.013	27.254	0.202
.|. |	.|. |	23	0.041	-0.027	27.586	0.232
*|. |	*|. |	24	-0.127	-0.13	30.793	0.16
.|. |	.|* |	25	0.013	0.078	30.829	0.195
.|. |	.|. |	26	0.038	0.027	31.124	0.224
.|. |	.|. |	27	0.029	-0.025	31.298	0.259
.|. |	.|* |	28	0	0.102	31.298	0.304
.|. |	.|. |	29	0.044	0.072	31.699	0.333
.|* |	.|. |	30	0.082	0.007	33.097	0.318
.|. |	.|. |	31	0.059	0.063	33.822	0.333
*|. |	.|. |	32	-0.081	-0.013	35.194	0.319
.|. |	.|. |	33	0.02	-0.032	35.281	0.361
.|* |	.|. |	34	0.096	0.016	37.265	0.321
.|. |	.|. |	35	-0.049	-0.032	37.775	0.344
.|. |	.|. |	36	-0.05	-0.05	38.321	0.365

Appendix 13.10e: GARCH(1,1) Model: Generalized Error Distribution: US

Dependent Variable: DLOGSP500				
Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1)				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DDLOGGDP	-0.10264	0.102457	-1.001763	0.32
DLOGINR	0.027494	0.026738	1.028263	0.30
DLOGEXR	0.004918	0.125276	0.039261	0.97
DLOGIFR	-0.01523	0.010547	-1.443986	0.15
DLOGCON	0.043447	0.180282	0.240995	0.81
DDLOGHPI	-0.48166	1.26414	-0.381015	0.70
C	0.00538	0.002621	2.053132	0.04
Variance Equation				
C	0.000138	9.48E-05	1.456264	0.15
RESID(-1)^2	0.176003	0.097069	1.81317	0.07
GARCH(-1)	0.726752	0.105637	6.879686	-
GED PARAMETER	1.60736	0.332501	4.834147	0
R-squared	-0.00049	Mean dependent var		0.002154
Adjusted R-squared	-0.03755	S.D. dependent var		0.039476
S.E. of regression	0.04021	Akaike info criterion		-3.636875
Sum squared resid	0.26193	Schwarz criterion		-3.433154
Log likelihood	318.316	Hannan-Quinn criter.		-3.554202
Durbin-Watson stat	1.937028			

Appendix 13.10f: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: US (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	1.171053	Prob. F(1,166)	0.2808
Obs*R-squared	1.17686	Prob. Chi-Square(1)	0.278

Appendix 13.10f: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: US (Page 2 of 2)

Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob**
.|. |	.|. |	1	-0.022	-0.022	0.0843	0.771
.|. |	.|. |	2	-0.027	-0.027	0.2062	0.902
.|. |	.|. |	3	-0.001	-0.003	0.2066	0.977
.|. |	.|. |	4	0.066	0.065	0.9687	0.915
.|. |	.|. |	5	0.025	0.028	1.0746	0.956
.|. |	.|. |	6	-0.022	-0.017	1.1599	0.979
.|. |	.|. |	7	-0.012	-0.011	1.1835	0.991
.|* |	.|* |	8	0.167	0.162	6.1674	0.628
*|. |	*|. |	9	-0.113	-0.113	8.4786	0.487
.|. |	.|. |	10	-0.049	-0.045	8.9156	0.54
.|. |	.|. |	11	0.07	0.07	9.8008	0.548
.|. |	*|. |	12	-0.055	-0.08	10.353	0.585
.|. |	.|. |	13	-0.028	-0.025	10.499	0.653
.|. |	.|. |	14	-0.001	0.019	10.499	0.725
.|* |	.|* |	15	0.177	0.178	16.359	0.359
.|. |	.|. |	16	0.06	0.037	17.041	0.383
*|. |	.|. |	17	-0.095	-0.05	18.754	0.343
.|. |	.|. |	18	-0.007	0.002	18.764	0.406
.|* |	.|* |	19	0.175	0.129	24.635	0.173
*|. |	*|. |	20	-0.087	-0.082	26.115	0.162
.|. |	.|. |	21	-0.028	-0.026	26.27	0.196
.|. |	.|. |	22	0.012	0.016	26.298	0.239
.|. |	.|. |	23	0.036	-0.031	26.55	0.276
*|. |	*|. |	24	-0.128	-0.132	29.795	0.192
.|. |	.|* |	25	0.012	0.076	29.823	0.231
.|. |	.|. |	26	0.035	0.023	30.067	0.265
.|. |	.|. |	27	0.033	-0.022	30.286	0.301
.|. |	.|* |	28	0.005	0.105	30.292	0.349
.|. |	.|. |	29	0.048	0.07	30.772	0.376
.|* |	.|. |	30	0.079	0.005	32.068	0.364
.|. |	.|. |	31	0.06	0.066	32.818	0.378
*|. |	.|. |	32	-0.081	-0.02	34.198	0.363
.|. |	.|. |	33	0.016	-0.036	34.255	0.407
.|* |	.|. |	34	0.085	0.01	35.809	0.384
.|. |	.|. |	35	-0.05	-0.038	36.352	0.406
.|. |	.|. |	36	-0.052	-0.054	36.939	0.425

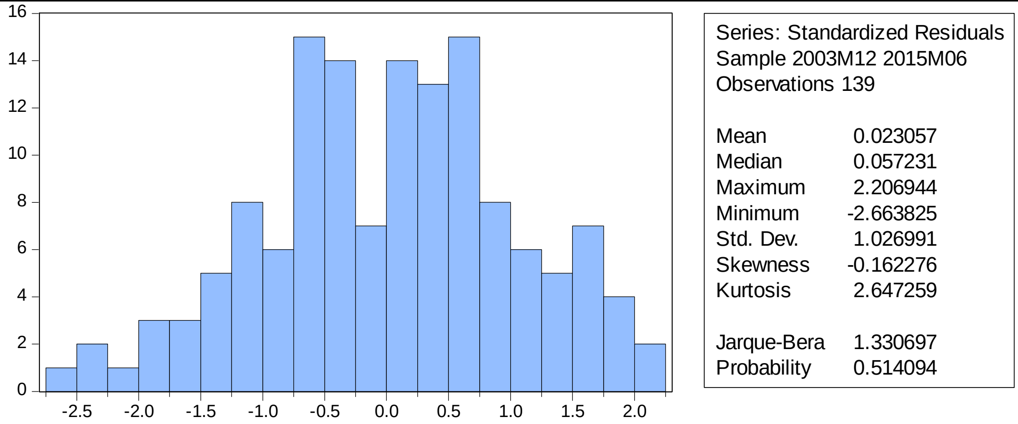
Appendix 14: GARCH (1,1) Model Results with Dummy Variables

Appendix 14.1a: GARCH (1,1) Model: Normal Distribution: Brazil

Dependent Variable: DLOGIBOV				
Method: ML - ARCH (Marquardt) - Normal distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	0.092999	0.072281	1.286635	0.1982
DLOGINR	-0.18014	0.130551	-1.37981	0.1676
DLOGEXR	-1.58322	0.084883	-18.6519	0
DLOGIFR	0.002481	0.068688	0.036125	0.9712
DLOGCON	0.545076	0.748992	0.727747	0.4668
DLOGHPI	0.018195	0.006966	2.611914	0.009
C	0.002048	0.007884	0.259834	0.795
Variance Equation				
C	0.000177	1.72E-05	10.27812	0
RESID(-1)^2	-0.09349	0.005731	-16.312	0
GARCH(-1)	1.033192	0.011314	91.32225	0
FCR	-6.83E-05	6.24E-05	-1.09341	0.2742
QEG	-7.92E-05	6.61E-05	-1.19725	0.2312
R-squared	0.700835	Mean dependent var		0.007876
Adjusted R-squared	0.687237	S.D. dependent var		0.08805
S.E. of regression	0.049242	Akaike info criterion		-3.20725
Sum squared resid	0.320073	Schwarz criterion		-2.95392
Log likelihood	234.9039	Hannan-Quinn criter.		-3.1043
Durbin-Watson stat	2.1085			

Appendix 14.1b: GARCH(1,1) Model Residual Diagnostics: Normal Distribution: Brazil (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.018427	Prob. F(1,136)	0.8922
Obs*R-squared	0.018696	Prob. Chi-Square(1)	0.8912

Appendix 14.1b: GARCH(1,1) Model Residual Diagnostics: Normal Distribution: Brazil

(Page 2 of 2)

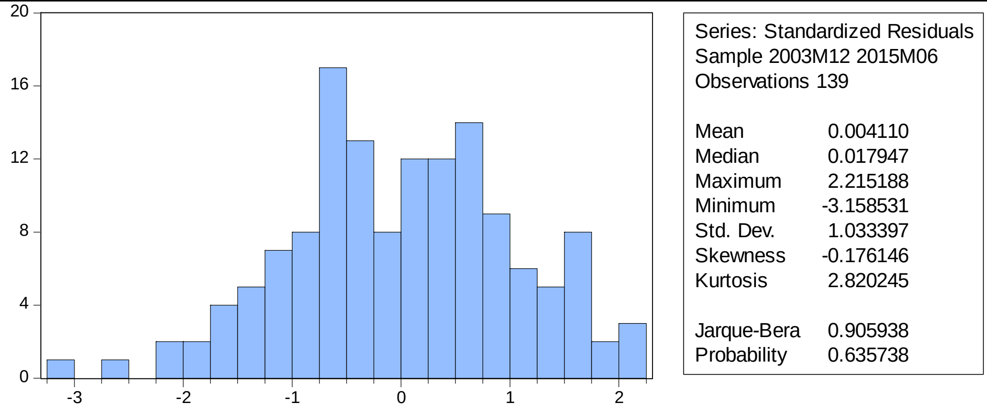
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob**
.|. |	.|. |	1	0.012	0.012	0.0192	0.89
*|. |	*|. |	2	-0.07	-0.07	0.7248	0.696
.|. |	.|. |	3	0.027	0.029	0.8305	0.842
.|. |	.|. |	4	0.026	0.021	0.9323	0.92
.|. |	.|. |	5	-0.006	-0.003	0.938	0.967
.|. |	.|. |	6	0.048	0.051	1.2744	0.973
.|. |	.|. |	7	-0.054	-0.058	1.7037	0.974
.|. |	.|. |	8	0.036	0.045	1.9003	0.984
.|. |	.|. |	9	0.046	0.035	2.2247	0.987
.|. |	.|. |	10	0.012	0.017	2.2474	0.994
*|. |	*|. |	11	-0.091	-0.086	3.5144	0.982
*|. |	*|. |	12	-0.082	-0.086	4.5412	0.972
.|. |	.|. |	13	0.057	0.053	5.0536	0.974
*|. |	*|. |	14	-0.086	-0.104	6.2091	0.961
.|. |	.|. |	15	0.037	0.061	6.4285	0.972
*|. |	*|. |	16	-0.139	-0.161	9.4884	0.892
*|. |	*|. |	17	-0.097	-0.078	11.012	0.856
.|. |	.|. |	18	0.053	0.037	11.466	0.874
.|. |	*|. |	19	-0.051	-0.079	11.895	0.89
.|. |	.|. |	20	-0.04	0.017	12.158	0.911
*|. |	*|. |	21	-0.154	-0.198	16.077	0.765
*|. |	*|. |	22	-0.117	-0.1	18.378	0.683
.|* |	.|* |	23	0.114	0.084	20.564	0.608
*|. |	*|. |	24	-0.072	-0.107	21.443	0.612
*|. |	*|. |	25	-0.121	-0.072	23.944	0.523
.|* |	.|* |	26	0.108	0.077	25.981	0.464
.|. |	.|. |	27	0.022	0.009	26.067	0.515
.|. |	.|. |	28	-0.022	-0.059	26.156	0.564
.|. |	.|. |	29	-0.045	-0.042	26.509	0.598
.|. |	.|. |	30	-0.01	-0.009	26.527	0.648
.|. |	.|. |	31	0.034	0.014	26.742	0.685
.|. |	*|. |	32	-0.05	-0.111	27.201	0.708
.|. |	.|. |	33	0.033	-0.036	27.402	0.742
.|. |	.|. |	34	-0.017	-0.003	27.455	0.779
.|. |	.|. |	35	0.061	0.03	28.148	0.788
.|. |	.|. |	36	0.043	-0.037	28.493	0.809

Appendix 14.1c: GARCH (1,1) Model: Student's t Distribution: Brazil

Dependent Variable: DLOGIBOV				
Method: ML - ARCH (Marquardt) - Student's t distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	0.029135	0.092219	0.315934	0.7521
DLOGINR	-0.17751	0.127997	-1.3868	0.1655
DLOGEXR	-1.58609	0.06951	-22.8181	0
DLOGIFR	-0.00183	0.062885	-0.02913	0.9768
DLOGCON	0.616216	0.704136	0.875137	0.3815
DLOGHPI	0.018687	0.00737	2.535602	0.0112
C	0.002646	0.006991	0.378425	0.7051
Variance Equation				
C	0.000256	0.000112	2.297534	0.0216
RESID(-1)^2	-0.11831	0.027242	-4.34297	0
GARCH(-1)	1.026843	0.04214	24.36769	0
FCR	-5.60E-05	6.18E-05	-0.90657	0.3646
QEG	-0.00015	0.000156	-0.99255	0.3209
T-DIST. DOF	38.84709	181.6521	0.213854	0.8307
R-squared	0.700422	Mean dependent var		0.007876
Adjusted R-squared	0.686805	S.D. dependent var		0.08805
S.E. of regression	0.049276	Akaike info criterion		-3.20247
Sum squared resid	0.320515	Schwarz criterion		-2.92802
Log likelihood	235.5717	Hannan-Quinn criter.		-3.09094
Durbin-Watson stat	2.090864			

Appendix 14.1d: GARCH(1,1) Model Residual Diagnostics: Student's t Distribution: Brazil (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.022395	Prob. F(1,136)	0.8813
Obs*R-squared	0.02272	Prob. Chi-Square(1)	0.8802

Appendix 14.1d: GARCH (1,1) Model Residual Diagnostics: Student’s t Distribution: Brazil (Page 2 of 2)

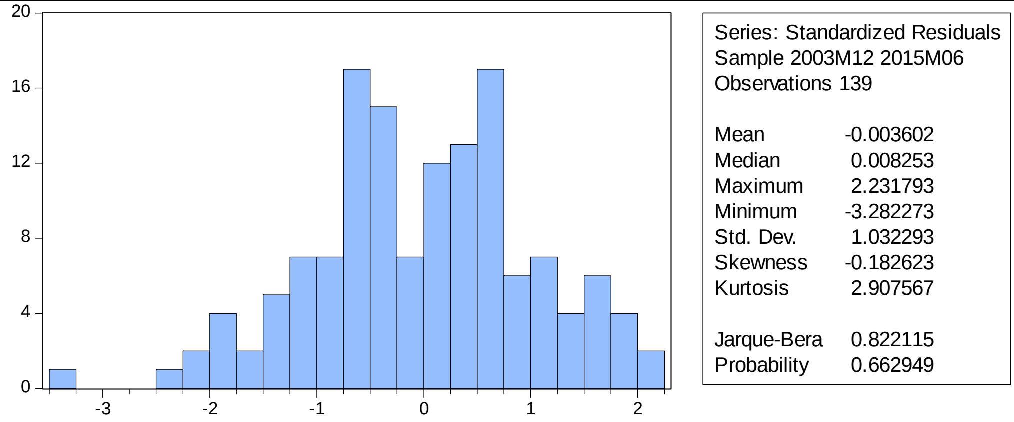
<table>
<tr><th colspan="7">Correlogram</th></tr>
<tr><th>Autocorrelation</th><th colspan="2">Partial Correlation</th><th>AC</th><th>PAC</th><th>Q-Stat</th><th>Prob</th></tr>
<tr><td>.|. |</td><td>.|. |</td><td>1</td><td>0.013</td><td>0.013</td><td>0.0233</td><td>0.879</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>2</td><td>-0.059</td><td>-0.059</td><td>0.5145</td><td>0.773</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>3</td><td>0.048</td><td>0.049</td><td>0.8426</td><td>0.839</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>4</td><td>0.018</td><td>0.013</td><td>0.8896</td><td>0.926</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>5</td><td>-0.012</td><td>-0.007</td><td>0.9107</td><td>0.969</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>6</td><td>0.065</td><td>0.065</td><td>1.5305</td><td>0.957</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>7</td><td>-0.044</td><td>-0.049</td><td>1.8131</td><td>0.969</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>8</td><td>0.048</td><td>0.058</td><td>2.1519</td><td>0.976</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>9</td><td>0.037</td><td>0.024</td><td>2.3587</td><td>0.984</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>10</td><td>0.01</td><td>0.017</td><td>2.3735</td><td>0.993</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>11</td><td>-0.104</td><td>-0.104</td><td>4.0165</td><td>0.969</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>12</td><td>-0.093</td><td>-0.1</td><td>5.3484</td><td>0.945</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>13</td><td>0.013</td><td>0.009</td><td>5.3759</td><td>0.966</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>14</td><td>-0.093</td><td>-0.107</td><td>6.7262</td><td>0.945</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>15</td><td>0.02</td><td>0.041</td><td>6.7912</td><td>0.963</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>16</td><td>-0.129</td><td>-0.152</td><td>9.4314</td><td>0.895</td></tr>
<tr><td>*|. |</td><td>.|. |</td><td>17</td><td>-0.088</td><td>-0.064</td><td>10.677</td><td>0.873</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>18</td><td>0.068</td><td>0.058</td><td>11.427</td><td>0.875</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>19</td><td>-0.053</td><td>-0.063</td><td>11.888</td><td>0.89</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>20</td><td>-0.029</td><td>0.031</td><td>12.026</td><td>0.915</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>21</td><td>-0.141</td><td>-0.182</td><td>15.342</td><td>0.805</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>22</td><td>-0.116</td><td>-0.091</td><td>17.586</td><td>0.73</td></tr>
<tr><td>.|* |</td><td>.|* |</td><td>23</td><td>0.122</td><td>0.099</td><td>20.111</td><td>0.635</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>24</td><td>-0.088</td><td>-0.123</td><td>21.444</td><td>0.612</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>25</td><td>-0.108</td><td>-0.066</td><td>23.463</td><td>0.551</td></tr>
<tr><td>.|* |</td><td>.|* |</td><td>26</td><td>0.125</td><td>0.083</td><td>26.163</td><td>0.454</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>27</td><td>0.031</td><td>0.018</td><td>26.326</td><td>0.501</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>28</td><td>-0.029</td><td>-0.055</td><td>26.479</td><td>0.547</td></tr>
<tr><td>.|. |</td><td>*|. |</td><td>29</td><td>-0.063</td><td>-0.085</td><td>27.19</td><td>0.561</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>30</td><td>-0.029</td><td>-0.025</td><td>27.34</td><td>0.605</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>31</td><td>0.021</td><td>-0.003</td><td>27.423</td><td>0.651</td></tr>
<tr><td>.|. |</td><td>*|. |</td><td>32</td><td>-0.059</td><td>-0.123</td><td>28.069</td><td>0.666</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>33</td><td>0.014</td><td>-0.063</td><td>28.107</td><td>0.709</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>34</td><td>-0.034</td><td>-0.039</td><td>28.326</td><td>0.742</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>35</td><td>0.025</td><td>-0.009</td><td>28.448</td><td>0.775</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>36</td><td>0.05</td><td>-0.032</td><td>28.932</td><td>0.792</td></tr>
</table>

Appendix 14.1e: GARCH(1,1) Model: Generalized Error Distribution: Brazil

Dependent Variable: DLOGIBOV				
Method: ML - ARCH (Marquardt) - Student's t distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	0.006975	0.092666	0.075271	0.94
DLOGINR	-0.15475	0.119646	-1.29341	0.1959
DLOGEXR	-1.6094	0.058748	-27.3948	0
DLOGIFR	0.00774	0.060457	0.128019	0.8981
DLOGCON	0.571343	0.679565	0.840747	0.4005
DLOGHPI	0.01903	0.006855	2.77601	0.0055
C	0.003512	0.006838	0.513658	0.6075
Variance Equation				
C	0.000253	8.36E-05	3.031708	0.0024
RESID(-1)^2	-0.11615	0.035434	-3.27791	0.001
GARCH(-1)	1.025088	0.004552	225.2033	0
FCR	-5.65E-05	6.91E-05	-0.81856	0.413
QEG	-0.00016	0.000113	-1.37301	0.1697
R-squared	0.700582	Mean dependent var		0.007876
Adjusted R-squared	0.686972	S.D. dependent var		0.08805
S.E. of regression	0.049263	Akaike info criterion		-3.1913
Sum squared resid	0.320344	Schwarz criterion		-2.93796
Log likelihood	233.7954	Hannan-Quinn criter.		-3.08835
Durbin-Watson stat	2.086914			

Appendix 14.1f: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: Brazil (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.230744	Prob. F(1,136)	0.6317
Obs*R-squared	0.23374	Prob. Chi-Square(1)	0.6288

Appendix 14.1f: GARCH (1,1) Model Residual Diagnostics: Generalized Error Distribution: Brazil (Page 2 of 2)

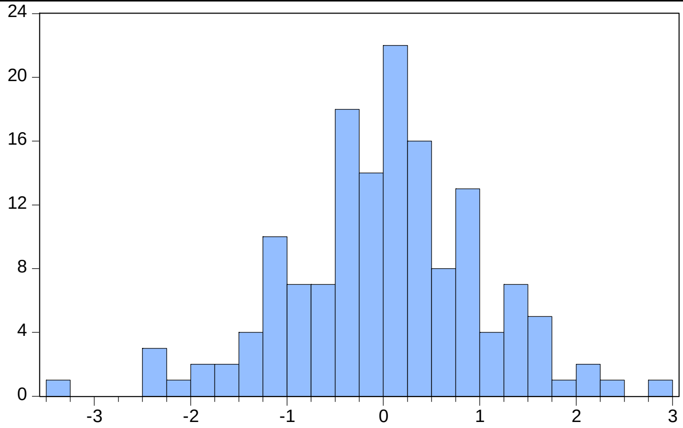
Correlogram						
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.|. |	.|. |	1	0.041	0.041	0.24	0.624
.|. |	.|. |	2	-0.048	-0.05	0.5702	0.752
.|. |	.|. |	3	0.062	0.067	1.1282	0.77
.|. |	.|. |	4	0.014	0.006	1.156	0.885
.|. |	.|. |	5	-0.016	-0.011	1.1946	0.945
.|* |	.|* |	6	0.092	0.09	2.4303	0.876
.|. |	.|. |	7	-0.033	-0.045	2.5946	0.92
.|. |	.|. |	8	0.042	0.058	2.858	0.943
.|. |	.|. |	9	0.033	0.013	3.0209	0.963
.|. |	.|. |	10	0.004	0.009	3.0231	0.981
*|. |	*|. |	11	-0.106	-0.109	4.7582	0.942
*|. |	*|. |	12	-0.084	-0.089	5.8478	0.924
.|. |	.|. |	13	-0.006	-0.001	5.8529	0.951
*|. |	*|. |	14	-0.092	-0.102	7.1659	0.928
.|. |	.|. |	15	0.01	0.033	7.1804	0.952
*|. |	*|. |	16	-0.134	-0.158	10.06	0.863
*|. |	.|. |	17	-0.098	-0.058	11.59	0.824
.|. |	.|. |	18	0.067	0.067	12.313	0.831
.|. |	.|. |	19	-0.057	-0.063	12.848	0.846
.|. |	.|. |	20	-0.038	0.027	13.08	0.874
*|. |	*|. |	21	-0.137	-0.179	16.198	0.758
*|. |	*|. |	22	-0.12	-0.08	18.63	0.668
.|* |	.|* |	23	0.094	0.085	20.116	0.635
*|. |	*|. |	24	-0.084	-0.123	21.315	0.62
*|. |	.|. |	25	-0.101	-0.057	23.071	0.573
.|* |	.|* |	26	0.123	0.086	25.707	0.479
.|. |	.|. |	27	0.034	0.024	25.912	0.523
.|. |	.|. |	28	-0.028	-0.047	26.054	0.57
.|. |	*|. |	29	-0.052	-0.079	26.533	0.597
.|. |	.|. |	30	-0.033	-0.029	26.733	0.637
.|. |	.|. |	31	0.024	0.012	26.833	0.681
.|. |	*|. |	32	-0.056	-0.125	27.404	0.698
.|. |	.|. |	33	0.012	-0.063	27.429	0.741
.|. |	.|. |	34	-0.037	-0.045	27.691	0.769
.|. |	.|. |	35	0.02	-0.01	27.763	0.803
.|. |	.|. |	36	0.054	-0.017	28.323	0.816

Appendix 14.2a: GARCH(1,1) Model: Normal Distribution: Russia (Page 1 of 2)

Dependent Variable: DLOGRTS				
Method: ML - ARCH (Marquardt) - Normal distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.06262	0.173896	-0.36008	0.7188
DLOGINR	-0.64124	0.371279	-1.72711	0.0841
DLOGEXR	-1.31362	0.142784	-9.20006	0
DLOGIFR	0.125786	0.072782	1.728269	0.0839
DLOGCON	-0.73988	0.457067	-1.61876	0.1055
DLOGHPI	0.02431	0.194643	0.124895	0.9006
C	0.013561	0.006772	2.002467	0.0452
Variance Equation				
C	0.000268	0.000222	1.207569	0.2272
RESID(-1)^2	0.213901	0.110073	1.943257	0.052
GARCH(-1)	0.728218	0.102298	7.118586	0
FCR	0.000144	0.000218	0.664193	0.5066
QEG	-0.0002	0.0002	-0.97965	0.3273
R-squared	0.408811	Mean dependent var		0.007326
Adjusted R-squared	0.383832	S.D. dependent var		0.090365
S.E. of regression	0.070933	Akaike info criterion		-2.5876
Sum squared resid	0.714474	Schwarz criterion		-2.34568
Log likelihood	204.7765	Hannan-Quinn criter.		-2.48931
Durbin-Watson stat	1.77688			

Appendix 14.2b: GARCH(1,1) Model Residual Diagnostics: Normal Distribution: Russia (Page 1 of 2)

Normal Distribution



Series: Standardized Residuals
Sample 2003M02 2015M06
Observations 149

Mean	0.024587
Median	0.093867
Maximum	2.797542
Minimum	-3.385736
Std. Dev.	1.005521
Skewness	-0.197703
Kurtosis	3.645892
Jarque-Bera	3.560623
Probability	0.168586

Heteroskedasticity Test: ARCH			
F-statistic	0.34565	Prob. F(1,146)	0.5575
Obs*R-squared	0.349557	Prob. Chi-Square(1)	0.5544

Appendix 14.2b: GARCH (1,1) Model Residual Diagnostics: Normal Distribution: Russia (Page 2 of 2)

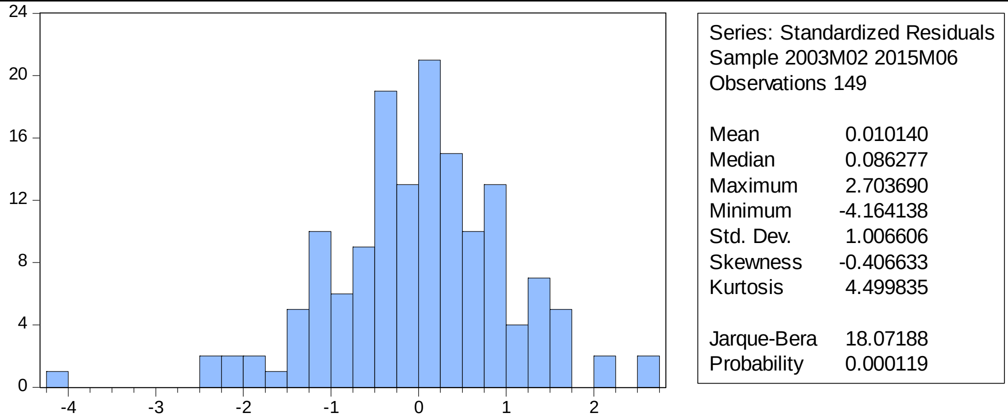
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob**
.|. |	.|. |	1	-0.049	-0.049	0.3579	0.55
.|. |	.|. |	2	0.006	0.004	0.3634	0.834
*|. |	*|. |	3	-0.095	-0.095	1.7643	0.623
.|* |	.|* |	4	0.163	0.155	5.8809	0.208
.|. |	.|. |	5	-0.041	-0.029	6.1435	0.293
.|* |	.|* |	6	0.127	0.12	8.6966	0.191
.|. |	.|. |	7	-0.015	0.022	8.7321	0.272
.|** |	.|* |	8	0.224	0.206	16.717	0.033
.|. |	.|. |	9	-0.013	0.035	16.743	0.053
*|. |	*|. |	10	-0.068	-0.102	17.481	0.064
*|. |	.|. |	11	-0.078	-0.048	18.465	0.071
.|. |	*|. |	12	-0.053	-0.153	18.923	0.09
.|. |	*|. |	13	-0.04	-0.068	19.188	0.117
.|. |	*|. |	14	-0.022	-0.083	19.269	0.155
.|. |	.|. |	15	-0.034	-0.056	19.466	0.193
.|. |	*|. |	16	-0.051	-0.07	19.904	0.225
*|. |	*|. |	17	-0.091	-0.095	21.316	0.212
.|. |	.|. |	18	-0.063	-0.005	21.999	0.232
.|. |	.|. |	19	-0.001	0.04	21.999	0.284
.|. |	.|. |	20	-0.052	0.011	22.47	0.316
*|. |	.|. |	21	-0.067	-0.02	23.254	0.331
*|. |	*|. |	22	-0.106	-0.091	25.259	0.285
.|. |	.|. |	23	-0.054	-0.064	25.785	0.311
.|. |	.|. |	24	0.021	0.026	25.868	0.36
.|. |	.|. |	25	-0.026	-0.017	25.99	0.408
.|. |	.|. |	26	-0.049	-0.036	26.426	0.44
*|. |	*|. |	27	-0.088	-0.124	27.854	0.419
.|. |	.|. |	28	0.035	0.012	28.082	0.46
.|. |	.|. |	29	0.037	0.056	28.34	0.5
.|. |	.|. |	30	-0.031	-0.011	28.524	0.543
.|. |	.|. |	31	-0.029	0.016	28.687	0.586
.|* |	.|* |	32	0.21	0.196	37.171	0.243
.|. |	.|. |	33	0.009	0.022	37.188	0.282
*|. |	*|. |	34	-0.067	-0.081	38.079	0.289
.|. |	.|. |	35	0.02	0.056	38.157	0.328
.|. |	.|. |	36	0.038	-0.053	38.45	0.359

Appendix 14.2c: GARCH(1,1) Model: Student's t Distribution: Russia

Dependent Variable: DLOGRTS				
Method: ML - ARCH (Marquardt) - Student's t distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	Coefficient	Std. Error	z-Statistic	Prob.
DLOGGDP	-0.0281	0.119732	-0.23471	0.8144
DLOGINR	-0.53309	0.344524	-1.54733	0.1218
DLOGEXR	-1.29627	0.122439	-10.5871	0
DLOGIFR	0.138072	0.059985	2.301762	0.0213
DLOGCON	-0.6464	0.414531	-1.55935	0.1189
DLOGHPI	0.065538	0.145459	0.450559	0.6523
C	0.013505	0.006656	2.028991	0.0425
Variance Equation				
C	0.000325	0.000259	1.253439	0.21
RESID(-1)^2	0.257651	0.150142	1.716056	0.0862
GARCH(-1)	0.699712	0.114048	6.135233	0
FCR	-6.04E-05	0.000283	-0.21383	0.8307
QEG	-0.00016	0.000261	-0.59825	0.5497
T-DIST. DOF	7.285924	6.040401	1.206199	0.2277
R-squared	0.406592	Mean dependent var		0.007326
Adjusted R-squared	0.381518	S.D. dependent var		0.090365
S.E. of regression	0.071066	Akaike info criterion		-2.59619
Sum squared resid	0.717156	Schwarz criterion		-2.3341
Log likelihood	206.4158	Hannan-Quinn criter.		-2.4897
Durbin-Watson stat	1.762035			

Appendix 13.2d: GARCH(1,1) Model Residual Diagnostics: Student's t Distribution: Russia (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.428071	Prob. F(1,146)	0.514
Obs*R-squared	0.432666	Prob. Chi-Square(1)	0.5107

Appendix 14.2d: GARCH(1,1) Model Residual Diagnostics: Student’s t Distribution: Russia (Page 2 of 2)

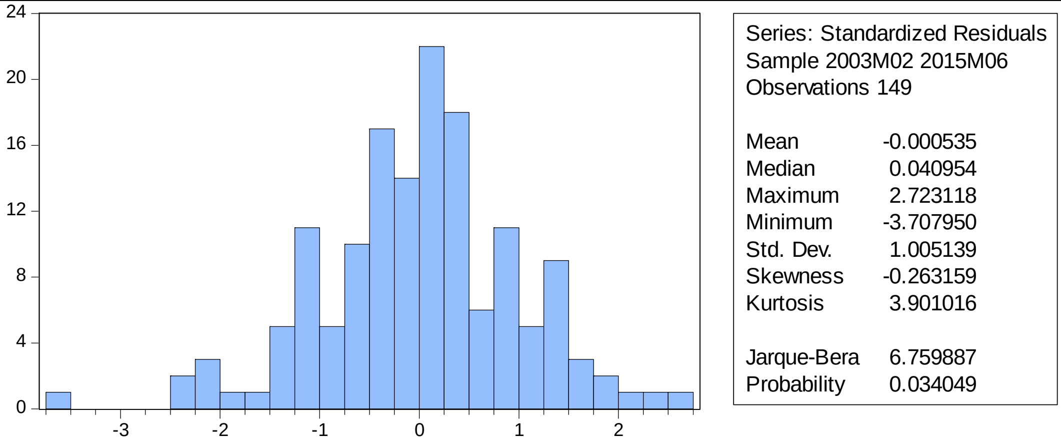
Correlogram						
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.|. |	.|. |	1	-0.054	-0.054	0.4433	0.506
.|. |	.|. |	2	-0.004	-0.007	0.4459	0.8
*|. |	*|. |	3	-0.066	-0.067	1.1155	0.773
.|* |	.|* |	4	0.144	0.137	4.311	0.366
.|. |	.|. |	5	-0.04	-0.028	4.5668	0.471
.|* |	.|* |	6	0.082	0.079	5.6266	0.466
.|. |	.|. |	7	-0.028	-0.005	5.7491	0.569
.|* |	.|* |	8	0.202	0.186	12.27	0.14
.|. |	.|. |	9	0.028	0.065	12.393	0.192
.|. |	*|. |	10	-0.064	-0.08	13.06	0.22
.|. |	.|. |	11	-0.064	-0.041	13.719	0.249
.|. |	*|. |	12	-0.038	-0.106	13.955	0.304
.|. |	*|. |	13	-0.046	-0.067	14.311	0.352
.|. |	.|. |	14	-0.031	-0.063	14.466	0.416
.|. |	.|. |	15	-0.01	-0.021	14.483	0.489
.|. |	.|. |	16	-0.025	-0.046	14.586	0.555
*|. |	*|. |	17	-0.071	-0.087	15.451	0.563
.|. |	.|. |	18	-0.051	-0.017	15.899	0.6
.|. |	.|. |	19	-0.013	0.014	15.929	0.662
.|. |	.|. |	20	-0.016	0.022	15.976	0.718
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob**
.|. |	.|. |	21	-0.057	-0.02	16.547	0.738
*|. |	*|. |	22	-0.101	-0.092	18.361	0.684
.|. |	.|. |	23	-0.05	-0.064	18.801	0.713
.|. |	.|. |	24	0.037	0.027	19.054	0.749
.|. |	.|. |	25	-0.04	-0.021	19.343	0.78
.|. |	.|. |	26	-0.036	-0.017	19.586	0.811
*|. |	*|. |	27	-0.085	-0.1	20.932	0.789
.|. |	.|. |	28	0.034	0.003	21.153	0.819
.|. |	.|. |	29	0.028	0.044	21.303	0.848
.|. |	.|. |	30	-0.022	0.003	21.391	0.875
.|. |	.|. |	31	-0.041	0.005	21.709	0.892
.|* |	.|* |	32	0.201	0.185	29.463	0.596
.|. |	.|. |	33	-0.009	0.003	29.48	0.643
.|. |	*|. |	34	-0.061	-0.077	30.205	0.654
.|. |	.|. |	35	-0.02	-0.001	30.288	0.695
.|. |	.|. |	36	0.026	-0.046	30.426	0.731

Appendix 14.2e: GARCH(1,1) Model: Generalized Error Distribution: Russia

Dependent Variable: DLOGRTS				
Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.09992	0.129571	-0.77112	0.4406
DLOGINR	-0.53714	0.287445	-1.86866	0.0617
DLOGEXR	-1.32491	0.118519	-11.1789	0
DLOGIFR	0.146187	0.058542	2.497125	0.0125
DLOGCON	-0.85355	0.415308	-2.05523	0.0399
DLOGHPI	0.113476	0.142695	0.795232	0.4265
C	0.016732	0.006592	2.538298	0.0111
Variance Equation				
C	0.000346	0.000293	1.18213	0.2372
RESID(-1)^2	0.232933	0.149265	1.560535	0.1186
GARCH(-1)	0.709251	0.127324	5.570458	0
FCR	-6.96E-06	0.000268	-0.02594	0.9793
QEG	-0.00022	0.000259	-0.85577	0.3921
GED PARAMETER	1.376459	0.291795	4.717207	0
R-squared	0.40878	Mean dependent var		0.007326
Adjusted R-squared	0.383799	S.D. dependent var		0.090365
S.E. of regression	0.070935	Akaike info criterion		-2.59982
Sum squared resid	0.714512	Schwarz criterion		-2.33773
Log likelihood	206.6862	Hannan-Quinn criter.		-2.49333
Durbin-Watson stat	1.769113			

Appendix 14.2f: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: Russia (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.437139	Prob. F(1,146)	0.5095
Obs*R-squared	0.441804	Prob. Chi-Square(1)	0.5063

Appendix 14.2f: GARCH (1,1) Model Residual Diagnostics: Generalized Error Distribution: Russia (Page 2 of 2)

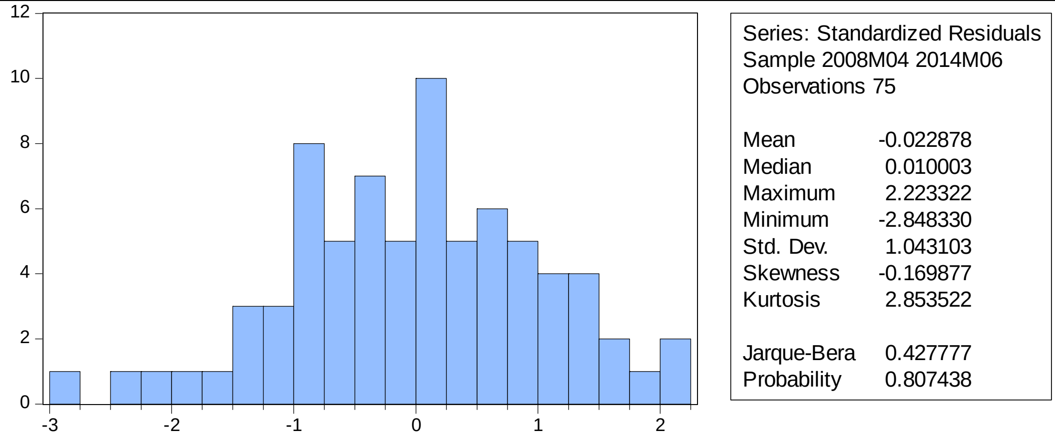
Correlogram						
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.|. |	.|. |	1	-0.055	-0.055	0.4526	0.501
.|. |	.|. |	2	0.01	0.007	0.4676	0.792
*|. |	*|. |	3	-0.086	-0.086	1.6186	0.655
.|* |	.|* |	4	0.141	0.133	4.7159	0.318
.|. |	.|. |	5	-0.034	-0.02	4.8931	0.429
.|* |	.|* |	6	0.104	0.096	6.6045	0.359
.|. |	.|. |	7	-0.017	0.013	6.6527	0.466
.|** |	.|* |	8	0.23	0.216	15.088	0.057
.|. |	.|. |	9	0.01	0.055	15.104	0.088
.|. |	*|. |	10	-0.063	-0.086	15.745	0.107
*|. |	.|. |	11	-0.069	-0.041	16.511	0.123
.|. |	*|. |	12	-0.047	-0.127	16.876	0.154
.|. |	*|. |	13	-0.041	-0.071	17.153	0.192
.|. |	*|. |	14	-0.038	-0.092	17.391	0.236
.|. |	.|. |	15	-0.019	-0.043	17.453	0.293
.|. |	.|. |	16	-0.027	-0.06	17.578	0.349
*|. |	*|. |	17	-0.083	-0.1	18.759	0.343
.|. |	.|. |	18	-0.055	-0.006	19.281	0.375
.|. |	.|. |	19	-0.003	0.035	19.283	0.439
.|. |	.|. |	20	-0.023	0.036	19.377	0.497
.|. |	.|. |	21	-0.063	-0.013	20.076	0.516
*|. |	*|. |	22	-0.105	-0.081	22.03	0.458
.|. |	.|. |	23	-0.049	-0.053	22.455	0.493
.|. |	.|. |	24	0.044	0.039	22.811	0.531
.|. |	.|. |	25	-0.037	-0.017	23.06	0.574
.|. |	.|. |	26	-0.044	-0.036	23.415	0.609
*|. |	*|. |	27	-0.096	-0.126	25.098	0.569
.|. |	.|. |	28	0.033	-0.009	25.297	0.612
.|. |	.|. |	29	0.026	0.041	25.424	0.656
.|. |	.|. |	30	-0.021	0.002	25.506	0.7
.|. |	.|. |	31	-0.027	0.022	25.643	0.738
.|* |	.|* |	32	0.197	0.19	33.128	0.412
.|. |	.|. |	33	-0.006	0.025	33.134	0.461
*|. |	*|. |	34	-0.069	-0.078	34.077	0.464
.|. |	.|. |	35	-0.004	0.036	34.079	0.512
.|. |	.|. |	36	0.024	-0.044	34.198	0.555

Appendix 14.3a: GARCH(1,1) Model: Normal Distribution: India

Dependent Variable: DLOGNIFTY				
Method: ML - ARCH (Marquardt) - Normal distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.19984	0.090595	-2.20581	0.0274
DLOGINR	-0.19447	0.081317	-2.39148	0.0168
DLOGEXR	-1.15182	0.095288	-12.0878	0
DLOGIFR	-0.00904	0.016897	-0.53505	0.5926
DLOGCON	-0.31378	0.285071	-1.10072	0.271
DLOGHPI	0.226601	0.020325	11.14882	0
C	0.017297	0.003003	5.75962	0
Variance Equation				
C	0.000428	0.000161	2.649333	0.0081
RESID(-1)^2	0.567916	0.212635	2.670842	0.0076
GARCH(-1)	-0.29731	0.138588	-2.1453	0.0319
FCR	0.000623	0.000622	1.001775	0.3165
QEG	5.54E-05	0.000581	0.095349	0.924
R-squared	0.840378	Mean dependent var		0.002705
Adjusted R-squared	0.826293	S.D. dependent var		0.082805
S.E. of regression	0.034511	Akaike info criterion		-4.14067
Sum squared resid	0.08099	Schwarz criterion		-3.76988
Log likelihood	167.2752	Hannan-Quinn criter.		-3.99262
Durbin-Watson stat	1.94268			

Appendix 14.3b: GARCH(1,1) Model Residual Diagnostics: Normal Distribution: India (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.797779	Prob. F(1,72)	0.3747
Obs*R-squared	0.810954	Prob. Chi-Square(1)	0.3678

Appendix 14.3b: GARCH(1,1) Model Residual Diagnostics: Normal Distribution: India (Page 2 of 2)

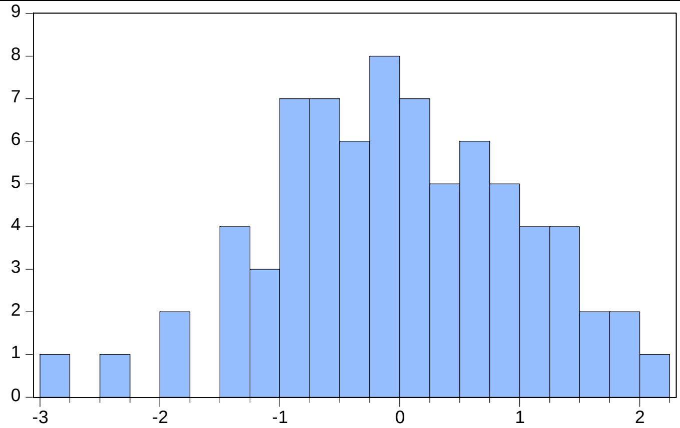
<table>
<tr><th colspan="7">Correlogram</th></tr>
<tr><th>Autocorrelation</th><th colspan="2">Partial Correlation</th><th>AC</th><th>PAC</th><th>Q-Stat</th><th>Prob</th></tr>
<tr><td>.*| . |</td><td>.*| .|</td><td>1</td><td>-0.104</td><td>-0.104</td><td>0.849</td><td>0.357</td></tr>
<tr><td>. | . |</td><td>. | .|</td><td>2</td><td>0.063</td><td>0.053</td><td>1.163</td><td>0.559</td></tr>
<tr><td>. | . |</td><td>. | .|</td><td>3</td><td>-0.019</td><td>-0.008</td><td>1.1927</td><td>0.755</td></tr>
<tr><td>.*| . |</td><td>.*| .|</td><td>4</td><td>-0.085</td><td>-0.092</td><td>1.7764</td><td>0.777</td></tr>
<tr><td>.*| . |</td><td>.*| .|</td><td>5</td><td>-0.067</td><td>-0.085</td><td>2.1452</td><td>0.829</td></tr>
<tr><td>.*| . |</td><td>.*| .|</td><td>6</td><td>-0.078</td><td>-0.085</td><td>2.6493</td><td>0.851</td></tr>
<tr><td>.*| . |</td><td>.*| .|</td><td>7</td><td>-0.106</td><td>-0.122</td><td>3.5954</td><td>0.825</td></tr>
<tr><td>. | . |</td><td>. | .|</td><td>8</td><td>0.058</td><td>0.031</td><td>3.8851</td><td>0.867</td></tr>
<tr><td>.*| . |</td><td>.*| .|</td><td>9</td><td>-0.075</td><td>-0.074</td><td>4.3742</td><td>0.885</td></tr>
<tr><td>.*| . |</td><td>.*| .|</td><td>10</td><td>-0.136</td><td>-0.194</td><td>6.011</td><td>0.814</td></tr>
<tr><td>. |*. |</td><td>. |*.|</td><td>11</td><td>0.21</td><td>0.159</td><td>9.9917</td><td>0.531</td></tr>
<tr><td>. | . |</td><td>. | .|</td><td>12</td><td>0.005</td><td>0.044</td><td>9.9943</td><td>0.616</td></tr>
<tr><td>. | . |</td><td>. | .|</td><td>13</td><td>0.046</td><td>-0.009</td><td>10.189</td><td>0.678</td></tr>
<tr><td>. | . |</td><td>. | .|</td><td>14</td><td>-0.017</td><td>-0.052</td><td>10.218</td><td>0.746</td></tr>
<tr><td>.*| . |</td><td>.*| .</td><td>15</td><td>-0.121</td><td>-0.139</td><td>11.627</td><td>0.707</td></tr>
<tr><td>. | . |</td><td>. | .|</td><td>16</td><td>0.009</td><td>-0.029</td><td>11.636</td><td>0.769</td></tr>
<tr><td>. | . |</td><td>. | .|</td><td>17</td><td>-0.058</td><td>-0.034</td><td>11.97</td><td>0.802</td></tr>
<tr><td>. | . |</td><td>. | .|</td><td>18</td><td>-0.054</td><td>-0.032</td><td>12.261</td><td>0.833</td></tr>
<tr><td>. |*. |</td><td>. |*.|</td><td>19</td><td>0.164</td><td>0.11</td><td>15.022</td><td>0.721</td></tr>
<tr><td>. | . |</td><td>. | .|</td><td>20</td><td>0.027</td><td>0.044</td><td>15.098</td><td>0.771</td></tr>
<tr><td>. | . |</td><td>. | .|</td><td>21</td><td>-0.018</td><td>-0.01</td><td>15.134</td><td>0.816</td></tr>
<tr><td>.*| . |</td><td>.*| .|</td><td>22</td><td>-0.093</td><td>-0.174</td><td>16.072</td><td>0.812</td></tr>
<tr><td>. | . |</td><td>. | .|</td><td>23</td><td>0.015</td><td>-0.008</td><td>16.098</td><td>0.851</td></tr>
<tr><td>. | . |</td><td>. | .|</td><td>24</td><td>-0.043</td><td>-0.064</td><td>16.304</td><td>0.877</td></tr>
<tr><td>. | . |</td><td>.*| .|</td><td>25</td><td>-0.032</td><td>-0.07</td><td>16.426</td><td>0.902</td></tr>
<tr><td>.*| . |</td><td>. | .|</td><td>26</td><td>-0.075</td><td>-0.036</td><td>17.088</td><td>0.906</td></tr>
<tr><td>. | . |</td><td>.*| .|</td><td>27</td><td>-0.033</td><td>-0.096</td><td>17.219</td><td>0.926</td></tr>
<tr><td>. | . |</td><td>. | .|</td><td>28</td><td>0.056</td><td>0.054</td><td>17.606</td><td>0.936</td></tr>
<tr><td>.*| . |</td><td>. | .|</td><td>29</td><td>-0.069</td><td>-0.046</td><td>18.209</td><td>0.94</td></tr>
<tr><td>. | . |</td><td>.*| .|</td><td>30</td><td>0.027</td><td>-0.089</td><td>18.301</td><td>0.953</td></tr>
<tr><td>. |** |</td><td>. |*.|</td><td>31</td><td>0.238</td><td>0.185</td><td>25.755</td><td>0.733</td></tr>
<tr><td>. | . |</td><td>. | .|</td><td>32</td><td>0.005</td><td>-0.033</td><td>25.759</td><td>0.774</td></tr>
</table>

Appendix 14.3c: GARCH(1,1) Model: Student's t Distribution: India

Dependent Variable: DLOGNIFTY				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.18621	0.106419	-1.74975	0.0802
DLOGINR	-0.19652	0.070163	-2.80087	0.0051
DLOGEXR	-1.16229	0.101829	-11.4141	0
DLOGIFR	-0.01113	0.013641	-0.81591	0.4145
DLOGCON	-0.28568	0.29005	-0.98495	0.3247
DLOGHPI	0.22404	0.018201	12.30937	0
C	0.017351	0.00371	4.676666	0
Variance Equation				
C	0.000448	0.000183	2.449384	0.0143
RESID(-1)^2	0.583833	0.303072	1.926386	0.0541
GARCH(-1)	-0.30631	0.150135	-2.04022	0.0413
FCR	0.000668	0.000716	0.932912	0.3509
QEG	3.22E-05	0.000683	0.04717	0.9624
T-DIST. DOF	34.16486	215.687	0.1584	0.8741
R-squared	0.840356	Mean dependent var		0.002705
Adjusted R-squared	0.826269	S.D. dependent var		0.082805
S.E. of regression	0.034514	Akaike info criterion		-4.06911
Sum squared resid	0.081002	Schwarz criterion		-3.66741
Log likelihood	165.5915	Hannan-Quinn criter.		-3.90871
Durbin-Watson stat	1.953401			

Appendix 14.3d: GARCH(1,1) Model Residual Diagnostics: Student’s t Distribution: India (Page 1 of 2)

Normal Distribution



Series: Standardized Residuals
Sample 2008M04 2014M06
Observations 75

Mean	-0.022706
Median	-0.005227
Maximum	2.237396
Minimum	-2.823082
Std. Dev.	1.013399
Skewness	-0.153549
Kurtosis	2.942435
Jarque-Bera	0.305070
Probability	0.858529

Heteroskedasticity Test: ARCH			
F-statistic	0.483218	Prob. F(1,72)	0.4892
Obs*R-squared	0.49333	Prob. Chi-Square(1)	0.4824

Appendix 14.3d: GARCH(1,1) Model Residual Diagnostics: Student's t Distribution: India (Page 1 of 2)

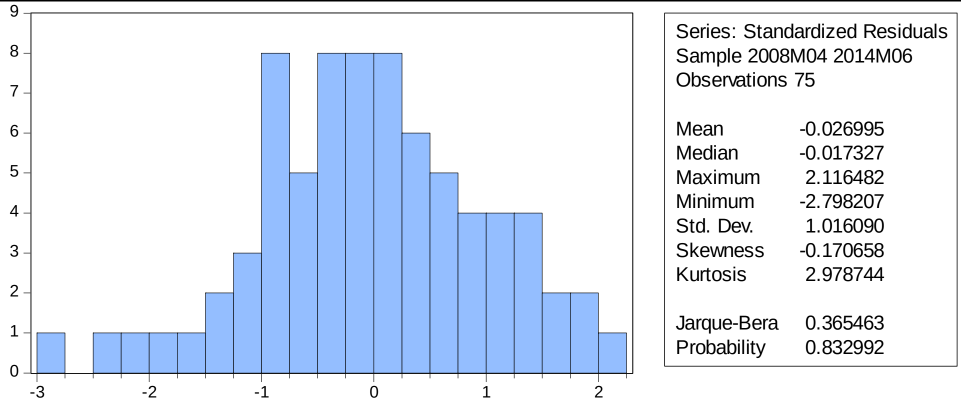
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob**
.*| . |	.*| .|	1	-0.081	-0.081	0.5167	0.472
. | . |	. | . |	2	0.014	0.008	0.5324	0.766
. | . |	. | . |	3	-0.016	-0.015	0.5541	0.907
. | . |	.*| .|	4	-0.064	-0.067	0.8892	0.926
. | . |	.*| .|	5	-0.059	-0.07	1.1745	0.947
.*| . |	.*| .|	6	-0.089	-0.101	1.8406	0.934
.*| . |	.*| .|	7	-0.094	-0.115	2.5932	0.92
. |*. |	. | . |	8	0.075	0.05	3.0739	0.93
.*| . |	.*| .|	9	-0.092	-0.097	3.8172	0.923
.*| . |	.*| .|	10	-0.128	-0.178	5.2834	0.871
. |** |	. |*.|	11	0.22	0.178	9.6493	0.562
. | . |	. | . |	12	-0.01	0.005	9.6582	0.646
. | . |	. | . |	13	0.017	-0.027	9.6845	0.72
. | . |	. | . |	14	-0.006	-0.023	9.6884	0.785
.*| . |	.*| .|	15	-0.119	-0.135	11.059	0.748
. | . |	. | . |	16	0.023	-0.025	11.11	0.803
. | . |	. | . |	17	-0.046	-0.022	11.321	0.839
. | . |	. | . |	18	-0.041	-0.021	11.491	0.872
. |*. |	. |*.|	19	0.165	0.102	14.297	0.766
. | . |	. | . |	20	0.034	0.059	14.42	0.809
. | . |	. | . |	21	-0.049	-0.028	14.677	0.839
.*| . |	.*| .|	22	-0.094	-0.181	15.644	0.833
. | . |	. | . |	23	0.008	0.004	15.651	0.87
. | . |	. | . |	24	-0.033	-0.055	15.771	0.896
. | . |	. | . |	25	-0.025	-0.054	15.841	0.919
.*| . |	. | . |	26	-0.07	-0.016	16.42	0.926
. | . |	.*| .|	27	-0.04	-0.117	16.612	0.94
. | . |	. | . |	28	0.058	0.04	17.024	0.948
. | . |	. | . |	29	-0.06	-0.037	17.473	0.954
. | . |	.*| .|	30	0.016	-0.095	17.504	0.966
. |** |	. |*.|	31	0.25	0.201	25.727	0.734
. | . |	. | . |	32	-0.003	-0.023	25.728	0.776

Appendix 14.3e: GARCH(1,1) Model: Generalized Error Distribution: India

Dependent Variable: DLOGNIFTY				
Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.1624	0.095757	-1.69597	0.0899
DLOGINR	-0.21456	0.092403	-2.32199	0.0202
DLOGEXR	-1.13596	0.104798	-10.8396	0
DLOGIFR	-0.00783	0.017387	-0.45038	0.6524
DLOGCON	-0.32733	0.283524	-1.1545	0.2483
DLOGHPI	0.231685	0.0206	11.24687	0
C	0.017857	0.003256	5.484701	0
Variance Equation				
C	0.000457	0.000188	2.426932	0.0152
RESID(-1)^2	0.555567	0.258494	2.149244	0.0316
GARCH(-1)	-0.31141	0.157647	-1.97539	0.0482
FCR	0.000677	0.000704	0.96181	0.3361
QEG	4.18E-05	0.000613	0.068235	0.9456
GED PARAMETER	1.906863	0.634467	3.005456	0.0027
R-squared	0.843988	Mean dependent var		0.002705
Adjusted R-squared	0.830222	S.D. dependent var		0.082805
S.E. of regression	0.034119	Akaike info criterion		-4.07727
Sum squared resid	0.079159	Schwarz criterion		-3.67558
Log likelihood	165.8978	Hannan-Quinn criter.		-3.91688
Durbin-Watson stat	1.942924			

Appendix 14.3f: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: India (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.473959	Prob. F(1,72)	0.4934
Obs*R-squared	0.483939	Prob. Chi-Square(1)	0.4866

Appendix 14.3f: GARCH (1,1) Model Residual Diagnostics: Generalized Error Distribution: India (Page 2 of 2)

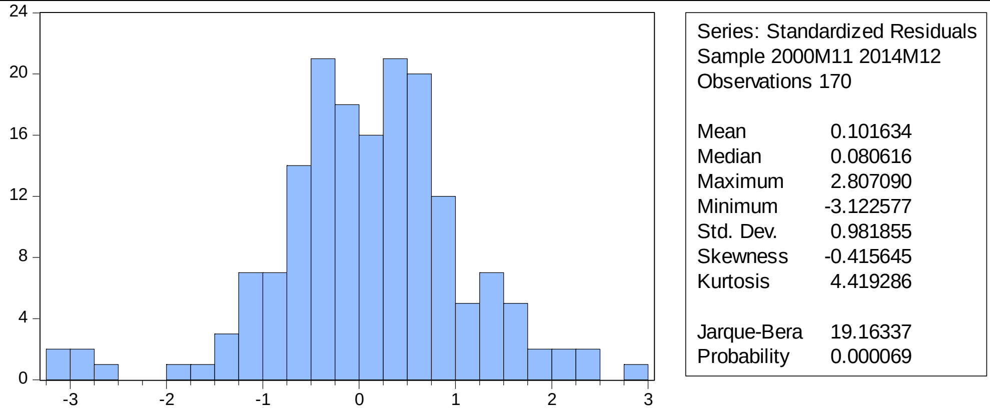
Correlogram						
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.*| . |	.*| .|	1	-0.081	-0.081	0.507	0.476
. | . |	. | . |	2	0.028	0.022	0.5695	0.752
. | . |	. | . |	3	-0.005	-0.001	0.5717	0.903
.*| . |	.*| .|	4	-0.07	-0.072	0.9719	0.914
. | . |	.*| .|	5	-0.062	-0.074	1.2851	0.936
.*| . |	.*| .|	6	-0.095	-0.104	2.0414	0.916
.*| . |	.*| .|	7	-0.083	-0.1	2.6219	0.918
. | . |	. | . |	8	0.061	0.043	2.9405	0.938
.*| . |	.*| .|	9	-0.086	-0.088	3.5866	0.936
.*| . |	.*| .|	10	-0.129	-0.177	5.0701	0.886
. |*. |	. |*.|	11	0.193	0.149	8.4248	0.675
. | . |	. | . |	12	0.004	0.023	8.4259	0.751
. | . |	. | . |	13	0.014	-0.026	8.445	0.813
. | . |	. | . |	14	-0.014	-0.043	8.4628	0.864
.*| . |	.*| .|	15	-0.115	-0.136	9.7254	0.837
. | . |	. | . |	16	0.038	-0.004	9.8634	0.874
.*| . |	. | . |	17	-0.067	-0.04	10.308	0.89
. | . |	. | . |	18	-0.028	-0.018	10.39	0.918
. |*. |	. |*.|	19	0.177	0.126	13.623	0.805
. | . |	. | . |	20	0.007	0.021	13.629	0.849
. | . |	. | . |	21	-0.038	-0.032	13.784	0.879
.*| . |	.*| .|	22	-0.09	-0.157	14.658	0.876
. | . |	. | . |	23	-0.01	-0.027	14.67	0.906
. | . |	. | . |	24	-0.016	-0.035	14.699	0.929
. | . |	. | . |	25	-0.042	-0.051	14.901	0.944
.*| . |	. | . |	26	-0.066	-0.035	15.419	0.949
. | . |	.*| .|	27	-0.036	-0.12	15.576	0.961
. |*. |	. |*.|	28	0.076	0.077	16.292	0.961
. | . |	. | . |	29	-0.049	-0.022	16.588	0.968
. | . |	.*| .|	30	0.039	-0.073	16.781	0.975
. |** |	. |*.|	31	0.24	0.208	24.31	0.798
. | . |	. | . |	32	0.014	-0.013	24.335	0.832

Appendix 14.4a: GARCH (1,1) Model: Normal Distribution: China

Dependent Variable: DLOGSHCOMP				
Method: ML - ARCH (Marquardt) - Normal distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.28974	0.183499	-1.57899	0.1143
DLOGINR	0.357131	0.210206	1.698954	0.0893
DLOGEXR	0.821099	0.879053	0.934072	0.3503
DLOGIFR	0.005365	0.011927	0.449788	0.6529
DLOGCON	-0.42978	0.202879	-2.11841	0.0341
DLOGHPI	0.514102	0.024898	20.64841	0
C	0.003543	0.004503	0.786768	0.4314
Variance Equation				
C	0.000785	0.00029	2.704019	0.0069
RESID(-1)^2	0.334242	0.158444	2.109526	0.0349
GARCH(-1)	0.323843	0.152733	2.120327	0.034
FCR	0.000678	0.000354	1.916985	0.0552
QEG	-0.00079	0.000274	-2.87742	0.004
R-squared	0.557188	Mean dependent var		0.003963
Adjusted R-squared	0.540889	S.D. dependent var		0.07302
S.E. of regression	0.049477	Akaike info criterion		-3.38013
Sum squared resid	0.399014	Schwarz criterion		-3.15878
Log likelihood	299.3112	Hannan-Quinn criter.		-3.29031
Durbin-Watson stat	2.255996			

Appendix 14.4b: GARCH(1,1) Model Residual Diagnostics: Normal Distribution: China (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.032658	Prob. F(1,167)	0.8568
Obs*R-squared	0.033042	Prob. Chi-Square(1)	0.8558

Appendix 14.4b: GARCH(1,1) Model Residual Diagnostics: Normal Distribution: China (Page 2 of 2)

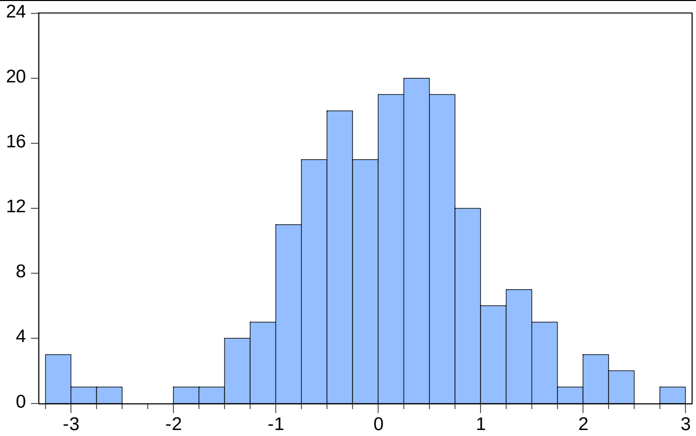
<table>
<tr><th colspan="7">Correlogram</th></tr>
<tr><th>Autocorrelation</th><th colspan="2">Partial Correlation</th><th>AC</th><th>PAC</th><th>Q-Stat</th><th>Prob</th></tr>
<tr><td>.|. |</td><td>.|. |</td><td>1</td><td>0.014</td><td>0.014</td><td>0.0338</td><td>0.854</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>2</td><td>-0.021</td><td>-0.021</td><td>0.1086</td><td>0.947</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>3</td><td>0.038</td><td>0.038</td><td>0.3579</td><td>0.949</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>4</td><td>-0.014</td><td>-0.016</td><td>0.3931</td><td>0.983</td></tr>
<tr><td>.|* |</td><td>.|* |</td><td>5</td><td>0.125</td><td>0.127</td><td>3.1611</td><td>0.675</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>6</td><td>0.059</td><td>0.053</td><td>3.7748</td><td>0.707</td></tr>
<tr><td>.|* |</td><td>.|* |</td><td>7</td><td>0.096</td><td>0.104</td><td>5.4296</td><td>0.608</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>8</td><td>0.041</td><td>0.033</td><td>5.7266</td><td>0.678</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>9</td><td>-0.021</td><td>-0.015</td><td>5.8033</td><td>0.759</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>10</td><td>0.047</td><td>0.029</td><td>6.2096</td><td>0.797</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>11</td><td>-0.009</td><td>-0.025</td><td>6.2232</td><td>0.858</td></tr>
<tr><td>.|* |</td><td>.|* |</td><td>12</td><td>0.208</td><td>0.192</td><td>14.219</td><td>0.287</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>13</td><td>0.061</td><td>0.036</td><td>14.918</td><td>0.313</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>14</td><td>-0.036</td><td>-0.029</td><td>15.162</td><td>0.367</td></tr>
<tr><td>.|* |</td><td>.|* |</td><td>15</td><td>0.119</td><td>0.101</td><td>17.827</td><td>0.272</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>16</td><td>0.054</td><td>0.062</td><td>18.386</td><td>0.302</td></tr>
<tr><td>.|* |</td><td>.|* |</td><td>17</td><td>0.132</td><td>0.104</td><td>21.71</td><td>0.196</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>18</td><td>0.014</td><td>-0.021</td><td>21.75</td><td>0.243</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>19</td><td>0.023</td><td>0.007</td><td>21.852</td><td>0.292</td></tr>
<tr><td>.|* |</td><td>.|* |</td><td>20</td><td>0.137</td><td>0.1</td><td>25.5</td><td>0.183</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>21</td><td>-0.055</td><td>-0.063</td><td>26.1</td><td>0.203</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>22</td><td>0.029</td><td>-0.018</td><td>26.264</td><td>0.241</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>23</td><td>-0.084</td><td>-0.132</td><td>27.68</td><td>0.228</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>24</td><td>0.022</td><td>-0.024</td><td>27.773</td><td>0.27</td></tr>
<tr><td>.|. |</td><td>*|. |</td><td>25</td><td>-0.009</td><td>-0.087</td><td>27.79</td><td>0.318</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>26</td><td>-0.08</td><td>-0.076</td><td>29.089</td><td>0.307</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>27</td><td>0.018</td><td>-0.06</td><td>29.155</td><td>0.353</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>28</td><td>-0.097</td><td>-0.136</td><td>31.079</td><td>0.314</td></tr>
<tr><td>.|* |</td><td>.|. |</td><td>29</td><td>0.081</td><td>0.059</td><td>32.455</td><td>0.3</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>30</td><td>0.002</td><td>-0.028</td><td>32.455</td><td>0.347</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>31</td><td>-0.049</td><td>-0.024</td><td>32.961</td><td>0.371</td></tr>
<tr><td>.|* |</td><td>.|. |</td><td>32</td><td>0.082</td><td>0.01</td><td>34.395</td><td>0.354</td></tr>
<tr><td>.|. |</td><td>.|* |</td><td>33</td><td>0.026</td><td>0.074</td><td>34.543</td><td>0.394</td></tr>
<tr><td>*|. |</td><td>.|. |</td><td>34</td><td>-0.068</td><td>-0.063</td><td>35.528</td><td>0.396</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>35</td><td>-0.026</td><td>-0.01</td><td>35.672</td><td>0.437</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>36</td><td>0.004</td><td>0.019</td><td>35.675</td><td>0.484</td></tr>
</table>

Appendix 14.4c: GARCH(1,1) Model: Student’s t Distribution: China

Dependent Variable: DLOGSHCOMP				
Method: ML - ARCH (Marquardt) - Student's t distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.32962	0.193482	-1.70362	0.0885
DLOGINR	0.34495	0.209897	1.643422	0.1003
DLOGEXR	1.036605	0.818832	1.265954	0.2055
DLOGIFR	0.003946	0.010648	0.370628	0.7109
DLOGCON	-0.33736	0.194781	-1.73201	0.0833
DLOGHPI	0.509838	0.026505	19.23536	0
C	0.004058	0.004452	0.911647	0.362
Variance Equation				
C	0.000842	0.000323	2.605111	0.0092
RESID(-1)^2	0.336289	0.159229	2.11199	0.0347
GARCH(-1)	0.260106	0.168405	1.544532	0.1225
FCR	0.000807	0.000429	1.879993	0.0601
QEG	-0.00084	0.000316	-2.67208	0.0075
T-DIST. DOF	16.62604	22.66262	0.733632	0.4632
R-squared	0.555362	Mean dependent var		0.003963
Adjusted R-squared	0.538995	S.D. dependent var		0.07302
S.E. of regression	0.049579	Akaike info criterion		-3.4032
Sum squared resid	0.400659	Schwarz criterion		-3.1634
Log likelihood	302.2717	Hannan-Quinn criter.		-3.30589
Durbin-Watson stat	2.256356			

Appendix 14.4d: GARCH(1,1) Model Residual Diagnostics: Student's t Distribution: China (Page 1 of 2)

Normal Distribution



Series: Standardized Residuals	
Sample 2000M11 2014M12	
Observations 170	
Mean	0.090293
Median	0.078518
Maximum	2.939745
Minimum	-3.234629
Std. Dev.	1.007407
Skewness	-0.445844
Kurtosis	4.574356
Jarque-Bera	23.18874
Probability	0.000009

Heteroskedasticity Test: ARCH			
F-statistic	0.006338	Prob. F(1,167)	0.9366
Obs*R-squared	0.006414	Prob. Chi-Square(1)	0.9362

Appendix 14.4d: GARCH (1,1) Model Residual Diagnostics: Student's t Distribution: China (Page 2 of 2)

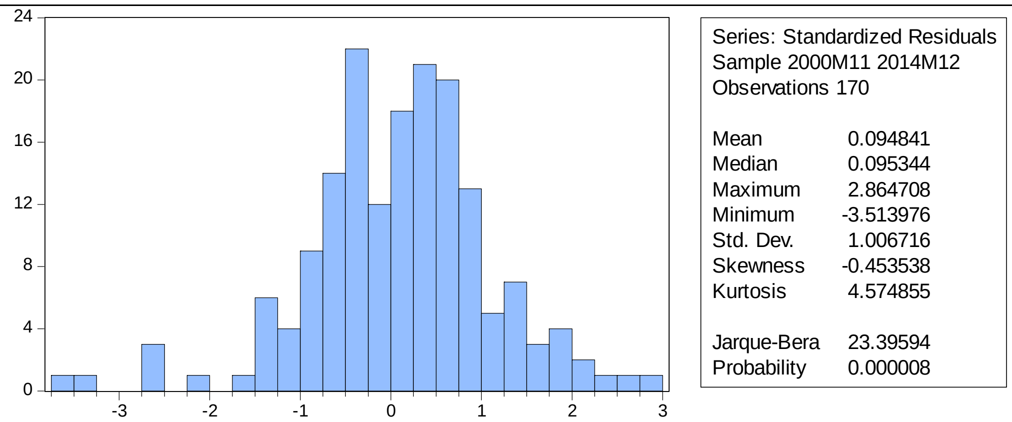
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob**
.|. |	.|. |	1	0.006	0.006	0.0066	0.935
.|. |	.|. |	2	-0.015	-0.015	0.0464	0.977
.|. |	.|. |	3	0.047	0.047	0.4334	0.933
.|. |	.|. |	4	-0.001	-0.002	0.4335	0.98
.|* |	.|* |	5	0.142	0.144	4.0265	0.546
.|. |	.|. |	6	0.054	0.05	4.5371	0.604
.|* |	.|* |	7	0.107	0.115	6.5866	0.473
.|. |	.|. |	8	0.059	0.05	7.2141	0.514
.|. |	.|. |	9	-0.017	-0.015	7.2671	0.609
.|. |	.|. |	10	0.052	0.026	7.7582	0.652
.|. |	.|. |	11	-0.009	-0.03	7.774	0.733
.|** |	.|* |	12	0.221	0.199	16.798	0.157
.|. |	.|. |	13	0.074	0.048	17.809	0.165
.|. |	.|. |	14	-0.036	-0.031	18.049	0.205
.|* |	.|* |	15	0.11	0.083	20.312	0.16
.|. |	.|. |	16	0.049	0.052	20.759	0.188
.|* |	.|* |	17	0.13	0.093	24.01	0.119
.|. |	.|. |	18	0.005	-0.034	24.015	0.155
.|. |	.|. |	19	0.022	-0.004	24.109	0.192
.|* |	.|* |	20	0.16	0.112	29.105	0.086
.|. |	*|. |	21	-0.058	-0.067	29.768	0.097
.|. |	.|. |	22	0.023	-0.026	29.873	0.122
*|. |	*|. |	23	-0.085	-0.134	31.305	0.115
.|. |	.|. |	24	0.023	-0.031	31.413	0.142
.|. |	*|. |	25	-0.02	-0.112	31.495	0.173
*|. |	*|. |	26	-0.076	-0.072	32.676	0.172
.|. |	.|. |	27	0.025	-0.052	32.803	0.204
*|. |	*|. |	28	-0.084	-0.118	34.273	0.192
.|. |	.|. |	29	0.067	0.045	35.194	0.198
.|. |	.|. |	30	-0.008	-0.021	35.207	0.235
.|. |	.|. |	31	-0.05	-0.011	35.727	0.256
.|* |	.|. |	32	0.08	0.008	37.074	0.246
.|. |	.|. |	33	0.02	0.073	37.161	0.283
*|. |	.|. |	34	-0.074	-0.062	38.337	0.279
.|. |	.|. |	35	-0.023	0.004	38.449	0.316
.|. |	.|. |	36	0.011	0.033	38.475	0.358

Appendix 14.4e: GARCH (1,1) Model: Generalized Error Distribution: China

Dependent Variable: DLOGSHCOMP				
Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.25552	0.172515	-1.48114	0.1386
DLOGINR	0.351744	0.153479	2.2918	0.0219
DLOGEXR	1.029821	0.693472	1.485021	0.1375
DLOGIFR	0.003787	0.007249	0.522402	0.6014
DLOGCON	-0.33985	0.192098	-1.76917	0.0769
DLOGHPI	0.518266	0.018876	27.45623	0
C	0.002817	0.003563	0.790577	0.4292
Variance Equation				
C	0.000449	0.000219	2.053061	0.0401
RESID(-1)^2	0.335164	0.177182	1.891634	0.0585
GARCH(-1)	0.46397	0.172443	2.690577	0.0071
FCR	0.000452	0.000354	1.274066	0.2026
QEG	-0.00047	0.000193	-2.41163	0.0159
GED PARAMETER	1.339166	0.228424	5.862627	0
R-squared	0.55749	Mean dependent var		0.003963
Adjusted R-squared	0.541201	S.D. dependent var		0.07302
S.E. of regression	0.04946	Akaike info criterion		-3.41424
Sum squared resid	0.398742	Schwarz criterion		-3.17445
Log likelihood	303.2107	Hannan-Quinn criter.		-3.31694
Durbin-Watson stat	2.256788			

Appendix 14.4f: GARCH (1,1) Model Residual Diagnostics: Generalized Error Distribution: China (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.010669	Prob. F(1,167)	0.9179
Obs*R-squared	0.010796	Prob. Chi-Square(1)	0.9172

Appendix 14.4f: GARCH (1,1) Model Residual Diagnostics: Generalized Error Distribution: China (Page 1 of 2)

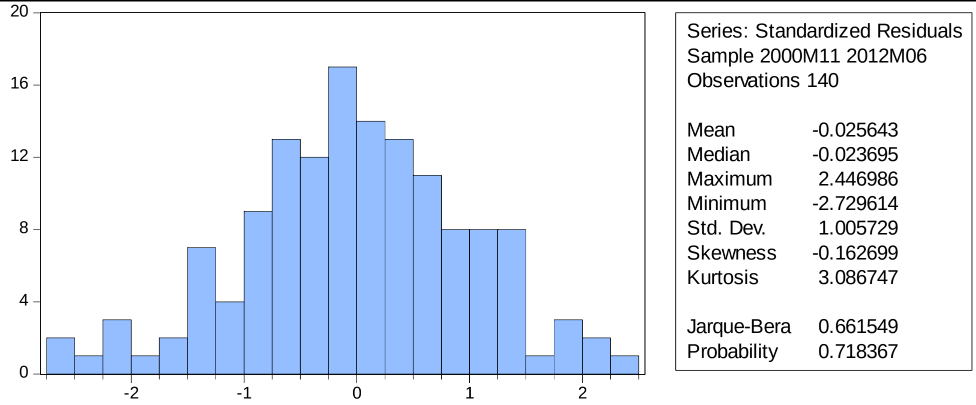
<table>
<tr><th colspan="7">Correlogram</th></tr>
<tr><th>Autocorrelation</th><th colspan="2">Partial Correlation</th><th>AC</th><th>PAC</th><th>Q-Stat</th><th>Prob</th></tr>
<tr><td>.|. |</td><td>.|. |</td><td>1</td><td>-0.008</td><td>-0.008</td><td>0.011</td><td>0.916</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>2</td><td>-0.056</td><td>-0.056</td><td>0.5505</td><td>0.759</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>3</td><td>-0.007</td><td>-0.008</td><td>0.5581</td><td>0.906</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>4</td><td>-0.04</td><td>-0.043</td><td>0.8393</td><td>0.933</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>5</td><td>0.061</td><td>0.059</td><td>1.4896</td><td>0.914</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>6</td><td>0.033</td><td>0.029</td><td>1.6818</td><td>0.947</td></tr>
<tr><td>.|* |</td><td>.|* |</td><td>7</td><td>0.112</td><td>0.12</td><td>3.9175</td><td>0.789</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>8</td><td>-0.01</td><td>-0.006</td><td>3.9374</td><td>0.863</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>9</td><td>-0.033</td><td>-0.015</td><td>4.138</td><td>0.902</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>10</td><td>0.016</td><td>0.014</td><td>4.1826</td><td>0.939</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>11</td><td>-0.011</td><td>-0.008</td><td>4.2032</td><td>0.964</td></tr>
<tr><td>.|* |</td><td>.|* |</td><td>12</td><td>0.197</td><td>0.187</td><td>11.399</td><td>0.495</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>13</td><td>0.027</td><td>0.023</td><td>11.533</td><td>0.566</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>14</td><td>-0.057</td><td>-0.043</td><td>12.134</td><td>0.596</td></tr>
<tr><td>.|* |</td><td>.|* |</td><td>15</td><td>0.077</td><td>0.085</td><td>13.266</td><td>0.582</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>16</td><td>0.037</td><td>0.057</td><td>13.533</td><td>0.633</td></tr>
<tr><td>.|* |</td><td>.|* |</td><td>17</td><td>0.099</td><td>0.094</td><td>15.401</td><td>0.567</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>18</td><td>0.014</td><td>0.008</td><td>15.438</td><td>0.632</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>19</td><td>0.001</td><td>-0.02</td><td>15.438</td><td>0.694</td></tr>
<tr><td>.|* |</td><td>.|* |</td><td>20</td><td>0.11</td><td>0.118</td><td>17.807</td><td>0.6</td></tr>
<tr><td>*|. |</td><td>.|. |</td><td>21</td><td>-0.069</td><td>-0.05</td><td>18.743</td><td>0.602</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>22</td><td>0.01</td><td>-0.011</td><td>18.762</td><td>0.66</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>23</td><td>-0.084</td><td>-0.114</td><td>20.169</td><td>0.632</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>24</td><td>0.015</td><td>-0.033</td><td>20.212</td><td>0.685</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>25</td><td>-0.007</td><td>-0.046</td><td>20.221</td><td>0.735</td></tr>
<tr><td>*|. |</td><td>.|. |</td><td>26</td><td>-0.068</td><td>-0.059</td><td>21.147</td><td>0.734</td></tr>
<tr><td>.|. |</td><td>*|. |</td><td>27</td><td>-0.012</td><td>-0.088</td><td>21.178</td><td>0.778</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>28</td><td>-0.102</td><td>-0.134</td><td>23.305</td><td>0.718</td></tr>
<tr><td>.|* |</td><td>.|. |</td><td>29</td><td>0.1</td><td>0.071</td><td>25.387</td><td>0.658</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>30</td><td>0.027</td><td>0.014</td><td>25.536</td><td>0.699</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>31</td><td>-0.045</td><td>-0.037</td><td>25.964</td><td>0.723</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>32</td><td>0.07</td><td>0.012</td><td>27.008</td><td>0.717</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>33</td><td>0.027</td><td>0.069</td><td>27.166</td><td>0.752</td></tr>
<tr><td>*|. |</td><td>.|. |</td><td>34</td><td>-0.078</td><td>-0.053</td><td>28.46</td><td>0.736</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>35</td><td>-0.035</td><td>-0.007</td><td>28.718</td><td>0.764</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>36</td><td>0.003</td><td>-0.016</td><td>28.72</td><td>0.801</td></tr>
</table>

Appendix 14.5a: GARCH(1,1) Model: Normal Distribution: South Africa

Dependent Variable: DLOGJALSH				
Method: ML - ARCH (Marquardt) - Normal distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.16126	0.188424	-0.85585	0.3921
DLOGINR	-0.0039	0.116245	-0.03352	0.9733
DLOGEXR	-0.91056	0.08322	-10.9416	0
DLOGIFR	-0.00171	0.022428	-0.07639	0.9391
DLOGCON	-0.53838	1.090318	-0.49379	0.6215
DLOGHPI	0.546841	0.477518	1.145173	0.2521
C	0.01231	0.011883	1.03595	0.3002
Variance Equation				
C	0.000199	0.000225	0.884566	0.3764
RESID(-1)^2	0.142137	0.087902	1.617001	0.1059
GARCH(-1)	0.776097	0.127705	6.077276	0
FCR	0.000144	0.000176	0.818874	0.4129
QEG	-0.00026	0.000215	-1.18658	0.2354
R-squared	0.428023	Mean dependent var		0.008914
Adjusted R-squared	0.402219	S.D. dependent var		0.0666
S.E. of regression	0.051492	Akaike info criterion		-3.0764
Sum squared resid	0.352645	Schwarz criterion		-2.82426
Log likelihood	227.3482	Hannan-Quinn criter.		-2.97394
Durbin-Watson stat	2.172891			

Appendix 14.5b: GARCH(1,1) Model Residual Diagnostics: Normal Distribution: South Africa (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	2.283258	Prob. F(1,137)	0.1331
Obs*R-squared	2.278614	Prob. Chi-Square(1)	0.1312

Appendix 14.5b: GARCH (1,1) Model Residual Diagnostics: Normal Distribution: South Africa (Page 2 of 2)

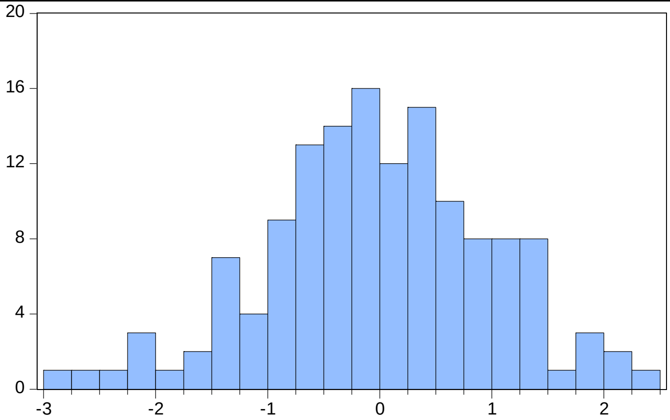
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob**
.|* |	.|* |	1	0.128	0.128	2.3349	0.127
*|. |	*|. |	2	-0.076	-0.094	3.1631	0.206
*|. |	*|. |	3	-0.16	-0.141	6.8895	0.076
.|. |	.|. |	4	-0.048	-0.015	7.2195	0.125
.|. |	.|. |	5	-0.005	-0.02	7.2225	0.205
.|* |	.|* |	6	0.167	0.15	11.357	0.078
.|* |	.|. |	7	0.115	0.07	13.334	0.064
.|. |	.|. |	8	-0.006	-0.012	13.34	0.101
*|. |	.|. |	9	-0.075	-0.02	14.202	0.115
.|. |	.|. |	10	0.009	0.053	14.214	0.163
*|. |	*|. |	11	-0.074	-0.087	15.048	0.18
.|. |	.|. |	12	0.063	0.058	15.655	0.208
.|. |	*|. |	13	-0.052	-0.105	16.073	0.245
*|. |	*|. |	14	-0.086	-0.094	17.243	0.243
.|. |	.|. |	15	-0.057	-0.018	17.759	0.276
*|. |	*|. |	16	-0.096	-0.137	19.249	0.256
*|. |	*|. |	17	-0.125	-0.126	21.779	0.193
*|. |	*|. |	18	-0.093	-0.114	23.173	0.184
*|. |	*|. |	19	-0.077	-0.117	24.136	0.191
.|. |	.|. |	20	-0.004	-0.017	24.139	0.236
.|. |	.|. |	21	0.005	-0.013	24.143	0.286
.|. |	.|. |	22	0.007	-0.019	24.152	0.339
.|. |	.|. |	23	-0.054	-0.001	24.645	0.369
*|. |	.|. |	24	-0.075	-0.043	25.6	0.374
*|. |	*|. |	25	-0.124	-0.107	28.262	0.296
.|. |	.|* |	26	0.059	0.091	28.874	0.317
.|. |	.|. |	27	0.034	-0.053	29.08	0.357
.|** |	.|**|	28	0.248	0.246	39.974	0.066
.|. |	.|. |	29	-0.011	-0.063	39.996	0.084
.|. |	.|. |	30	-0.039	-0.013	40.269	0.1
*|. |	.|. |	31	-0.075	-0.001	41.294	0.102
.|. |	.|. |	32	0.071	0.024	42.219	0.107
.|* |	.|. |	33	0.079	-0.001	43.366	0.107
.|* |	.|. |	34	0.162	0.064	48.286	0.053
.|* |	.|* |	35	0.181	0.133	54.507	0.019
.|. |	.|. |	36	0.067	0.043	55.363	0.021

Appendix 14.5c: GARCH(1,1) Model: Student’s t Distribution: South Africa

Dependent Variable: DLOGJALSH				
Method: ML - ARCH (Marquardt) - Student's t distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.15684	0.185084	-0.84742	0.3968
DLOGINR	-0.00057	0.118487	-0.00479	0.9962
DLOGEXR	-0.9068	0.080766	-11.2275	0
DLOGIFR	-0.00135	0.020979	-0.06438	0.9487
DLOGCON	-0.51793	1.061974	-0.4877	0.6258
DLOGHPI	0.533931	0.460145	1.160353	0.2459
C	0.012441	0.011417	1.089714	0.2758
Variance Equation				
C	0.000191	0.00023	0.829902	0.4066
RESID(-1)^2	0.147015	0.093314	1.575491	0.1151
GARCH(-1)	0.773195	0.131197	5.893378	0
FCR	0.000149	0.000188	0.792169	0.4283
QEG	-0.00024	0.000221	-1.09625	0.273
T-DIST. DOF	29.94109	124.9885	0.239551	0.8107
R-squared	0.428158	Mean dependent var		0.008914
Adjusted R-squared	0.402361	S.D. dependent var		0.0666
S.E. of regression	0.051486	Akaike info criterion		-3.06299
Sum squared resid	0.352561	Schwarz criterion		-2.78983
Log likelihood	227.4091	Hannan-Quinn criter.		-2.95199
Durbin-Watson stat	2.171862			

Appendix 14.5d: GARCH(1,1) Model Residual Diagnostics: Student's t Distribution: South Africa (Page 1 of 2)

Normal Distribution



Series: Standardized Residuals	
Sample 2000M11 2012M06	
Observations 140	
Mean	-0.030412
Median	-0.027907
Maximum	2.458749
Minimum	-2.788781
Std. Dev.	1.005907
Skewness	-0.170436
Kurtosis	3.107990
Jarque-Bera	0.745821
Probability	0.688727

Heteroskedasticity Test: ARCH			
F-statistic	2.277389	Prob. F(1,137)	0.1336
Obs*R-squared	2.272854	Prob. Chi-Square(1)	0.1317

Appendix 14.5d: GARCH (1,1) Model Residual Diagnostics: Student's t Distribution: South Africa (Page 2 of 2)

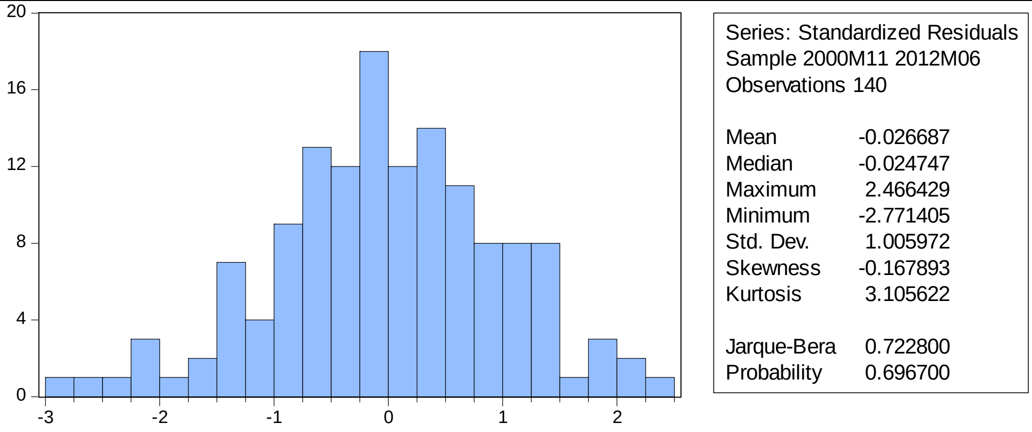
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob**
.|* |	.|* |	1	0.128	0.128	2.329	0.127
*|. |	*|. |	2	-0.074	-0.092	3.1258	0.21
*|. |	*|. |	3	-0.16	-0.141	6.8335	0.077
.|. |	.|. |	4	-0.048	-0.016	7.1683	0.127
.|. |	.|. |	5	-0.008	-0.023	7.1776	0.208
.|* |	.|* |	6	0.163	0.147	11.128	0.084
.|* |	.|. |	7	0.116	0.071	13.129	0.069
.|. |	.|. |	8	-0.003	-0.011	13.13	0.107
*|. |	.|. |	9	-0.071	-0.017	13.889	0.126
.|. |	.|. |	10	0.005	0.048	13.893	0.178
*|. |	*|. |	11	-0.071	-0.081	14.67	0.198
.|. |	.|. |	12	0.063	0.059	15.285	0.226
.|. |	*|. |	13	-0.051	-0.105	15.7	0.266
*|. |	*|. |	14	-0.08	-0.088	16.708	0.272
.|. |	.|. |	15	-0.056	-0.019	17.205	0.307
*|. |	*|. |	16	-0.098	-0.135	18.729	0.283
*|. |	*|. |	17	-0.127	-0.126	21.341	0.211
*|. |	*|. |	18	-0.094	-0.116	22.786	0.199
*|. |	*|. |	19	-0.072	-0.112	23.632	0.211
.|. |	.|. |	20	0	-0.015	23.632	0.259
.|. |	.|. |	21	0.006	-0.014	23.639	0.311
.|. |	.|. |	22	0.005	-0.017	23.643	0.366
.|. |	.|. |	23	-0.055	-0.002	24.155	0.395
*|. |	.|. |	24	-0.074	-0.042	25.102	0.4
*|. |	*|. |	25	-0.125	-0.105	27.784	0.318
.|. |	.|* |	26	0.062	0.092	28.451	0.337
.|. |	.|. |	27	0.035	-0.05	28.663	0.377
.|** |	.|**|	28	0.248	0.249	39.571	0.072
.|. |	*|. |	29	-0.016	-0.067	39.616	0.09
.|. |	.|. |	30	-0.039	-0.009	39.885	0.107
*|. |	.|. |	31	-0.075	-0.003	40.917	0.11
.|. |	.|. |	32	0.072	0.026	41.865	0.114
.|* |	.|. |	33	0.078	0.003	43.001	0.114
.|* |	.|. |	34	0.158	0.059	47.691	0.06
.|* |	.|* |	35	0.182	0.136	53.972	0.021
.|. |	.|. |	36	0.068	0.045	54.861	0.023

Appendix 14.5e: GARCH(1,1) Model: Generalized Error Distribution: South Africa

Dependent Variable: DLOGJALSH				
Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.14655	0.179011	-0.81865	0.413
DLOGINR	-0.00183	0.116367	-0.01568	0.9875
DLOGEXR	-0.90917	0.078702	-11.5521	0
DLOGIFR	-0.00134	0.019572	-0.06822	0.9456
DLOGCON	-0.52972	1.025762	-0.51641	0.6056
DLOGHPI	0.524783	0.446404	1.175577	0.2398
C	0.012366	0.010721	1.153408	0.2487
Variance Equation				
C	0.00019	0.000245	0.774953	0.4384
RESID(-1)^2	0.146766	0.098411	1.491349	0.1359
GARCH(-1)	0.774059	0.139206	5.560523	0
FCR	0.000145	0.000197	0.736465	0.4614
QEG	-0.00024	0.000234	-1.02213	0.3067
GED PARAMETER	1.698871	0.401571	4.23056	0
R-squared	0.42846	Mean dependent var		0.008914
Adjusted R-squared	0.402676	S.D. dependent var		0.0666
S.E. of regression	0.051473	Akaike info criterion		-3.06698
Sum squared resid	0.352375	Schwarz criterion		-2.79383
Log likelihood	227.6886	Hannan-Quinn criter.		-2.95598
Durbin-Watson stat	2.17253			

Appendix 14.5f: GARCH (1,1) Model Residual Diagnostics: Generalized Error Distribution: South Africa (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	2.268566	Prob. F(1,137)	0.1343
Obs*R-squared	2.264191	Prob. Chi-Square(1)	0.1324

Appendix 14.5f: GARCH (1,1) Model Residual Diagnostics: Generalized Error Distribution: South Africa (Page 1 of 2)

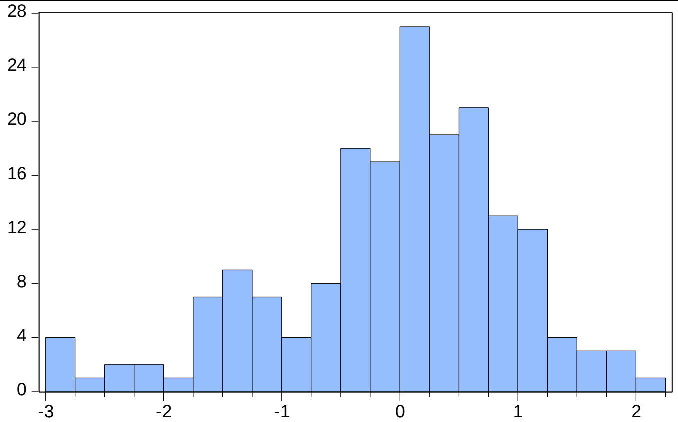
Correlogram						
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.|* |	.|* |	1	0.127	0.127	2.3204	0.128
*|. |	*|. |	2	-0.075	-0.093	3.1356	0.208
*|. |	*|. |	3	-0.16	-0.141	6.8621	0.076
.|. |	.|. |	4	-0.048	-0.016	7.204	0.125
.|. |	.|. |	5	-0.008	-0.024	7.214	0.205
.|* |	.|* |	6	0.164	0.147	11.183	0.083
.|* |	.|* |	7	0.118	0.074	13.28	0.066
.|. |	.|. |	8	-0.002	-0.01	13.281	0.103
*|. |	.|. |	9	-0.072	-0.018	14.073	0.12
.|. |	.|. |	10	0.004	0.048	14.075	0.17
*|. |	*|. |	11	-0.072	-0.081	14.866	0.189
.|. |	.|. |	12	0.061	0.057	15.446	0.218
.|. |	*|. |	13	-0.05	-0.104	15.836	0.258
*|. |	*|. |	14	-0.082	-0.092	16.897	0.262
.|. |	.|. |	15	-0.056	-0.019	17.403	0.295
*|. |	*|. |	16	-0.098	-0.136	18.943	0.272
*|. |	*|. |	17	-0.126	-0.126	21.489	0.205
*|. |	*|. |	18	-0.094	-0.115	22.92	0.194
*|. |	*|. |	19	-0.073	-0.115	23.794	0.204
.|. |	.|. |	20	-0.001	-0.015	23.794	0.251
.|. |	.|. |	21	0.008	-0.012	23.804	0.303
.|. |	.|. |	22	0.005	-0.019	23.809	0.357
.|. |	.|. |	23	-0.055	-0.002	24.324	0.386
*|. |	.|. |	24	-0.075	-0.041	25.29	0.39
*|. |	*|. |	25	-0.123	-0.104	27.911	0.312
.|. |	.|* |	26	0.061	0.092	28.569	0.331
.|. |	.|. |	27	0.034	-0.052	28.772	0.372
.|** |	.|**|	28	0.249	0.249	39.747	0.07
.|. |	*|. |	29	-0.014	-0.066	39.785	0.088
.|. |	.|. |	30	-0.039	-0.01	40.058	0.104
*|. |	.|. |	31	-0.076	-0.003	41.097	0.106
.|. |	.|. |	32	0.073	0.028	42.077	0.11
.|* |	.|. |	33	0.077	0	43.192	0.11
.|* |	.|. |	34	0.158	0.06	47.888	0.057
.|* |	.|* |	35	0.184	0.137	54.281	0.02
.|. |	.|. |	36	0.068	0.044	55.172	0.021

Appendix 14.6a: GARCH (1,1) Model: Normal Distribution: France

Dependent Variable: DLOGCAC				
Method: ML - ARCH (Marquardt) - Normal distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.96312	1.432627	-0.67227	0.5014
DLOGINR	0.009417	0.018966	0.49652	0.6195
DLOGEXR	-0.15862	0.242034	-0.65535	0.5122
DLOGIFR	-0.00917	0.014615	-0.62763	0.5302
DLOGCON	1.068524	1.440984	0.741524	0.4584
DLOGHPI	0.339024	0.660777	0.513069	0.6079
C	-0.00034	0.00442	-0.07705	0.9386
Variance Equation				
C	0.0007	0.000339	2.063141	0.0391
RESID(-1)^2	0.403615	0.14666	2.752038	0.0059
GARCH(-1)	0.308211	0.200052	1.540659	0.1234
FCR	0.000755	0.000557	1.35632	0.175
QEG	5.87E-05	0.000636	0.092425	0.9264
R-squared	0.012129	Mean dependent var		-0.00032
Adjusted R-squared	-0.02155	S.D. dependent var		0.052581
S.E. of regression	0.053144	Akaike info criterion		-3.08998
Sum squared resid	0.497079	Schwarz criterion		-2.87952
Log likelihood	294.7331	Hannan-Quinn criter.		-3.00467
Durbin-Watson stat	1.99975			

Appendix 14.6b: GARCH(1,1) Model Residual Diagnostics: Normal Distribution: France (Page 1 of 2)

Normal Distribution



Series: Standardized Residuals
Sample 2000M04 2015M06
Observations 183

Mean	-0.036997
Median	0.091135
Maximum	2.199949
Minimum	-2.840826
Std. Dev.	1.001791
Skewness	-0.665879
Kurtosis	3.399047
Jarque-Bera	14.73774
Probability	0.000631

Heteroskedasticity Test: ARCH			
F-statistic	0.022714	Prob. F(1,180)	0.8804
Obs*R-squared	0.022964	Prob. Chi-Square(1)	0.8796

Appendix 14.6b: GARCH(1,1) Model Residual Diagnostics: Normal Distribution: France (Page 2 of 2)

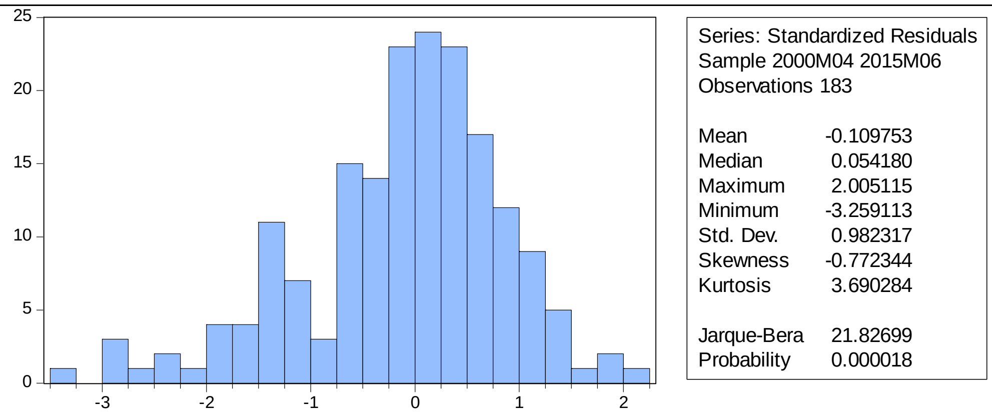
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob***
.|. |	.|. |	1	-0.011	-0.011	0.0234	0.878
.|. |	.|. |	2	0.002	0.002	0.024	0.988
.|* |	.|* |	3	0.103	0.103	2.0361	0.565
*|. |	*|. |	4	-0.095	-0.094	3.7592	0.44
*|. |	*|. |	5	-0.08	-0.084	4.9856	0.418
.|. |	.|. |	6	-0.022	-0.034	5.0809	0.533
.|. |	.|. |	7	-0.016	0.005	5.1275	0.644
.|. |	.|. |	8	0.041	0.051	5.4581	0.708
.|* |	.|* |	9	0.084	0.078	6.8201	0.656
.|. |	.|. |	10	-0.023	-0.034	6.9256	0.732
.|. |	.|. |	11	0.057	0.041	7.5709	0.751
.|. |	.|. |	12	-0.036	-0.046	7.8215	0.799
.|. |	.|. |	13	-0.025	0.001	7.9446	0.847
.|. |	.|. |	14	-0.019	-0.019	8.0163	0.888
.|. |	.|. |	15	-0.039	-0.021	8.3184	0.91
.|. |	.|. |	16	-0.05	-0.052	8.8249	0.92
.|. |	.|. |	17	0.015	0.006	8.8679	0.944
*|. |	*|. |	18	-0.087	-0.095	10.415	0.918
.|. |	.|. |	19	0.026	0.028	10.553	0.938
.|. |	*|. |	20	-0.046	-0.071	10.996	0.946
.|. |	.|. |	21	-0.039	-0.018	11.307	0.956
.|. |	.|. |	22	-0.012	-0.04	11.336	0.97
.|. |	.|. |	23	-0.051	-0.041	11.891	0.972
.|. |	.|. |	24	0.014	0.013	11.932	0.981
.|. |	.|. |	25	0.019	0.021	12.005	0.987
.|. |	.|. |	26	0.013	0.014	12.044	0.991
.|. |	.|. |	27	-0.012	-0.013	12.075	0.994
.|. |	.|. |	28	-0.013	-0.039	12.115	0.996
*|. |	.|. |	29	-0.073	-0.057	13.274	0.994
.|. |	.|. |	30	0.003	0.002	13.277	0.996
.|. |	.|. |	31	-0.024	-0.01	13.41	0.997
.|. |	.|. |	32	-0.025	-0.02	13.546	0.998
.|* |	.|* |	33	0.197	0.181	22.338	0.92
.|* |	.|* |	34	0.107	0.099	24.916	0.872
*|. |	*|. |	35	-0.083	-0.096	26.485	0.849
.|. |	.|. |	36	0.043	-0.024	26.919	0.863

Appendix 14.6c: GARCH(1,1) Model: Student's t Distribution: France

Dependent Variable: DLOGCAC				
Method: ML - ARCH (Marquardt) - Student's t distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.80832	1.185131	-0.68205	0.4952
DLOGINR	0.008718	0.013331	0.653971	0.5131
DLOGEXR	-0.03557	0.245696	-0.14477	0.8849
DLOGIFR	-0.00962	0.011785	-0.81636	0.4143
DLOGCON	0.845519	1.196366	0.70674	0.4797
DLOGHPI	0.505534	0.629069	0.803622	0.4216
C	0.002493	0.004434	0.562167	0.574
Variance Equation				
C	0.000456	0.000281	1.620475	0.1051
RESID(-1)^2	0.36006	0.178854	2.013145	0.0441
GARCH(-1)	0.464384	0.2017	2.302354	0.0213
FCR	0.00054	0.000517	1.043944	0.2965
QEG	0.000566	0.001004	0.564114	0.5727
T-DIST. DOF	5.82029	3.5727	1.629101	0.1033
R-squared	0.003641	Mean dependent var		-0.00032
Adjusted R-squared	-0.03033	S.D. dependent var		0.052581
S.E. of regression	0.053372	Akaike info criterion		-3.09913
Sum squared resid	0.50135	Schwarz criterion		-2.87113
Log likelihood	296.5699	Hannan-Quinn criter.		-3.00671
Durbin-Watson stat	1.98625			

Appendix 14.6d: GARCH(1,1) Model Residual Diagnostics: Student's t Distribution: France (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.038718	Prob. F(1,180)	0.8442
Obs*R-squared	0.03914	Prob. Chi-Square(1)	0.8432

Appendix 14.6d: GARCH (1,1) Model Residual Diagnostics: Student's t Distribution: France (Page 2 of 2)

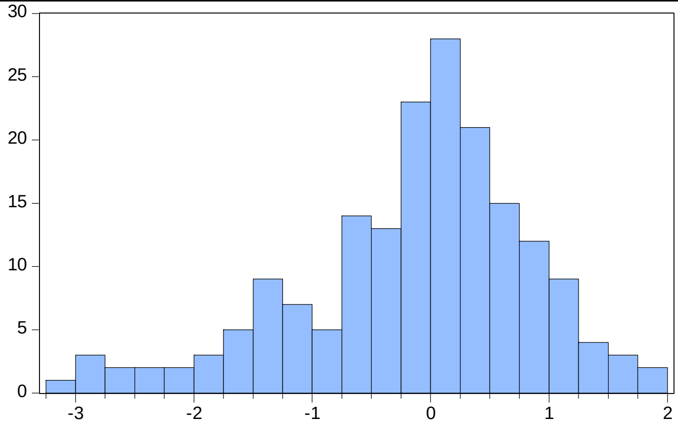
Correlogram						
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob*
.|. |	.|. |	1	-0.015	-0.015	0.0399	0.842
.|. |	.|. |	2	-0.029	-0.029	0.1942	0.907
.|* |	.|* |	3	0.078	0.078	1.3509	0.717
*|. |	*|. |	4	-0.1	-0.1	3.2607	0.515
*|. |	*|. |	5	-0.081	-0.08	4.5141	0.478
.|. |	.|. |	6	-0.017	-0.031	4.5698	0.6
.|. |	.|. |	7	-0.044	-0.035	4.9494	0.666
.|. |	.|. |	8	0.022	0.022	5.0402	0.753
.|. |	.|. |	9	0.072	0.06	6.0533	0.735
.|. |	.|. |	10	-0.045	-0.049	6.4544	0.776
.|. |	.|. |	11	0.041	0.03	6.7905	0.816
.|. |	.|. |	12	-0.033	-0.049	7.0116	0.857
.|. |	.|. |	13	-0.02	0.002	7.0952	0.897
.|. |	.|. |	14	-0.009	-0.016	7.1102	0.93
.|. |	.|. |	15	-0.043	-0.035	7.4843	0.943
.|. |	.|. |	16	-0.049	-0.051	7.9691	0.95
.|. |	.|. |	17	0.011	-0.004	7.9922	0.967
*|. |	*|. |	18	-0.084	-0.091	9.4318	0.949
.|. |	.|. |	19	0.011	0.009	9.4563	0.965
.|. |	.|. |	20	-0.027	-0.058	9.6032	0.975
.|. |	.|. |	21	-0.018	-0.007	9.6707	0.983
.|. |	*|. |	22	-0.035	-0.069	9.9331	0.987
.|. |	*|. |	23	-0.064	-0.075	10.805	0.985
.|. |	.|. |	24	0.024	0.012	10.931	0.989
.|. |	.|. |	25	0.002	-0.008	10.933	0.993
.|. |	.|. |	26	-0.004	-0.01	10.936	0.996
.|. |	.|. |	27	0.017	0	11	0.997
.|. |	.|. |	28	-0.011	-0.042	11.029	0.998
*|. |	*|. |	29	-0.071	-0.071	12.151	0.997
.|. |	.|. |	30	0.015	-0.009	12.203	0.998
.|. |	.|. |	31	-0.053	-0.054	12.827	0.998
.|. |	.|. |	32	-0.033	-0.038	13.078	0.999
.|** |	.|* |	33	0.218	0.19	23.773	0.881
.|* |	.|* |	34	0.105	0.105	26.295	0.825
*|. |	*|. |	35	-0.075	-0.086	27.591	0.809
.|. |	.|. |	36	0.064	0.003	28.533	0.808

Appendix 14.6e: GARCH(1,1) Model: Generalized Error Distribution: France

Dependent Variable: DLOGCAC				
Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.31176	1.045967	-0.29806	0.7657
DLOGINR	0.014608	0.013794	1.058977	0.2896
DLOGEXR	-0.09416	0.231797	-0.4062	0.6846
DLOGIFR	-0.01521	0.010495	-1.44953	0.1472
DLOGCON	0.393609	1.050379	0.37473	0.7079
DLOGHPI	0.342874	0.575151	0.596146	0.5511
C	0.005162	0.004069	1.268556	0.2046
Variance Equation				
C	0.000616	0.000373	1.649925	0.099
RESID(-1)^2	0.410222	0.216329	1.896281	0.0579
GARCH(-1)	0.353905	0.253039	1.398619	0.1619
FCR	0.00079	0.000745	1.061022	0.2887
QEG	0.000253	0.001007	0.251526	0.8014
GED PARAMETER	1.203079	0.213707	5.629574	0
R-squared	-0.00713	Mean dependent var		-0.00032
Adjusted R-squared	-0.04147	S.D. dependent var		0.052581
S.E. of regression	0.05366	Akaike info criterion		-3.11341
Sum squared resid	0.50677	Schwarz criterion		-2.88541
Log likelihood	297.8765	Hannan-Quinn criter.		-3.02099
Durbin-Watson stat	1.9706			

Appendix 14.6f: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: France (Page 1 of 2)

Normal Distribution



Series: Standardized Residuals	
Sample 2000M04 2015M06	
Observations 183	
Mean	-0.138357
Median	0.037253
Maximum	1.932262
Minimum	-3.104142
Std. Dev.	0.987838
Skewness	-0.729398
Kurtosis	3.565462
Jarque-Bera	18.66471
Probability	0.000089

Heteroskedasticity Test: ARCH			
F-statistic	0.123563	Prob. F(1,180)	0.7256
Obs*R-squared	0.12485	Prob. Chi-Square(1)	0.7238

Appendix 14.6f: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: France (Page 2 of 2)

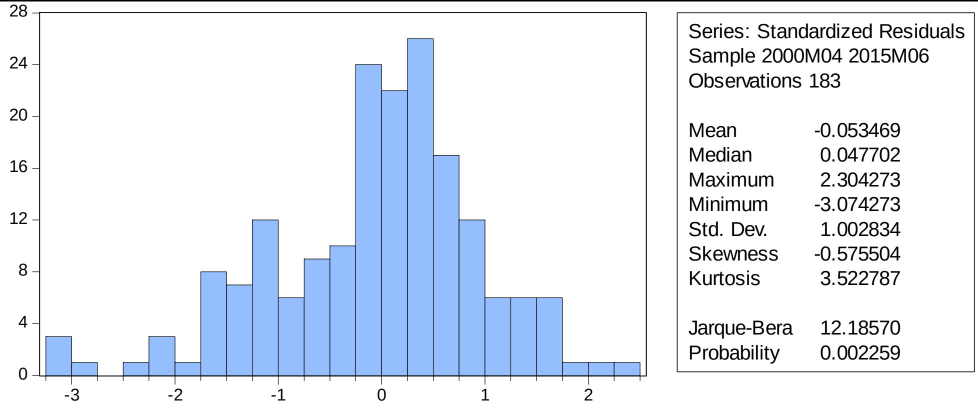
<table>
<tr><th colspan="7">Correlogram</th></tr>
<tr><th>Autocorrelation</th><th colspan="2">Partial Correlation</th><th>AC</th><th>PAC</th><th>Q-Stat</th><th>Prob*</th></tr>
<tr><td>.|. |</td><td>.|. |</td><td>1</td><td>-0.026</td><td>-0.026</td><td>0.1274</td><td>0.721</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>2</td><td>-0.026</td><td>-0.026</td><td>0.2499</td><td>0.883</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>3</td><td>0.069</td><td>0.068</td><td>1.1448</td><td>0.766</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>4</td><td>-0.097</td><td>-0.094</td><td>2.9123</td><td>0.573</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>5</td><td>-0.066</td><td>-0.068</td><td>3.7478</td><td>0.586</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>6</td><td>-0.007</td><td>-0.02</td><td>3.7567</td><td>0.71</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>7</td><td>-0.037</td><td>-0.028</td><td>4.0146</td><td>0.778</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>8</td><td>0.031</td><td>0.029</td><td>4.2006</td><td>0.839</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>9</td><td>0.069</td><td>0.059</td><td>5.134</td><td>0.822</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>10</td><td>-0.047</td><td>-0.046</td><td>5.5666</td><td>0.85</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>11</td><td>0.061</td><td>0.051</td><td>6.2938</td><td>0.853</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>12</td><td>-0.041</td><td>-0.05</td><td>6.6344</td><td>0.881</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>13</td><td>-0.031</td><td>-0.01</td><td>6.8317</td><td>0.911</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>14</td><td>-0.011</td><td>-0.022</td><td>6.8573</td><td>0.94</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>15</td><td>-0.037</td><td>-0.026</td><td>7.1285</td><td>0.954</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>16</td><td>-0.049</td><td>-0.05</td><td>7.6186</td><td>0.959</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>17</td><td>0.016</td><td>0</td><td>7.6683</td><td>0.973</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>18</td><td>-0.087</td><td>-0.094</td><td>9.2074</td><td>0.955</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>19</td><td>0.028</td><td>0.024</td><td>9.3744</td><td>0.967</td></tr>
<tr><td>.|. |</td><td>*|. |</td><td>20</td><td>-0.044</td><td>-0.074</td><td>9.7828</td><td>0.972</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>21</td><td>-0.006</td><td>0.01</td><td>9.7905</td><td>0.982</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>22</td><td>-0.019</td><td>-0.051</td><td>9.866</td><td>0.987</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>23</td><td>-0.053</td><td>-0.052</td><td>10.471</td><td>0.988</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>24</td><td>0.014</td><td>0.002</td><td>10.509</td><td>0.992</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>25</td><td>0.014</td><td>0.008</td><td>10.554</td><td>0.995</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>26</td><td>-0.013</td><td>-0.016</td><td>10.593</td><td>0.997</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>27</td><td>0.009</td><td>0.005</td><td>10.609</td><td>0.998</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>28</td><td>-0.004</td><td>-0.033</td><td>10.613</td><td>0.999</td></tr>
<tr><td>*|. |</td><td>.|. |</td><td>29</td><td>-0.071</td><td>-0.056</td><td>11.709</td><td>0.998</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>30</td><td>0.027</td><td>0</td><td>11.872</td><td>0.999</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>31</td><td>-0.049</td><td>-0.045</td><td>12.397</td><td>0.999</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>32</td><td>0.011</td><td>0.008</td><td>12.426</td><td>0.999</td></tr>
<tr><td>.|* |</td><td>.|* |</td><td>33</td><td>0.172</td><td>0.152</td><td>19.101</td><td>0.974</td></tr>
<tr><td>.|* |</td><td>.|* |</td><td>34</td><td>0.099</td><td>0.105</td><td>21.332</td><td>0.955</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>35</td><td>-0.087</td><td>-0.093</td><td>23.07</td><td>0.939</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>36</td><td>0.061</td><td>0.018</td><td>23.933</td><td>0.938</td></tr>
</table>

Appendix 14.7a: GARCH(1,1) Model: Normal Distribution: Germany

Dependent Variable: DLOGDAX				
Method: ML - ARCH (Marquardt) - Normal distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	0.232553	0.721818	0.322176	0.7473
DLOGINR	0.012645	0.018759	0.674091	0.5003
DLOGEXR	0.272802	0.272992	0.999305	0.3176
LOGIFRIT	-0.00504	0.004492	-1.12251	0.2616
DLOGCON	-0.28656	0.742229	-0.38608	0.6994
DLOGHPI	-1.87568	1.605229	-1.16848	0.2426
C	0.01189	0.004585	2.593066	0.0095
Variance Equation				
C	0.000778	0.000359	2.168293	0.0301
RESID(-1)^2	0.278645	0.113638	2.452041	0.0142
GARCH(-1)	0.469587	0.186062	2.523814	0.0116
FCR	0.000416	0.000391	1.061959	0.2883
QEG	-0.00018	0.000548	-0.33312	0.739
R-squared	0.019238	Mean dependent var		0.002913
Adjusted R-squared	-0.0142	S.D. dependent var		0.058989
S.E. of regression	0.059406	Akaike info criterion		-2.85735
Sum squared resid	0.621112	Schwarz criterion		-2.6469
Log likelihood	273.4478	Hannan-Quinn criter.		-2.77204
Durbin-Watson stat	1.987853			

Appendix 14.7b: GARCH(1,1) Model Residual Diagnostics: Normal Distribution: Germany (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.000798	Prob. F(1,180)	0.9775
Obs*R-squared	0.000806	Prob. Chi-Square(1)	0.9773

Appendix 14.7b: GARCH (1,1) Model Residual Diagnostics: Normal Distribution: Germany (Page 2 of 2)

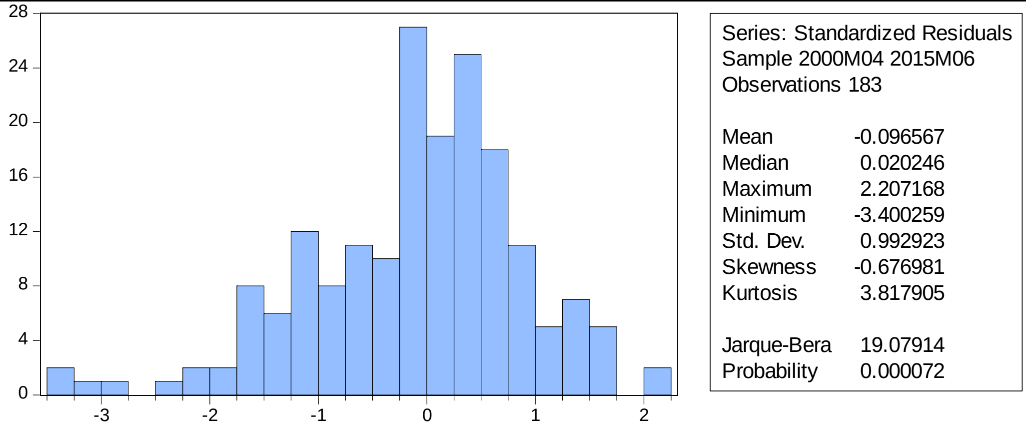
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob***
.|. |	.|. |	1	0.002	0.002	0.0008	0.977
.|. |	.|. |	2	-0.047	-0.047	0.4132	0.813
.|* |	.|* |	3	0.171	0.171	5.8866	0.117
.|. |	.|. |	4	-0.016	-0.021	5.9366	0.204
.|. |	.|. |	5	-0.046	-0.031	6.3475	0.274
.|. |	*|. |	6	-0.061	-0.094	7.0642	0.315
.|. |	.|. |	7	-0.004	0.001	7.0666	0.422
.|. |	.|. |	8	0.021	0.029	7.155	0.52
.|. |	.|* |	9	0.05	0.078	7.6392	0.571
.|. |	.|. |	10	-0.002	-0.005	7.6398	0.664
.|. |	.|. |	11	-0.027	-0.039	7.7859	0.732
.|. |	.|. |	12	-0.007	-0.037	7.7958	0.801
.|. |	.|. |	13	0.014	0.018	7.834	0.854
.|. |	.|. |	14	-0.026	-0.007	7.972	0.891
*|. |	*|. |	15	-0.107	-0.093	10.276	0.802
.|* |	.|* |	16	0.094	0.089	12.065	0.74
.|. |	.|. |	17	0.023	0.01	12.171	0.79
*|. |	.|. |	18	-0.096	-0.062	14.051	0.726
.|. |	.|. |	19	-0.014	-0.049	14.093	0.778
.|. |	.|. |	20	0.042	0.03	14.454	0.807
.|. |	.|. |	21	0.012	0.034	14.486	0.848
*|. |	.|. |	22	-0.069	-0.048	15.487	0.84
*|. |	*|. |	23	-0.084	-0.1	16.984	0.81
.|. |	.|. |	24	0.001	-0.016	16.984	0.849
*|. |	*|. |	25	-0.068	-0.071	17.968	0.844
.|. |	.|. |	26	-0.056	-0.023	18.642	0.851
.|. |	.|. |	27	-0.003	0.005	18.644	0.883
.|. |	.|. |	28	-0.038	-0.029	18.954	0.9
.|. |	.|. |	29	-0.004	-0.025	18.959	0.922
.|. |	.|. |	30	-0.031	-0.059	19.171	0.936
.|. |	.|. |	31	-0.02	0.009	19.256	0.95
.|. |	.|. |	32	0.048	0.052	19.78	0.955
.|** |	.|** |	33	0.215	0.231	30.252	0.605
.|. |	.|. |	34	0.015	0.028	30.302	0.65
.|. |	.|. |	35	0.011	0.019	30.328	0.693
.|. |	*|. |	36	0.042	-0.066	30.743	0.717

Appendix 14.7c: GARCH (1,1) Model: Student's t Distribution: Germany

Dependent Variable: DLOGDAX				
Method: ML - ARCH (Marquardt) - Student's t distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	0.490032	0.643904	0.761032	0.4466
DLOGINR	0.014122	0.014884	0.948822	0.3427
DLOGEXR	0.244225	0.271264	0.90032	0.368
LOGIFRIT	-0.00374	0.004367	-0.85626	0.3919
DLOGCON	-0.65915	0.664523	-0.99192	0.3212
DLOGHPI	-1.97622	1.442331	-1.37015	0.1706
C	0.014212	0.004363	3.257383	0.0011
Variance Equation				
C	0.000592	0.000408	1.449989	0.1471
RESID(-1)^2	0.244717	0.131197	1.865271	0.0621
GARCH(-1)	0.568001	0.209984	2.704965	0.0068
FCR	0.000199	0.000385	0.515718	0.6061
QEG	0.000187	0.000717	0.260949	0.7941
T-DIST. DOF	6.662228	4.220333	1.578603	0.1144
R-squared	0.020961	Mean dependent var		0.002913
Adjusted R-squared	-0.01242	S.D. dependent var		0.058989
S.E. of regression	0.059354	Akaike info criterion		-2.86805
Sum squared resid	0.620021	Schwarz criterion		-2.64005
Log likelihood	275.4264	Hannan-Quinn criter.		-2.77563
Durbin-Watson stat	1.987711			

Appendix 14.7d: GARCH(1,1) Model Residual Diagnostics: Student's t Distribution: Germany (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.00167	Prob. F(1,180)	0.9675
Obs*R-squared	0.001688	Prob. Chi-Square(1)	0.9672

Appendix 14.7d: GARCH (1,1) Model Residual Diagnostics: Student's t Distribution: Germany (Page 1 of 2)

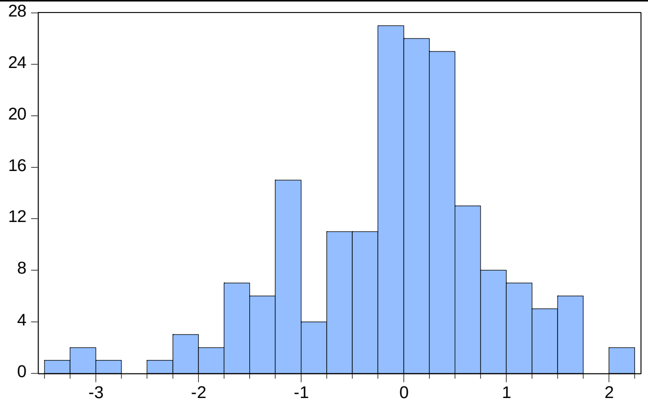
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob***
.|. |	.|. |	1	-0.003	-0.003	0.0017	0.967
.|. |	.|. |	2	-0.064	-0.064	0.7722	0.68
.|* |	.|* |	3	0.165	0.165	5.8772	0.118
.|. |	.|. |	4	-0.032	-0.038	6.0758	0.194
.|. |	.|. |	5	-0.054	-0.033	6.6224	0.25
.|. |	*|. |	6	-0.053	-0.086	7.1502	0.307
.|. |	.|. |	7	-0.021	-0.014	7.2325	0.405
.|. |	.|. |	8	0.027	0.033	7.3713	0.497
.|. |	.|. |	9	0.039	0.059	7.6727	0.567
.|. |	.|. |	10	-0.017	-0.016	7.7315	0.655
.|. |	.|. |	11	-0.024	-0.038	7.8451	0.727
.|. |	.|. |	12	-0.022	-0.047	7.9441	0.789
.|. |	.|. |	13	0.005	0.012	7.9489	0.847
.|. |	.|. |	14	-0.01	0.004	7.9701	0.891
*|. |	*|. |	15	-0.107	-0.094	10.289	0.801
.|* |	.|* |	16	0.084	0.079	11.72	0.763
.|. |	.|. |	17	0.021	-0.002	11.808	0.812
*|. |	.|. |	18	-0.086	-0.051	13.332	0.771
.|. |	.|. |	19	-0.008	-0.04	13.345	0.82
.|. |	.|. |	20	0.042	0.034	13.719	0.844
.|. |	.|. |	21	0.003	0.02	13.722	0.881
*|. |	.|. |	22	-0.069	-0.058	14.717	0.874
*|. |	*|. |	23	-0.091	-0.108	16.451	0.835
.|. |	.|. |	24	-0.005	-0.021	16.456	0.871
.|. |	.|. |	25	-0.058	-0.063	17.186	0.875
.|. |	.|. |	26	-0.059	-0.027	17.94	0.878
.|. |	.|. |	27	0	-0.005	17.94	0.905
.|. |	.|. |	28	-0.037	-0.042	18.235	0.92
.|. |	.|. |	29	-0.01	-0.03	18.258	0.939
.|. |	*|. |	30	-0.035	-0.071	18.531	0.949
.|. |	.|. |	31	-0.031	-0.007	18.745	0.959
.|. |	.|. |	32	0.037	0.033	19.053	0.966
.|** |	.|** |	33	0.213	0.226	29.321	0.651
.|. |	.|. |	34	0.021	0.029	29.419	0.692
.|. |	.|. |	35	0.037	0.052	29.725	0.721
.|. |	.|. |	36	0.054	-0.045	30.408	0.731

Appendix 14.7e: GARCH (1,1) Model: Generalized Error Distribution: Germany

Dependent Variable: DLOGDAX				
Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	0.824586	0.575753	1.432188	0.1521
DLOGINR	0.022934	0.01445	1.587111	0.1125
DLOGEXR	0.231031	0.238514	0.968624	0.3327
LOGIFRIT	-0.0044	0.003929	-1.11902	0.2631
DLOGCON	-0.9843	0.596936	-1.64892	0.0992
DLOGHPI	-0.57641	1.212804	-0.47527	0.6346
C	0.014568	0.003753	3.881297	0.0001
Variance Equation				
C	0.000783	0.000529	1.479824	0.1389
RESID(-1)^2	0.282228	0.172743	1.633802	0.1023
GARCH(-1)	0.483182	0.258478	1.869332	0.0616
FCR	0.000313	0.000556	0.563477	0.5731
QEG	5.72E-05	0.000873	0.065498	0.9478
GED PARAMETER	1.133327	0.199889	5.669778	0
R-squared	0.017414	Mean dependent var		0.002913
Adjusted R-squared	-0.01608	S.D. dependent var		0.058989
S.E. of regression	0.059461	Akaike info criterion		-2.8904
Sum squared resid	0.622267	Schwarz criterion		-2.66241
Log likelihood	277.4717	Hannan-Quinn criter.		-2.79798
Durbin-Watson stat	1.963004			

Appendix 14.7f: GARCH (1,1) Model Residual Diagnostics: Generalized Error Distribution: Germany (Page 1 of 2)

Normal Distribution



Series: Standardized Residuals
Sample 2000M04 2015M06
Observations 183

Mean	-0.129658
Median	5.64e-05
Maximum	2.103887
Minimum	-3.250592
Std. Dev.	0.984183
Skewness	-0.590323
Kurtosis	3.645298
Jarque-Bera	13.80381
Probability	0.001006

Heteroskedasticity Test: ARCH			
F-statistic	0.038127	Prob. F(1,180)	0.8454
Obs*R-squared	0.038542	Prob. Chi-Square(1)	0.8444

Appendix 14.7f: GARCH (1,1) Model Residual Diagnostics: Generalized Error Distribution: Germany (Page 2 of 2)

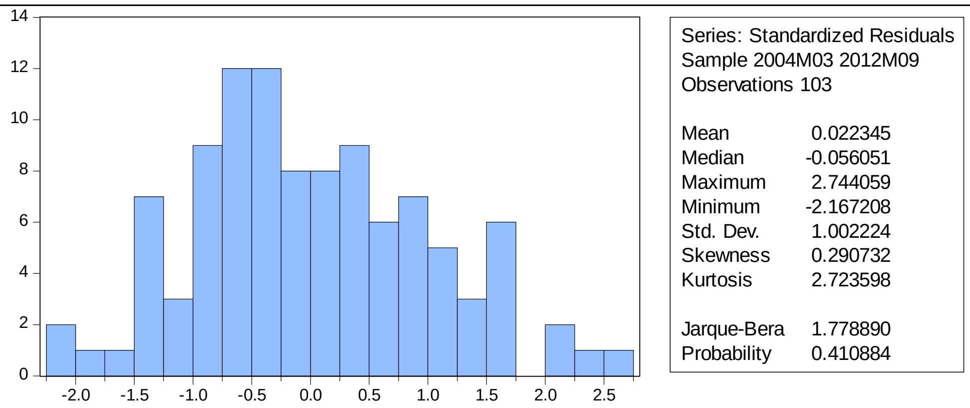
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob***
.|. |	.|. |	1	-0.015	-0.015	0.0391	0.843
*|. |	*|. |	2	-0.073	-0.073	1.0242	0.599
.|* |	.|* |	3	0.164	0.162	6.0523	0.109
.|. |	.|. |	4	-0.056	-0.06	6.6401	0.156
.|. |	.|. |	5	-0.045	-0.023	7.0289	0.219
.|. |	*|. |	6	-0.045	-0.082	7.4093	0.285
.|. |	.|. |	7	-0.021	-0.007	7.4913	0.38
.|. |	.|. |	8	0.036	0.036	7.7435	0.459
.|. |	.|* |	9	0.07	0.089	8.7047	0.465
.|. |	.|. |	10	-0.02	-0.02	8.7841	0.553
.|. |	.|. |	11	-0.013	-0.022	8.8178	0.639
.|. |	.|. |	12	-0.022	-0.056	8.9175	0.71
.|. |	.|. |	13	0.017	0.033	8.9771	0.775
.|. |	.|. |	14	-0.017	-0.008	9.0329	0.829
*|. |	*|. |	15	-0.109	-0.089	11.436	0.721
.|. |	.|. |	16	0.071	0.056	12.467	0.711
.|. |	.|. |	17	0.019	0.001	12.541	0.766
*|. |	.|. |	18	-0.086	-0.056	14.07	0.725
.|. |	.|. |	19	-0.008	-0.037	14.084	0.779
.|. |	.|. |	20	0.038	0.031	14.39	0.81
.|. |	.|. |	21	0.017	0.035	14.448	0.85
*|. |	.|. |	22	-0.066	-0.063	15.375	0.846
*|. |	*|. |	23	-0.085	-0.097	16.902	0.814
.|. |	.|. |	24	0.005	-0.009	16.908	0.853
.|. |	*|. |	25	-0.062	-0.068	17.719	0.854
.|. |	.|. |	26	-0.056	-0.028	18.389	0.861
.|. |	.|. |	27	-0.005	-0.016	18.394	0.891
.|. |	.|. |	28	-0.036	-0.032	18.678	0.908
.|. |	.|. |	29	0	-0.025	18.678	0.929
.|. |	.|. |	30	-0.03	-0.062	18.881	0.942
.|. |	.|. |	31	-0.038	-0.012	19.21	0.951
.|. |	.|. |	32	0.051	0.052	19.785	0.955
.|** |	.|** |	33	0.219	0.23	30.624	0.586
.|. |	.|. |	34	0.012	0.035	30.657	0.632
.|. |	.|. |	35	0.022	0.04	30.764	0.673
.|. |	.|. |	36	0.043	-0.042	31.184	0.697

Appendix 14.8a: GARCH(1,1) Model: Normal Distribution: Japan

Dependent Variable: DLOGNIKKEY				
Method: ML - ARCH (Marquardt) - Normal distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.21727	0.222366	-0.97708	0.3285
DLOGINR	2.45E-05	0.004444	0.005509	0.9956
DLOGEXR	0.044503	0.114311	0.389311	0.697
DLOGIFR	-0.00321	0.00509	-0.63115	0.5279
DLOGCON	0.450738	1.010243	0.446168	0.6555
DLOGHPI	0.369763	0.041829	8.839795	0
C	0.000674	0.002883	0.233807	0.8151
Variance Equation				
C	8.31E-05	0.00011	0.757899	0.4485
RESID(-1)^2	0.156322	0.144359	1.08287	0.2789
GARCH(-1)	0.745433	0.263505	2.828912	0.0047
FCR	4.72E-05	8.97E-05	0.526063	0.5988
QEG	-4.74E-05	0.000109	-0.43627	0.6626
R-squared	0.545833	Mean dependent var		0.00271
Adjusted R-squared	0.517448	S.D. dependent var		0.044811
S.E. of regression	0.031129	Akaike info criterion		-4.08034
Sum squared resid	0.093023	Schwarz criterion		-3.77338
Log likelihood	222.1376	Hannan-Quinn criter.		-3.95601
Durbin-Watson stat	2.334448			

Appendix 14.8b: GARCH (1,1) Model Residual Diagnostics: Normal Distribution: Japan (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.009013	Prob. F(1,100)	0.9246
Obs*R-squared	0.009192	Prob. Chi-Square(1)	0.9236

Appendix 14.8b: GARCH (1,1) Model Residual Diagnostics: Normal Distribution: Japan (Page 2 of 2)

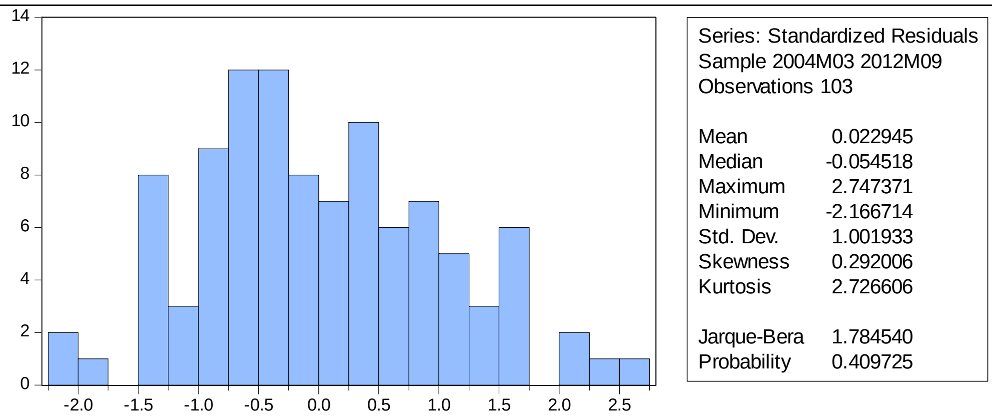
<table>
<tr><th colspan="7">Correlogram</th></tr>
<tr><th>Autocorrelation</th><th colspan="2">Partial Correlation</th><th>AC</th><th>PAC</th><th>Q-Stat</th><th>Prob*</th></tr>
<tr><td>.|. |</td><td>.|. |</td><td>1</td><td>0.009</td><td>0.009</td><td>0.0095</td><td>0.922</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>2</td><td>-0.111</td><td>-0.111</td><td>1.3358</td><td>0.513</td></tr>
<tr><td>.|* |</td><td>.|* |</td><td>3</td><td>0.129</td><td>0.133</td><td>3.1289</td><td>0.372</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>4</td><td>-0.02</td><td>-0.039</td><td>3.174</td><td>0.529</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>5</td><td>0.01</td><td>0.043</td><td>3.1861</td><td>0.671</td></tr>
<tr><td>.|** |</td><td>.|** |</td><td>6</td><td>0.274</td><td>0.257</td><td>11.587</td><td>0.072</td></tr>
<tr><td>.|. |</td><td>.|* |</td><td>7</td><td>0.072</td><td>0.08</td><td>12.172</td><td>0.095</td></tr>
<tr><td>*|. |</td><td>.|. |</td><td>8</td><td>-0.082</td><td>-0.033</td><td>12.932</td><td>0.114</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>9</td><td>-0.066</td><td>-0.122</td><td>13.437</td><td>0.144</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>10</td><td>-0.102</td><td>-0.139</td><td>14.638</td><td>0.146</td></tr>
<tr><td>*|. |</td><td>**|. |</td><td>11</td><td>-0.187</td><td>-0.239</td><td>18.735</td><td>0.066</td></tr>
<tr><td>.|* |</td><td>.|. |</td><td>12</td><td>0.083</td><td>-0.008</td><td>19.561</td><td>0.076</td></tr>
<tr><td>.|. |</td><td>*|. |</td><td>13</td><td>-0.007</td><td>-0.071</td><td>19.567</td><td>0.107</td></tr>
<tr><td>*|. |</td><td>.|. |</td><td>14</td><td>-0.126</td><td>-0.042</td><td>21.507</td><td>0.089</td></tr>
<tr><td>.|. |</td><td>.|* |</td><td>15</td><td>0.053</td><td>0.133</td><td>21.85</td><td>0.112</td></tr>
<tr><td>*|. |</td><td>.|. |</td><td>16</td><td>-0.109</td><td>-0.013</td><td>23.325</td><td>0.105</td></tr>
<tr><td>*|. |</td><td>.|. |</td><td>17</td><td>-0.168</td><td>-0.014</td><td>26.865</td><td>0.06</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>18</td><td>0.019</td><td>-0.027</td><td>26.913</td><td>0.081</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>19</td><td>0.019</td><td>-0.02</td><td>26.961</td><td>0.106</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>20</td><td>-0.033</td><td>-0.034</td><td>27.106</td><td>0.132</td></tr>
<tr><td>.|. |</td><td>*|. |</td><td>21</td><td>-0.036</td><td>-0.116</td><td>27.279</td><td>0.162</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>22</td><td>-0.081</td><td>-0.127</td><td>28.15</td><td>0.171</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>23</td><td>-0.011</td><td>0.036</td><td>28.167</td><td>0.21</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>24</td><td>-0.024</td><td>-0.03</td><td>28.245</td><td>0.25</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>25</td><td>-0.148</td><td>-0.193</td><td>31.289</td><td>0.18</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>26</td><td>-0.087</td><td>-0.121</td><td>32.364</td><td>0.181</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>27</td><td>0.051</td><td>-0.014</td><td>32.73</td><td>0.206</td></tr>
<tr><td>*|. |</td><td>.|. |</td><td>28</td><td>-0.072</td><td>-0.061</td><td>33.468</td><td>0.219</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>29</td><td>-0.14</td><td>-0.143</td><td>36.318</td><td>0.164</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>30</td><td>0.02</td><td>-0.04</td><td>36.375</td><td>0.196</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>31</td><td>-0.107</td><td>-0.095</td><td>38.099</td><td>0.178</td></tr>
<tr><td>*|. |</td><td>.|. |</td><td>32</td><td>-0.097</td><td>-0.062</td><td>39.541</td><td>0.169</td></tr>
<tr><td>.|* |</td><td>.|* |</td><td>33</td><td>0.166</td><td>0.105</td><td>43.773</td><td>0.1</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>34</td><td>-0.007</td><td>-0.026</td><td>43.781</td><td>0.122</td></tr>
<tr><td>*|. |</td><td>.|. |</td><td>35</td><td>-0.069</td><td>-0.056</td><td>44.541</td><td>0.129</td></tr>
<tr><td>.|* |</td><td>.|. |</td><td>36</td><td>0.137</td><td>0.055</td><td>47.569</td><td>0.094</td></tr>
</table>

Appendix 14.8c: GARCH(1,1) Model: Student's t Distribution: Japan

Dependent Variable: DLOGNIKKEY				
Method: ML - ARCH (Marquardt) - Student's t distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.21707	0.221255	-0.9811	0.3265
DLOGINR	8.89E-06	0.004483	0.001983	0.9984
DLOGEXR	0.044236	0.120569	0.366896	0.7137
DLOGIFR	-0.00326	0.006223	-0.52388	0.6004
DLOGCON	0.451013	1.028207	0.43864	0.6609
DLOGHPI	0.369514	0.041839	8.831906	0
C	0.000661	0.002891	0.228736	0.8191
Variance Equation				
C	8.31E-05	0.000113	0.735055	0.4623
RESID(-1)^2	0.156731	0.146009	1.073436	0.2831
GARCH(-1)	0.745202	0.264741	2.814836	0.0049
FCR	4.68E-05	9.07E-05	0.516443	0.6055
QEG	-4.70E-05	0.000109	-0.42962	0.6675
T-DIST. DOF	446.5965	38533.1	0.01159	0.9908
R-squared	0.545812	Mean dependent var		0.00271
Adjusted R-squared	0.517426	S.D. dependent var		0.044811
S.E. of regression	0.031129	Akaike info criterion		-4.06064
Sum squared resid	0.093027	Schwarz criterion		-3.72811
Log likelihood	222.1232	Hannan-Quinn criter.		-3.92596
Durbin-Watson stat	2.334408			

Appendix 14.8d: GARCH (1,1) Model Residual Diagnostics: Student's t Distribution: Japan (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.008779	Prob. F(1,100)	0.9255
Obs*R-squared	0.008954	Prob. Chi-Square(1)	0.9246

Appendix 14.8d: GARCH (1,1) Model Residual Diagnostics: Student’s t Distribution: Japan (Page 2 of 2)

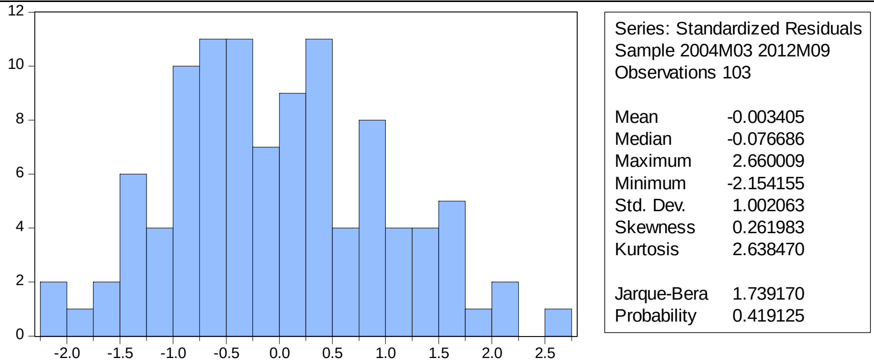
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob***
.|. |	.|. |	1	0.009	0.009	0.0093	0.923
*|. |	*|. |	2	-0.111	-0.111	1.3342	0.513
.|* |	.|* |	3	0.129	0.132	3.1206	0.373
.|. |	.|. |	4	-0.02	-0.038	3.1643	0.531
.|. |	.|. |	5	0.01	0.043	3.1762	0.673
.|** |	.|** |	6	0.274	0.257	11.564	0.072
.|. |	.|* |	7	0.072	0.08	12.149	0.096
*|. |	.|. |	8	-0.082	-0.033	12.914	0.115
*|. |	*|. |	9	-0.066	-0.122	13.417	0.145
*|. |	*|. |	10	-0.102	-0.139	14.615	0.147
*|. |	**|. |	11	-0.186	-0.238	18.701	0.067
.|* |	.|. |	12	0.083	-0.008	19.522	0.077
.|. |	*|. |	13	-0.007	-0.07	19.528	0.108
*|. |	.|. |	14	-0.126	-0.042	21.46	0.09
.|. |	.|* |	15	0.053	0.133	21.798	0.113
*|. |	.|. |	16	-0.109	-0.013	23.266	0.107
*|. |	.|. |	17	-0.168	-0.015	26.799	0.061
.|. |	.|. |	18	0.019	-0.027	26.847	0.082
.|. |	.|. |	19	0.019	-0.02	26.895	0.107
.|. |	.|. |	20	-0.033	-0.034	27.041	0.134
.|. |	*|. |	21	-0.036	-0.117	27.216	0.164
*|. |	*|. |	22	-0.08	-0.126	28.078	0.173
.|. |	.|. |	23	-0.012	0.036	28.097	0.212
.|. |	.|. |	24	-0.024	-0.029	28.174	0.253
*|. |	*|. |	25	-0.148	-0.193	31.201	0.182
*|. |	*|. |	26	-0.088	-0.121	32.279	0.184
.|. |	.|. |	27	0.05	-0.014	32.64	0.209
*|. |	.|. |	28	-0.071	-0.061	33.377	0.222
*|. |	*|. |	29	-0.14	-0.143	36.23	0.167
.|. |	.|. |	30	0.019	-0.041	36.285	0.199
*|. |	*|. |	31	-0.107	-0.096	38.008	0.18
*|. |	.|. |	32	-0.097	-0.063	39.453	0.171
.|* |	.|* |	33	0.165	0.105	43.682	0.101
.|. |	.|. |	34	-0.007	-0.026	43.689	0.123
*|. |	.|. |	35	-0.069	-0.055	44.453	0.131
.|* |	.|. |	36	0.137	0.056	47.489	0.095

Appendix 14.8e: GARCH (1,1) Model: Generalized Error Distribution: Japan

Dependent Variable: DLOGNIKKEY				
Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.22393	0.333395	-0.67168	0.5018
DLOGINR	0.000731	0.004644	0.157433	0.8749
DLOGEXR	0.043847	0.134027	0.327153	0.7436
DLOGIFR	-0.00265	0.00588	-0.45073	0.6522
DLOGCON	0.375191	1.258501	0.298125	0.7656
DLOGHPI	0.381832	0.044137	8.651079	0
C	0.001246	0.003041	0.409683	0.682
Variance Equation				
C	8.50E-05	0.00011	0.776329	0.4376
RESID(-1)^2	0.141944	0.133682	1.061799	0.2883
GARCH(-1)	0.753037	0.261984	2.874364	0.004
FCR	6.31E-05	9.60E-05	0.657373	0.5109
QEG	-6.13E-05	9.39E-05	-0.65346	0.5135
GED PARAMETER	2.491111	0.920527	2.70618	0.0068
R-squared	0.547297	Mean dependent var		0.00271
Adjusted R-squared	0.519003	S.D. dependent var		0.044811
S.E. of regression	0.031078	Akaike info criterion		-4.06728
Sum squared resid	0.092723	Schwarz criterion		-3.73474
Log likelihood	222.4647	Hannan-Quinn criter.		-3.93259
Durbin-Watson stat	2.340073			

Appendix 14.8f: GARCH (1,1) Model Residual Diagnostics: Generalized Error Distribution: Japan (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.029865	Prob. F(1,100)	0.8631
Obs*R-squared	0.030453	Prob. Chi-Square(1)	0.8615

Appendix 14.8f: GARCH (1,1) Model Residual Diagnostics: Generalized Error Distribution: Japan (Page 2 of 2)

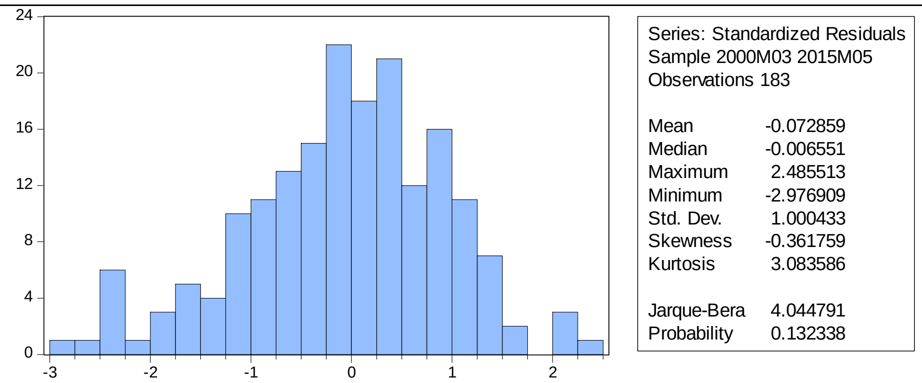
Correlogram						
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob*
.|. |	.|. |	1	0.017	0.017	0.0316	0.859
*|. |	*|. |	2	-0.11	-0.111	1.335	0.513
.|* |	.|* |	3	0.124	0.13	3.0009	0.391
.|. |	.|. |	4	-0.027	-0.047	3.0785	0.545
.|. |	.|. |	5	0.018	0.051	3.1145	0.682
.|** |	.|** |	6	0.286	0.268	12.226	0.057
.|. |	.|* |	7	0.069	0.075	12.769	0.078
*|. |	.|. |	8	-0.078	-0.029	13.454	0.097
*|. |	*|. |	9	-0.069	-0.126	14.006	0.122
*|. |	*|. |	10	-0.104	-0.135	15.273	0.122
*|. |	**|. |	11	-0.193	-0.251	19.654	0.05
.|* |	.|. |	12	0.087	-0.008	20.563	0.057
.|. |	*|. |	13	-0.008	-0.078	20.571	0.082
*|. |	.|. |	14	-0.13	-0.045	22.615	0.067
.|. |	.|* |	15	0.056	0.141	23.001	0.084
*|. |	.|. |	16	-0.119	-0.019	24.774	0.074
*|. |	.|. |	17	-0.167	0.001	28.279	0.042
.|. |	.|. |	18	0.021	-0.028	28.337	0.057
.|. |	.|. |	19	0.019	-0.009	28.386	0.076
.|. |	.|. |	20	-0.03	-0.035	28.503	0.098
.|. |	*|. |	21	-0.033	-0.119	28.651	0.123
*|. |	*|. |	22	-0.092	-0.14	29.782	0.124
.|. |	.|. |	23	-0.003	0.043	29.783	0.156
.|. |	.|. |	24	-0.031	-0.047	29.912	0.188
*|. |	**|. |	25	-0.153	-0.206	33.169	0.127
*|. |	*|. |	26	-0.088	-0.123	34.245	0.129
.|. |	.|. |	27	0.056	-0.008	34.693	0.147
*|. |	.|. |	28	-0.069	-0.045	35.376	0.159
*|. |	*|. |	29	-0.135	-0.136	38.047	0.121
.|. |	.|. |	30	0.022	-0.02	38.118	0.147
*|. |	*|. |	31	-0.108	-0.079	39.879	0.132
*|. |	.|. |	32	-0.09	-0.045	41.117	0.13
.|* |	.|* |	33	0.167	0.101	45.429	0.073
.|. |	.|. |	34	-0.011	-0.033	45.448	0.091
*|. |	*|. |	35	-0.067	-0.069	46.152	0.098
.|* |	.|. |	36	0.134	0.04	49.071	0.072

Appendix 14.9a: GARCH (1,1) Model: Normal Distribution: UK

Dependent Variable: DLOGFTSE100				
Method: ML - ARCH (Marquardt) - Normal distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.09575	0.137418	-0.69678	0.4859
DLOGINR	0.018651	0.046118	0.404429	0.6859
DLOGEXR	0.176145	0.116033	1.518059	0.129
DLOGIFR	-0.00484	0.012839	-0.37701	0.7062
DLOGCON	0.059705	0.134894	0.442609	0.658
DDLOGHPI	0.099512	0.109915	0.905355	0.3653
C	0.004209	0.002688	1.565581	0.1174
Variance Equation				
C	0.000353	0.000122	2.900038	0.0037
RESID(-1)^2	0.448333	0.187262	2.394146	0.0167
GARCH(-1)	0.259201	0.133504	1.941521	0.0522
FCR	0.000432	0.000326	1.3244	0.1854
QEG	-0.00019	0.000182	-1.01723	0.309
R-squared	0.023489	Mean dependent var		0.00047
Adjusted R-squared	-0.0098	S.D. dependent var		0.036162
S.E. of regression	0.036339	Akaike info criterion		-3.86741
Sum squared resid	0.232408	Schwarz criterion		-3.65695
Log likelihood	365.8679	Hannan-Quinn criter.		-3.7821
Durbin-Watson stat	1.973871			

Appendix 14.9b: GARCH (1,1) Model Residual Diagnostics: Normal Distribution: UK (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.000175	Prob. F(1,180)	0.9895
Obs*R-squared	0.000177	Prob. Chi-Square(1)	0.9894

Appendix 14.9b: GARCH (1,1) Model Residual Diagnostics: Normal Distribution: UK (Page 2 of 2)

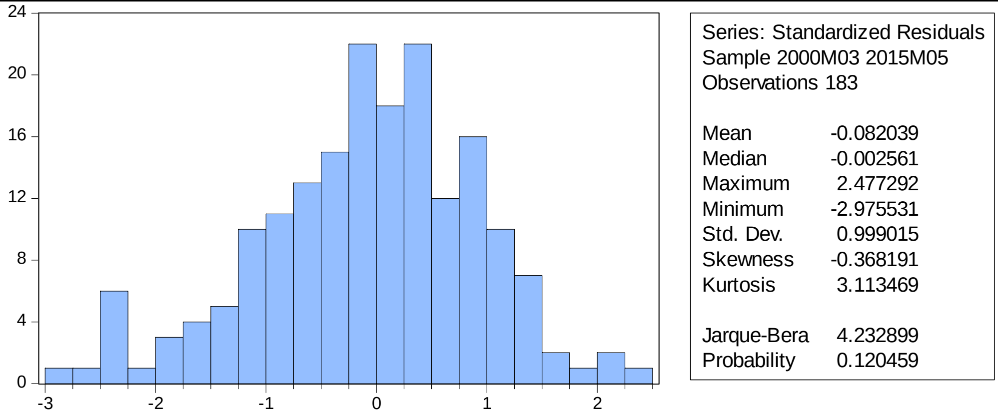
Correlogram						
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob*
.|. |	.|. |	1	-0.001	-0.001	0.0002	0.989
*|. |	*|. |	2	-0.075	-0.075	1.0663	0.587
.|* |	.|* |	3	0.127	0.127	4.0948	0.251
*|. |	*|. |	4	-0.137	-0.147	7.6615	0.105
.|. |	.|. |	5	-0.039	-0.016	7.956	0.159
.|* |	.|. |	6	0.075	0.039	9.043	0.171
.|. |	.|. |	7	0.017	0.048	9.0995	0.246
.|. |	.|. |	8	0.074	0.072	10.151	0.255
.|. |	.|. |	9	-0.035	-0.059	10.392	0.32
.|* |	.|* |	10	0.093	0.12	12.078	0.28
.|. |	.|. |	11	-0.005	-0.026	12.082	0.358
.|. |	.|. |	12	-0.008	0.044	12.094	0.438
.|. |	*|. |	13	-0.023	-0.07	12.198	0.511
.|. |	.|. |	14	-0.06	-0.038	12.924	0.532
*|. |	*|. |	15	-0.106	-0.117	15.177	0.439
.|. |	.|. |	16	-0.035	-0.045	15.423	0.494
.|. |	.|. |	17	0.003	-0.007	15.425	0.565
.|. |	*|. |	18	-0.043	-0.067	15.801	0.606
.|* |	.|* |	19	0.092	0.102	17.545	0.553
.|. |	.|. |	20	0.036	-0.006	17.808	0.6
*|. |	*|. |	21	-0.126	-0.071	21.122	0.452
.|. |	.|. |	22	0.046	0.031	21.566	0.486
.|. |	.|. |	23	-0.042	-0.023	21.935	0.524
.|. |	.|. |	24	-0.066	-0.006	22.849	0.529
.|. |	.|. |	25	0.041	0.004	23.203	0.566
.|. |	.|. |	26	-0.008	0.007	23.219	0.621
.|. |	.|. |	27	-0.014	-0.021	23.261	0.671
.|* |	.|* |	28	0.078	0.077	24.599	0.65
.|. |	.|. |	29	-0.014	-0.033	24.64	0.697
.|. |	*|. |	30	-0.052	-0.067	25.239	0.713
*|. |	*|. |	31	-0.073	-0.089	26.426	0.701
.|. |	.|. |	32	-0.027	-0.027	26.591	0.737
.|* |	.|* |	33	0.099	0.126	28.823	0.675
.|* |	.|* |	34	0.097	0.105	30.951	0.618
.|. |	.|. |	35	-0.005	-0.004	30.957	0.664
.|. |	.|. |	36	-0.01	-0.061	30.978	0.706

Appendix 14.9c: GARCH(1,1) Model: Student's t Distribution: UK

Dependent Variable: DLOGFTSE100				
Method: ML - ARCH (Marquardt) - Student's t distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.09526	0.138198	-0.6893	0.4906
DLOGINR	0.020101	0.044041	0.456407	0.6481
DLOGEXR	0.167299	0.118691	1.409527	0.1587
DLOGIFR	-0.00433	0.012658	-0.34183	0.7325
DLOGCON	0.060796	0.133535	0.45528	0.6489
DDLOGHPI	0.118593	0.116487	1.018071	0.3086
C	0.004507	0.002557	1.762387	0.078
Variance Equation				
C	0.000365	0.000135	2.701335	0.0069
RESID(-1)^2	0.459732	0.202586	2.269321	0.0232
GARCH(-1)	0.237971	0.13594	1.750561	0.08
FCR	0.000485	0.000372	1.303781	0.1923
QEG	-0.00021	0.000189	-1.08899	0.2762
T-DIST. DOF	19.2859	40.82524	0.472401	0.6366
R-squared	0.021577	Mean dependent var		0.00047
Adjusted R-squared	-0.01178	S.D. dependent var		0.036162
S.E. of regression	0.036374	Akaike info criterion		-3.85884
Sum squared resid	0.232863	Schwarz criterion		-3.63084
Log likelihood	366.0834	Hannan-Quinn criter.		-3.76642
Durbin-Watson stat	1.970201			

Appendix 14.9d: GARCH (1,1) Model Residual Diagnostics: Student's t Distribution: UK (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.004924	Prob. F(1,180)	0.9441
Obs*R-squared	0.004979	Prob. Chi-Square(1)	0.9437

Appendix 14.9d: GARCH (1,1) Model Residual Diagnostics: Student's t Distribution: UK (Page 2 of 2)

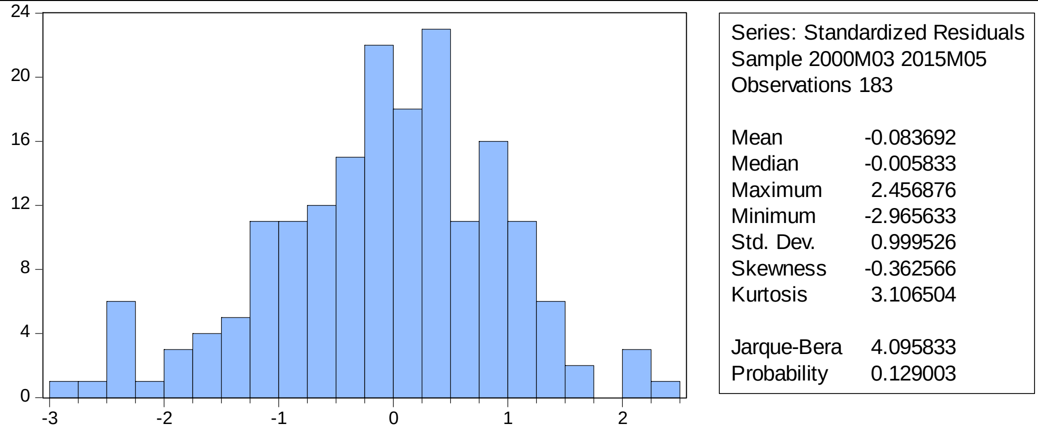
Correlogram						
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob*
.|. |	.|. |	1	-0.005	-0.005	0.0051	0.943
*|. |	*|. |	2	-0.075	-0.075	1.0451	0.593
.|* |	.|* |	3	0.141	0.141	4.8107	0.186
*|. |	*|. |	4	-0.129	-0.138	7.9522	0.093
.|. |	.|. |	5	-0.041	-0.017	8.2694	0.142
.|* |	.|. |	6	0.075	0.037	9.3436	0.155
.|. |	.|. |	7	0.017	0.05	9.3974	0.225
.|. |	.|. |	8	0.07	0.072	10.357	0.241
.|. |	.|. |	9	-0.035	-0.059	10.59	0.305
.|* |	.|* |	10	0.09	0.114	12.163	0.274
.|. |	.|. |	11	-0.006	-0.028	12.169	0.351
.|. |	.|. |	12	-0.007	0.044	12.178	0.431
.|. |	*|. |	13	-0.025	-0.073	12.301	0.503
.|. |	.|. |	14	-0.059	-0.039	13.01	0.526
*|. |	*|. |	15	-0.107	-0.12	15.317	0.429
.|. |	.|. |	16	-0.033	-0.04	15.538	0.486
.|. |	.|. |	17	0.001	-0.009	15.538	0.557
.|. |	.|. |	18	-0.045	-0.063	15.956	0.596
.|* |	.|* |	19	0.097	0.108	17.883	0.53
.|. |	.|. |	20	0.041	0.004	18.238	0.572
*|. |	*|. |	21	-0.128	-0.071	21.639	0.421
.|. |	.|. |	22	0.055	0.037	22.275	0.444
.|. |	.|. |	23	-0.042	-0.026	22.656	0.481
.|. |	.|. |	24	-0.065	-0.001	23.558	0.487
.|. |	.|. |	25	0.045	0.007	23.991	0.52
.|. |	.|. |	26	-0.008	0.007	24.004	0.576
.|. |	.|. |	27	-0.02	-0.027	24.09	0.625
.|* |	.|. |	28	0.076	0.071	25.35	0.609
.|. |	.|. |	29	-0.007	-0.026	25.361	0.659
.|. |	*|. |	30	-0.052	-0.069	25.963	0.677
*|. |	*|. |	31	-0.066	-0.082	26.924	0.676
.|. |	.|. |	32	-0.021	-0.027	27.023	0.717
.|* |	.|* |	33	0.098	0.132	29.186	0.658
.|* |	.|* |	34	0.091	0.103	31.055	0.613
.|. |	.|. |	35	-0.008	-0.002	31.071	0.658
.|. |	.|. |	36	-0.007	-0.06	31.081	0.702

Appendix 14.9e: GARCH(1,1) Model: Generalized Error Distribution: UK

Dependent Variable: DLOGFTSE100				
Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DLOGGDP	-0.09655	0.138901	-0.6951	0.487
DLOGINR	0.020089	0.043168	0.465379	0.6417
DLOGEXR	0.176396	0.114795	1.536613	0.1244
DLOGIFR	-0.00397	0.012531	-0.31651	0.7516
DLOGCON	0.050241	0.134226	0.374303	0.7082
DDLOGHPI	0.109306	0.114762	0.952451	0.3409
C	0.004587	0.002498	1.836725	0.0663
Variance Equation				
C	0.000366	0.000137	2.665621	0.0077
RESID(-1)^2	0.454401	0.205843	2.207513	0.0273
GARCH(-1)	0.240104	0.141837	1.692822	0.0905
FCR	0.000483	0.000386	1.253066	0.2102
QEG	-0.00021	0.000194	-1.05932	0.2895
GED PARAMETER	1.703167	0.330254	5.157144	0
R-squared	0.021409	Mean dependent var		0.00047
Adjusted R-squared	-0.01195	S.D. dependent var		0.036162
S.E. of regression	0.036377	Akaike info criterion		-3.86135
Sum squared resid	0.232903	Schwarz criterion		-3.63336
Log likelihood	366.3138	Hannan-Quinn criter.		-3.76894
Durbin-Watson stat	1.974017			

Appendix 14.9f: GARCH (1,1) Model Residual Diagnostics: Generalized Error Distribution: UK (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	0.000665	Prob. F(1,180)	0.9795
Obs*R-squared	0.000672	Prob. Chi-Square(1)	0.9793

Appendix 14.9f: GARCH (1,1) Model Residual Diagnostics: Generalized Error Distribution: UK (Page 2 of 2)

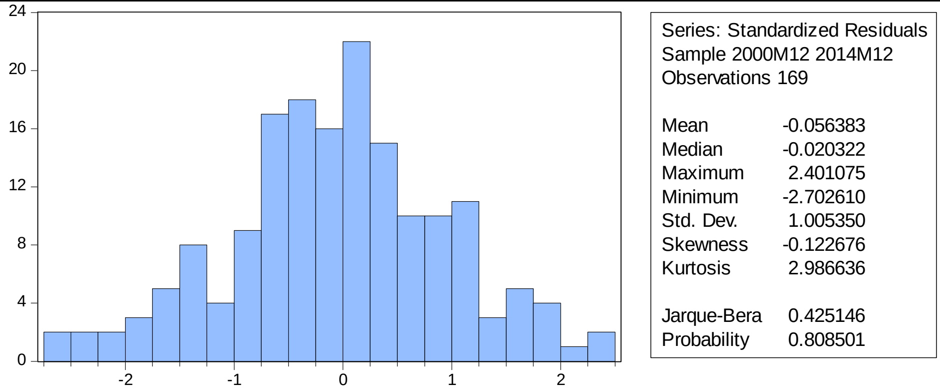
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob***
.|. |	.|. |	1	-0.002	-0.002	0.0007	0.979
*|. |	*|. |	2	-0.074	-0.074	1.0217	0.6
.|* |	.|* |	3	0.142	0.142	4.7939	0.188
*|. |	*|. |	4	-0.13	-0.14	7.997	0.092
.|. |	.|. |	5	-0.042	-0.017	8.3309	0.139
.|* |	.|. |	6	0.08	0.042	9.5535	0.145
.|. |	.|. |	7	0.017	0.05	9.6083	0.212
.|. |	.|. |	8	0.067	0.068	10.474	0.233
.|. |	.|. |	9	-0.037	-0.063	10.734	0.294
.|* |	.|* |	10	0.092	0.118	12.404	0.259
.|. |	.|. |	11	-0.006	-0.028	12.411	0.334
.|. |	.|. |	12	-0.006	0.045	12.417	0.413
.|. |	*|. |	13	-0.022	-0.074	12.517	0.486
.|. |	.|. |	14	-0.061	-0.039	13.258	0.506
*|. |	*|. |	15	-0.106	-0.117	15.527	0.414
.|. |	.|. |	16	-0.031	-0.038	15.718	0.473
.|. |	.|. |	17	-0.001	-0.009	15.719	0.544
.|. |	.|. |	18	-0.045	-0.065	16.14	0.583
.|* |	.|* |	19	0.096	0.108	18.048	0.519
.|. |	.|. |	20	0.039	0	18.365	0.563
*|. |	*|. |	21	-0.127	-0.071	21.751	0.414
.|. |	.|. |	22	0.058	0.04	22.462	0.433
.|. |	.|. |	23	-0.041	-0.026	22.823	0.471
*|. |	.|. |	24	-0.067	-0.002	23.779	0.474
.|. |	.|. |	25	0.044	0.004	24.197	0.508
.|. |	.|. |	26	-0.009	0.006	24.217	0.564
.|. |	.|. |	27	-0.019	-0.023	24.295	0.614
.|* |	.|* |	28	0.079	0.075	25.667	0.591
.|. |	.|. |	29	-0.009	-0.029	25.684	0.642
.|. |	*|. |	30	-0.052	-0.069	26.283	0.661
*|. |	*|. |	31	-0.067	-0.082	27.275	0.658
.|. |	.|. |	32	-0.023	-0.027	27.393	0.699
.|* |	.|* |	33	0.099	0.134	29.605	0.637
.|* |	.|* |	34	0.094	0.104	31.604	0.586
.|. |	.|. |	35	-0.008	-0.005	31.617	0.632
.|. |	.|. |	36	-0.009	-0.062	31.635	0.676

Appendix 14.10a: GARCH(1,1) Model: Normal Distribution: US

Dependent Variable: DLOGSP500				
Method: ML - ARCH (Marquardt) - Normal distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DDLOGGDP	-0.11591	0.113882	-1.01778	0.3088
DLOGINR	0.031626	0.029206	1.082838	0.2789
DLOGEXR	0.028674	0.127506	0.224881	0.8221
DLOGIFR	-0.01533	0.011258	-1.36196	0.1732
DLOGCON	0.128782	0.178151	0.722881	0.4698
DDLOGHPI	-0.7445	1.477245	-0.50398	0.6143
C	0.005566	0.002769	2.009936	0.0444
Variance Equation				
C	0.000129	8.48E-05	1.523686	0.1276
RESID(-1)^2	0.168606	0.090933	1.854167	0.0637
GARCH(-1)	0.73392	0.09477	7.744264	0
FCR	4.20E-05	0.000102	0.413921	0.6789
QEG	-3.86E-05	9.92E-05	-0.38953	0.6969
R-squared	-0.00374	Mean dependent var		0.002154
Adjusted R-squared	-0.04091	S.D. dependent var		0.039476
S.E. of regression	0.040275	Akaike info criterion		-3.62134
Sum squared resid	0.262781	Schwarz criterion		-3.3991
Log likelihood	318.0036	Hannan-Quinn criter.		-3.53116
Durbin-Watson stat	1.944691			

Appendix 14.10b: GARCH (1,1) Model Residual Diagnostics: Normal Distribution: US (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	1.482904	Prob. F(1,166)	0.225
Obs*R-squared	1.487482	Prob. Chi-Square(1)	0.2226

Appendix 14.10b: GARCH (1,1) Model Residual Diagnostics: Normal Distribution: US (Page 1 of 2)

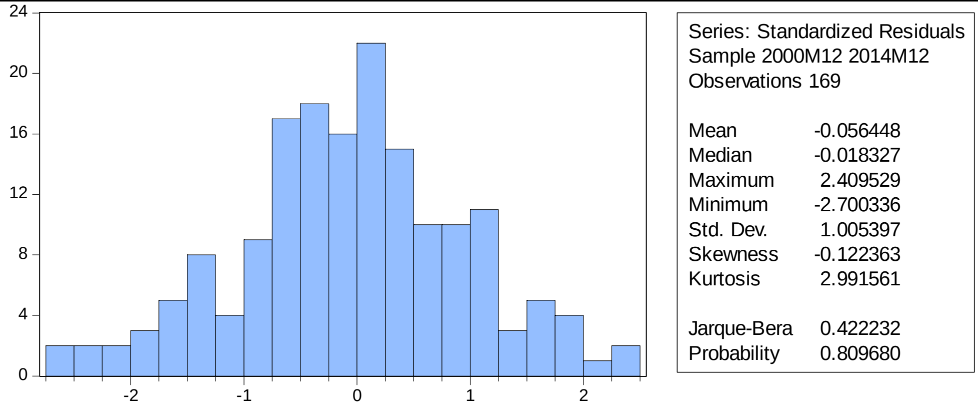
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob***
.|* |	.|* |	1	0.094	0.094	1.52	0.218
.|. |	.|. |	2	-0.023	-0.032	1.6134	0.446
.|. |	.|. |	3	0.031	0.036	1.778	0.62
*|. |	*|. |	4	-0.113	-0.121	4.0056	0.405
.|. |	.|. |	5	-0.064	-0.039	4.7188	0.451
.|. |	.|. |	6	-0.002	-0.001	4.7197	0.58
.|. |	.|* |	7	0.068	0.076	5.5459	0.594
.|. |	.|. |	8	-0.004	-0.028	5.5494	0.698
.|. |	.|. |	9	-0.052	-0.058	6.0299	0.737
.|. |	.|. |	10	0.063	0.065	6.7486	0.749
*|. |	*|. |	11	-0.095	-0.097	8.3998	0.677
.|. |	.|. |	12	-0.001	0.032	8.4001	0.753
.|. |	.|. |	13	0.045	0.017	8.7754	0.79
.|. |	.|. |	14	-0.054	-0.049	9.3125	0.811
.|. |	.|. |	15	0.027	0.026	9.4466	0.853
.|. |	.|. |	16	-0.02	-0.032	9.5205	0.89
.|. |	.|. |	17	-0.059	-0.051	10.171	0.896
.|. |	.|. |	18	-0.056	-0.048	10.769	0.904
.|. |	.|. |	19	-0.003	0.012	10.771	0.931
*|. |	*|. |	20	-0.068	-0.096	11.663	0.927
.|. |	.|. |	21	-0.054	-0.027	12.229	0.933
.|. |	.|. |	22	-0.016	-0.044	12.278	0.951
.|. |	.|. |	23	-0.044	-0.049	12.653	0.959
.|. |	.|. |	24	-0.02	-0.003	12.731	0.97
.|. |	*|. |	25	-0.054	-0.09	13.319	0.972
*|. |	*|. |	26	-0.1	-0.103	15.335	0.951
.|. |	.|. |	27	-0.027	-0.02	15.482	0.962
.|* |	.|* |	28	0.083	0.078	16.891	0.951
.|. |	*|. |	29	-0.047	-0.1	17.343	0.957
*|. |	*|. |	30	-0.11	-0.122	19.871	0.92
.|. |	.|. |	31	0.007	-0.017	19.88	0.938
*|. |	*|. |	32	-0.117	-0.133	22.788	0.885
.|. |	.|. |	33	0.011	0.053	22.815	0.908
.|* |	.|* |	34	0.205	0.143	31.794	0.576
.|. |	.|. |	35	0.036	-0.037	32.066	0.61
.|. |	.|. |	36	0.02	-0.005	32.157	0.652

Appendix 14.10c: GARCH(1,1) Model: Student's t Distribution: US

Dependent Variable: DLOGSP500				
Method: ML - ARCH (Marquardt) - Student's t distribution				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DDLOGGDP	-0.11522	0.113694	-1.0134	0.3109
DLOGINR	0.031401	0.029089	1.079511	0.2804
DLOGEXR	0.026258	0.129642	0.202542	0.8395
DLOGIFR	-0.01527	0.011214	-1.36196	0.1732
DLOGCON	0.123929	0.18041	0.686929	0.4921
DDLOGHPI	-0.73458	1.470955	-0.49939	0.6175
C	0.00557	0.002773	2.00837	0.0446
Variance Equation				
C	0.00013	8.81E-05	1.470852	0.1413
RESID(-1)^2	0.168904	0.092231	1.831311	0.0671
GARCH(-1)	0.733308	0.096315	7.613625	0
FCR	4.22E-05	0.000103	0.410089	0.6817
QEG	-3.77E-05	0.000102	-0.37038	0.7111
T-DIST. DOF	170.9795	3306.693	0.051707	0.9588
R-squared	-0.00347	Mean dependent var		0.002154
Adjusted R-squared	-0.04064	S.D. dependent var		0.039476
S.E. of regression	0.04027	Akaike info criterion		-3.60953
Sum squared resid	0.262711	Schwarz criterion		-3.36877
Log likelihood	318.0053	Hannan-Quinn criter.		-3.51182
Durbin-Watson stat	1.944855			

Appendix 14.10d: GARCH (1,1) Model Residual Diagnostics: Student's t Distribution: US (Page 1 of 2)

Normal Distribution



Heteroskedasticity Test: ARCH			
F-statistic	1.454533	Prob. F(1,166)	0.2295
Obs*R-squared	1.459271	Prob. Chi-Square(1)	0.227

Appendix 14.10d: GARCH (1,1) Model Residual Diagnostics: Student's t Distribution: US (Page 2 of 2)

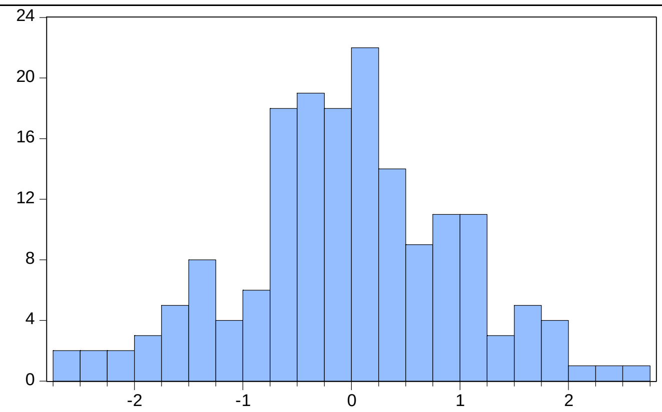
Correlogram						
Autocorrelation	**Partial Correlation**		**AC**	**PAC**	**Q-Stat**	**Prob***
.|* |	.|* |	1	0.093	0.093	1.4912	0.222
.|. |	.|. |	2	-0.023	-0.032	1.5867	0.452
.|. |	.|. |	3	0.03	0.036	1.746	0.627
*|. |	*|. |	4	-0.113	-0.121	3.9838	0.408
.|. |	.|. |	5	-0.063	-0.039	4.6858	0.455
.|. |	.|. |	6	-0.002	-0.001	4.6864	0.585
.|. |	.|* |	7	0.068	0.076	5.5163	0.597
.|. |	.|. |	8	-0.004	-0.028	5.5188	0.701
.|. |	.|. |	9	-0.051	-0.058	5.9976	0.74
.|. |	.|. |	10	0.063	0.066	6.719	0.752
*|. |	*|. |	11	-0.095	-0.096	8.3534	0.681
.|. |	.|. |	12	-0.001	0.032	8.3537	0.757
.|. |	.|. |	13	0.045	0.018	8.7354	0.793
.|. |	.|. |	14	-0.054	-0.05	9.282	0.813
.|. |	.|. |	15	0.027	0.027	9.42	0.855
.|. |	.|. |	16	-0.02	-0.032	9.4963	0.892
.|. |	.|. |	17	-0.059	-0.051	10.149	0.897
.|. |	.|. |	18	-0.056	-0.048	10.741	0.905
.|. |	.|. |	19	-0.003	0.012	10.743	0.932
*|. |	*|. |	20	-0.068	-0.096	11.637	0.928
.|. |	.|. |	21	-0.054	-0.027	12.205	0.934
.|. |	.|. |	22	-0.016	-0.043	12.253	0.952
.|. |	.|. |	23	-0.043	-0.049	12.625	0.96
.|. |	.|. |	24	-0.02	-0.003	12.702	0.971
.|. |	*|. |	25	-0.054	-0.091	13.295	0.973
*|. |	*|. |	26	-0.1	-0.103	15.299	0.952
.|. |	.|. |	27	-0.027	-0.021	15.45	0.963
.|* |	.|* |	28	0.083	0.078	16.852	0.951
.|. |	*|. |	29	-0.046	-0.099	17.295	0.957
*|. |	*|. |	30	-0.11	-0.122	19.821	0.921
.|. |	.|. |	31	0.007	-0.016	19.831	0.939
*|. |	*|. |	32	-0.117	-0.132	22.732	0.887
.|. |	.|. |	33	0.011	0.053	22.759	0.909
.|* |	.|* |	34	0.204	0.142	31.683	0.582
.|. |	.|. |	35	0.035	-0.037	31.954	0.616
.|. |	.|. |	36	0.02	-0.005	32.041	0.657

Appendix 14.10e: GARCH (1,1) Model: Generalized Error Distribution: US

Dependent Variable: DLOGSP500				
Method: ML - ARCH (Marquardt) - Generalized error distribution (GED)				
GARCH = C(8) + C(9)*RESID(-1)^2 + C(10)*GARCH(-1) + C(11)*FCR + C(12)*QEG				
Variable	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**
DDLOGGDP	-0.10728	0.113734	-0.94328	0.3455
DLOGINR	0.02503	0.027301	0.916825	0.3592
DLOGEXR	0.009822	0.128214	0.076606	0.9389
DLOGIFR	-0.01528	0.010753	-1.42111	0.1553
DLOGCON	0.047993	0.182439	0.263063	0.7925
DDLOGHPI	-0.58004	1.330219	-0.43605	0.6628
C	0.005405	0.002631	2.054012	0.04
Variance Equation				
C	0.000129	9.88E-05	1.30341	0.1924
RESID(-1)^2	0.165541	0.100649	1.644731	0.1
GARCH(-1)	0.736239	0.109981	6.694258	0
FCR	4.84E-05	0.000117	0.413526	0.6792
QEG	-3.28E-05	0.00012	-0.27253	0.7852
GED PARAMETER	1.61555	0.345793	4.672018	0
R-squared	0.000431	Mean dependent var		0.002154
Adjusted R-squared	-0.03659	S.D. dependent var		0.039476
S.E. of regression	0.040192	Akaike info criterion		-3.61516
Sum squared resid	0.261689	Schwarz criterion		-3.3744
Log likelihood	318.4812	Hannan-Quinn criter.		-3.51746
Durbin-Watson stat	1.931811			

Appendix 14.10f: GARCH(1,1) Model Residual Diagnostics: Generalized Error Distribution: US (Page 1 of 2)

Normal Distribution



Series: Standardized Residuals
Sample 2000M12 2014M12
Observations 169

Mean	-0.051499
Median	-0.019971
Maximum	2.563843
Minimum	-2.673244
Std. Dev.	1.005034
Skewness	-0.107060
Kurtosis	3.065940
Jarque-Bera	0.353460
Probability	0.838006

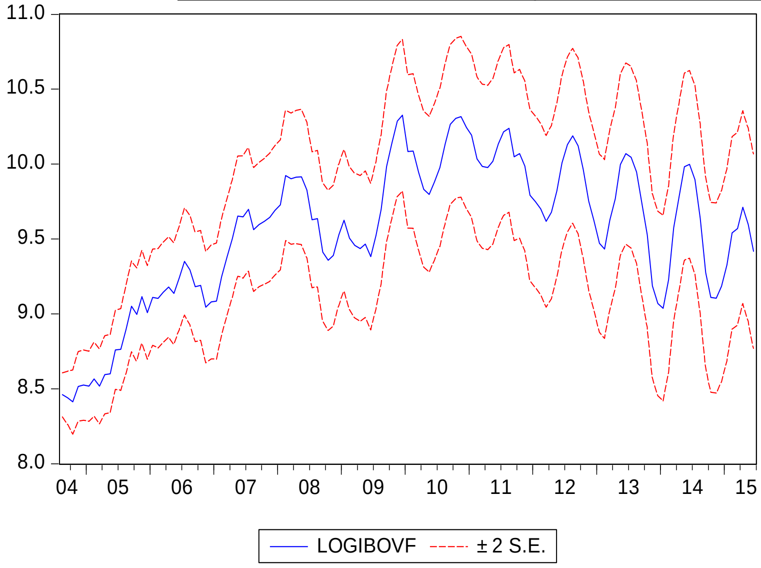
Heteroskedasticity Test: ARCH			
F-statistic	1.190599	Prob. F(1,166)	0.2768
Obs*R-squared	1.196363	Prob. Chi-Square(1)	0.274

Appendix 14.10f: GARCH (1,1) Model Residual Diagnostics: Generalized Error Distribution: US (Page 2 of 2)

<table>
<tr><th colspan="7">Correlogram</th></tr>
<tr><th>Autocorrelation</th><th colspan="2">Partial Correlation</th><th>AC</th><th>PAC</th><th>Q-Stat</th><th>Prob*</th></tr>
<tr><td>.|* |</td><td>.|* |</td><td>1</td><td>0.084</td><td>0.084</td><td>1.2225</td><td>0.269</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>2</td><td>-0.021</td><td>-0.029</td><td>1.3011</td><td>0.522</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>3</td><td>0.02</td><td>0.024</td><td>1.3703</td><td>0.713</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>4</td><td>-0.116</td><td>-0.121</td><td>3.7159</td><td>0.446</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>5</td><td>-0.061</td><td>-0.04</td><td>4.381</td><td>0.496</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>6</td><td>-0.006</td><td>-0.005</td><td>4.3879</td><td>0.624</td></tr>
<tr><td>.|. |</td><td>.|* |</td><td>7</td><td>0.071</td><td>0.077</td><td>5.276</td><td>0.626</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>8</td><td>0.007</td><td>-0.017</td><td>5.2849</td><td>0.727</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>9</td><td>-0.049</td><td>-0.057</td><td>5.7165</td><td>0.768</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>10</td><td>0.056</td><td>0.058</td><td>6.2788</td><td>0.791</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>11</td><td>-0.088</td><td>-0.087</td><td>7.7036</td><td>0.74</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>12</td><td>-0.003</td><td>0.026</td><td>7.7058</td><td>0.808</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>13</td><td>0.042</td><td>0.02</td><td>8.0325</td><td>0.841</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>14</td><td>-0.059</td><td>-0.058</td><td>8.6744</td><td>0.851</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>15</td><td>0.039</td><td>0.038</td><td>8.9554</td><td>0.88</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>16</td><td>-0.024</td><td>-0.036</td><td>9.062</td><td>0.911</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>17</td><td>-0.061</td><td>-0.053</td><td>9.7788</td><td>0.913</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>18</td><td>-0.052</td><td>-0.048</td><td>10.293</td><td>0.922</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>19</td><td>0.005</td><td>0.022</td><td>10.298</td><td>0.945</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>20</td><td>-0.07</td><td>-0.098</td><td>11.247</td><td>0.94</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>21</td><td>-0.058</td><td>-0.037</td><td>11.907</td><td>0.942</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>22</td><td>-0.011</td><td>-0.036</td><td>11.929</td><td>0.959</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>23</td><td>-0.044</td><td>-0.052</td><td>12.308</td><td>0.965</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>24</td><td>-0.018</td><td>-0.001</td><td>12.373</td><td>0.975</td></tr>
<tr><td>.|. |</td><td>*|. |</td><td>25</td><td>-0.059</td><td>-0.099</td><td>13.079</td><td>0.976</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>26</td><td>-0.093</td><td>-0.096</td><td>14.812</td><td>0.961</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>27</td><td>-0.033</td><td>-0.031</td><td>15.04</td><td>0.969</td></tr>
<tr><td>.|* |</td><td>.|* |</td><td>28</td><td>0.078</td><td>0.075</td><td>16.292</td><td>0.961</td></tr>
<tr><td>.|. |</td><td>*|. |</td><td>29</td><td>-0.04</td><td>-0.092</td><td>16.624</td><td>0.968</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>30</td><td>-0.109</td><td>-0.126</td><td>19.101</td><td>0.938</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>31</td><td>0.01</td><td>-0.012</td><td>19.124</td><td>0.953</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>32</td><td>-0.112</td><td>-0.132</td><td>21.78</td><td>0.913</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>33</td><td>0.01</td><td>0.05</td><td>21.802</td><td>0.932</td></tr>
<tr><td>.|* |</td><td>.|* |</td><td>34</td><td>0.187</td><td>0.124</td><td>29.265</td><td>0.699</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>35</td><td>0.042</td><td>-0.021</td><td>29.646</td><td>0.724</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>36</td><td>0.008</td><td>-0.026</td><td>29.659</td><td>0.763</td></tr>
</table>

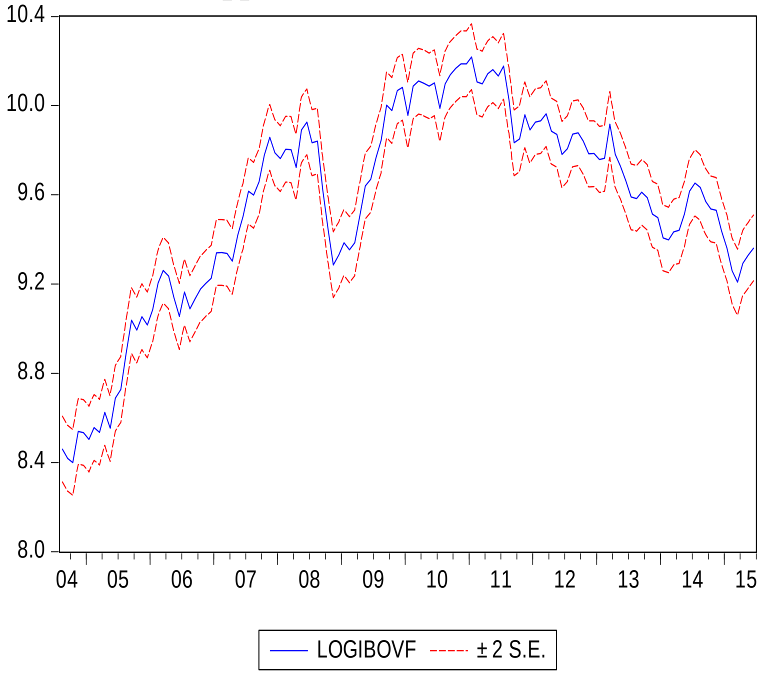
Appendix 15: Forecasting Figures

Appendix 15.1: Brazil: Dynamic Forecasting: VECM Model



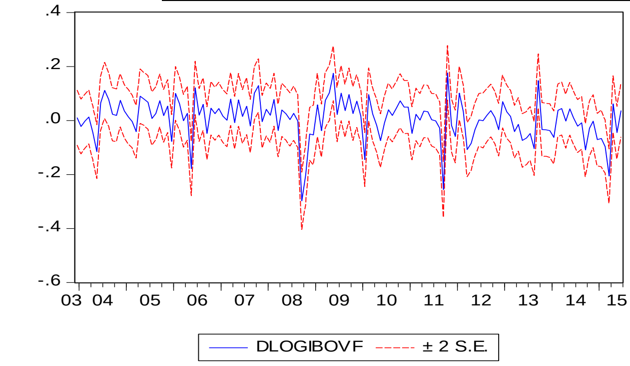
Forecast: LOGIBOVF	
Actual: LOGIBOV	
Forecast sample: 2000M01 2015M06	
Adjusted sample: 2004M08 2015M06	
Included observations: 131	
Root Mean Squared Error	0.201008
Mean Absolute Error	0.160113
Mean Abs. Percent Error	1.662846
Theil Inequality Coefficient	0.010508
Bias Proportion	0.000841
Variance Proportion	0.009496
Covariance Proportion	0.989663

Appendix 15.2: Brazil: Static Forecasting: VECM Model

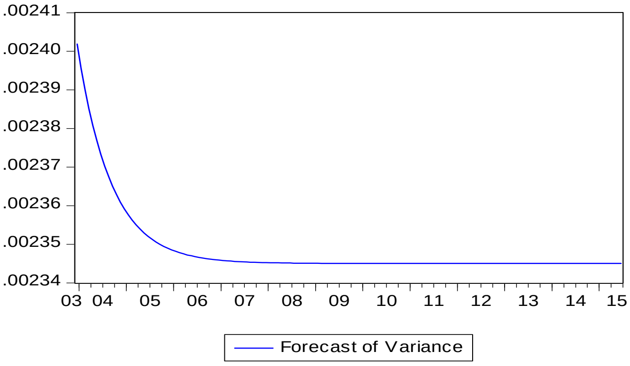


Forecast: LOGIBOVF	
Actual: LOGIBOV	
Forecast sample: 2000M01 2015M06	
Adjusted sample: 2004M08 2015M06	
Included observations: 131	
Root Mean Squared Error	0.053940
Mean Absolute Error	0.040054
Mean Abs. Percent Error	0.419291
Theil Inequality Coefficient	0.002821
Bias Proportion	0.000000
Variance Proportion	0.005071
Covariance Proportion	0.994929

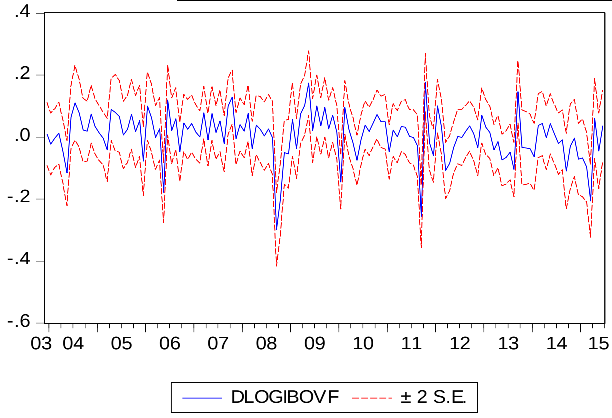
Appendix 15.3: Brazil: Dynamic Forecasting: GARCH Model



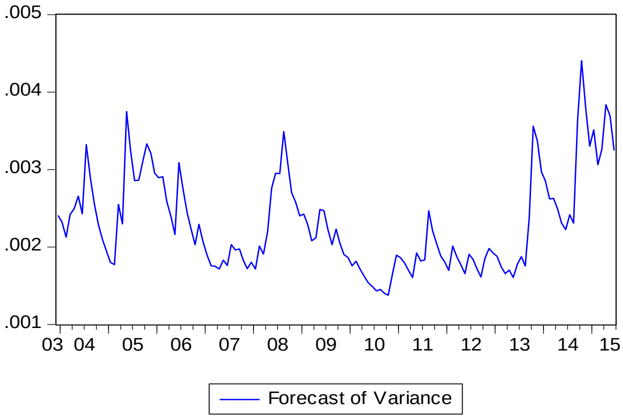
Forecast: DLOGIBOVF	
Actual: DLOGIBOV	
Forecast sample: 2000M01 2015M06	
Adjusted sample: 2003M12 2015M06	
Included observations: 139	
Root Mean Squared Error	0.047863
Mean Absolute Error	0.038118
Mean Abs. Percent Error	260.8159
Theil Inequality Coefficient	0.295410
Bias Proportion	0.001604
Variance Proportion	0.085998
Covariance Proportion	0.912398



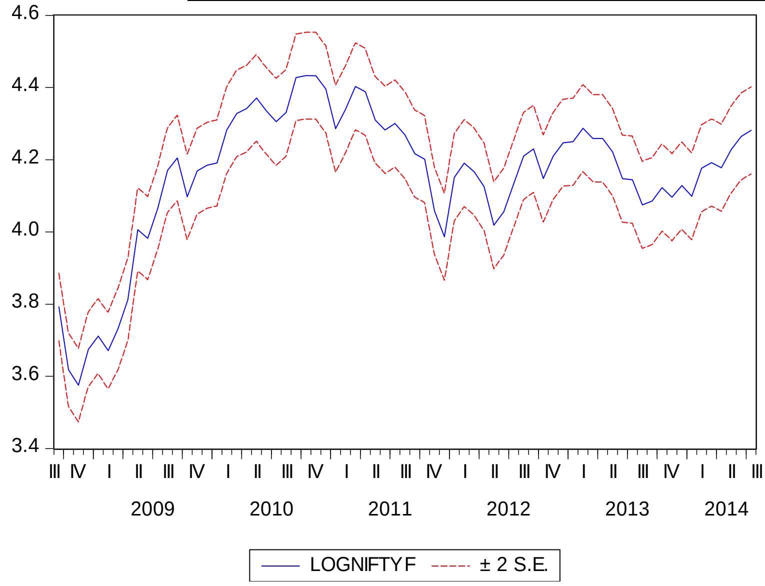
Appendix 15.4: Brazil: Static Forecasting: GARCH Model



Forecast: DLOGIBOVF	
Actual: DLOGIBOV	
Forecast sample: 2000M01 2015M06	
Adjusted sample: 2003M12 2015M06	
Included observations: 139	
Root Mean Squared Error	0.047863
Mean Absolute Error	0.038118
Mean Abs. Percent Error	260.8159
Theil Inequality Coefficient	0.295410
Bias Proportion	0.001604
Variance Proportion	0.085998
Covariance Proportion	0.912398

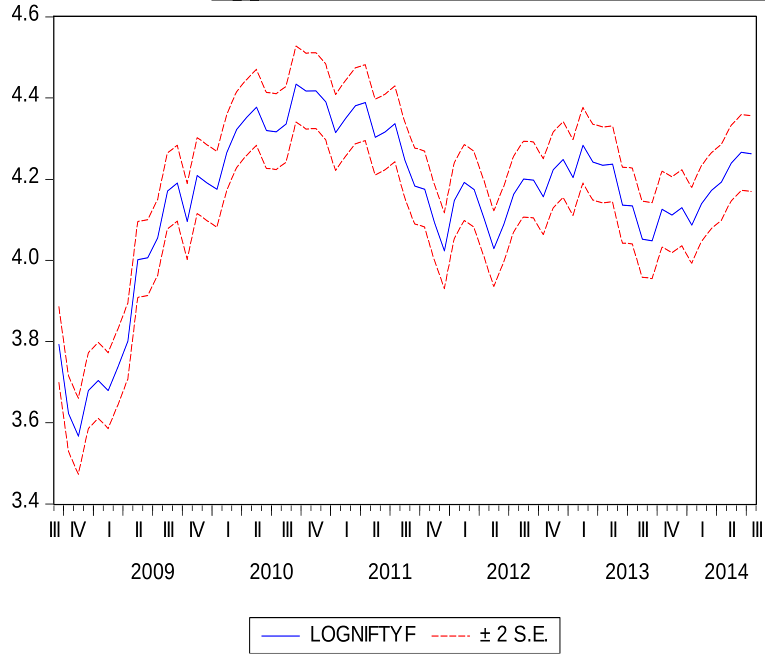


Appendix 15.5: India: Dynamic Forecasting: VECM Model



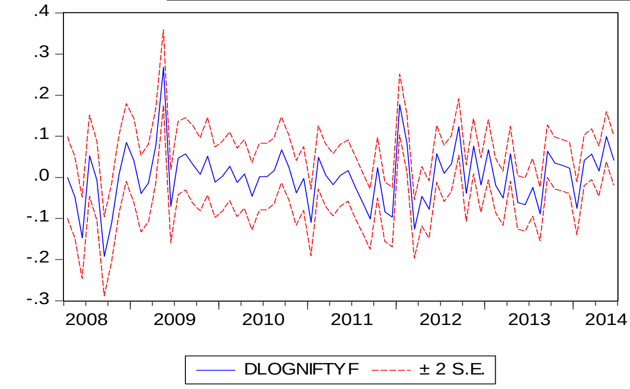
Forecast: LOGNIFTYF	
Actual: LOGNIFTY	
Forecast sample: 2000M01 2015M06	
Adjusted sample: 2008M09 2014M07	
Included observations: 71	
Root Mean Squared Error	0.032616
Mean Absolute Error	0.025179
Mean Abs. Percent Error	0.602230
Theil Inequality Coefficient	0.003920
Bias Proportion	0.002212
Variance Proportion	0.001157
Covariance Proportion	0.996631

Appendix 15.6: India: Static Forecasting: VECM Model

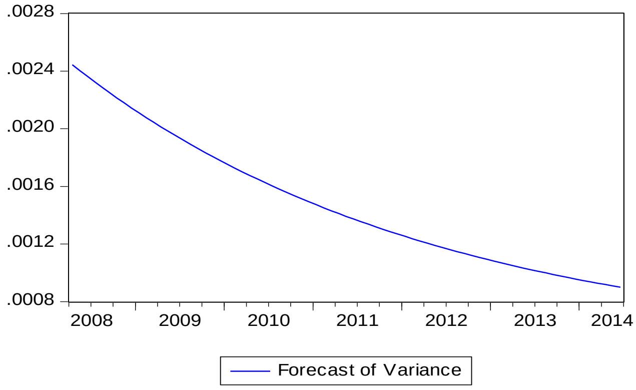


Forecast: LOGNIFTYF	
Actual: LOGNIFTY	
Forecast sample: 2000M01 2015M06	
Adjusted sample: 2008M09 2014M07	
Included observations: 71	
Root Mean Squared Error	0.029861
Mean Absolute Error	0.022534
Mean Abs. Percent Error	0.539140
Theil Inequality Coefficient	0.003590
Bias Proportion	0.000000
Variance Proportion	0.005779
Covariance Proportion	0.994221

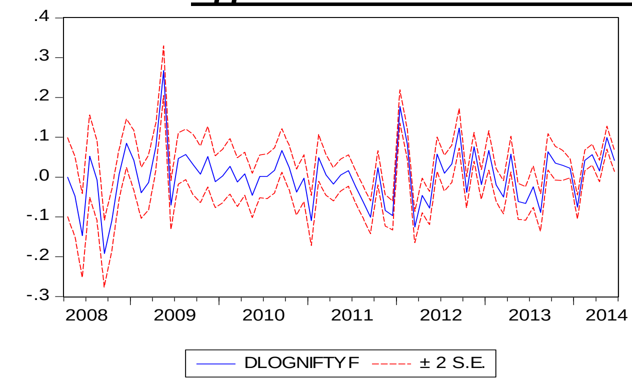
Appendix 15.7: India: Dynamic Forecasting: GARCH Model



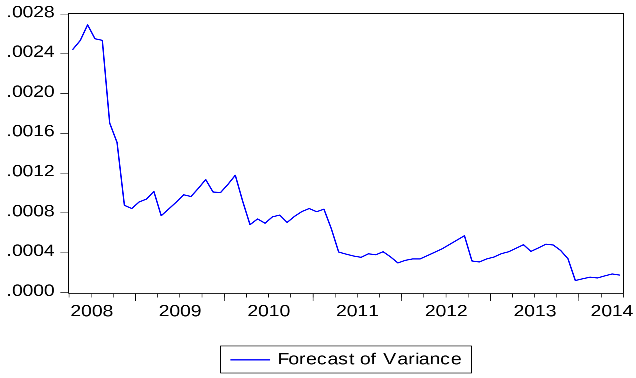
Forecast: DLOGNIFTYF	
Actual: DLOGNIFTY	
Forecast sample: 2000M01 2015M06	
Adjusted sample: 2008M04 2014M06	
Included observations: 75	
Root Mean Squared Error	0.031477
Mean Absolute Error	0.023191
Mean Abs. Percent Error	77.53382
Theil Inequality Coefficient	0.205040
Bias Proportion	0.000656
Variance Proportion	0.123388
Covariance Proportion	0.875956



Appendix 15.8: India: Static Forecasting: GARCH Model



Forecast: DLOGNIFTYF	
Actual: DLOGNIFTY	
Forecast sample: 2000M01 2015M06	
Adjusted sample: 2008M04 2014M06	
Included observations: 75	
Root Mean Squared Error	0.031477
Mean Absolute Error	0.023191
Mean Abs. Percent Error	77.53382
Theil Inequality Coefficient	0.205040
Bias Proportion	0.000656
Variance Proportion	0.123388
Covariance Proportion	0.875956



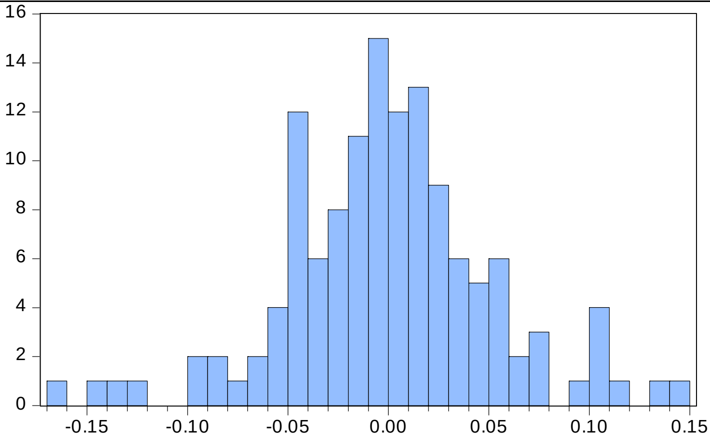
Appendix 16: VAR/VECM Model Results Including Dummy Variables

Appendix 16.1: VECM - Summary Results: Brazil

Dependent Variable: D(LOGIBOV)			
	Statistically Significant Coefficients	Statistically Significant Endogenous Variables	Number of Co-integrated Equations
Long-Run Relationships	-0.53	**LOGIBOV(-1) LOGIFR(-1) LOGCON(-1) LOGHPI(-1)**	Trace Test – 4 Max Eigenvalue Test - 4
	1.45	**LOGGDP(-1) LOGIFR(-1) LOGCON(-1) LOGHPI(-1)**	
	0.63	**LOGINR(-1) LOGIFR(-1) LOGCON(-1) LOGHPI(-1)**	
	1.17	**LOGEXR(-1) LOGIFR(-1) LOGCON(-1) LOGHPI(-1)**	
Short-Run Adjustments	0.43	D(LOGIBOV(-2)	n/a
	-0.44	D(LOGIBOV(-6)	
	-1.26	**D(LOGGDP(-1))**	
	-0.86	D(LOGGDP(-3)	
	-1.32	**D(LOGINR(-2))**	
	-1.64	**D(LOGINR(-3))**	
	-0.77	D(LOGINR(-7))	
	-0.98	**D(LOGINR(-8))**	
	-1.15	**D(LOGEXR(-1))**	
	-1.05	D(LOGEXR(-4)	
	-1.06	D(LOGEXR(-6)	
	0.62	**D(LOGIFR(-3))**	
	0.48	D(LOGIFR(-4)	
	0.66	**D(LOGIFR(-5))**	
	0.59	**D(LOGIFR(-8))**	
	7.42	**D(LOGCON(-1))**	
	-0.27	**D(LOGHPI(-1))**	
	-0.24	**D(LOGHPI(-2))**	
	-0.16	**D(LOGHPI(-3))**	
	-0.13	**D(LOGHPI(-4))**	
	-0.15	**D(LOGHPI(-5))**	
Dummy Effect	0.11	**FCR**	
	Is not significant	**QEG**	
R-squared 0.65	**F-stat. p-value 0.00**		

Appendix 16.1a: VECM Model Residuals Including Dummy Variables: Brazil

Normal Distribution Hypothesis



Series: Residuals	
Sample 2004M08 2015M06	
Observations 131	
Mean	6.28e-16
Median	-0.000790
Maximum	0.141841
Minimum	-0.161025
Std. Dev.	0.051695
Skewness	-0.081510
Kurtosis	4.098250
Jarque-Bera	6.728639
Probability	0.034586

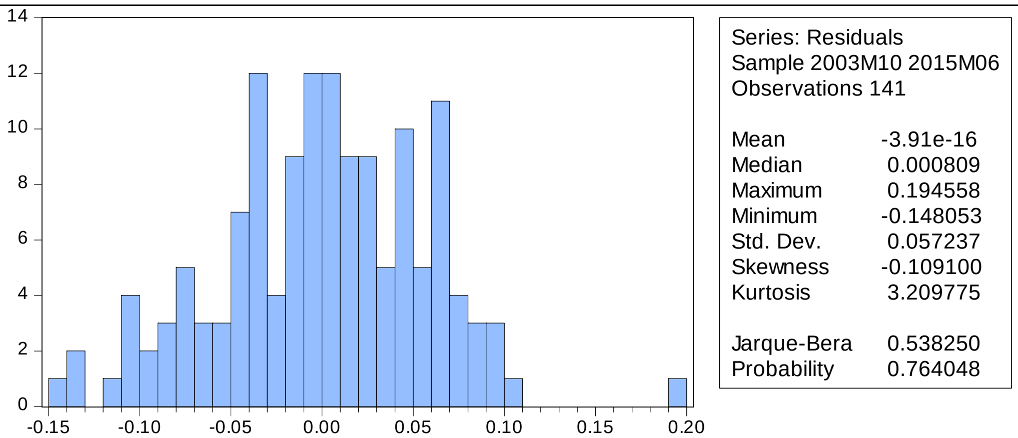
Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.369101	Prob. F(2,66)	0.6928
Obs*R-squared	1.449013	Prob. Chi-Square(2)	0.4846
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.073469	Prob. F(65,65)	0.388
Obs*R-squared	67.82086	Prob. Chi-Square(65)	0.3812
Scaled explained SS	28.30902	Prob. Chi-Square(65)	1

Appendix 16.2: VECM - Summary Results: Russia

Dependent Variable: D(LOGRTS)			
	Statistically Significant Coefficients	Statistically Significant Endogenous Variables	Number of Co-integrated Equations
Long-Run Relationships	-0.55	**LOGGDP(-1)** **LOGIFR(-1)** **LOGCON(-1)** **LOGHPI(-1)**	Trace Test – 4 Max Eigenvalue Test - 4
Short-Run Adjustments	0.27	D(LOGRTS(-1))	n/a
	0.34	**D(LOGRTS(-3))**	
	0.75	D(LOGGDP(-1)	
	0.91	D(LOGGDP(-2)	
	0.96	D(LOGGDP(-5)	
	0.73	D(LOGEXR(-1))	
	1.17	**D(LOGEXR(-4))**	
	0.36	**D(LOGIFR(-4))**	
	Is not significant	D(LOGCON(-3))	
Dummy Effect	-0.08	FCR	
	Is not significant	QEG	
R-squared 0.599	**F-stat. p-value 0**		

Appendix 16.2a: VECM Model Residuals Including Dummy Variables: Russia

Normal Distribution Hypothesis



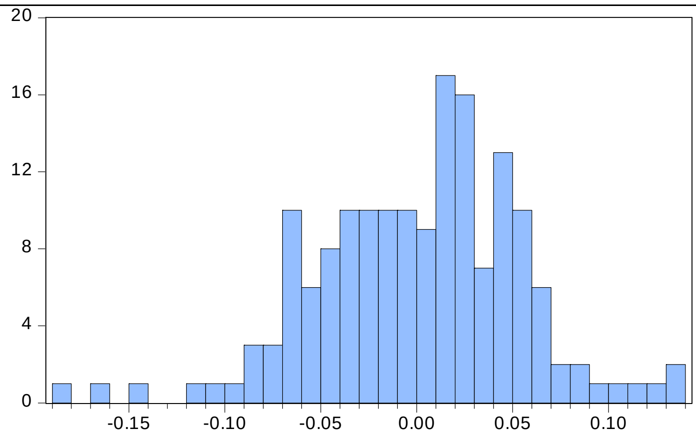
Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.160501	Prob. F(2,76)	0.852
Obs*R-squared	0.59304	Prob. Chi-Square(2)	0.7434
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.658553	Prob. F(65,75)	0.9569
Obs*R-squared	51.23372	Prob. Chi-Square(65)	0.8935
Scaled explained SS	17.32308	Prob. Chi-Square(65)	1

Appendix 16.3: VECM - Summary Results: China

Dependent Variable: D(LOGSHCOMP)			
	Statistically Significant Coefficients	Statistically Significant Endogenous Variables	Number of Co-integrated Equations
Long-Run Relationships	3.04	**LOGEXR(-1) LOGIFRIT(-1) LOGCON(-1) LOGHPI(-1)**	**Trace Test – 4** Max Eigenvalue Test - 3
Short-Run Adjustments	-2.03	**D(LOGGDP(-2))**	n/a
	Is not significant	**D(LOGCON(-3))**	
	Is not significant	**D(LOGCON(-7))**	
Dummy Effect	Is not significant	FCR	
	Is not significant	QEG	
R-squared 0.48	**F-stat. p-value 0.00**		

Appendix 16.3a: VECM Model Residuals Including Dummy Variables: China

Normal Distribution Hypothesis



Series: Residuals	
Sample 2001M06 2015M01	
Observations 164	
Mean	7.42e-16
Median	0.003978
Maximum	0.138438
Minimum	-0.185041
Std. Dev.	0.053203
Skewness	-0.353418
Kurtosis	3.815848
Jarque-Bera	7.962360
Probability	0.018664

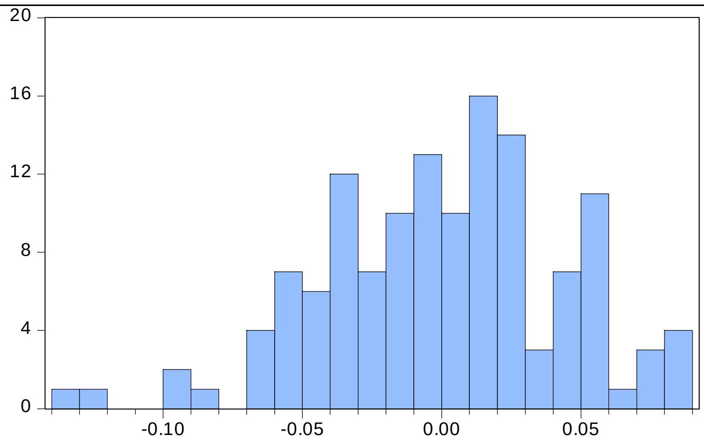
Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.45211	Prob. F(2,106)	0.2387
Obs*R-squared	4.373497	Prob. Chi-Square(2)	0.1123
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.00685	Prob. F(58,105)	0.4794
Obs*R-squared	58.61272	Prob. Chi-Square(58)	0.4528
Scaled explained SS	35.78746	Prob. Chi-Square(58)	0.9904

Appendix 16.4: VECM - Summary Results: South Africa

Dependent Variable: D(LOGJALSH)			
	Statistically Significant Coefficients	Statistically Significant Endogenous Variables	Number of Co-integrated Equations
Long-Run Relationships	-0.28	**LOGINR(-1)** **LOGCON(-1)** **LOGHPI(-1)**	Trace Test – 5 Max Eigenvalue Test - 5
Short-Run Adjustments	1.11	**D(LOGGDP(-1))**	n/a
	-4.09	**D(LOGCON(-7))**	
	-6.46	**D(LOGHPI(-3))**	
Dummy Effect	Is not significant	FCR	
	Is not significant	QEG	
R-squared 0.56	**F-stat. p-value 0.08**		

Appendix 16.4a: VECM Model Residuals Including Dummy Variables: South Africa

Normal Distribution Hypothesis



Series: Residuals	
Sample 2001M07 2012M07	
Observations 133	
Mean	5.45e-16
Median	0.001698
Maximum	0.086342
Minimum	-0.138515
Std. Dev.	0.043259
Skewness	-0.351156
Kurtosis	3.187529
Jarque-Bera	2.928272
Probability	0.231278

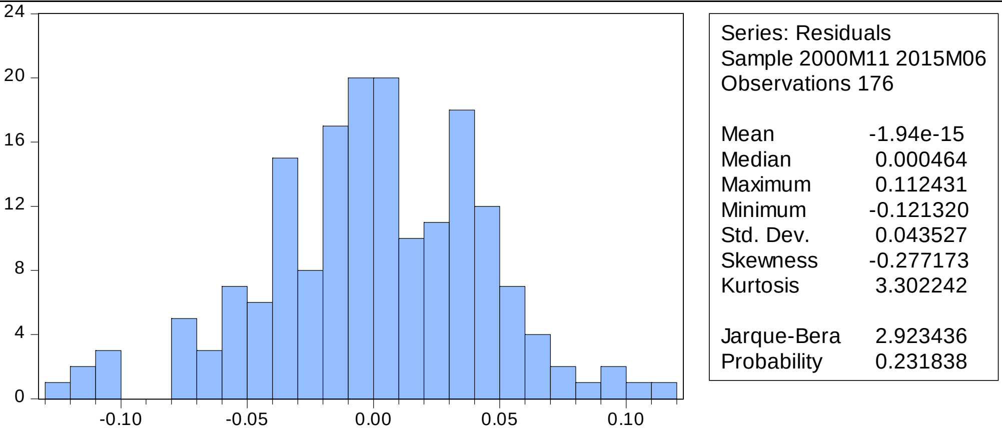
Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.180424	Prob. F(2,67)	0.8353
Obs*R-squared	0.712473	Prob. Chi-Square(2)	0.7003
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.621887	Prob. F(65,67)	0.9719
Obs*R-squared	50.04729	Prob. Chi-Square(65)	0.9144
Scaled explained SS	14.73327	Prob. Chi-Square(65)	1

Appendix 16.5: VECM - Summary Results: France

Dependent Variable: D(LOGCAC)			
	Statistically Significant Coefficients	Statistically Significant Endogenous Variables	Number of Co-integrated Equations
Long-Run Relationships	-0.06	**LOGCAC(-1) LOGINR(-1) LOGEXR(-1) LOGIFRIT(-1) LOGCON(-1) LOGHPI(-1)**	Trace Test – 4 **Max Eigenvalue Test - 2**
	-4.74	**LOGGDP(-1) LOGINR(-1) LOGEXR(-1) LOGIFRIT(-1) LOGCON(-1) LOGHPI(-1)**	
Dependent Variable: D(LOGCAC)			
	Statistically Significant Coefficients	Statistically Significant Endogenous Variables	Number of Co-integrated Equations
Short-Run Adjustments	6.25	**D(LOGGDP(-1))**	n/a
	5.47	**D(LOGGDP(-2))**	
	5.05	**D(LOGGDP(-3))**	
	-0.09	**D(LOGINR(-1))**	
	-0.06	D(LOGINR(-2)	
	-0.06	D(LOGINR(-4)	
	0.05	D(LOGIFRIT(-1))	
	0.06	**D(LOGIFRIT(-2))**	
	-5.56	**D(LOGCON(-1))**	
	-4.53	**D(LOGCON(-2))**	
	-4.83	**D(LOGCON(-3))**	
	9.11	**D(LOGHPI(-4))**	
Dummy Effect	Is not significant	FCR	
	Is not significant	QEG	
R-squared 0.33	**F-stat. p-value 0.26**		

Appendix 16.5a: VECM Model Residuals Including Dummy Variables: France

Normal Distribution Hypothesis



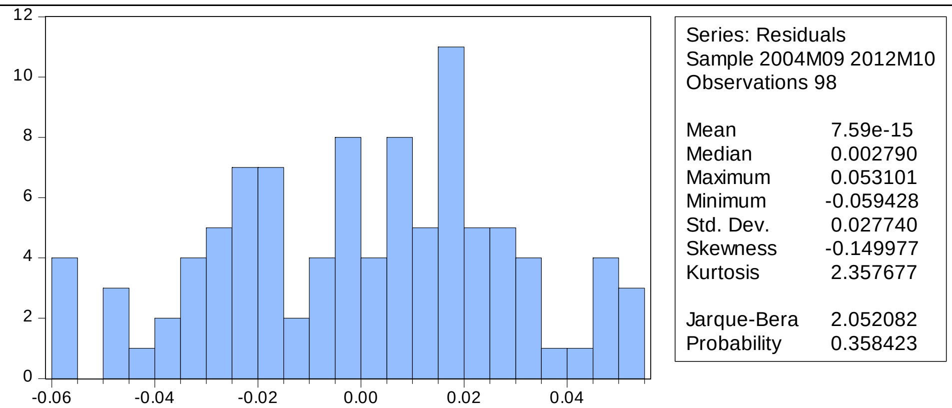
Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.171279	Prob. F(2,120)	0.3135
Obs*R-squared	3.369966	Prob. Chi-Square(2)	0.1854
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.788566	Prob. F(58,117)	0.8419
Obs*R-squared	49.46442	Prob. Chi-Square(58)	0.7801
Scaled explained SS	27.35951	Prob. Chi-Square(58)	0.9998

Appendix 16.6: VECM - Summary Results: Japan

Dependent Variable: D(LOGNIKKEY)			
	Statistically Significant Coefficients	Statistically Significant Endogenous Variables	Number of Co-integrated Equations
Long-Run Relationships	-0.48	**LOGNIKKEY(-1)** **LOGEXR(-1)** **LOGIFRIT(-1)** **LOGCON(-1)** **LOGHPI(-1)**	**Trace Test – 3** Max Eigenvalue Test - 1
	0.54	**LOGGDP(-1)** **LOGEXR(-1)** **LOGIFRIT(-1)** **LOGCON(-1)** **LOGHPI(-1)**	
Short-Run Adjustments	Is not significant	D(LOGIFRIT(-1))	n/a
	0.04	**D(LOGIFRIT(-2))**	
	0.04	**D(LOGIFRIT(-4))**	
	0.04	**D(LOGIFRIT(-6))**	
Dummy Effect	Is not significant	FCR	
	Is not significant	QEG	
R-squared 0.61	**F-stat. p-value 0.04**		

Appendix 16.6a: VECM Model Residuals Including Dummy Variables: Japan

Normal Distribution Hypothesis



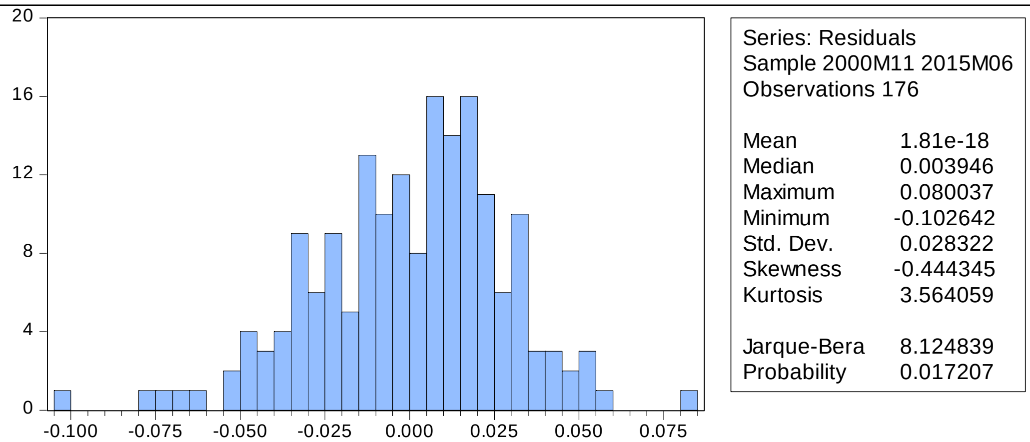
Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.631492	Prob. F(2,48)	0.5362
Obs*R-squared	2.512485	Prob. Chi-Square(2)	0.2847
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.91581	Prob. F(51,46)	0.6215
Obs*R-squared	49.37332	Prob. Chi-Square(51)	0.5385
Scaled explained SS	8.724624	Prob. Chi-Square(51)	1

Appendix 16.7: VAR - Summary Results: UK

Dependent Variable: DLOGFTSE100			
	Statistically Significant Coefficients	Statistically Significant Endogenous Variables	Number of Co-integrated Equations
Short-Run Effects	0.06	DLOGIFR(-7)	n/a
	0.52	DLOGCON(-8)	
	-0.59	DDLOGHPI(-1)	
	-1.04	DDLOGHPI(-2)	
Dummy Effect	Is not significant	FCR	
	Is not significant	QEG	
R-squared 0.39	**F-stat. p-value 0.14**		

Appendix 16.7a: VAR Model Residuals Including Dummy Variables: UK

Normal Distribution Hypothesis



Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.399927	Prob. F(2,115)	0.6713
Obs*R-squared	1.21567	Prob. Chi-Square(2)	0.5445
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.383741	Prob. F(58,117)	0.0701
Obs*R-squared	71.60827	Prob. Chi-Square(58)	0.108
Scaled explained SS	40.57024	Prob. Chi-Square(58)	0.9602

Appendix 17: Descriptive Statistics and Correlation of the Stock Market Indices

Appendix 17.1: Descriptive Statistics of the Stock Market Indices

	LOGIBOV	LOGRTS	LOGNIFTY	LOGSHCOMP	LOGJALSH	LOGCAC	LOGDAX	LOGNIKKEY	LOGFTSE100	LOGSP500
Mean	9.15	6.24	3.66	5.17	7.34	8.03	8.38	4.26	8.61	6.65
Median	9.33	6.53	3.81	5.24	7.50	8.06	8.42	4.28	8.64	6.60
Maximum	10.19	7.13	4.53	6.17	8.03	8.33	9.05	4.82	8.84	7.22
Minimum	7.29	4.65	2.48	4.19	6.38	7.48	7.45	3.68	8.19	6.24
Std. Dev.	0.75	0.72	0.63	0.45	0.55	0.19	0.38	0.22	0.16	0.23
Skewness	-0.49	-0.76	-0.39	-0.24	-0.41	-0.66	-0.34	0.00	-0.64	0.67
Kurtosis	2.11	2.28	1.65	2.16	1.62	2.82	2.42	2.92	2.45	2.81
Jarque-Bera	13.55	21.76	18.91	7.35	19.92	13.90	6.20	0.05	14.90	14.30
Probability	0.00	0.00	0.00	0.03	0.00	0.00	0.05	0.97	0.00	0.00
Sum	1,702	1,161	681	962	1,365	1,494	1,559	792	1,601	1,237
Sum Sq. Dev.	105.19	97.07	72.73	37.24	56.93	6.50	27.41	8.75	4.99	9.93
Obs.	186	186	186	186	186	186	186	186	186	186

Appendix 17.2: Correlation Between the Stock Market Indices

	LOGIBOV	LOGRTS	LOGNIFTY	LOGSHCOMP	LOGJALSH	LOGCAC	LOGDAX	LOGNIKKEY	LOGFTSE100	LOGSP500
LOGIBOV	1	0.83	0.94	0.73	0.92	0.57	0.83	0.49	0.55	0.34
LOGRTS	0.83	1	0.87	0.51	0.90	0.32	0.62	0.18	0.34	0.13
LOGNIFTY	0.94	0.87	1	0.75	0.98	0.53	0.88	0.52	0.58	0.46
LOGSHCOMP	0.73	0.51	0.75	1	0.67	0.48	0.77	0.47	0.50	0.48
LOGJALSH	0.92	0.90	0.98	0.67	1	0.47	0.86	0.49	0.57	0.47
LOGCAC	0.57	0.32	0.53	0.48	0.47	1	0.73	0.77	0.88	0.56
LOGDAX	0.83	0.62	0.88	0.77	0.86	0.73	1	0.79	0.83	0.77
LOGNIKKEY	0.49	0.18	0.52	0.47	0.49	0.77	0.79	1	0.87	0.84
LOGFTSE100	0.55	0.34	0.58	0.50	0.57	0.88	0.83	0.87	1	0.83
LOGSP500	0.34	0.13	0.46	0.48	0.47	0.56	0.77	0.84	0.83	1

Appendix 17.3: Johansen-Juselius Test Results – All Stock Market Indices

Trend assumption: Linear deterministic trend				
Series: LOGIBOV LOGRTS LOGNIFTY LOGSHCOMP LOGJALSH LOGCAC LOGDAX LOGNIKKEY LOGFTSE100 LOGSP500				
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	0.326939	262.0361	239.2354	0.003
At most 1	0.222383	189.1869	197.3709	0.118
At most 2	0.193711	142.907	159.5297	0.2778
At most 3	0.146918	103.2895	125.6154	0.4972
At most 4	0.139669	74.0521	95.75366	0.5786
At most 5	0.096552	46.37151	69.81889	0.7842
At most 6	0.064649	27.68883	47.85613	0.8269
At most 7	0.045234	15.39147	29.79707	0.7542
At most 8	0.034475	6.874335	15.49471	0.5923
At most 9	0.002274	0.418933	3.841466	0.5175
Trace test indicates 1 cointegrating eqn(s) at the 0.05 level				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		**Max-Eigen**	**0.05**	
No. of CE(s)	**Eigenvalue**	**Statistic**	**Critical Value**	**Prob.**
None	0.326939	72.84918	64.50472	0.0067
At most 1	0.222383	46.27992	58.43354	0.453
At most 2	0.193711	39.61749	52.36261	0.5191
At most 3	0.146918	29.23745	46.23142	0.8215
At most 4	0.139669	27.68058	40.07757	0.5847
At most 5	0.096552	18.68268	33.87687	0.8408
At most 6	0.064649	12.29736	27.58434	0.9201
At most 7	0.045234	8.517139	21.13162	0.8693
At most 8	0.034475	6.455402	14.2646	0.5555
At most 9	0.002274	0.418933	3.841466	0.5175
Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level				

Appendix 17.4: Lag Selection Criteria – All Stock Market Indices

VAR Lag Order Selection Criteria						
Endogenous variables: LOGIBOV LOGRTS LOGNIFTY LOGSHCOMP LOGJALSH LOGCAC LOGDAX LOGNIKKEY LOGFTSE100 LOGSP500						
Lag	**LogL**	**LR**	**FPE**	**AIC**	**SC**	**HQ**
0	1101.532	NA	2.23E-18	-12.2644	-12.08565	-12.19191
1	3251.982	4035.114	2.21e-28*	-35.30317*	-33.33690*	-34.50579*
2	3332.061	141.2627	2.79E-28	-35.07933	-31.32554	-33.55707
3	3409.212	127.429	3.69E-28	-34.8226	-29.28129	-32.57545
4	3482.119	112.2288	5.26E-28	-34.51819	-27.18937	-31.54616
5	3588.844	152.293	5.28E-28	-34.59376	-25.47741	-30.89683
6	3692.707	136.5388	5.73E-28	-34.63716	-23.73329	-30.21535
7	3791.841	119.1832	6.92E-28	-34.62743	-21.93604	-29.48073
8	3907.403	125.9500*	7.47E-28	-34.80228	-20.32338	-28.9307

* indicates lag order selected by the criterion

Appendix 18: VECM Model: Stock Market Indices

Appendix 18.1: VECM Model – All Stock Market Indices

Vector Error Correction Estimates										
Error Correction:	**D(LOGIBOV)**	**D(LOGRTS)**	**D(LOGNIFTY)**	**D(LOGSHCOMP)**	**D(LOGJALSH)**	**D(LOGCAC)**	**D(LOGDAX)**	**D(LOGNIKKEY)**	**D(LOGFTSE100)**	**D(LOGSP500)**
CointEq1	-0.0377	-0.05518	0.007084	-0.03558	0.006267	-0.01182	0.02118	0.046354	-0.00173	-0.01213
	-0.029	-0.02577	-0.02143	-0.02075	-0.01758	-0.01507	-0.01681	-0.01409	-0.01033	-0.01119
	[-1.29963]	[-2.14125]	[0.33050]	[-1.71449]	[0.35658]	[-0.78433]	[1.25974]	[3.29015]	[-0.16767]	[-1.08389]
D(LOGIBOV(-1))	-0.00184	0.247658	0.167124	-0.0583	0.092865	0.12597	0.107449	0.017435	0.062989	0.068561
	-0.11471	-0.10192	-0.08477	-0.08207	-0.06951	-0.05959	-0.06649	-0.05572	-0.04084	-0.04424
	[-0.01603]	[2.42994]	[1.97145]	[-0.71034]	[1.33592]	[2.11397]	[1.61594]	[0.31291]	[1.54228]	[1.54961]
D(LOGRTS(-1))	-0.03611	0.097778	-0.09321	0.037374	-0.04574	-0.05078	-0.04767	-0.01615	0.001236	0.00559
	-0.10586	-0.09405	-0.07823	-0.07574	-0.06415	-0.05499	-0.06136	-0.05142	-0.03769	-0.04083
	[-0.34108]	[1.03959]	[-1.19146]	[0.49347]	[-0.71294]	[-0.92333]	[-0.77679]	[-0.31411]	[0.03279]	[0.13692]
D(LOGNIFTY(-1))	-0.0273	-0.18268	-0.1816	-0.04505	0.019133	-0.01853	0.016352	-0.08971	-0.02068	-0.06632
	-0.13972	-0.12414	-0.10326	-0.09996	-0.08467	-0.07258	-0.08099	-0.06787	-0.04975	-0.05389
	[-0.19540]	[-1.47154]	[-1.75871]	[-0.45065]	[0.22597]	[-0.25532]	[0.20189]	[-1.32188]	[-0.41567]	[-1.23065]
D(LOGSHCOMP(-1))	0.039019	0.061802	0.075702	0.066315	0.047616	0.031574	0.053302	0.127945	0.051877	0.075767
	-0.10899	-0.09683	-0.08054	-0.07798	-0.06605	-0.05662	-0.06318	-0.05294	-0.0388	-0.04204
	[0.35801]	[0.63822]	[0.93989]	[0.85045]	[0.72095]	[0.55768]	[0.84371]	[2.41684]	[1.33691]	[1.80240]
D(LOGJALSH(-1))	0.142858	-0.05903	0.09657	0.093919	-0.19058	-0.0033	0.017788	-0.0733	-0.06037	-0.06978
	-0.21495	-0.19098	-0.15885	-0.15379	-0.13026	-0.11166	-0.1246	-0.10441	-0.07653	-0.08291
	[0.66462]	[-0.30908]	[0.60794]	[0.61071]	[-1.46314]	[-0.02956]	[0.14276]	[-0.70206]	[-0.78879]	[-0.84166]
D(LOGCAC(-1))	-0.16507	0.254391	0.091649	0.196224	0.170386	-0.07979	0.154674	0.357211	0.12987	0.042581
	-0.35812	-0.31819	-0.26466	-0.25622	-0.21702	-0.18604	-0.20759	-0.17395	-0.12751	-0.13813
	[-0.46093]	[0.79949]	[0.34629]	[0.76584]	[0.78511]	[-0.42887]	[0.74509]	[2.05350]	[1.01855]	[0.30827]
D(LOGDAX(-1))	0.071565	0.030074	0.034035	0.180184	-0.07372	-0.05062	-0.23386	-0.01237	0.019818	-0.00562
	-0.31043	-0.27582	-0.22942	-0.2221	-0.18812	-0.16126	-0.17995	-0.15079	-0.11053	-0.11974
	[0.23053]	[0.10903]	[0.14835]	[0.81126]	[-0.39184]	[-0.31391]	[-1.29957]	[-0.08203]	[0.17931]	[-0.04695]
D(LOGNIKKEY(-1))	0.18005	0.189462	0.15711	0.172632	0.137504	0.049328	0.115609	0.040102	0.076444	0.049307
	-0.20585	-0.18289	-0.15212	-0.14727	-0.12474	-0.10693	-0.11932	-0.09999	-0.07329	-0.0794
	[0.87469]	[1.03592]	[1.03278]	[1.17218]	[1.10231]	[0.46130]	[0.96888]	[0.40107]	[1.04305]	[0.62103]
D(LOGFTSE100(-1))	0.124903	-0.14985	-0.12333	-0.48995	-0.00934	0.095752	0.016802	-0.08351	-0.22097	-0.01741
	-0.51592	-0.45839	-0.38127	-0.36912	-0.31265	-0.26801	-0.29906	-0.2506	-0.18369	-0.19899
	[0.24210]	[-0.32691]	[-0.32346]	[-1.32734]	[-0.02987]	[0.35727]	[0.05618]	[-0.33325]	[-1.20299]	[-0.08748]
D(LOGSP500(-1))	-0.01242	-0.02999	-0.17349	-0.1613	-0.02609	-0.07892	-0.1158	-0.1623	-0.00461	0.025777
	-0.346	-0.30742	-0.2557	-0.24755	-0.20967	-0.17974	-0.20056	-0.16806	-0.12319	-0.13345
	[-0.03591]	[-0.09755]	[-0.67848]	[-0.65157]	[-0.12443]	[-0.43909]	[-0.57736]	[-0.96568]	[-0.03742]	[0.19315]
C	0.002904	0.008881	0.008071	0.005799	0.008419	-0.00015	0.003462	0.000282	0.000338	0.002333
	-0.00784	-0.00697	-0.0058	-0.00561	-0.00475	-0.00407	-0.00455	-0.00381	-0.00279	-0.00302
	[0.37033]	[1.27462]	[1.39265]	[1.03364]	[1.77167]	[-0.03675]	[0.76153]	[0.07401]	[0.12097]	[0.77128]
R-squared	0.027714	0.124298	0.057484	0.059557	0.034353	0.039335	0.048217	0.12902	0.046799	0.049762
Adj. R-squared	-0.03447	0.068294	-0.00279	-0.00059	-0.0274	-0.0221	-0.01265	0.073318	-0.01416	-0.01101
Sum sq. resids	1.793909	1.416174	0.979741	0.918284	0.658786	0.484103	0.60278	0.423256	0.227404	0.266876
S.E. equation	0.102126	0.090739	0.075473	0.073067	0.061888	0.053052	0.059199	0.049606	0.036361	0.03939
F-statistic	0.445696	2.219447	0.953658	0.990231	0.556267	0.640235	0.792126	2.316248	0.767699	0.81885
Log likelihood	164.9249	186.6772	220.5724	226.5323	257.0862	285.4316	265.2601	297.789	354.944	340.2186
Akaike AIC	-1.66223	-1.89867	-2.26709	-2.33187	-2.66398	-2.97208	-2.75283	-3.1064	-3.72765	-3.56759
Schwarz SC	-1.45256	-1.689	-2.05742	-2.1222	-2.45431	-2.76241	-2.54316	-2.89673	-3.51798	-3.35792
Mean dependent	0.003819	0.009294	0.007238	0.006734	0.00714	-0.00046	0.002888	-0.0005	0.00034	0.002236
S.D. dependent	0.10041	0.094006	0.075368	0.073046	0.061057	0.052476	0.058828	0.051531	0.036106	0.039175

Appendix 18.2: VECM Model: Residual Diagnostics – All Stock Market Indices (Page 1 of 2)

VEC Residual Serial Correlation LM Tests		
Null Hypothesis: no serial correlation at lag order h		
Lags	**LM-Stat**	**Prob**
1	134.9863	0.0113
2	104.5422	0.3581
3	125.7323	0.0418
4	146.2223	0.0018
5	88.80538	0.781
6	109.9455	0.2333
7	92.05271	0.702
8	129.364	0.0257
9	108.6395	0.2608
10	108.7487	0.2584
11	128.4617	0.0291
12	132.7407	0.0159

VEC Residual Normality Tests				
Orthogonalization: Cholesky (Lutkepohl)				
Null Hypothesis: residuals are multivariate normal				
Component	**Skewness**	**Chi-sq**	**df**	**Prob.**
1	-0.63594	12.40212	1	0.0004
2	0.055821	0.095558	1	0.7572
3	-0.23735	1.727548	1	0.1887
4	-0.11809	0.427665	1	0.5131
5	0.351144	3.781262	1	0.0518
6	-0.33355	3.411793	1	0.0647
7	0.044568	0.060912	1	0.8051
8	-0.08897	0.242742	1	0.6222
9	-0.27931	2.392405	1	0.1219
10	0.011459	0.004027	1	0.9494
Joint		24.54603	10	0.0063

Appendix 18.2: VECM Model: Residual Diagnostics – All Stock Market Indices (Page 2 of 2)

VEC Residual Normality Tests				
Component	**Kurtosis**	**Chi-sq**	**df**	**Prob.**
1	4.099792	9.273167	1	0.0023
2	3.435193	1.45201	1	0.2282
3	3.842859	5.446493	1	0.0196
4	4.113805	9.510974	1	0.002
5	3.536277	2.204877	1	0.1376
6	3.586918	2.640955	1	0.1041
7	3.291314	0.650622	1	0.4199
8	3.092071	0.064991	1	0.7988
9	4.443892	15.98366	1	0.0001
10	3.318363	0.777056	1	0.378
Joint		48.0048	10	0
Component	**Jarque-Bera**	**df**	**Prob.**	
1	21.67529	2	0	
2	1.547567	2	0.4613	
3	7.174041	2	0.0277	
4	9.938639	2	0.0069	
5	5.986139	2	0.0501	
6	6.052748	2	0.0485	
7	0.711534	2	0.7006	
8	0.307733	2	0.8574	
9	18.37606	2	0.0001	
10	0.781082	2	0.6767	
Joint	72.55083	20	0	

VEC Residual Heteroskedasticity Tests: No Cross Terms (only levels and squares)		
Joint test:		
Chi-sq	**df**	**Prob.**
1597.286	1210	0.056

Appendix 19: Causality Analysis of Stock Market Indices

Appendix 19.1: VEC Granger Causality/Block Exogeneity Wald Tests – All Stock Market Indices (Page 1 of 5)

VEC Granger Causality/Block Exogeneity Wald Tests			
Dependent variable: D(LOGIBOV)			
Excluded	**Chi-sq**	**df**	**Prob.**
D(LOGRTS)	0.116337	1	0.733
D(LOGNIFTY)	0.03818	1	0.8451
D(LOGSHCOMP)	0.128172	1	0.7203
D(LOGJALSH)	0.441724	1	0.5063
D(LOGCAC)	0.21246	1	0.6448
D(LOGDAX)	0.053145	1	0.8177
D(LOGNIKKEY)	0.765078	1	0.3817
D(LOGFTSE100)	0.058612	1	0.8087
D(LOGSP500)	0.001289	1	0.9714
All	2.943593	9	0.9665
Dependent variable: D(LOGRTS)			
Excluded	**Chi-sq**	**df**	**Prob.**
D(LOGIBOV)	5.904618	1	**0.0151**
D(LOGNIFTY)	2.165427	1	0.1411
D(LOGSHCOMP)	0.407323	1	0.5233
D(LOGJALSH)	0.095532	1	0.7573
D(LOGCAC)	0.639187	1	0.424
D(LOGDAX)	0.011889	1	0.9132
D(LOGNIKKEY)	1.073121	1	0.3002
D(LOGFTSE100)	0.10687	1	0.7437
D(LOGSP500)	0.009516	1	0.9223
All	13.19362	9	0.154

Appendix 19.2: VEC Granger Causality/Block Exogeneity Wald Tests – All Stock Market Indices (Page 2 of 5)

Dependent variable: D(LOGNIFTY)			
Excluded	**Chi-sq**	**df**	**Prob.**
D(LOGIBOV)	3.886619	1	**0.0487**
D(LOGRTS)	1.41957	1	0.2335
D(LOGSHCOMP)	0.883389	1	0.3473
D(LOGJALSH)	0.369587	1	0.5432
D(LOGCAC)	0.119919	1	0.7291
D(LOGDAX)	0.022009	1	0.8821
D(LOGNIKKEY)	1.066633	1	0.3017
D(LOGFTSE100)	0.104626	1	0.7463
D(LOGSP500)	0.460341	1	0.4975
All	9.821969	9	0.3651
Dependent variable: D(LOGSHCOMP)			
Excluded	**Chi-sq**	**df**	**Prob.**
D(LOGIBOV)	0.50458	1	0.4775
D(LOGRTS)	0.243514	1	0.6217
D(LOGNIFTY)	0.203084	1	0.6522
D(LOGJALSH)	0.372965	1	0.5414
D(LOGCAC)	0.586504	1	0.4438
D(LOGDAX)	0.658142	1	0.4172
D(LOGNIKKEY)	1.373997	1	0.2411
D(LOGFTSE100)	1.761843	1	0.1844
D(LOGSP500)	0.424544	1	0.5147
All	6.803967	9	0.6575

Appendix 19.3: VEC Granger Causality/Block Exogeneity Wald Tests – All Stock Market Indices (Page 3 of 5)

Dependent variable: D(LOGJALSH)			
Excluded	**Chi-sq**	**df**	**Prob.**
D(LOGIBOV)	1.784682	1	0.1816
D(LOGRTS)	0.50828	1	0.4759
D(LOGNIFTY)	0.051063	1	0.8212
D(LOGSHCOMP)	0.519766	1	0.4709
D(LOGCAC)	0.616402	1	0.4324
D(LOGDAX)	0.153542	1	0.6952
D(LOGNIKKEY)	1.215086	1	0.2703
D(LOGFTSE100)	0.000892	1	0.9762
D(LOGSP500)	0.015483	1	0.901
All	5.924472	9	0.7475
Dependent variable: D(LOGCAC)			
Excluded	**Chi-sq**	**df**	**Prob.**
D(LOGIBOV)	4.468887	1	**0.0345**
D(LOGRTS)	0.852534	1	0.3558
D(LOGNIFTY)	0.065188	1	0.7985
D(LOGSHCOMP)	0.31101	1	0.5771
D(LOGJALSH)	0.000874	1	0.9764
D(LOGDAX)	0.09854	1	0.7536
D(LOGNIKKEY)	0.2128	1	0.6446
D(LOGFTSE100)	0.127643	1	0.7209
D(LOGSP500)	0.192804	1	0.6606
All	6.531344	9	0.6858

Appendix 19.4: VEC Granger Causality/Block Exogeneity Wald Tests – All Stock Market Indices (Page 4 of 5)

Dependent variable: D(LOGDAX)			
Excluded	**Chi-sq**	**df**	**Prob.**
D(LOGIBOV)	2.611269	1	0.1061
D(LOGRTS)	0.603405	1	0.4373
D(LOGNIFTY)	0.040761	1	0.84
D(LOGSHCOMP)	0.711839	1	0.3988
D(LOGJALSH)	0.020381	1	0.8865
D(LOGCAC)	0.555162	1	0.4562
D(LOGNIKKEY)	0.938728	1	0.3326
D(LOGFTSE100)	0.003156	1	0.9552
D(LOGSP500)	0.333349	1	0.5637
All	6.988688	9	0.6383
Dependent variable: D(LOGNIKKEY)			
Excluded	**Chi-sq**	**df**	**Prob.**
D(LOGIBOV)	0.097914	1	0.7543
D(LOGRTS)	0.098666	1	0.7534
D(LOGNIFTY)	1.747365	1	0.1862
D(LOGSHCOMP)	5.841129	1	**0.0157**
D(LOGJALSH)	0.492892	1	0.4826
D(LOGCAC)	4.216852	1	**0.04**
D(LOGDAX)	0.006729	1	0.9346
D(LOGFTSE100)	0.111053	1	0.7389
D(LOGSP500)	0.932543	1	0.3342
All	15.2946	9	0.0832

Appendix 19.5: VEC Granger Causality/Block Exogeneity Wald Tests – All Stock Market Indices (Page 5 of 5)

Dependent variable: D(LOGFTSE100)			
Excluded	**Chi-sq**	**df**	**Prob.**
D(LOGIBOV)	2.378639	1	0.123
D(LOGRTS)	0.001075	1	0.9738
D(LOGNIFTY)	0.172782	1	0.6777
D(LOGSHCOMP)	1.787323	1	0.1813
D(LOGJALSH)	0.622197	1	0.4302
D(LOGCAC)	1.037438	1	0.3084
D(LOGDAX)	0.032152	1	0.8577
D(LOGNIKKEY)	1.087943	1	0.2969
D(LOGSP500)	0.001401	1	0.9701
All	7.978407	9	0.5363
Dependent variable: D(LOGSP500)			
Excluded	**Chi-sq**	**df**	**Prob.**
D(LOGIBOV)	2.401285	1	0.1212
D(LOGRTS)	0.018746	1	0.8911
D(LOGNIFTY)	1.514495	1	0.2185
D(LOGSHCOMP)	3.24863	1	0.0715
D(LOGJALSH)	0.708383	1	0.4
D(LOGCAC)	0.095029	1	0.7579
D(LOGDAX)	0.002204	1	0.9626
D(LOGNIKKEY)	0.385678	1	0.5346
D(LOGFTSE100)	0.007653	1	0.9303
All	7.109252	9	0.6257

Appendix 19.6: Pairwise Granger Causality Tests– All Stock Market Indices (Page 1 of 4)

Pairwise Granger Causality Tests			
Null Hypothesis:	**Obs**	**F-Statistic**	**Prob.**
LOGRTS does not Granger Cause LOGIBOV	184	1.15403	0.3177
LOGIBOV does not Granger Cause LOGRTS		4.32903	0.0146
LOGNIFTY does not Granger Cause LOGIBOV	184	1.13522	0.3237
LOGIBOV does not Granger Cause LOGNIFTY		3.0991	0.0475
LOGSHCOMP does not Granger Cause LOGIBOV	184	0.38376	0.6819
LOGIBOV does not Granger Cause LOGSHCOMP		1.11344	0.3307
LOGJALSH does not Granger Cause LOGIBOV	184	0.93215	0.3956
LOGIBOV does not Granger Cause LOGJALSH		1.26009	0.2861
LOGCAC does not Granger Cause LOGIBOV	184	0.84561	0.431
LOGIBOV does not Granger Cause LOGCAC		2.90407	0.0574
LOGDAX does not Granger Cause LOGIBOV	184	2.08752	0.127
LOGIBOV does not Granger Cause LOGDAX		3.78055	0.0247
LOGNIKKEY does not Granger Cause LOGIBOV	184	2.95192	0.0548
LOGIBOV does not Granger Cause LOGNIKKEY		3.33988	0.0377
LOGFTSE100 does not Granger Cause LOGIBOV	184	2.9544	0.0547
LOGIBOV does not Granger Cause LOGFTSE100		1.97821	0.1413
LOGSP500 does not Granger Cause LOGIBOV	184	3.60006	0.0293
LOGIBOV does not Granger Cause LOGSP500		1.93627	0.1473
LOGNIFTY does not Granger Cause LOGRTS	184	0.28722	0.7507
LOGRTS does not Granger Cause LOGNIFTY		0.85883	0.4254
LOGSHCOMP does not Granger Cause LOGRTS	184	0.88735	0.4135
LOGRTS does not Granger Cause LOGSHCOMP		0.36037	0.6979
LOGJALSH does not Granger Cause LOGRTS	184	1.03826	0.3562
LOGRTS does not Granger Cause LOGJALSH		0.46436	0.6293

Appendix 19.7: Pairwise Granger Causality Tests– All Stock Market Indices (Page 2 of 4)

Pairwise Granger Causality Tests			
Null Hypothesis:	Obs	F-Statistic	Prob.
LOGCAC does not Granger Cause LOGRTS	184	3.35217	0.0372
LOGRTS does not Granger Cause LOGCAC		0.85685	0.4262
LOGDAX does not Granger Cause LOGRTS	184	3.55482	0.0306
LOGRTS does not Granger Cause LOGDAX		2.54905	0.081
LOGNIKKEY does not Granger Cause LOGRTS	184	2.05455	0.1312
LOGRTS does not Granger Cause LOGNIKKEY		2.73368	0.0677
LOGFTSE100 does not Granger Cause LOGRTS	184	3.32973	0.038
LOGRTS does not Granger Cause LOGFTSE100		0.84703	0.4304
LOGSP500 does not Granger Cause LOGRTS	184	2.71906	0.0687
LOGRTS does not Granger Cause LOGSP500		0.87674	0.4179
LOGSHCOMP does not Granger Cause LOGNIFTY	184	1.4336	0.2412
LOGNIFTY does not Granger Cause LOGSHCOMP		2.74591	0.0669
LOGJALSH does not Granger Cause LOGNIFTY	184	2.95672	0.0545
LOGNIFTY does not Granger Cause LOGJALSH		0.94662	0.39
LOGCAC does not Granger Cause LOGNIFTY	184	2.36118	0.0972
LOGNIFTY does not Granger Cause LOGCAC		1.4949	0.2271
LOGDAX does not Granger Cause LOGNIFTY	184	2.57563	0.0789
LOGNIFTY does not Granger Cause LOGDAX		5.24952	0.0061
LOGNIKKEY does not Granger Cause LOGNIFTY	184	2.73127	0.0679
LOGNIFTY does not Granger Cause LOGNIKKEY		4.80806	0.0092
LOGFTSE100 does not Granger Cause LOGNIFTY	184	2.67257	0.0718
LOGNIFTY does not Granger Cause LOGFTSE100		1.87711	0.156
LOGSP500 does not Granger Cause LOGNIFTY	184	1.71121	0.1836
LOGNIFTY does not Granger Cause LOGSP500		1.99658	0.1388
LOGJALSH does not Granger Cause LOGSHCOMP	184	1.78916	0.1701
LOGSHCOMP does not Granger Cause LOGJALSH		1.00626	0.3676
LOGCAC does not Granger Cause LOGSHCOMP	184	2.95159	0.0548
LOGSHCOMP does not Granger Cause LOGCAC		0.96264	0.3839
LOGDAX does not Granger Cause LOGSHCOMP	184	3.46433	0.0334
LOGSHCOMP does not Granger Cause LOGDAX		0.44486	0.6416

Appendix 19.8: Pairwise Granger Causality Tests– All Stock Market Indices (Page 3 of 4)

Pairwise Granger Causality Tests			
Null Hypothesis:	**Obs**	**F-Statistic**	**Prob.**
LOGNIKKEY does not Granger Cause LOGSHCOMP	184	4.77326	0.0096
LOGSHCOMP does not Granger Cause LOGNIKKEY		2.71066	0.0692
LOGFTSE100 does not Granger Cause LOGSHCOMP	184	2.36264	0.0971
LOGSHCOMP does not Granger Cause LOGFTSE100		1.38339	0.2534
LOGSP500 does not Granger Cause LOGSHCOMP	184	1.81271	0.1662
LOGSHCOMP does not Granger Cause LOGSP500		2.14315	0.1203
LOGCAC does not Granger Cause LOGJALSH	184	3.00681	0.052
LOGJALSH does not Granger Cause LOGCAC		1.46464	0.2339
LOGDAX does not Granger Cause LOGJALSH	184	2.94479	0.0552
LOGJALSH does not Granger Cause LOGDAX		5.82617	0.0035
LOGNIKKEY does not Granger Cause LOGJALSH	184	2.61499	0.076
LOGJALSH does not Granger Cause LOGNIKKEY		4.635	0.0109
LOGFTSE100 does not Granger Cause LOGJALSH	184	3.5833	0.0298
LOGJALSH does not Granger Cause LOGFTSE100		1.95515	0.1446
LOGSP500 does not Granger Cause LOGJALSH	184	2.78564	0.0644
LOGJALSH does not Granger Cause LOGSP500		1.9326	0.1478
LOGDAX does not Granger Cause LOGCAC	184	0.42789	0.6525
LOGCAC does not Granger Cause LOGDAX		1.65977	0.1931
LOGNIKKEY does not Granger Cause LOGCAC	184	0.80654	0.448
LOGCAC does not Granger Cause LOGNIKKEY		3.4137	0.0351
LOGFTSE100 does not Granger Cause LOGCAC	184	0.66326	0.5164
LOGCAC does not Granger Cause LOGFTSE100		1.86575	0.1578
LOGSP500 does not Granger Cause LOGCAC	184	0.03868	0.9621
LOGCAC does not Granger Cause LOGSP500		0.61639	0.541
LOGNIKKEY does not Granger Cause LOGDAX	184	1.07418	0.3438
LOGDAX does not Granger Cause LOGNIKKEY		7.00123	0.0012
LOGFTSE100 does not Granger Cause LOGDAX	184	1.15644	0.3169
LOGDAX does not Granger Cause LOGFTSE100		1.91095	0.1509

Appendix 19.9: Pairwise Granger Causality Tests– All Stock Market Indices (Page 4 of 4)

Pairwise Granger Causality Tests			
Null Hypothesis:	Obs	F-Statistic	Prob.
LOGSP500 does not Granger Cause LOGDAX	184	0.51295	0.5996
LOGDAX does not Granger Cause LOGSP500		0.82459	0.4401
LOGFTSE100 does not Granger Cause LOGNIKKEY	184	1.72353	0.1814
LOGNIKKEY does not Granger Cause LOGFTSE100		1.41064	0.2467
LOGSP500 does not Granger Cause LOGNIKKEY	184	2.76651	0.0656
LOGNIKKEY does not Granger Cause LOGSP500		0.19791	0.8206
LOGSP500 does not Granger Cause LOGFTSE100	184	0.4196	0.658
LOGFTSE100 does not Granger Cause LOGSP500		0.12726	0.8806

Appendix 20: BRICS Stock Market Indices

Appendix 20.1: Johansen-Juselius Test Results – BRICS Stock Market Indices

Trend assumption: Linear deterministic trend				
Series: LOGIBOV LOGRTS LOGNIFTY LOGSHCOMP LOGJALSH				
Lags interval (in first differences): 1 to 8				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		**Trace**	**0.05**	
No. of CE(s)	**Eigenvalue**	**Statistic**	**Critical Value**	**Prob.**
None	0.140683	67.46474	69.81889	0.0759
At most 1	0.116565	40.62853	47.85613	0.2008
At most 2	0.059708	18.6916	29.79707	0.5152
At most 3	0.042833	7.794598	15.49471	0.4876
At most 4	0.00026	0.045966	3.841466	0.8302
Trace test indicates no cointegration at the 0.05 level				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		**Max-Eigen**	**0.05**	
No. of CE(s)	**Eigenvalue**	**Statistic**	**Critical Value**	**Prob.**
None	0.140683	26.83621	33.87687	0.2722
At most 1	0.116565	21.93693	27.58434	0.2236
At most 2	0.059708	10.89701	21.13162	0.6576
At most 3	0.042833	7.748631	14.2646	0.4048
At most 4	0.00026	0.045966	3.841466	0.8302
Max-eigenvalue test indicates no cointegration at the 0.05 level				

Appendix 20.2: Lag Selection Criteria – BRICS Stock Market Indices

VAR Lag Order Selection Criteria						
Endogenous variables: DLOGIBOV DLOGRTS DLOGNIFTY DLOGSHCOMP DLOGJALSH						
Exogenous variables: C						
Lag	**LogL**	**LR**	**FPE**	**AIC**	**SC**	**HQ**
0	1133.534	NA	1.99e-12*	-12.75180*	-12.66207*	-12.71541*
1	1156.63	44.62661	2.04E-12	-12.73028	-12.19195	-12.51196
2	1171.217	27.36152	2.29E-12	-12.61263	-11.62569	-12.21236
3	1186.474	27.75447	2.56E-12	-12.50253	-11.06698	-11.92033
4	1212.051	45.08442	2.56E-12	-12.50905	-10.62489	-11.7449
5	1227.571	26.48101	2.86E-12	-12.40193	-10.06917	-11.45585
6	1242.102	23.97192	3.24E-12	-12.28364	-9.502262	-11.15562
7	1263.124	33.49355	3.43E-12	-12.23869	-9.00871	-10.92874
8	1287.787	37.89934*	3.49E-12	-12.23488	-8.556287	-10.74299

* indicates lag order selected by the criterion

Appendix 20.3: VAR Model – BRICS Stock Market Indices (Page 1 of 5)

Vector Autoregression Estimates					
	DLOGIBOV	**DLOGRTS**	**DLOGNIFTY**	**DLOGSHCOMP**	**DLOGJALSH**
DLOGIBOV(-1)	-0.01595	0.154454	0.202722	-0.09708	0.071919
	-0.11271	-0.10428	-0.08611	-0.08551	-0.0701
	[-0.14147]	[1.48117]	[2.35409]	[-1.13527]	[1.02595]
DLOGIBOV(-2)	0.254647	0.124327	0.124966	-0.09476	0.104343
	-0.11525	-0.10663	-0.08806	-0.08744	-0.07168
	[2.20945]	[1.16592]	[1.41910]	[-1.08368]	[1.45560]
DLOGIBOV(-3)	0.331168	0.093282	0.190048	0.06247	0.122823
	-0.11711	-0.10836	-0.08948	-0.08885	-0.07284
	[2.82776]	[0.86090]	[2.12389]	[0.70307]	[1.68619]

Appendix 20.3: VAR Model – BRICS Stock Market Indices (Page 2 of 5)

	DLOGIBOV	DLOGRTS	DLOGNIFTY	DLOGSHCOMP	DLOGJALSH
DLOGIBOV(-4)	-0.00678	-0.01881	0.11468	0.119378	0.122443
	-0.11525	-0.10663	-0.08806	-0.08744	-0.07168
	[-0.05879]	[-0.17639]	[1.30235]	[1.36529]	[1.70818]
DLOGIBOV(-5)	0.000739	-0.2256	-0.04471	0.054255	-0.01272
	-0.11721	-0.10845	-0.08956	-0.08893	-0.0729
	[0.00631]	[-2.08022]	[-0.49924]	[0.61009]	[-0.17445]
DLOGIBOV(-6)	-0.15763	-0.25031	-0.06819	-0.09808	-0.01738
	-0.11913	-0.11022	-0.09102	-0.09038	-0.07409
	[-1.32316]	[-2.27103]	[-0.74919]	[-1.08515]	[-0.23457]
DLOGIBOV(-7)	-0.17144	-0.33135	-0.02602	-0.1504	-0.08441
	-0.12198	-0.11285	-0.0932	-0.09254	-0.07587
	[-1.40552]	[-2.93612]	[-0.27917]	[-1.62515]	[-1.11263]
DLOGIBOV(-8)	-0.09215	-0.06226	-0.25604	-0.11436	-0.14777
	-0.12318	-0.11397	-0.09412	-0.09346	-0.07661
	[-0.74810]	[-0.54628]	[-2.72044]	[-1.22369]	[-1.92879]
DLOGRTS(-1)	-0.09475	-0.01565	-0.25096	-0.09058	-0.13866
	-0.12146	-0.11237	-0.0928	-0.09215	-0.07554
	[-0.78013]	[-0.13929]	[-2.70439]	[-0.98303]	[-1.83561]
DLOGRTS(-2)	0.097352	-0.01747	-0.00534	0.037719	0.12341
	-0.11896	-0.11006	-0.09089	-0.09025	-0.07399
	[0.81836]	[-0.15874]	[-0.05877]	[0.41792]	[1.66795]
DLOGRTS(-3)	-0.15903	0.003029	-0.07731	-0.21217	-0.13712
	-0.11837	-0.10951	-0.09044	-0.0898	-0.07362
	[-1.34355]	[0.02766]	[-0.85482]	[-2.36265]	[-1.86261]
DLOGRTS(-4)	-0.12426	-0.00129	0.047255	-0.18303	-0.02019
	-0.11784	-0.10903	-0.09003	-0.0894	-0.07329
	[-1.05446]	[-0.01183]	[0.52486]	[-2.04730]	[-0.27544]
DLOGRTS(-5)	0.142028	0.165287	0.000175	-0.07714	0.069025
	-0.1231	-0.11389	-0.09405	-0.09339	-0.07656
	[1.15380]	[1.45128]	[0.00186]	[-0.82594]	[0.90156]
DLOGRTS(-6)	0.175283	0.168478	-0.07957	0.037739	0.080687
	-0.12402	-0.11474	-0.09476	-0.09409	-0.07714
	[1.41336]	[1.46830]	[-0.83977]	[0.40109]	[1.04605]

Appendix 20.3: VAR Model – BRICS Stock Market Indices (Page 3 of 5)

	DLOGIBOV	DLOGRTS	DLOGNIFTY	DLOGSHCOMP	DLOGJALSH
DLOGRTS(-7)	-0.21586	-0.06701	-0.02995	0.100062	-0.05383
	-0.12569	-0.11629	-0.09603	-0.09536	-0.07817
	[-1.71744]	[-0.57621]	[-0.31188]	[1.04934]	[-0.68854]
DLOGRTS(-8)	-0.34025	-0.21657	-0.00109	0.145407	-0.12641
	-0.11737	-0.10859	-0.08967	-0.08904	-0.073
	[-2.89906]	[-1.99437]	[-0.01217]	[1.63298]	[-1.73173]
DLOGNIFTY(-1)	-0.05767	-0.03471	-0.23873	0.051298	0.015208
	-0.15002	-0.1388	-0.11463	-0.11382	-0.09331
	[-0.38443]	[-0.25009]	[-2.08271]	[0.45069]	[0.16299]
DLOGNIFTY(-2)	-0.3314	-0.09308	-0.17443	0.1472	-0.21336
	-0.15266	-0.14125	-0.11664	-0.11582	-0.09495
	[-2.17079]	[-0.65895]	[-1.49538]	[1.27089]	[-2.24702]
DLOGNIFTY(-3)	-0.07895	0.082966	-0.0077	0.004493	0.012207
	-0.14662	-0.13565	-0.11202	-0.11124	-0.09119
	[-0.53846]	[0.61161]	[-0.06869]	[0.04040]	[0.13386]
DLOGNIFTY(-4)	0.370933	0.274617	0.163778	0.108662	0.189319
	-0.1412	-0.13064	-0.10788	-0.10713	-0.08782
	[2.62703]	[2.10211]	[1.51810]	[1.01433]	[2.15574]
DLOGNIFTY(-5)	0.232959	0.205059	0.046839	0.086037	0.108923
	-0.14159	-0.131	-0.10818	-0.10742	-0.08806
	[1.64535]	[1.56537]	[0.43297]	[0.80094]	[1.23689]
DLOGNIFTY(-6)	0.067169	0.214238	-0.0018	0.146101	0.052021
	-0.14266	-0.13199	-0.109	-0.10823	-0.08873
	[0.47084]	[1.62315]	[-0.01647]	[1.34987]	[0.58629]
DLOGNIFTY(-7)	0.167314	0.193637	0.055422	0.221372	0.059417
	-0.1422	-0.13156	-0.10865	-0.10788	-0.08844
	[1.17663]	[1.47182]	[0.51011]	[2.05196]	[0.67183]
DLOGNIFTY(-8)	0.02402	0.142201	-0.01027	-0.06422	0.081398
	-0.13842	-0.12807	-0.10576	-0.10502	-0.08609
	[0.17353]	[1.11037]	[-0.09712]	[-0.61149]	[0.94549]
DLOGSHCOMP(-1)	0.080813	0.086382	0.047741	-0.08315	0.037748
	-0.11387	-0.10535	-0.087	-0.08639	-0.07082
	[0.70972]	[0.81995]	[0.54875]	[-0.96252]	[0.53301]

Appendix 20.3: VAR Model – BRICS Stock Market Indices (Page 4 of 5)

	DLOGIBOV	DLOGRTS	DLOGNIFTY	DLOGSHCOMP	DLOGJALSH
DLOGSHCOMP(-2)	0.222899	0.145972	0.157677	0.08564	0.13722
	-0.11135	-0.10302	-0.08508	-0.08448	-0.06925
	[2.00183]	[1.41693]	[1.85337]	[1.01374]	[1.98139]
DLOGSHCOMP(-3)	-0.23071	-0.09365	-0.04732	0.130799	-0.11176
	-0.11306	-0.1046	-0.08638	-0.08578	-0.07032
	[-2.04067]	[-0.89534]	[-0.54784]	[1.52490]	[-1.58929]
DLOGSHCOMP(-4)	0.027814	0.021004	0.221409	0.288769	0.040913
	-0.11671	-0.10798	-0.08917	-0.08854	-0.07259
	[0.23833]	[0.19452]	[2.48300]	[3.26132]	[0.56364]
DLOGSHCOMP(-5)	-0.10133	-0.16311	-0.03414	0.090305	-0.01818
	-0.11845	-0.10959	-0.0905	-0.08986	-0.07367
	[-0.85545]	[-1.48836]	[-0.37720]	[1.00490]	[-0.24678]
DLOGSHCOMP(-6)	0.021506	-0.11166	-0.10769	-0.08389	-0.03071
	-0.11802	-0.1092	-0.09018	-0.08954	-0.07341
	[0.18222]	[-1.02255]	[-1.19424]	[-0.93682]	[-0.41835]
DLOGSHCOMP(-7)	0.109731	0.143944	-0.03719	0.014382	0.022397
	-0.11941	-0.11048	-0.09124	-0.09059	-0.07427
	[0.91895]	[1.30291]	[-0.40758]	[0.15875]	[0.30157]
DLOGSHCOMP(-8)	0.086471	0.086796	0.002112	0.035031	-0.03305
	-0.11888	-0.10999	-0.09083	-0.09019	-0.07394
	[0.72740]	[0.78916]	[0.02325]	[0.38842]	[-0.44705]
DLOGJALSH(-1)	0.181408	0.102352	0.321362	0.215789	-0.00414
	-0.20462	-0.18932	-0.15634	-0.15525	-0.12727
	[0.88654]	[0.54062]	[2.05548]	[1.38997]	[-0.03250]
DLOGJALSH(-2)	-0.22729	-0.09147	-0.03317	-0.04925	-0.09567
	-0.20697	-0.19149	-0.15814	-0.15702	-0.12873
	[-1.09820]	[-0.47768]	[-0.20975]	[-0.31362]	[-0.74320]
DLOGJALSH(-3)	-0.08579	-0.12744	-0.05116	0.032908	-0.05018
	-0.20559	-0.19021	-0.15708	-0.15598	-0.12787
	[-0.41731]	[-0.66999]	[-0.32571]	[0.21098]	[-0.39244]
DLOGJALSH(-4)	-0.24422	-0.17799	-0.37915	-0.02202	-0.17535
	-0.19797	-0.18317	-0.15126	-0.1502	-0.12313
	[-1.23358]	[-0.97174]	[-2.50658]	[-0.14662]	[-1.42406]

Appendix 20.3: VAR Model – BRICS Stock Market Indices (Page 5 of 5)

	DLOGIBOV	DLOGRTS	DLOGNIFTY	DLOGSHCOMP	DLOGJALSH
DLOGJALSH(-5)	-0.14511	0.067553	0.044072	-0.04424	-0.24751
	-0.2013	-0.18625	-0.15381	-0.15273	-0.1252
	[-0.72083]	[0.36270]	[0.28654]	[-0.28965]	[-1.97689]
DLOGJALSH(-6)	-0.04575	-0.07458	0.308571	2.11E-05	-0.09171
	-0.20629	-0.19087	-0.15762	-0.15651	-0.12831
	[-0.22175]	[-0.39077]	[1.95770]	[0.00013]	[-0.71473]
DLOGJALSH(-7)	0.186708	0.16584	0.086508	-0.20143	0.09974
	-0.21186	-0.19601	-0.16187	-0.16073	-0.13177
	[0.88129]	[0.84606]	[0.53442]	[-1.25315]	[0.75693]
DLOGJALSH(-8)	0.560495	0.242165	0.295028	-0.06913	0.333191
	-0.20431	-0.18903	-0.1561	-0.15501	-0.12707
	[2.74337]	[1.28109]	[1.88995]	[-0.44596]	[2.62204]
C	0.004111	0.002609	0.00734	0.002444	0.008288
	-0.00816	-0.00755	-0.00624	-0.00619	-0.00508
	[0.50356]	[0.34541]	[1.17664]	[0.39452]	[1.63209]
R-squared	0.314296	0.280024	0.303345	0.268132	0.278211
Adj. R-squared	0.112618	0.068267	0.098447	0.052876	0.06592
Sum sq. resids	1.230318	1.053179	0.718234	0.708183	0.475937
S.E. equation	0.095113	0.088	0.072671	0.072161	0.059157
F-statistic	1.558406	1.322381	1.480467	1.245644	1.310519
Log likelihood	188.5935	202.3517	236.227	237.4743	272.6457
Akaike AIC	-1.66772	-1.82318	-2.20596	-2.22005	-2.61747
Schwarz SC	-0.93201	-1.08747	-1.47024	-1.48433	-1.88175
Mean dependent	0.003452	0.008292	0.008106	0.00576	0.00696
S.D. dependent	0.100968	0.091167	0.076536	0.074148	0.061209
Determinant resid covariance (dof adj.)	1.23E-12				
Determinant resid covariance	3.30E-13				
Log likelihood	1287.787				
Akaike information criterion	-12.2349				
Schwarz criterion	-8.55629				

Appendix 20.4: VAR Model: Residual Diagnostics – BRICS Stock Market Indices (Page 1 of 2)

VAR Residual Serial Correlation LM Tests		
Null Hypothesis: no serial correlation at lag order h		
Lags	**LM-Stat**	**Prob**
1	18.30605	0.8291
2	18.51631	0.8197
3	29.70632	0.2355
4	38.03369	0.0459
5	35.40945	0.0811
6	30.91333	0.1919
7	32.55398	0.1426
8	30.92141	0.1916
9	17.04812	0.88

VAR Residual Normality Tests				
Orthogonalization: Cholesky (Lutkepohl)				
Null Hypothesis: residuals are multivariate normal				
Component	**Skewness**	**Chi-sq**	**df**	**Prob.**
1	0.194843	1.119935	1	0.2899
2	0.144614	0.616937	1	0.4322
3	-0.18642	1.025138	1	0.3113
4	-0.14808	0.646902	1	0.4212
5	0.054482	0.087563	1	0.7673
Joint		3.496475	5	0.6239
Component	**Kurtosis**	**Chi-sq**	**df**	**Prob.**
1	3.628386	2.912159	1	0.0879
2	3.22516	0.37389	1	0.5409
3	3.013201	0.001285	1	0.9714
4	3.767303	4.342056	1	0.0372
5	3.856714	5.412942	1	0.02
Joint		13.04233	5	0.023

Appendix 20.4: VAR Model: Residual Diagnostics – BRICS Stock Market Indices (Page 2 of 2)

Component	Jarque-Bera	df		Prob.
1	4.032094	2		0.1332
2	0.990828	2		0.6093
3	1.026423	2		0.5986
4	4.988958	2		0.0825
5	5.500506	2		0.0639
Joint	16.53881	10		0.0852

VAR Residual Heteroskedasticity Tests: No Cross Terms (only levels and squares)		
Joint test:		
Chi-sq	**df**	**Prob.**
1294.512	1200	0.2291

Appendix 20.5: VAR Granger Causality/Block Exogeneity Wald Tests – BRICS Stock Market Indices (Page 1 of 2)

VAR Granger Causality/Block Exogeneity Wald Tests			
Dependent variable: DLOGIBOV			
Excluded	**Chi-sq**	**df**	**Prob.**
DLOGRTS	24.19847	8	0.0021
DLOGNIFTY	15.20751	8	0.0552
DLOGSHCOMP	10.51366	8	0.2308
DLOGJALSH	14.52621	8	0.069
All	55.54954	32	0.0061

Appendix 20.5: VAR Granger Causality/Block Exogeneity Wald Tests – BRICS Stock Market Indices (Page 2 of 2)

Dependent variable: DLOGRTS			
Excluded	**Chi-sq**	**df**	**Prob.**
DLOGIBOV	18.16635	8	0.02
DLOGNIFTY	9.529234	8	0.2996
DLOGSHCOMP	7.397622	8	0.4944
DLOGJALSH	5.444888	8	0.7091
All	40.53127	32	0.1432
Dependent variable: DLOGNIFTY			
Excluded	**Chi-sq**	**df**	**Prob.**
DLOGIBOV	23.53856	8	0.0027
DLOGRTS	10.12215	8	0.2566
DLOGSHCOMP	12.03829	8	0.1495
DLOGJALSH	18.26151	8	0.0193
All	55.81003	32	0.0057
Dependent variable: DLOGSHCOMP			
Excluded	**Chi-sq**	**df**	**Prob.**
DLOGIBOV	7.497425	8	0.484
DLOGRTS	15.73734	8	0.0463
DLOGNIFTY	8.879905	8	0.3525
DLOGJALSH	4.262424	8	0.8327
All	29.1882	32	0.6096
Dependent variable: DLOGJALSH			
Excluded	**Chi-sq**	**df**	**Prob.**
DLOGIBOV	12.98599	8	0.1123
DLOGRTS	15.84157	8	0.0447
DLOGNIFTY	12.72479	8	0.1217
DLOGSHCOMP	8.08223	8	0.4255
All	46.6221	32	0.0458

Appendix 20.6: Pairwise Granger Causality Tests – BRICS Stock Market Indices

Pairwise Granger Causality Tests			
Null Hypothesis:	**Obs**	**F-Statistic**	**Prob.**
LOGRTS does not Granger Cause LOGIBOV	184	1.15403	0.3177
LOGIBOV does not Granger Cause LOGRTS		4.32903	0.0146
LOGNIFTY does not Granger Cause LOGIBOV	184	1.13522	0.3237
LOGIBOV does not Granger Cause LOGNIFTY		3.0991	0.0475
LOGSHCOMP does not Granger Cause LOGIBOV	184	0.38376	0.6819
LOGIBOV does not Granger Cause LOGSHCOMP		1.11344	0.3307
LOGJALSH does not Granger Cause LOGIBOV	184	0.93215	0.3956
LOGIBOV does not Granger Cause LOGJALSH		1.26009	0.2861
LOGNIFTY does not Granger Cause LOGRTS	184	0.28722	0.7507
LOGRTS does not Granger Cause LOGNIFTY		0.85883	0.4254
LOGSHCOMP does not Granger Cause LOGRTS	184	0.88735	0.4135
LOGRTS does not Granger Cause LOGSHCOMP		0.36037	0.6979
LOGJALSH does not Granger Cause LOGRTS	184	1.03826	0.3562
LOGRTS does not Granger Cause LOGJALSH		0.46436	0.6293
LOGSHCOMP does not Granger Cause LOGNIFTY	184	1.4336	0.2412
LOGNIFTY does not Granger Cause LOGSHCOMP		2.74591	0.0669
LOGJALSH does not Granger Cause LOGNIFTY	184	2.95672	0.0545
LOGNIFTY does not Granger Cause LOGJALSH		0.94662	0.39
LOGJALSH does not Granger Cause LOGSHCOMP	184	1.78916	0.1701
LOGSHCOMP does not Granger Cause LOGJALSH		1.00626	0.3676

Appendix 21: Stock Market Indices of Developed Countries

Appendix 21.1: Johansen-Juselius Test Results –Stock Market Indices of Developed Countries

Trend assumption: Linear deterministic trend				
Series: LOGCAC LOGDAX LOGNIKKEY LOGFTSE100 LOGSP500				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.
None	0.144877	83.22355	69.81889	0.0029
At most 1	0.126028	55.20821	47.85613	0.0087
At most 2	0.103133	31.09576	29.79707	0.0353
At most 3	0.038806	11.61198	15.49471	0.1765
At most 4	0.024975	4.527375	3.841466	0.0333
Trace test indicates 3 cointegrating eqn(s) at the 0.05 level				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.
None	0.144877	28.01534	33.87687	0.2128
At most 1	0.126028	24.11244	27.58434	0.1309
At most 2	0.103133	19.48378	21.13162	0.0837
At most 3	0.038806	7.084608	14.2646	0.4792
At most 4	0.024975	4.527375	3.841466	0.0333
Max-eigenvalue test indicates no cointegration at the 0.05 level				

Appendix 21.2: Lag Selection Criteria –Stock Market Indices of Developed Countries

VAR Lag Order Selection Criteria						
Endogenous variables : LOGCAC LOGDAX LOGNIKKEY LOGFTSE100 LOGSP500						
Exogenous variables: C						
Lag	**LogL**	**LR**	**FPE**	**AIC**	**SC**	**HQ**
0	674.4613	NA	3.72E-10	-7.522037	-7.432661	-7.485793
1	1907.724	2383.385	4.73e-16*	-21.09803*	-20.56177*	-20.88056*
2	1930.067	41.92392	4.88E-16	-21.06817	-20.08503	-20.66948
3	1951.444	38.91141	5.09E-16	-21.02746	-19.59745	-20.44756
4	1966.953	27.35781	5.68E-16	-20.92082	-19.04392	-20.15969
5	1989.851	39.10628	5.84E-16	-20.8972	-18.57342	-19.95485
6	2014.471	40.66538*	5.91E-16	-20.89294	-18.12228	-19.76936
7	2031.509	27.18459	6.53E-16	-20.80348	-17.58594	-19.49868
8	2048.789	26.59806	7.22E-16	-20.71672	-17.05231	-19.23071

* indicates lag order selected by the criterion

Appendix 21.3: VAR Model – Stock Market Indices of Developed Countries (Page 1 of 4)

Vector Autoregression Estimates					
	DLOGCAC	**DLOGDAX**	**DLOGNIKKEY**	**DLOGFTSE100**	**DLOGSP500**
DLOGCAC(-1)	-0.39507	-0.190888	0.143131	-0.095946	-0.101749
	-0.22131	-0.25024	-0.20343	-0.15357	-0.1684
	[-1.78511]	[-0.76283]	[0.70358]	[-0.62475]	[-0.60421]
DLOGCAC(-2)	-0.197715	-0.153714	-0.253641	-0.191283	-0.129319
	-0.22906	-0.259	-0.21056	-0.15895	-0.1743
	[-0.86314]	[-0.59349]	[-1.20462]	[-1.20339]	[-0.74194]
DLOGCAC(-3)	0.077432	0.05516	0.057804	0.015465	0.046439
	-0.21594	-0.24416	-0.19849	-0.14984	-0.16431
	[0.35858]	[0.22592]	[0.29122]	[0.10321]	[0.28263]

Appendix 21.3: VAR Model – Stock Market Indices of Developed Countries (Page 2 of 4)

	DLOGCAC	DLOGDAX	DLOGNIKKEY	DLOGFTSE100	DLOGSP500
DLOGCAC(-4)	-0.003023	0.023582	0.03579	-0.017061	-0.127822
	-0.20147	-0.2278	-0.18519	-0.1398	-0.1533
	[-0.01500]	[0.10352]	[0.19326]	[-0.12204]	[-0.83380]
DLOGCAC(-5)	-0.099808	-0.139517	0.02465	-0.025684	0.024935
	-0.20284	-0.22935	-0.18645	-0.14075	-0.15434
	[-0.49206]	[-0.60833]	[0.13221]	[-0.18248]	[0.16156]
DLOGCAC(-6)	0.236078	0.093276	-0.006281	0.118211	0.020094
	-0.19555	-0.22111	-0.17975	-0.1357	-0.1488
	[1.20724]	[0.42186]	[-0.03494]	[0.87113]	[0.13504]
DLOGDAX(-1)	0.08133	-0.140608	-0.166057	0.079461	-0.054081
	-0.18008	-0.20361	-0.16553	-0.12496	-0.13702
	[0.45164]	[-0.69057]	[-1.00320]	[0.63589]	[-0.39469]
DLOGDAX(-2)	-0.260596	-0.326253	-0.022793	-0.112835	-0.318161
	-0.18329	-0.20724	-0.16848	-0.12719	-0.13947
	[-1.42178]	[-1.57427]	[-0.13529]	[-0.88715]	[-2.28127]
DLOGDAX(-3)	0.117049	0.181492	0.156727	0.003147	-0.07435
	-0.18586	-0.21015	-0.17085	-0.12898	-0.14143
	[0.62975]	[0.86361]	[0.91735]	[0.02440]	[-0.52571]
DLOGDAX(-4)	0.148751	0.010876	0.232698	-0.044208	0.114409
	-0.18374	-0.20775	-0.1689	-0.1275	-0.13981
	[0.80956]	[0.05235]	[1.37776]	[-0.34672]	[0.81830]
DLOGDAX(-5)	0.302507	0.37258	0.228202	0.159828	0.059226
	-0.18774	-0.21227	-0.17257	-0.13027	-0.14285
	[1.61134]	[1.75521]	[1.32239]	[1.22685]	[0.41460]
DLOGDAX(-6)	-0.226268	-0.064524	0.296249	-0.013776	0.104879
	-0.18271	-0.20658	-0.16794	-0.12678	-0.13902
	[-1.23843]	[-0.31234]	[1.76398]	[-0.10866]	[0.75440]
DLOGNIKKEY(-1)	0.057513	0.118458	-0.067407	0.053162	-0.007881
	-0.10768	-0.12175	-0.09898	-0.07472	-0.08194
	[0.53410]	[0.97293]	[-0.68100]	[0.71145]	[-0.09618]

Appendix 21.3: VAR Model – Stock Market Indices of Developed Countries (Page 3 of 4)

	DLOGCAC	DLOGDAX	DLOGNIKKEY	DLOGFTSE100	DLOGSP500
DLOGNIKKEY(-2)	-0.159103	-0.208922	-0.11051	-0.1042	-0.015791
	-0.10746	-0.12151	-0.09878	-0.07457	-0.08177
	[-1.48052]	[-1.71940]	[-1.11873]	[-1.39730]	[-0.19311]
DLOGNIKKEY(-3)	0.069009	0.009064	-0.01184	0.087519	0.066429
	-0.10504	-0.11876	-0.09655	-0.07289	-0.07992
	[0.65700]	[0.07632]	[-0.12263]	[1.20075]	[0.83115]
DLOGNIKKEY(-4)	-0.095368	-0.097183	-0.318094	-0.111814	-0.166521
	-0.10134	-0.11458	-0.09315	-0.07032	-0.07711
	[-0.94109]	[-0.84816]	[-3.41485]	[-1.59006]	[-2.15954]
DLOGNIKKEY(-5)	0.105548	0.102513	0.071168	0.05075	-0.053489
	-0.10544	-0.11922	-0.09692	-0.07317	-0.08023
	[1.00102]	[0.85987]	[0.73429]	[0.69362]	[-0.66668]
DLOGNIKKEY(-6)	0.170627	0.084789	0.065049	0.078037	0.122254
	-0.10678	-0.12074	-0.09816	-0.0741	-0.08125
	[1.59787]	[0.70225]	[0.66271]	[1.05313]	[1.50460]
DLOGFTSE100(-1)	0.658402	0.624719	0.160421	0.11237	0.269984
	-0.27715	-0.31337	-0.25476	-0.19232	-0.21089
	[2.37558]	[1.99353]	[0.62969]	[0.58428]	[1.28021]
DLOGFTSE100(-2)	0.54038	0.622851	0.365348	0.494386	0.55845
	-0.29154	-0.32964	-0.26798	-0.20231	-0.22184
	[1.85355]	[1.88950]	[1.36333]	[2.44377]	[2.51740]
DLOGFTSE100(-3)	-0.221865	-0.205558	-0.111176	0.086382	0.146977
	-0.28571	-0.32305	-0.26263	-0.19826	-0.2174
	[-0.77653]	[-0.63630]	[-0.42332]	[0.43570]	[0.67606]
DLOGFTSE100(-4)	-0.064793	-0.05171	-0.234209	0.119104	0.09398
	-0.27605	-0.31212	-0.25374	-0.19156	-0.21005
	[-0.23472]	[-0.16567]	[-0.92301]	[0.62177]	[0.44742]
DLOGFTSE100(-5)	-0.496027	-0.515986	-0.511577	-0.240655	-0.102137
	-0.27747	-0.31373	-0.25505	-0.19254	-0.21113
	[-1.78766]	[-1.64466]	[-2.00576]	[-1.24987]	[-0.48375]
DLOGFTSE100(-6)	0.110448	-0.061386	-0.442571	-0.040746	-0.121308
	-0.26401	-0.29851	-0.24268	-0.1832	-0.20089
	[0.41835]	[-0.20564]	[-1.82371]	[-0.22241]	[-0.60386]

Appendix 21.3: VAR Model – Stock Market Indices of Developed Countries (Page 4 of 4)

	DLOGCAC	DLOGDAX	DLOGNIKKEY	DLOGFTSE100	DLOGSP500
DLOGSP500(-1)	-0.205856	-0.082251	0.181552	-0.040128	0.009492
	-0.1968	-0.22252	-0.1809	-0.13657	-0.14975
	[-1.04600]	[-0.36963]	[1.00359]	[-0.29384]	[0.06338]
DLOGSP500(-2)	0.156608	0.171675	0.069887	0.003819	0.049976
	-0.19284	-0.21804	-0.17726	-0.13381	-0.14673
	[0.81213]	[0.78736]	[0.39427]	[0.02854]	[0.34059]
DLOGSP500(-3)	0.013219	0.041177	0.076265	-0.119181	-0.075658
	-0.19154	-0.21657	-0.17607	-0.13292	-0.14575
	[0.06902]	[0.19013]	[0.43316]	[-0.89667]	[-0.51910]
DLOGSP500(-4)	0.117498	0.287876	0.378425	0.159407	0.136114
	-0.1821	-0.2059	-0.16739	-0.12637	-0.13857
	[0.64523]	[1.39813]	[2.26074]	[1.26148]	[0.98231]
DLOGSP500(-5)	0.158201	0.168349	0.110095	0.063427	0.083429
	-0.18046	-0.20405	-0.16588	-0.12523	-0.13732
	[0.87663]	[0.82504]	[0.66369]	[0.50649]	[0.60756]
DLOGSP500(-6)	-0.256652	-0.109246	-0.120462	-0.155969	-0.171741
	-0.17729	-0.20046	-0.16296	-0.12302	-0.1349
	[-1.44765]	[-0.54498]	[-0.73919]	[-1.26779]	[-1.27309]
C	-0.001624	0.001863	-0.003345	-0.000137	0.001696
	-0.00445	-0.00503	-0.00409	-0.00309	-0.00339
	[-0.36509]	[0.37036]	[-0.81793]	[-0.04427]	[0.50096]
R-squared	0.18552	0.163167	0.229133	0.155239	0.149478
Adj. R-squared	0.020423	-0.006461	0.072876	-0.015996	-0.022926
Sum sq. resids	0.406627	0.519851	0.343573	0.195803	0.235435
S.E. equation	0.052416	0.059266	0.048181	0.036373	0.039885
F-statistic	1.123704	0.96191	1.466385	0.906586	0.867023
Log likelihood	290.8183	268.8331	305.8988	356.224	339.7269
Akaike AIC	-2.902998	-2.657353	-3.071495	-3.633788	-3.449462
Schwarz SC	-2.350993	-2.105348	-2.51949	-3.081782	-2.897457
Mean dependent	-0.000753	0.00336	0.000547	0.000266	0.001684
S.D. dependent	0.05296	0.059076	0.050039	0.036085	0.039435

Appendix 21.4: VAR Model: Residual Diagnostics –Stock Market Indices of Developed Countries (Page 1 of 2)

VAR Residual Serial Correlation LM Tests		
Null Hypothesis: no serial correlation at lag order h		
Lags	**LM-Stat**	**Prob**
1	32.6537	0.14
2	35.6828	0.0766
3	33.52144	0.1185
4	27.14861	0.3485
5	24.65461	0.4819
6	43.10497	0.0136
7	17.11291	0.8777

VAR Residual Normality Tests				
Orthogonalization: Cholesky (Lutkepohl)				
Null Hypothesis: residuals are multivariate normal				
Component	**Skewness**	**Chi-sq**	**df**	**Prob.**
1	-0.7144	15.22591	1	0.0001
2	-0.24549	1.797954	1	0.18
3	-0.04895	0.07149	1	0.7892
4	-0.61755	11.37733	1	0.0007
5	0.007518	0.001686	1	0.9672
Joint		28.47437	5	0
Component	**Kurtosis**	**Chi-sq**	**df**	**Prob.**
1	3.702013	3.675632	1	0.0552
2	3.214474	0.343075	1	0.5581
3	3.164802	0.202566	1	0.6527
4	4.366418	13.92544	1	0.0002
5	3.390151	1.135291	1	0.2866
Joint		19.28201	5	0.0017

Appendix 21.4: VAR Model: Residual Diagnostics –Stock Market Indices of Developed Countries (Page 2 of 2)

Component	**Jarque-Bera**	**df**		**Prob.**
1	18.90154	2		0.0001
2	2.14103	2		0.3428
3	0.274056	2		0.8719
4	25.30277	2		0
5	1.136977	2		0.5664
Joint	47.75638	10		0

VAR Residual Heteroskedasticity Tests: No Cross Terms (only levels and squares)		
Joint test:		
Chi-sq	**df**	**Prob.**
1096.261	900	0.1000

Appendix 21.5: VAR Granger Causality/Block Exogeneity Wald Tests – Stock Market Indices of Developed Countries (Page 1 of 2)

VAR Granger Causality/Block Exogeneity Wald Tests			
Dependent variable: DLOGCAC			
Excluded	**Chi-sq**	**df**	**Prob.**
DLOGDAX	6.931221	6	0.3273
DLOGNIKKEY	9.223419	6	0.1614
DLOGFTSE100	12.40688	6	0.0535
DLOGSP500	5.291162	6	0.507
All	27.76264	24	0.2702

Appendix 21.5: VAR Granger Causality/Block Exogeneity Wald Tests – Stock Market Indices of Developed Countries (Page 2 of 2)

Dependent variable: DLOGDAX			
Excluded	**Chi-sq**	**df**	**Prob.**
DLOGCAC	1.612718	6	0.9517
DLOGNIKKEY	6.843184	6	0.3356
DLOGFTSE100	9.458672	6	0.1494
DLOGSP500	4.016171	6	0.6745
All	21.44747	24	0.6122
Dependent variable: DLOGNIKKEY			
Excluded	**Chi-sq**	**df**	**Prob.**
DLOGCAC	2.974211	6	0.8121
DLOGDAX	7.184669	6	0.3041
DLOGFTSE100	7.343527	6	0.2902
DLOGSP500	7.541585	6	0.2736
All	36.44687	24	0.0496
Dependent variable: DLOGFTSE100			
Excluded	**Chi-sq**	**df**	**Prob.**
DLOGCAC	2.779791	6	0.8359
DLOGDAX	2.888147	6	0.8227
DLOGNIKKEY	9.429964	6	0.1508
DLOGSP500	4.379235	6	0.6255
All	21.57622	24	0.6045
Dependent variable: DLOGSP500			
Excluded	**Chi-sq**	**df**	**Prob.**
DLOGCAC	1.99248	6	0.9204
DLOGDAX	6.955198	6	0.325
DLOGNIKKEY	8.896176	6	0.1795
DLOGFTSE100	7.477186	6	0.279
All	23.28921	24	0.5028

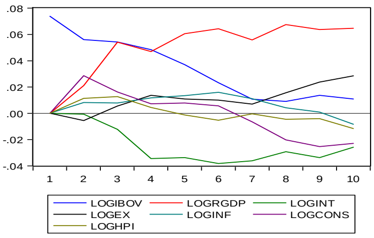
Appendix 21.6: Pairwise Granger Causality Tests – Stock Market Indices of Developed Countries

Pairwise Granger Causality Tests			
Null Hypothesis:	**Obs**	**F-Statistic**	**Prob.**
DLOGDAX does not Granger Cause DLOGCAC	183	0.2589	0.7722
DLOGCAC does not Granger Cause DLOGDAX		0.37859	0.6854
DLOGNIKKEY does not Granger Cause DLOGCAC	183	0.56096	0.5717
DLOGCAC does not Granger Cause DLOGNIKKEY		3.36469	0.0368
DLOGFTSE100 does not Granger Cause DLOGCAC	183	2.64926	0.0735
DLOGCAC does not Granger Cause DLOGFTSE100		2.97219	0.0537
DLOGSP500 does not Granger Cause DLOGCAC	183	0.1327	0.8758
DLOGCAC does not Granger Cause DLOGSP500		0.68035	0.5078
DLOGNIKKEY does not Granger Cause DLOGDAX	183	1.17329	0.3117
DLOGDAX does not Granger Cause DLOGNIKKEY		2.4139	0.0924
DLOGFTSE100 does not Granger Cause DLOGDAX	183	4.47228	0.0127
DLOGDAX does not Granger Cause DLOGFTSE100		3.34799	0.0374
DLOGSP500 does not Granger Cause DLOGDAX	183	0.6938	0.501
DLOGDAX does not Granger Cause DLOGSP500		2.11318	0.1239
DLOGFTSE100 does not Granger Cause DLOGNIKKEY	183	1.15671	0.3169
DLOGNIKKEY does not Granger Cause DLOGFTSE100		1.91799	0.1499
DLOGSP500 does not Granger Cause DLOGNIKKEY	183	0.69315	0.5013
DLOGNIKKEY does not Granger Cause DLOGSP500		0.11912	0.8878
DLOGSP500 does not Granger Cause DLOGFTSE100	183	0.98962	0.3738
DLOGFTSE100 does not Granger Cause DLOGSP500		0.20187	0.8174

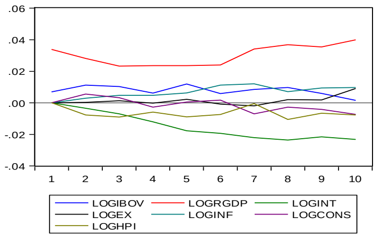
Appendix 22: Impulse Response Function

Appendix 22.1: Impulse Response to Cholesky One S.D. Innovations: Brazil

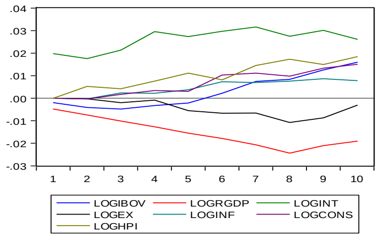
Response of LOGIBOV to Cholesky One S.D. Innovations



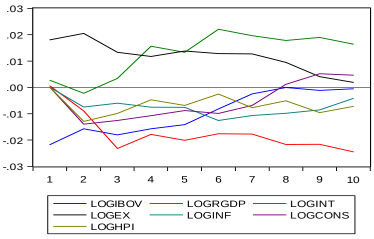
Response of LOGRGDP to Cholesky One S.D. Innovations



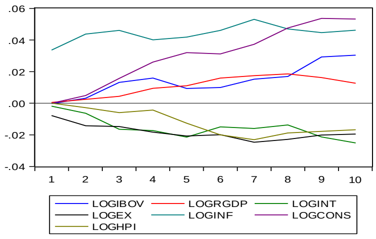
Response of LOGINT to Cholesky One S.D. Innovations



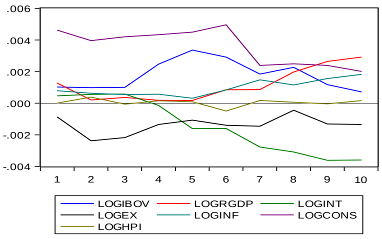
Response of LOGEX to Cholesky One S.D. Innovations



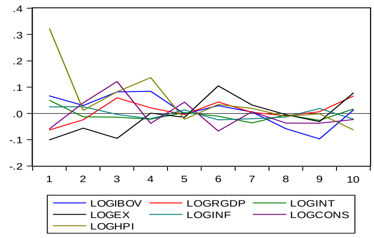
Response of LOGINF to Cholesky One S.D. Innovations



Response of LOGCONS to Cholesky One S.D. Innovations

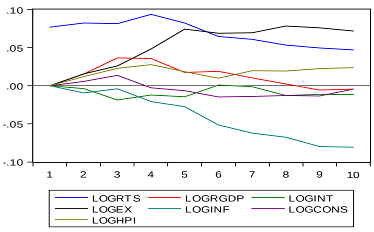


Response of LOGHPI to Cholesky One S.D. Innovations

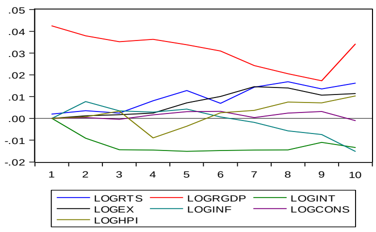


Appendix 22.2: Impulse Response to Cholesky One S.D. Innovations: Russia

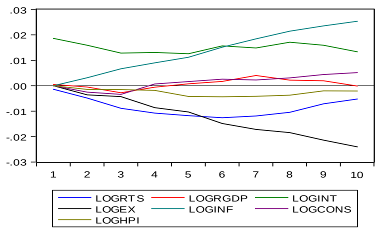
Response of LOGRTS to Cholesky One S.D. Innovations



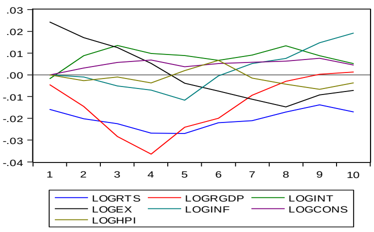
Response of LOGRGDP to Cholesky One S.D. Innovations



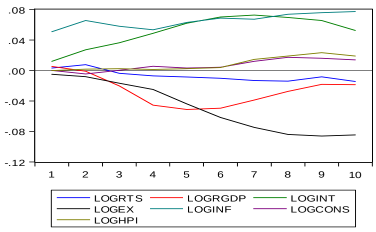
Response of LOGINT to Cholesky One S.D. Innovations



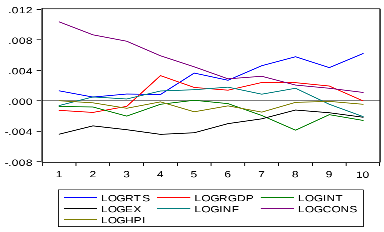
Response of LOGEX to Cholesky One S.D. Innovations



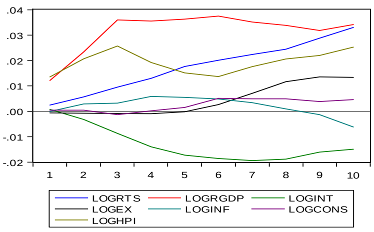
Response of LOGINF to Cholesky One S.D. Innovations



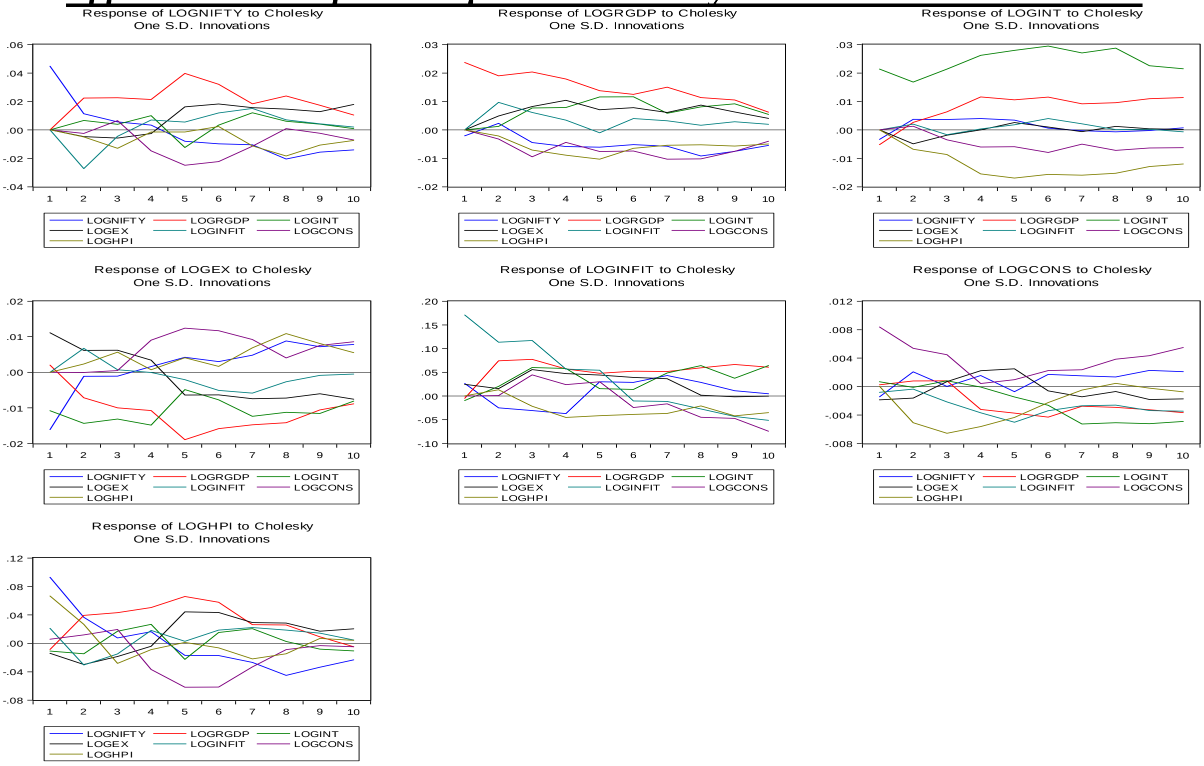
Response of LOGCONS to Cholesky One S.D. Innovations



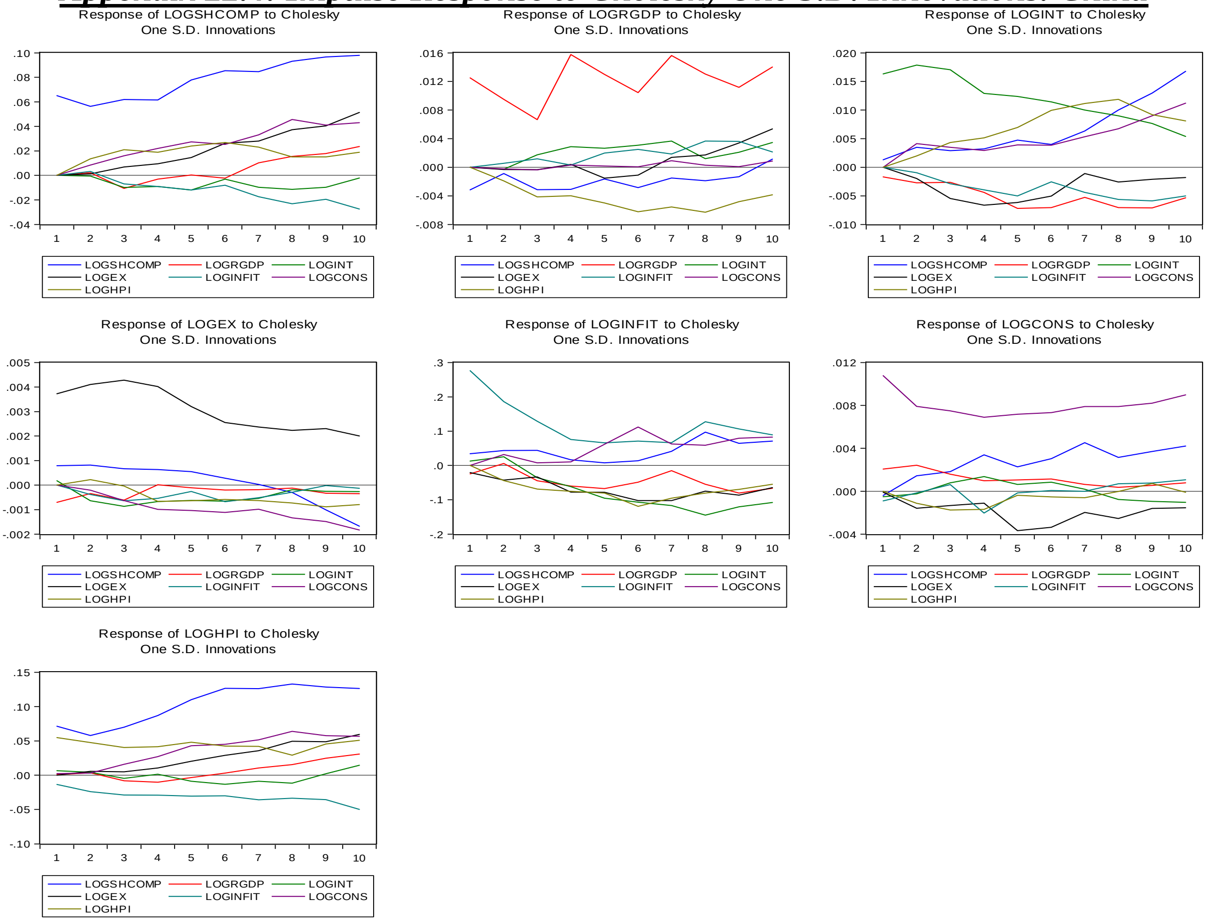
Response of LOGHPI to Cholesky One S.D. Innovations



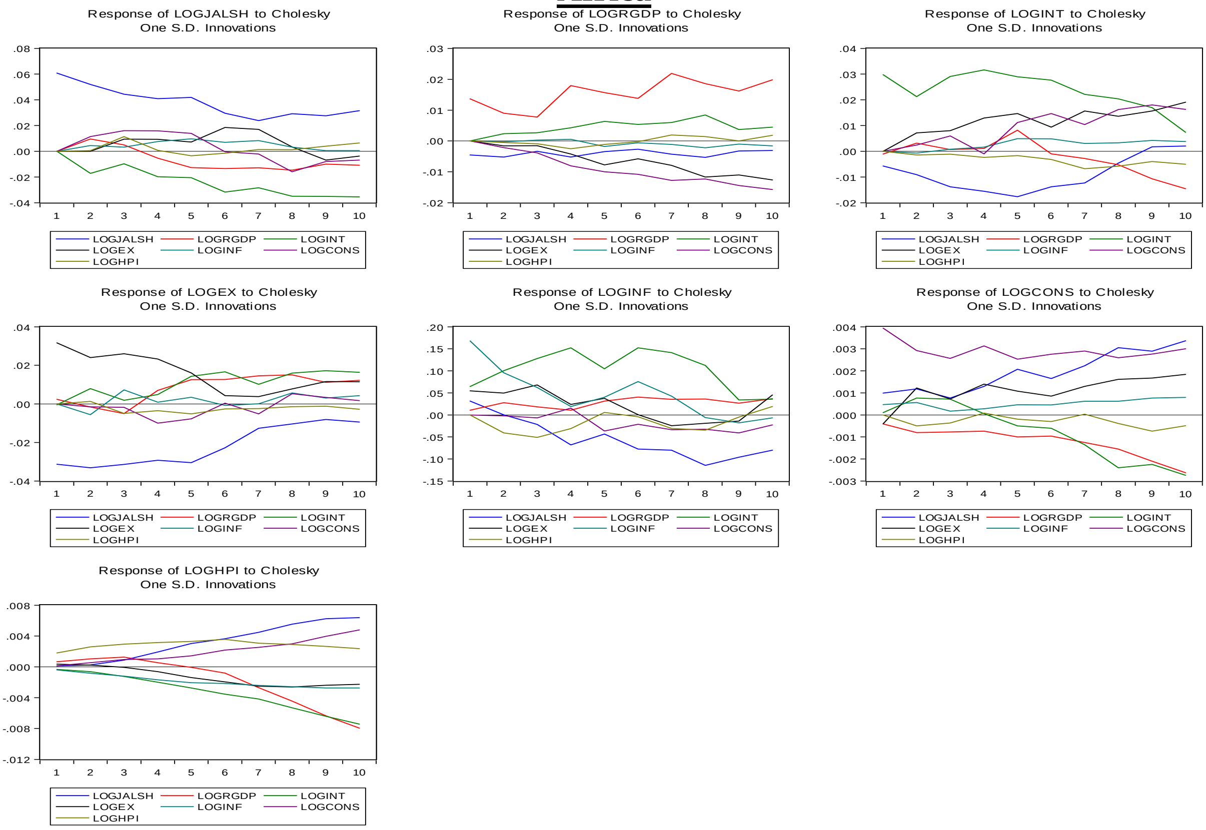
Appendix 22.3: Impulse Response to Cholesky One S.D. Innovations: India



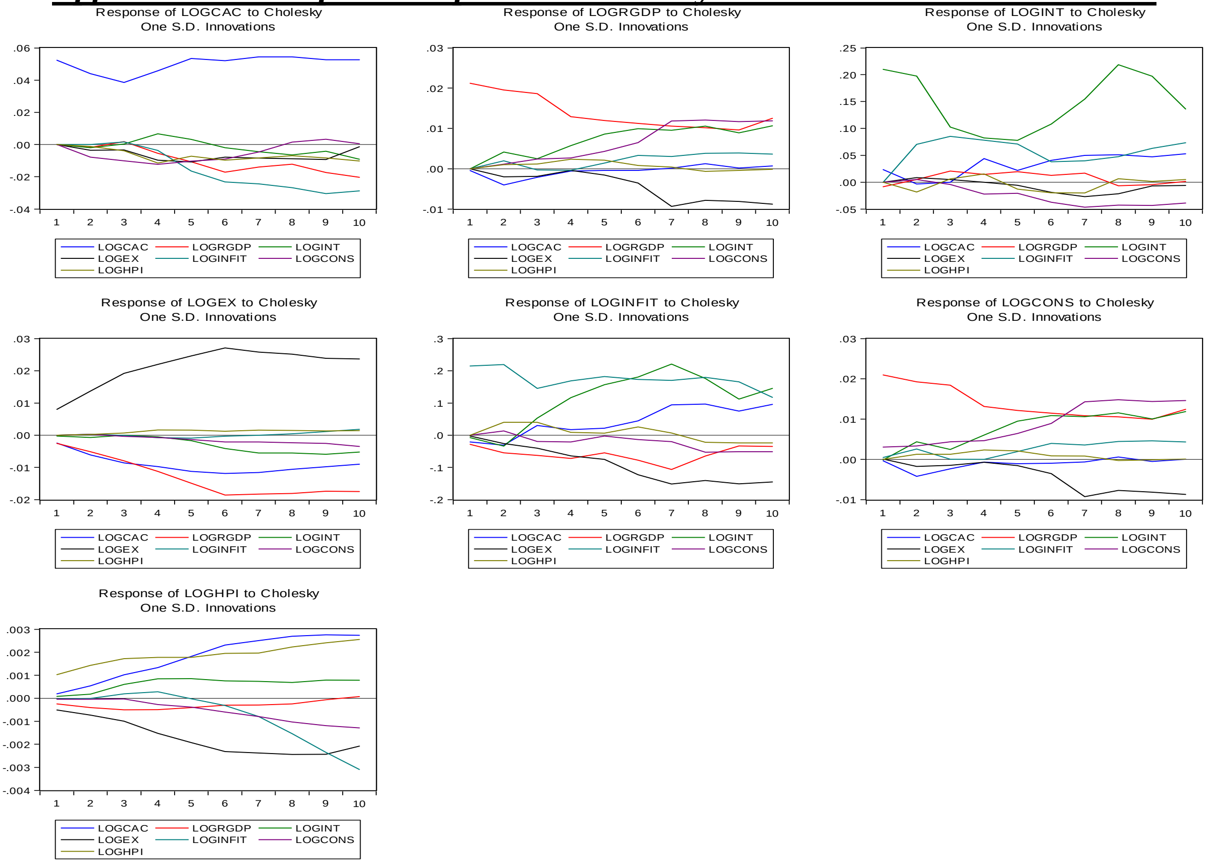
Appendix 22.4: Impulse Response to Cholesky One S.D. Innovations: China



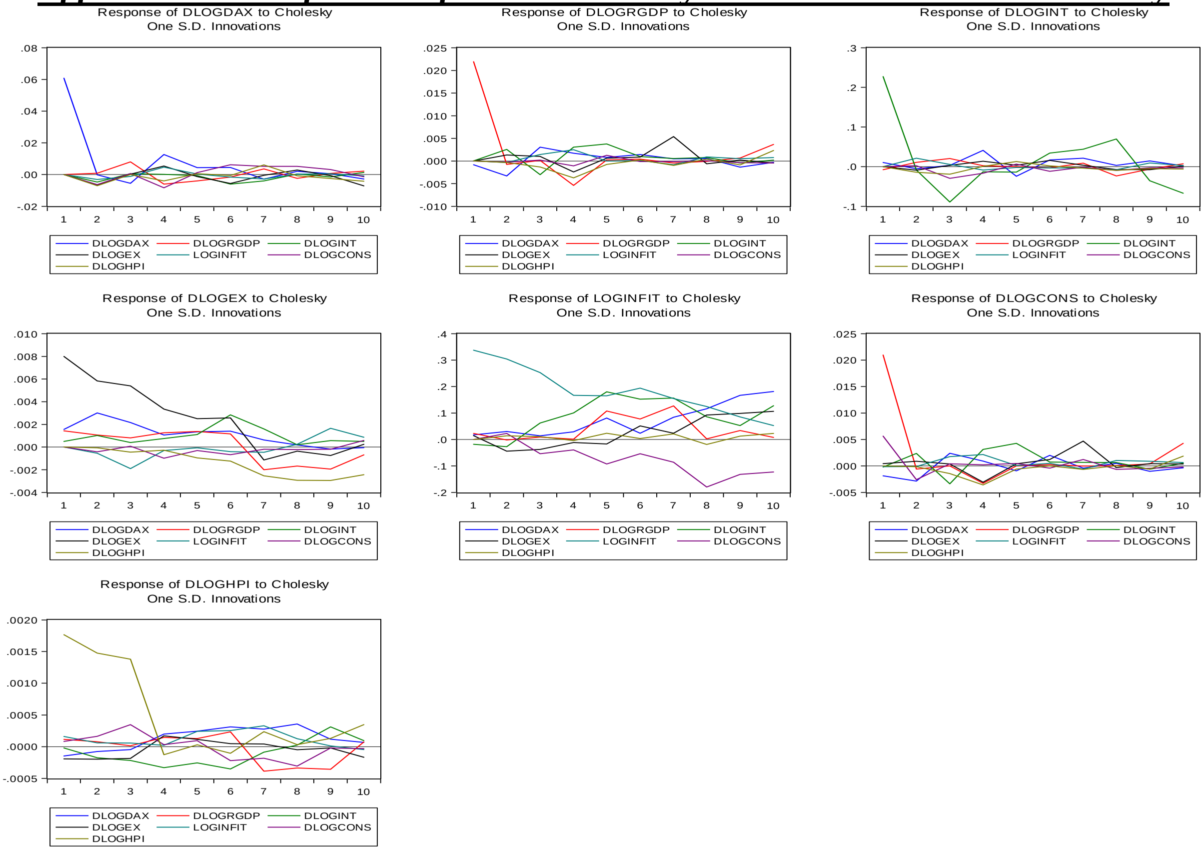
Appendix 22.5: Impulse Response to Cholesky One S.D. Innovations: South Africa



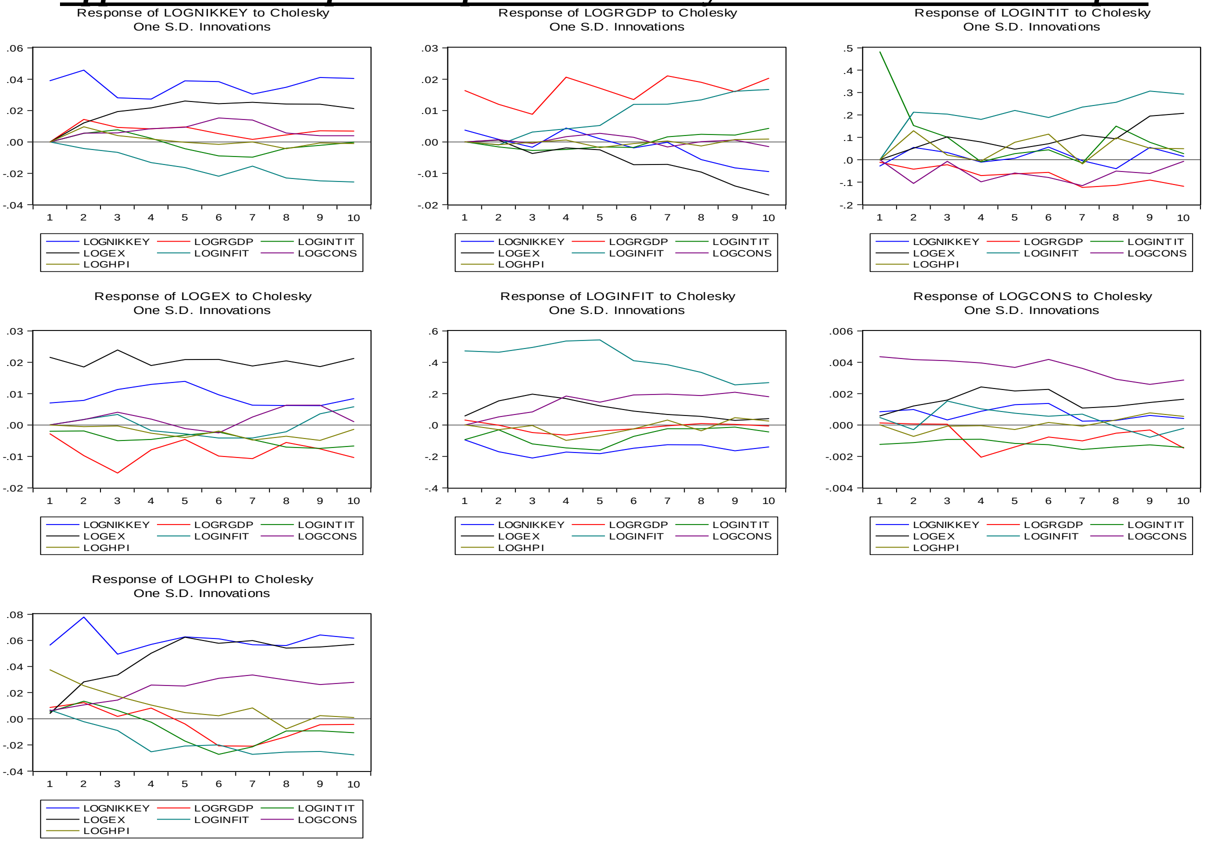
Appendix 22.6: Impulse Response to Cholesky One S.D. Innovations: France



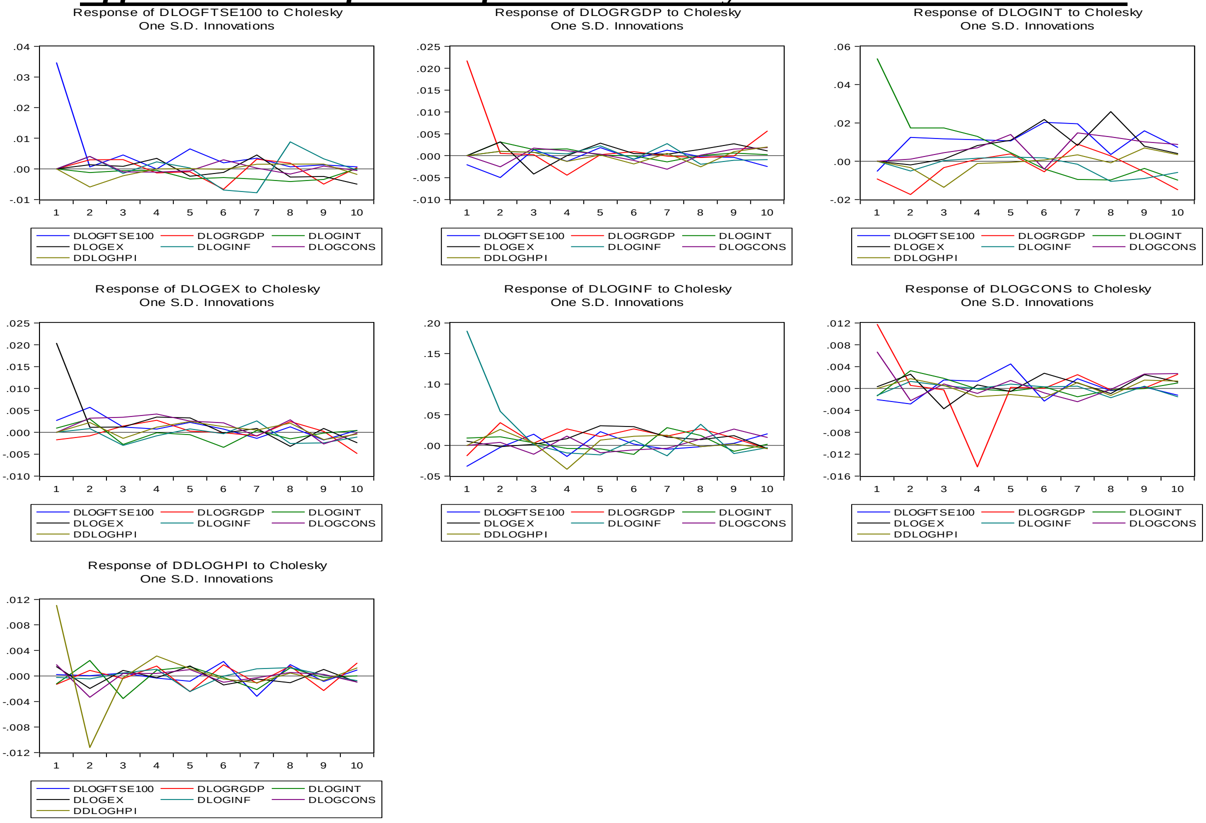
Appendix 22.7: Impulse Response to Cholesky One S.D. Innovations: Germany



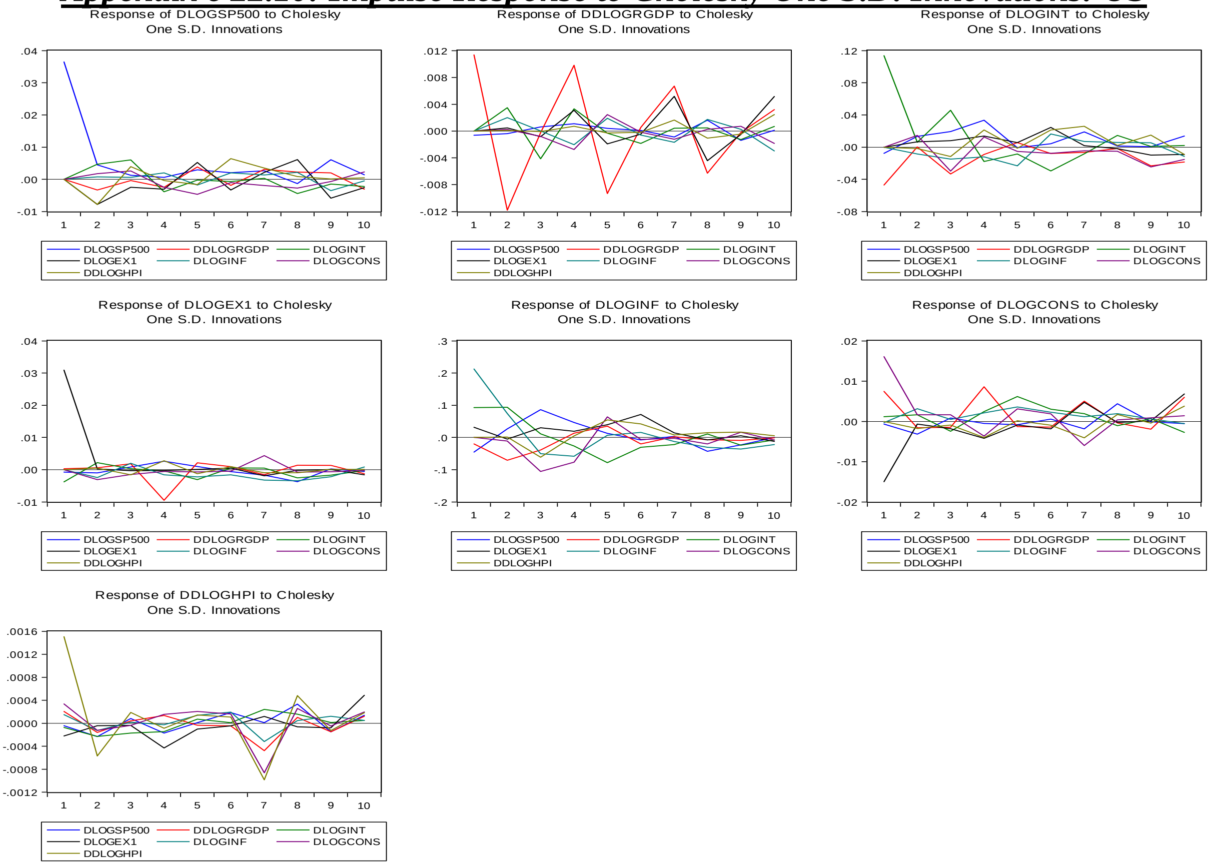
Appendix 22.8: Impulse Response to Cholesky One S.D. Innovations: Japan



Appendix 22.9: Impulse Response to Cholesky One S.D. Innovations: UK



Appendix e 22.10: Impulse Response to Cholesky One S.D. Innovations: US



Appendix 23: Variance Decomposition Analysis

Appendix 23.1: Variance Decomposition Results: Brazil

Variance Decomposition of LOGIBOV:								
Period	**S.E.**	LOGIBOV	**LOGRGDP**	**LOGINR**	LOGEX	LOGIFR	LOGCONS	LOGHPI
1	**0.07**	100	0	0	0	0	0	0
2	**0.10**	85.22	4.43	0.00	0.31	0.67	8.11	1.26
3	**0.13**	69.39	20.33	0.92	0.37	0.78	6.49	1.73
4	**0.15**	60.99	24.54	5.89	1.09	1.17	4.98	1.35
5	**0.17**	52.05	31.59	8.46	1.25	1.53	4.07	1.05
6	**0.19**	44.03	37.38	10.98	1.30	1.96	3.42	0.94
7	**0.20**	39.15	40.67	12.92	1.27	2.04	3.12	0.83
8	**0.22**	34.16	45.02	13.04	1.62	1.80	3.59	0.76
9	**0.23**	30.27	47.05	13.56	2.49	1.58	4.35	0.70
10	**0.24**	27.17	**48.91**	**13.21**	3.57	1.52	4.76	0.85

Appendix 23.2: Variance Decomposition Results: Russia

Variance Decomposition of LOGRTS:								
Period	**S.E.**	LOGRTS	LOGRGDP	LOGINR	**LOGEX**	**LOGIFR**	LOGCONS	LOGHPI
1	**0.08**	100	0	0	0	0	0	0
2	**0.12**	94.47	1.70	0.10	1.76	0.68	0.23	1.06
3	**0.15**	83.46	6.76	1.56	3.92	0.46	0.92	2.91
4	**0.19**	76.18	7.70	1.38	8.78	1.46	0.60	3.90
5	**0.23**	68.55	6.17	1.42	17.29	2.55	0.52	3.50
6	**0.25**	61.87	5.54	1.14	21.42	6.28	0.76	2.98
7	**0.28**	56.10	4.73	0.95	24.08	10.27	0.89	2.97
8	**0.30**	50.40	3.99	0.98	27.09	13.70	0.93	2.91
9	**0.33**	45.37	3.44	0.96	28.59	17.71	0.97	2.96
10	**0.35**	41.69	3.04	0.96	**29.40**	**20.98**	0.87	3.07

Appendix 23.3: Variance Decomposition Results: India

Variance Decomposition of LOGNIFTY:								
Period	**S.E.**	LOGNIFTY	**LOGRGDP**	LOGINR	**LOGEX**	LOGIFRIT	**LOGCONS**	LOGHPI
1	**0.04**	100	0	0	0	0	0	0
2	**0.06**	61.43	14.42	1.26	0.64	21.35	0.18	0.71
3	**0.07**	50.39	23.56	1.39	1.29	17.73	1.14	4.50
4	**0.07**	42.32	28.57	3.12	1.21	15.76	5.23	3.80
5	**0.09**	28.55	38.80	3.99	4.13	10.72	11.29	2.52
6	**0.10**	23.45	40.92	3.26	6.58	9.85	13.90	2.04
7	**0.11**	21.70	39.12	4.16	7.96	10.70	13.45	2.92
8	**0.11**	22.25	38.58	3.91	8.62	9.74	11.76	5.14
9	**0.12**	22.62	38.35	3.78	9.28	9.26	11.06	5.65
10	**0.12**	22.86	**37.15**	3.60	**10.99**	8.82	**10.84**	5.74

Appendix 23.4: Variance Decomposition Results: China

Variance Decomposition of LOGSHCOMP:								
Period	**S.E.**	LOGSHCOMP	LOGRGDP	LOGINR	**LOGEX**	LOGIFRIT	**LOGCONS**	LOGHPI
1	**0.07**	100	0	0	0	0	0	0
2	**0.09**	96.44	0.07	0.00	0.02	0.13	0.94	2.40
3	**0.11**	89.84	0.95	0.76	0.38	0.48	2.63	4.96
4	**0.13**	86.40	0.74	1.01	0.78	0.80	4.66	5.61
5	**0.16**	83.42	0.51	1.27	1.38	1.12	6.16	6.14
6	**0.19**	81.78	0.38	0.95	3.00	1.00	6.32	6.56
7	**0.21**	79.39	0.53	0.95	4.07	1.45	7.34	6.28
8	**0.24**	76.18	0.83	0.95	5.52	2.04	9.24	5.23
9	**0.27**	74.68	1.12	0.90	6.74	2.18	9.83	4.55
10	**0.30**	72.21	1.55	0.74	**8.54**	2.65	**10.17**	4.13

Appendix 23.5: Variance Decomposition Results: South Africa

Variance Decomposition of LOGJALSH:								
Period	**S.E.**	LOGJALSH	LOGRGDP	**LOGINR**	LOGEX	LOGIFR	LOGCONS	LOGHPI
1	**0.06**	100	0	0	0	0	0	0
2	**0.08**	92.26	1.34	4.26	0.00	0.28	1.86	0.00
3	**0.10**	87.95	1.23	4.12	0.94	0.31	4.08	1.38
4	**0.11**	83.65	1.22	6.52	1.46	0.72	5.33	1.10
5	**0.12**	80.24	2.10	8.23	1.54	1.23	5.67	0.98
6	**0.13**	73.87	2.84	12.94	3.30	1.33	4.86	0.86
7	**0.14**	69.47	3.43	15.87	4.49	1.56	4.40	0.78
8	**0.15**	65.14	4.02	19.66	4.01	1.42	5.06	0.69
9	**0.15**	62.25	4.07	23.01	3.83	1.29	4.87	0.69
10	**0.16**	60.16	4.14	**25.64**	3.52	1.17	4.59	0.79

Appendix 23.6: Variance Decomposition Results: France

Variance Decomposition of LOGCAC:								
Period	**S.E.**	LOGCAC	LOGRGDP	LOGINR	LOGEX	**LOGIFRIT**	LOGCONS	LOGHPI
1	**0.05**	100	0	0	0	0	0	0
2	**0.07**	98.27	0.06	0.08	0.25	0.00	1.30	0.03
3	**0.08**	96.61	0.10	0.06	0.37	0.04	2.56	0.25
4	**0.09**	92.37	0.40	0.55	1.33	0.18	3.51	1.66
5	**0.11**	89.14	1.20	0.47	1.89	2.31	3.37	1.62
6	**0.13**	85.05	2.74	0.39	1.83	5.09	3.09	1.82
7	**0.14**	83.13	3.17	0.41	1.82	7.06	2.59	1.81
8	**0.16**	81.65	3.26	0.51	1.84	8.85	2.17	1.71
9	**0.17**	79.39	3.84	0.50	1.87	10.81	1.89	1.70
10	**0.18**	77.65	4.62	0.69	1.63	**11.95**	1.65	1.80

Appendix 23.7: Variance Decomposition Results: Germany

Variance Decomposition of DLOGDAX:								
Period	**S.E.**	DLOGDAX	DLOGRGDP	DLOGINR	DLOGEX	LOGIFRIT	DLOGCONS	DLOGHPI
1	**0.06**	100	0	0	0	0	0	0
2	**0.06**	95.58	0.02	0.59	1.22	0.23	1.06	1.29
3	**0.06**	94.01	1.64	0.58	1.20	0.27	1.05	1.26
4	**0.07**	90.46	2.35	0.53	1.77	0.74	2.61	1.54
5	**0.07**	90.08	2.71	0.54	1.79	0.73	2.62	1.53
6	**0.07**	87.86	2.69	1.33	2.46	0.77	3.38	1.49
7	**0.07**	85.95	2.91	1.66	2.41	0.92	3.91	2.24
8	**0.07**	85.18	3.00	1.64	2.56	0.92	4.46	2.24
9	**0.07**	84.81	3.00	1.69	2.56	0.92	4.66	2.36
10	**0.07**	83.43	3.04	1.70	3.60	0.91	4.61	2.71

Appendix 23.8: Variance Decomposition Results: Japan

Variance Decomposition of LOGNIKKEY:								
Period	**S.E.**	LOGNIKKEY	LOGRGDP	LOGINRIT	**LOGEX**	**LOGIFRIT**	LOGCONS	LOGHPI
1	**0.04**	100	0	0	0	0	0	0
2	**0.06**	87.39	4.95	0.70	3.51	0.45	0.74	2.25
3	**0.07**	79.53	5.22	1.59	9.39	1.14	1.15	1.97
4	**0.08**	72.77	5.05	1.32	13.99	3.40	1.88	1.59
5	**0.10**	68.43	4.60	1.16	17.14	5.25	2.26	1.15
6	**0.11**	64.47	3.77	1.53	17.88	7.84	3.60	0.91
7	**0.12**	61.60	3.25	1.96	19.66	8.37	4.39	0.78
8	**0.13**	60.01	2.90	1.78	20.29	10.28	3.96	0.78
9	**0.14**	59.59	2.72	1.54	20.18	11.85	3.45	0.67
10	**0.15**	59.43	2.59	1.35	**19.69**	**13.25**	3.10	0.59

Appendix 23.9: Variance Decomposition Results: UK

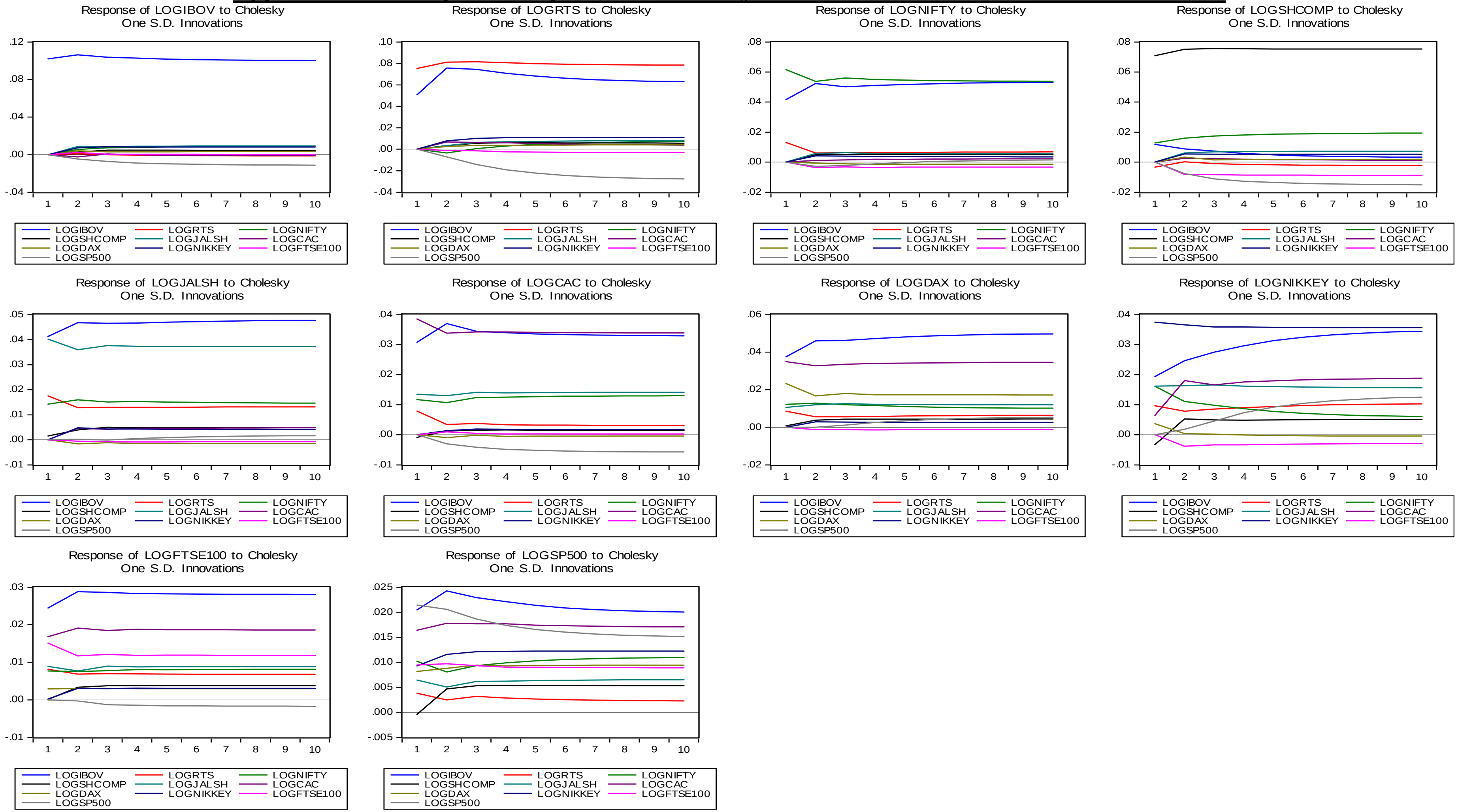
Variance Decomposition of DLOGFTSE100:								
Period	**S.E.**	DLOGFTSE100	DLOGRGDP	DLOGINR	DLOGEX	**DLOGIFR**	DLOGCONS	DDLOGHPI
1	**0.03**	100	0	0	0	0	0	0
2	**0.04**	93.75	0.67	0.11	0.14	1.31	1.30	2.71
3	**0.04**	92.56	1.33	0.13	0.19	1.43	1.34	3.02
4	**0.04**	91.18	1.43	0.15	1.06	1.81	1.40	2.97
5	**0.04**	90.29	1.44	0.90	1.42	1.74	1.37	2.84
6	**0.04**	83.78	4.22	1.36	1.40	4.77	1.84	2.63
7	**0.04**	78.51	4.54	1.94	2.58	8.13	1.71	2.58
8	**0.04**	73.50	4.45	2.80	2.82	12.11	1.76	2.55
9	**0.04**	71.21	5.67	3.37	3.06	12.34	1.75	2.60
10	**0.04**	70.10	5.59	3.32	4.37	**12.15**	1.74	2.74

Appendix 23.10: Variance Decomposition Results: US

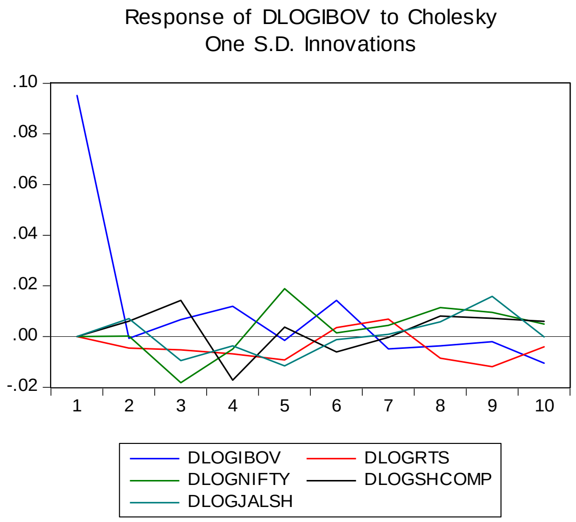
Variance Decomposition of DLOGSP500:								
Period	**S.E.**	DLOGSP500	DDLOGRGDP	DLOGINR	DLOGEX	DLOGIFR	DLOGCONS	DDLOGHPI
1	**0.04**	100	0	0	0	0	0	0
2	**0.04**	89.55	0.71	1.44	4.03	0.04	0.21	4.02
3	**0.04**	85.86	0.69	3.68	4.24	0.06	0.63	4.84
4	**0.04**	83.69	1.05	4.52	4.71	0.31	0.99	4.73
5	**0.04**	80.33	1.87	4.31	6.14	0.47	2.22	4.67
6	**0.04**	77.60	2.00	4.18	6.52	0.68	2.20	6.82
7	**0.04**	76.29	2.49	4.09	6.64	0.77	2.36	7.36
8	**0.04**	73.29	2.66	4.96	8.36	0.99	2.66	7.09
9	**0.04**	71.81	2.74	4.84	9.70	1.58	2.56	6.77
10	**0.04**	70.87	3.17	5.02	9.90	1.57	2.78	6.68

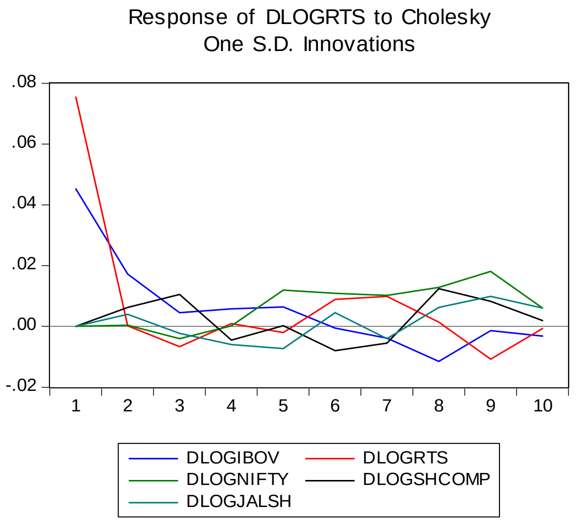
Appendix 24: Impulse Response Function: All Stock Market Indices

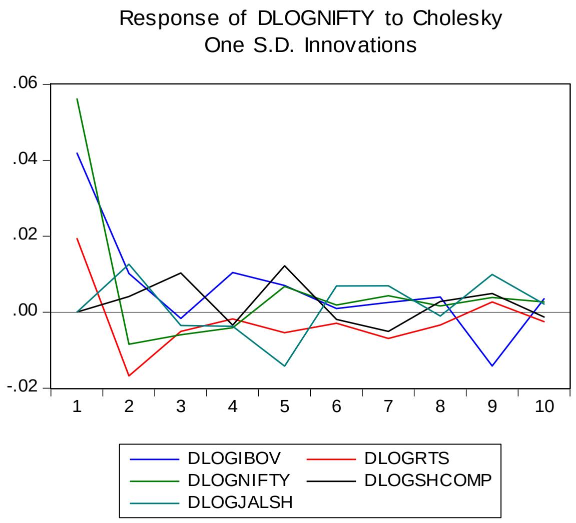
Appendix 24.1: Impulse Response to Cholesky One S.D. Innovations: All Stock Markets

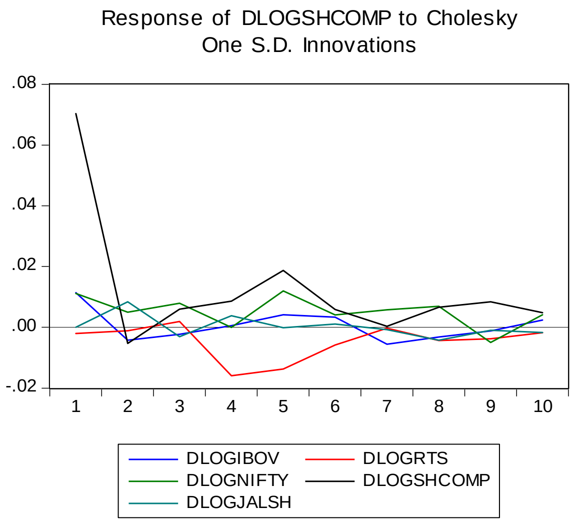


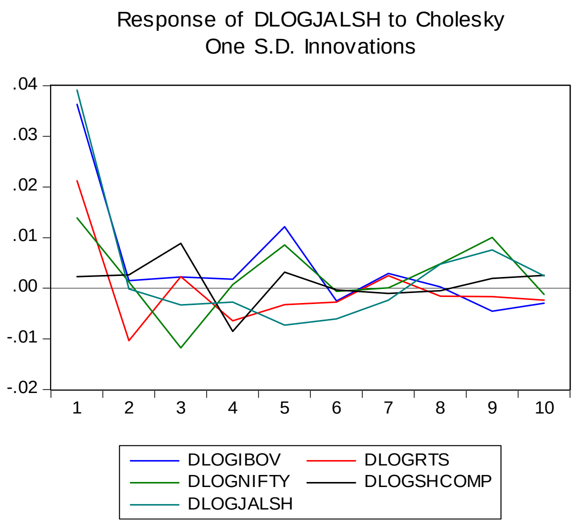
Appendix 24.2: Impulse Response to Cholesky One S.D. Innovations: BRICS Stock Markets





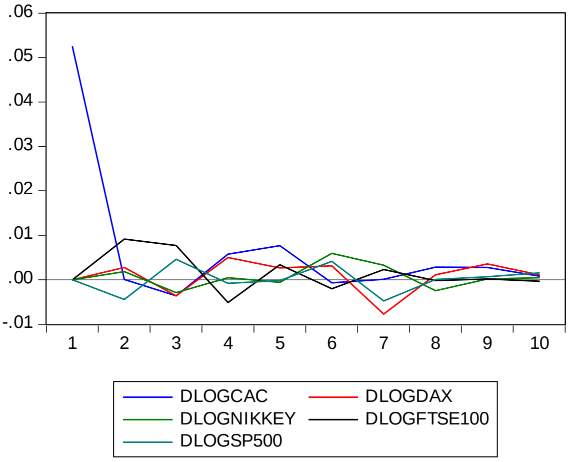




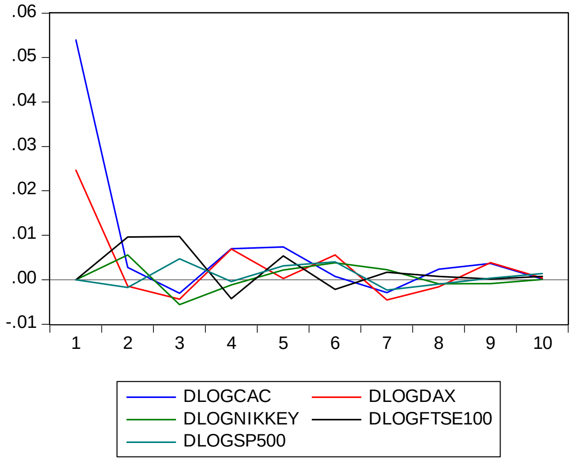


Appendix 24.3: Impulse Response to Cholesky One S.D. Innovations: Stock Markets of Developed Countries

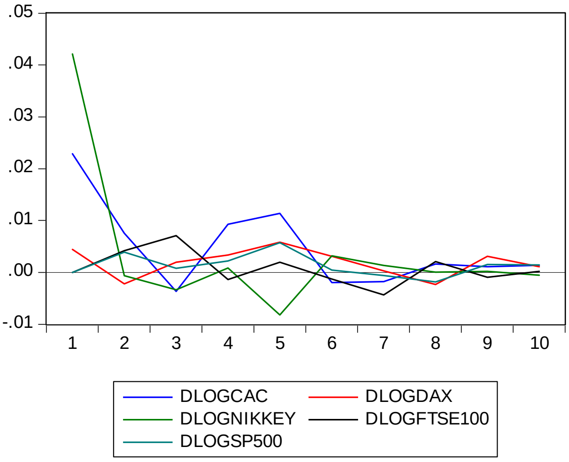
Response of DLOGCAC to Cholesky
One S.D. Innovations



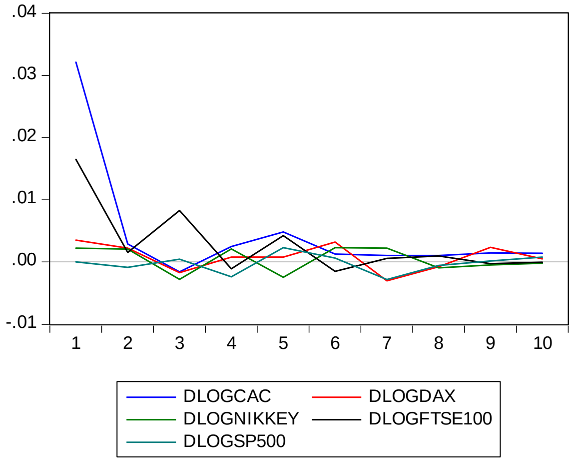
Response of DLOGDAX to Cholesky
One S.D. Innovations



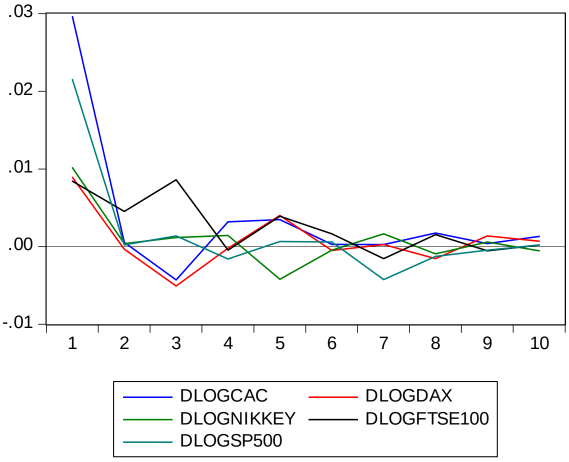
Response of DLOGNIKKEY to Cholesky
One S.D. Innovations



Response of DLOGFTSE100 to Cholesky
One S.D. Innovations



Response of DLOGSP500 to Cholesky
One S.D. Innovations



Appendix 24.4: Variance Decomposition Results: All Indices (Page 1 of 5)

Variance Decomposition of LOGIBOV											
Period	S.E.	**LOGIBOV**	LOGRTS	LOGNIFTY	LOGSHCOMP	LOGJALSH	LOGCAC	LOGDAX	LOGNIKKEY	LOGFTSE100	LOGSP500
1	0.10	100.00	-	-	-	-	-	-	-	-	-
2	0.15	99.02	0.00	0.14	0.03	0.33	0.03	0.07	0.25	0.03	0.10
3	0.18	98.50	0.00	0.25	0.09	0.44	0.02	0.07	0.38	0.02	0.22
4	0.21	98.15	0.00	0.32	0.12	0.51	0.01	0.08	0.43	0.02	0.35
5	0.23	97.88	0.00	0.39	0.14	0.56	0.01	0.08	0.47	0.01	0.46
6	0.26	97.67	0.01	0.43	0.15	0.59	0.01	0.08	0.49	0.01	0.55
7	0.28	97.51	0.01	0.47	0.16	0.62	0.01	0.08	0.51	0.01	0.62
8	0.29	97.37	0.01	0.50	0.16	0.64	0.01	0.09	0.53	0.01	0.68
9	0.31	97.26	0.01	0.53	0.17	0.66	0.01	0.09	0.54	0.01	0.74
10	0.33	**97.16**	0.01	0.55	0.17	0.67	0.01	0.09	0.55	0.01	0.78
Variance Decomposition of LOGRTS											
Period	S.E.	**LOGIBOV**	**LOGRTS**	LOGNIFTY	LOGSHCOMP	LOGJALSH	LOGCAC	LOGDAX	LOGNIKKEY	LOGFTSE100	LOGSP500
1	0.09	31.20	68.80	-	-	-	-	-	-	-	-
2	0.14	40.01	59.03	0.06	0.06	0.06	0.21	0.03	0.29	0.01	0.24
3	0.18	41.46	56.66	0.04	0.13	0.15	0.26	0.06	0.49	0.01	0.75
4	0.21	41.43	55.80	0.05	0.18	0.22	0.27	0.07	0.61	0.02	1.35
5	0.24	41.01	55.44	0.07	0.21	0.27	0.27	0.08	0.68	0.03	1.94
6	0.26	40.49	55.27	0.10	0.22	0.31	0.25	0.09	0.74	0.03	2.48
7	0.28	39.98	55.19	0.14	0.24	0.34	0.24	0.10	0.78	0.04	2.96
8	0.30	39.51	55.14	0.17	0.24	0.37	0.23	0.11	0.81	0.04	3.37
9	0.32	39.10	55.12	0.20	0.25	0.39	0.22	0.11	0.84	0.05	3.73
10	0.34	**38.74**	**55.10**	0.22	0.25	0.41	0.21	0.12	0.86	0.05	4.03

Appendix 24.4: Variance Decomposition Results: All Indices (Page 2 of 5)

Variance Decomposition of LOGNIFTY											
Period	S.E.	**LOGIBOV**	LOGRTS	**LOGNIFTY**	LOGSHCOMP	LOGJALSH	LOGCAC	LOGDAX	LOGNIKKEY	LOGFTSE100	LOGSP500
1	0.08	30.34	3.01	66.65	-	-	-	-	-	-	-
2	0.11	39.01	1.82	58.31	0.22	0.29	0.01	0.00	0.15	0.12	0.07
3	0.13	40.49	1.45	56.92	0.29	0.41	0.02	0.01	0.19	0.14	0.08
4	0.15	41.66	1.26	55.82	0.34	0.46	0.03	0.01	0.21	0.16	0.06
5	0.17	42.56	1.15	54.97	0.36	0.48	0.04	0.02	0.21	0.17	0.05
6	0.19	43.29	1.08	54.28	0.38	0.49	0.04	0.02	0.21	0.17	0.04
7	0.20	43.89	1.03	53.70	0.39	0.50	0.05	0.02	0.21	0.17	0.04
8	0.22	44.38	1.00	53.21	0.40	0.50	0.05	0.02	0.22	0.17	0.04
9	0.23	44.80	0.98	52.81	0.40	0.51	0.06	0.03	0.22	0.18	0.04
10	0.24	**45.14**	0.96	**52.47**	0.41	0.51	0.06	0.03	0.22	0.18	0.04
Variance Decomposition of LOGSHCOMP											
Period	S.E.	LOGIBOV	LOGRTS	LOGNIFTY	**LOGSHCOMP**	LOGJALSH	LOGCAC	LOGDAX	LOGNIKKEY	LOGFTSE100	LOGSP500
1	0.07	2.63	0.20	3.08	94.08	-	-	-	-	-	-
2	0.11	1.88	0.09	3.63	92.59	0.32	0.06	0.10	0.26	0.57	0.50
3	0.13	1.51	0.07	4.04	91.67	0.47	0.07	0.07	0.33	0.76	1.02
4	0.16	1.25	0.06	4.33	91.05	0.55	0.07	0.07	0.35	0.86	1.42
5	0.18	1.06	0.06	4.56	90.58	0.60	0.06	0.06	0.37	0.93	1.72
6	0.19	0.93	0.06	4.73	90.22	0.63	0.06	0.06	0.38	0.97	1.97
7	0.21	0.83	0.06	4.87	89.93	0.66	0.05	0.06	0.38	1.00	2.16
8	0.22	0.75	0.06	4.98	89.69	0.68	0.05	0.06	0.39	1.02	2.32
9	0.24	0.68	0.06	5.07	89.50	0.69	0.05	0.06	0.39	1.04	2.45
10	0.25	0.63	0.06	5.14	**89.34**	0.70	0.05	0.06	0.40	1.06	2.56

Appendix 24.4: Variance Decomposition Results: All Indices (Page 3 of 5)

Variance Decomposition of LOGJALSH:											
Period	S.E.	**LOGIBOV**	LOGRTS	LOGNIFTY	LOGSHCOMP	**LOGJALSH**	LOGCAC	LOGDAX	LOGNIKKEY	LOGFTSE100	LOGSP500
1	0.06	44.35	8.05	5.30	0.06	42.25	-	-	-	-	-
2	0.09	49.84	6.05	5.87	0.23	37.40	0.27	0.04	0.29	0.00	0.00
3	0.11	51.10	5.39	5.81	0.36	36.61	0.33	0.03	0.35	0.01	0.00
4	0.13	51.80	5.07	5.82	0.42	36.09	0.38	0.04	0.38	0.01	0.00
5	0.14	52.32	4.88	5.76	0.45	35.72	0.40	0.04	0.39	0.01	0.01
6	0.15	52.72	4.76	5.71	0.48	35.44	0.42	0.05	0.40	0.01	0.01
7	0.17	53.04	4.67	5.65	0.49	35.22	0.44	0.05	0.41	0.01	0.02
8	0.18	53.30	4.61	5.61	0.50	35.04	0.45	0.05	0.41	0.01	0.02
9	0.19	53.51	4.57	5.56	0.51	34.89	0.46	0.05	0.41	0.01	0.03
10	0.20	**53.68**	4.53	5.53	**0.52**	**34.76**	0.47	0.05	0.42	0.01	0.03
Variance Decomposition of LOGCAC:											
Period	S.E.	**LOGIBOV**	LOGRTS	LOGNIFTY	LOGSHCOMP	LOGJALSH	**LOGCAC**	LOGDAX	LOGNIKKEY	LOGFTSE100	LOGSP500
1	0.05	33.70	2.21	4.88	0.03	6.47	52.71	-	-	-	-
2	0.08	41.10	1.31	4.48	0.04	6.23	46.60	0.02	0.03	0.02	0.17
3	0.09	41.77	1.05	4.83	0.06	6.57	45.32	0.01	0.06	0.01	0.32
4	0.11	41.92	0.89	5.06	0.07	6.72	44.79	0.01	0.08	0.01	0.45
5	0.12	41.92	0.79	5.24	0.07	6.85	44.47	0.01	0.09	0.01	0.56
6	0.13	41.85	0.73	5.39	0.07	6.94	44.27	0.01	0.09	0.01	0.65
7	0.14	41.78	0.68	5.50	0.07	7.01	44.14	0.01	0.09	0.01	0.72
8	0.15	41.70	0.64	5.60	0.07	7.07	44.03	0.01	0.10	0.01	0.78
9	0.16	41.63	0.61	5.68	0.08	7.11	43.96	0.01	0.10	0.01	0.83
10	0.16	**41.57**	0.58	5.74	0.08	7.15	**43.90**	0.01	0.10	0.01	0.87

Appendix 24.4: Variance Decomposition Results: All Indices (Page 4 of 5)

Variance Decomposition of LOGDAX:											
Period	S.E.	**LOGIBOV**	LOGRTS	LOGNIFTY	LOGSHCOMP	LOGJALSH	**LOGCAC**	LOGDAX	LOGNIKKEY	LOGFTSE100	LOGSP500
1	0.06	40.22	2.07	4.26	0.01	3.16	34.73	15.56	-	-	-
2	0.09	48.10	1.40	4.27	0.21	3.45	31.20	11.23	0.11	0.02	0.00
3	0.11	50.24	1.18	4.05	0.30	3.63	30.27	10.14	0.14	0.03	0.01
4	0.12	51.55	1.09	3.86	0.34	3.66	29.83	9.44	0.15	0.03	0.05
5	0.14	52.52	1.04	3.67	0.36	3.64	29.50	8.99	0.15	0.03	0.10
6	0.15	53.24	1.01	3.51	0.38	3.61	29.25	8.66	0.15	0.03	0.16
7	0.17	53.81	0.99	3.37	0.39	3.58	29.05	8.42	0.15	0.03	0.21
8	0.18	54.26	0.99	3.25	0.40	3.55	28.89	8.23	0.15	0.03	0.26
9	0.19	54.62	0.98	3.15	0.40	3.53	28.76	8.07	0.15	0.03	0.30
10	0.20	**54.92**	0.98	3.07	0.41	3.51	**28.66**	7.95	0.15	0.03	0.34
Variance Decomposition of LOGNIKKEY:											
Period	S.E.	**LOGIBOV**	LOGRTS	LOGNIFTY	LOGSHCOMP	LOGJALSH	LOGCAC	LOGDAX	**LOGNIKKEY**	LOGFTSE100	LOGSP500
1	0.05	15.30	3.80	10.50	0.43	10.64	1.72	0.55	57.07	-	-
2	0.07	18.81	2.95	7.30	0.73	10.11	7.03	0.26	52.46	0.28	0.07
3	0.09	21.62	2.82	5.94	0.78	10.00	7.99	0.17	50.06	0.32	0.31
4	0.11	23.72	2.80	5.02	0.78	9.68	8.63	0.13	48.20	0.34	0.71
5	0.12	25.45	2.81	4.34	0.79	9.37	9.01	0.10	46.65	0.33	1.15
6	0.13	26.82	2.84	3.83	0.79	9.10	9.27	0.08	45.38	0.33	1.57
7	0.14	27.93	2.87	3.44	0.79	8.86	9.45	0.07	44.33	0.32	1.94
8	0.15	28.82	2.90	3.13	0.79	8.66	9.58	0.06	43.48	0.31	2.26
9	0.17	29.55	2.92	2.89	0.79	8.50	9.69	0.05	42.78	0.31	2.53
10	0.18	**30.15**	2.95	2.69	0.79	8.36	9.77	0.05	**42.19**	0.30	2.76

Appendix 24.4: Variance Decomposition Results: All Indices (Page 5 of 5)

Variance Decomposition of LOGFTSE100:											
Period	S.E.	**LOGIBOV**	LOGRTS	LOGNIFTY	LOGSHCOMP	LOGJALSH	**LOGCAC**	LOGDAX	LOGNIKKEY	LOGFTSE100	LOGSP500
1	0.04	45.22	5.06	4.51	0.00	5.99	21.35	0.64	0.00	17.23	-
2	0.05	50.11	4.00	4.11	0.39	4.85	22.75	0.62	0.33	12.84	0.00
3	0.07	51.29	3.73	4.05	0.58	4.98	22.60	0.61	0.42	11.70	0.04
4	0.08	51.66	3.58	4.11	0.67	5.01	22.76	0.60	0.47	11.07	0.06
5	0.09	51.89	3.48	4.14	0.73	5.04	22.82	0.60	0.50	10.72	0.09
6	0.09	52.01	3.42	4.18	0.76	5.07	22.86	0.60	0.52	10.49	0.10
7	0.10	52.09	3.37	4.20	0.79	5.08	22.90	0.59	0.53	10.33	0.11
8	0.11	52.14	3.34	4.23	0.80	5.10	22.92	0.59	0.54	10.21	0.12
9	0.12	52.18	3.31	4.24	0.82	5.11	22.94	0.59	0.55	10.12	0.13
10	0.12	**52.21**	3.29	4.26	0.83	5.12	**22.96**	0.59	0.56	10.04	0.14
Variance Decomposition of LOGSP500:											
Period	S.E.	**LOGIBOV**	LOGRTS	LOGNIFTY	LOGSHCOMP	LOGJALSH	**LOGCAC**	LOGDAX	LOGNIKKEY	LOGFTSE100	LOGSP500
1	0.04	27.07	0.94	6.71	0.01	2.68	17.38	4.30	5.55	5.77	29.60
2	0.06	30.52	0.63	5.13	0.67	2.04	17.73	4.36	6.67	5.56	26.70
3	0.07	30.81	0.62	5.15	1.01	2.11	18.08	4.68	7.36	5.43	24.73
4	0.08	30.76	0.60	5.39	1.21	2.19	18.45	4.86	7.85	5.36	23.33
5	0.09	30.57	0.57	5.67	1.34	2.28	18.70	5.02	8.21	5.35	22.28
6	0.10	30.33	0.55	5.94	1.43	2.36	18.90	5.16	8.49	5.35	21.48
7	0.11	30.10	0.53	6.19	1.50	2.42	19.06	5.28	8.72	5.36	20.83
8	0.11	29.89	0.52	6.41	1.55	2.48	19.19	5.37	8.90	5.38	20.31
9	0.12	29.70	0.50	6.60	1.59	2.53	19.30	5.46	9.06	5.39	19.87
10	0.12	**29.53**	0.49	6.77	1.63	2.57	**19.39**	5.53	9.19	5.40	19.50

Appendix 24.5: Variance Decomposition Results: BRICS Indices (Page 1 of 2)

Variance Decomposition of DLOGIBOV:						
Period	S.E.	**DLOGIBOV**	DLOGRTS	DLOGNIFTY	DLOGSHCOMP	DLOGJALSH
1	0.10	100.00	-	-	-	-
2	0.10	98.81	0.23	0.00	0.41	0.55
3	0.10	92.27	0.50	3.37	2.45	1.42
4	0.10	89.01	0.91	3.44	5.16	1.48
5	0.10	84.22	1.64	6.53	5.01	2.61
6	0.11	84.11	1.71	6.40	5.21	2.56
7	0.11	83.64	2.12	6.52	5.17	2.55
8	0.11	81.48	2.69	7.47	5.59	2.77
9	0.11	77.90	3.73	7.88	5.77	4.73
10	0.11	**77.61**	3.81	7.96	5.97	4.65
Variance Decomposition of DLOGRTS:						
Period	S.E.	**DLOGIBOV**	**DLOGRTS**	DLOGNIFTY	DLOGSHCOMP	DLOGJALSH
1	0.09	26.45	73.55	-	-	-
2	0.09	28.96	70.34	0.00	0.49	0.20
3	0.09	28.52	69.20	0.20	1.83	0.26
4	0.09	28.61	68.46	0.19	2.05	0.68
5	0.09	28.29	66.60	1.83	2.00	1.28
6	0.09	27.40	65.38	3.10	2.65	1.47
7	0.10	26.78	64.58	4.15	2.90	1.60
8	0.10	26.77	61.30	5.65	4.36	1.92
9	0.10	25.19	58.78	8.51	4.76	2.76
10	0.10	**25.08**	**58.30**	8.78	4.76	3.09
Variance Decomposition of DLOGNIFTY:						
Period	S.E.	**DLOGIBOV**	**DLOGRTS**	**DLOGNIFTY**	DLOGSHCOMP	DLOGJALSH
1	0.07	33.17	7.10	59.73	-	-
2	0.08	31.36	11.14	54.54	0.28	2.67
3	0.08	30.47	11.23	53.49	2.01	2.79
4	0.08	31.46	11.01	52.44	2.15	2.95
5	0.08	29.95	10.67	49.40	4.21	5.76
6	0.08	29.68	10.70	48.98	4.23	6.41
7	0.08	29.14	11.17	48.21	4.52	6.97
8	0.08	29.21	11.27	47.98	4.60	6.95
9	0.09	30.58	10.83	45.92	4.72	7.96
10	0.09	**30.61**	**10.87**	**45.82**	4.72	7.98

Appendix 24.5: Variance Decomposition Results: BRICS Indices (Page 2 of 2)

Variance Decomposition of DLOGSHCOMP:						
Period	S.E.	DLOGIBOV	DLOGRTS	DLOGNIFTY	**DLOGSHCOMP**	DLOGJALSH
1	0.07	2.48	0.08	2.39	95.06	-
2	0.07	2.76	0.10	2.78	93.04	1.33
3	0.07	2.79	0.16	3.86	91.71	1.48
4	0.08	2.63	4.52	3.63	87.57	1.64
5	0.08	2.61	6.91	5.44	83.57	1.47
6	0.08	2.74	7.31	5.61	82.87	1.46
7	0.08	3.17	7.24	6.06	82.07	1.46
8	0.08	3.26	7.38	6.64	81.03	1.70
9	0.08	3.23	7.47	6.90	80.73	1.68
10	0.08	3.29	7.46	7.09	**80.45**	1.71
Variance Decomposition of DLOGJALSH:						
Period	S.E.	**DLOGIBOV**	**DLOGRTS**	**DLOGNIFTY**	DLOGSHCOMP	**DLOGJALSH**
1	0.06	37.75	12.90	5.48	0.15	43.73
2	0.06	36.58	15.43	5.35	0.34	42.31
3	0.06	34.45	14.61	8.61	2.35	39.98
4	0.06	33.45	15.20	8.35	4.10	38.91
5	0.07	34.60	14.40	9.48	4.05	37.47
6	0.07	34.34	14.41	9.38	4.00	37.88
7	0.07	34.36	14.48	9.33	4.01	37.82
8	0.07	33.99	14.38	9.75	3.97	37.92
9	0.07	33.07	13.86	11.55	3.89	37.64
10	0.07	**33.05**	13.89	11.52	4.00	**37.53**

Appendix 24.5: Variance Decomposition Results: Indices of the Developed Countries (Page 1 of 3)

Variance Decomposition of DLOGCAC:						
Period	S.E.	**DLOGCAC**	DLOGDAX	DLOGNIKKEY	DLOGFTSE100	DLOGSP500
1	0.05	100.00	-	-	-	-
2	0.05	96.02	0.26	0.11	2.92	0.68
3	0.05	92.74	0.70	0.39	4.80	1.36
4	0.06	91.24	1.49	0.39	5.54	1.35
5	0.06	90.85	1.67	0.39	5.77	1.31
6	0.06	88.99	1.94	1.46	5.78	1.82
7	0.06	86.35	3.68	1.74	5.77	2.46
8	0.06	86.19	3.70	1.92	5.74	2.45
9	0.06	85.88	4.06	1.90	5.71	2.45
10	0.06	**85.78**	4.09	1.91	5.70	2.51

Appendix 24.5: Variance Decomposition Results: Indices of the Developed Countries (Page 2 of 3)

Variance Decomposition of DLOGDAX						
Period	S.E.	**DLOGCAC**	**DLOGDAX**	DLOGNIKKEY	DLOGFTSE100	DLOGSP500
1	0.06	82.72	17.28	-	-	-
2	0.06	79.84	16.69	0.84	2.54	0.09
3	0.06	76.41	16.43	1.63	4.88	0.66
4	0.06	75.40	17.15	1.61	5.20	0.64
5	0.06	74.93	16.74	1.69	5.77	0.86
6	0.06	73.72	17.23	2.01	5.79	1.24
7	0.06	73.18	17.55	2.11	5.80	1.36
8	0.06	73.12	17.57	2.13	5.80	1.37
9	0.06	72.94	17.80	2.13	5.76	1.37
10	0.06	**72.89**	**17.79**	2.13	5.77	1.41
Variance Decomposition of DLOGNIKKEY						
Period	S.E.	**DLOGCAC**	DLOGDAX	**DLOGNIKKEY**	DLOGFTSE100	DLOGSP500
1	0.05	22.61	0.85	76.54	-	-
2	0.05	24.07	1.02	73.56	0.72	0.63
3	0.05	23.84	1.14	71.66	2.73	0.64
4	0.05	26.19	1.52	68.80	2.69	0.80
5	0.05	28.28	2.55	64.74	2.58	1.86
6	0.05	28.16	2.86	64.52	2.61	1.85
7	0.05	28.04	2.84	64.05	3.23	1.85
8	0.05	27.98	3.01	63.70	3.36	1.95
9	0.05	27.89	3.32	63.40	3.37	2.02
10	0.05	**27.90**	3.35	**63.30**	3.37	2.09
Variance Decomposition of DLOGFTSE100						
Period	S.E.	**DLOGCAC**	DLOGDAX	DLOGNIKKEY	**DLOGFTSE100**	DLOGSP500
1	0.04	78.09	0.94	0.38	20.60	-
2	0.04	77.50	1.30	0.69	20.45	0.06
3	0.04	73.21	1.42	1.20	24.10	0.07
4	0.04	72.72	1.45	1.49	23.88	0.46
5	0.04	71.70	1.44	1.84	24.23	0.79
6	0.04	70.86	2.11	2.16	24.06	0.81
7	0.04	69.85	2.67	2.45	23.72	1.31
8	0.04	69.75	2.70	2.50	23.72	1.33
9	0.04	69.52	3.05	2.50	23.60	1.32
10	0.04	**69.52**	3.06	2.50	**23.56**	1.36

Appendix 24.5: Variance Decomposition Results: Indices of the Developed Countries (Page 3 of 3)

Variance Decomposition of DLOGSP500:						
Period	S.E.	**DLOGCAC**	DLOGDAX	DLOGNIKKEY	**DLOGFTSE100**	**DLOGSP500**
1	0.04	55.07	4.96	6.49	4.46	29.02
2	0.04	54.37	4.90	6.41	5.67	28.64
3	0.04	51.62	6.05	6.04	9.55	26.74
4	0.04	51.75	6.00	6.11	9.48	26.66
5	0.04	50.65	6.68	6.89	10.00	25.77
6	0.04	50.56	6.68	6.89	10.13	25.74
7	0.04	49.92	6.60	6.94	10.14	26.40
8	0.04	49.81	6.70	6.95	10.20	26.34
9	0.04	49.74	6.79	6.96	10.20	26.31
10	0.04	**49.76**	6.81	6.96	**10.19**	**26.27**

Appendix 25.1: Comparative Table of Selected Literature with Thesis Results

Objective1: to determine sets of macroeconomic variables those are statistically significant when predicting relevant stock market indices

NO.	AUTHORS	YEARS	RESULTS	THESIS RESULTS	COMMENTS
1	**Campbell and Shiller**	1988	evidence revealed that a long term moving average of real earnings predicts real dividends it investigates the relationship between macroeconomics variables and stock market and how the variables predict stock prices	indicate that that the selected macroeconomic variables and/or the dummy variables fail to describe the stock market indices of the developed countries, implying that other factors need to be considered in this aspect. However, relationship is found between stock market indices and macroeconomic variables in the BRICS context.	Not similar as in the US (developed countries), current selected variables cannot explain change in the stock market indices.
2	**Chen et al**	1986	their results reveal that stock returns are exposed to systematic economic news and priced in accordance with their exposures and are also affected by some of the macroeconomic variables		Not similar as in the US (developed countries), current selected variables cannot explain change in the stock market indices.
3	**Dritsaki**	2005	evidence revealed the existence of a cointegration vector, which implies that the variables tend to evolve together over time.		Similar as in the Greek context as in the BRICS context macroeconomic variables and stock indices have a proven relationship.
4	**Gallegati**	2005	the paper found that stock market tends to lead economic activity		Not similar as in the US (developed countries), current selected variables cannot explain change in the stock market indices.
5	**Humpe and Macmillan**	2007	they emphasise on the issue of selecting relevant variables and found out a positive relationship between industrial production and stock price and a negative relationship between stock price and consumer price index in the US.		Not similar as in the US (developed countries), current selected variables cannot explain change in the stock market indices. However, it is similar to the present paper as in Japan, the thesis has demonstrated evidence of relationship between stock market index and macroeconomic variables.

Appendix 25.2: Comparative Table of Selected Literature with Thesis Results

Objective 2: to identify any statistically significant long run relationship and - or linkage between selected sets of macroeconomic variables and their relevant stock market indices

no.	authors	years	results	thesis results	comments
1	**Maysami et al**	2004	evidence indicated that the stock market and property index have significant long-run relationship with all the selected macroeconomic variables	results indicate that long-run relationship is found among the stock market indices and the selected set of macroeconomic variables for all the BRICS countries, as well as for France and Japan among the developed countries. Importantly, the VECM models run for the BRICS countries can be used in predicting the stock market index of the relevant country while referring to the developed countries, the models are valid for estimating the relationship among the selected variables only for Japan.	The results are similar with the emerging markets, as long run is found in the BRICS as well as in Singapore.
2	**Moolman and du Toit**	2005	evidence showed existence of short term relationship between the variables with the gdp highly significant in predicting JALSH / FTSE returns		Both results are similar as short term regarding the South African Markets. Both supported that short-term relationship exist within this market which ca
3	**Nasseh and Strauss**	2000	evidence concluded that stock prices are determined by macroeconomic activity		Evidence of relationship between stock market and macroeconomic variables, especially in the Japanese context is proven.
4	**Ratanapakorn and Sharma**	2007	stock prices negatively relate to the long-term interest rate, but positively relate to the money supply, industrial production, inflation, the exchange rate and the short-term interest rate		Not similar as long run relationship is not observed in most of the advanced economies except for France and Japan. Precisely, in the US context,
5	**Yunus**	2012	results indicate that each property market is co-integrated with its respective stock market and with key macroeconomic factors in the long run and is also influenced by the overall economy in the short run.		Not similar as long run does not exist in most of the advanced economies except for France and Japan. However, this thesis demonstrated that there is long run between stock market and macroeconomic variables in the emerging markets.

Appendix 25.3: Comparative Table of Selected Literature with Thesis Results

Objective 3: To identify the directional and potentially causal relationship between sets of selected macroeconomic variables and their relevant stock market indices

no.	authors	years	results	thesis results	comments
1	**Agrawal Et al**	2010	Evidence revealed that Nifty returns as well as Exchange Rates were non-normally distributed. unidirectional relationship between Nifty returns and Exchange Rates, running from the former towards the latter.	The results indicate causation from IBOV to INT, from INF to NIFTY, as well as from CAC to HPI and from FTSE100 to EXR	Not similar with unidirectional relationship from macroeconomic variables to stock market in emerging market (India). However, the results become similar with unidirectional from stock market to macroeconomic variables in Brazil. In the advanced economies, France and UK for instance, the relationship, unidirectional, is from the stock markets to the macroeconomic variables.
2	**Mahmood and Dinniah**	2007	It indicates the existing of a long run equilibrium relationship between and among variables in only four countries, i.e., Japan, Korea, Hong Kong and Australia		Conform as the current thesis has demonstrated long-ruin relationship in the BRICS emerging markets along with Japan. This is identical to the present research paper results.
3	**Iltuzer And Tas**	2012	they found the presence of bidirectional causality between stock prices and interest rate		Not similar as the present thesis has not found any relationship between stock market and interest rate, except for the Brazilian market. However, this relationship is unidirectional from the IBOV to the INT
4	**Ahmed**	2008	the author concluded that a long term causal relationship was present between variables.		Similar as the thesis found also long run relationships in the BRICS context which India is part. However, in the short-run only inflation rate granger causes the Indian stock market.
5	**Shahbaz**	2008	results reveal that there is a very strong positive relationship between stock market development and economic growth. a bi-direction relationship exits in the long run while a one way causality is present from the stock market		Similar as there is evidence of long-run and short run relationship in the BRICS between stock market and macroeconomic variables as demonstrated in Pakistan by the corresponding author.

Appendix 25.4: Comparative Table of Selected Literature with Thesis Results

Objective 4: To determine intensities of the volatility of selected macroeconomic variables on their relevant stock market indices

no.	authors	years	results	thesis results	comments
1	**Choo Et Al.**	2011	reviews that macroeconomic variables used in this research have no impact on the volatility of Japanese stock markets.	The GARCH models run for the developed countries are not valid, excluding Japan while the GARCH effect is statistically significant for all of the BRICS countries implying that today's stock market index volatility bears the impact of the previous day's volatility, and the ARCH effect is significant for South Africa, meaning that today's volatility is also impacted by the previous day's stock market index information as suggested by the results.	Not similar as stock market of Japan volatility is captured within this present thesis. however, for the other developed countries, GARCH is not useful in capturing their stock market volatility.
2	**David Morelli**	2002	he concluded that his selected variables were not able to explain the ftse100 volatility, recommending that different variables be explored in assessing the UK index volatility.		Similar as the present variables cannot to explain the FSTE and most of the developed countries stock market volatility.
3	**Morelli**	2002	Research shows that the macroeconomic variables couldn't explain FTSE100 volatility.		Similar as the present variables cannot to explain the FSTE and most of the developed countries stock market volatility.
4	**Leon**	2008	reveals that the conditional market returns have a negative and significant relation with the interest rates.		Similar as GARCH can help explain volatility in emerging markets.
5	**Kapital**	1998	evidence revealed that the macroeconomic variables had significant and positive effect on volatility of the us stock market		Not similar as GARCH in the current context cannot explain US stock market volatility.

Appendix 25.5: Comparative Table of Selected Literature with Thesis Results

Objective 5: To determine the comparable effectiveness of the VAR or VECM models as compared to GARCH models when predicting relevant stock market indices

no.	authors	years	results	thesis results	comments
1	**Asgharian et al**	2013	evidence showed that the macroeconomic variables significantly enhance the forecast ability of the model in the long run.	The results suggest that the VECM forecasts outperform the GARCH forecast model, and, thus, have better fit to the actual series	The similarity is that those present papers and the thesis both try to analyse predictive power of selected macroeconomic variables on selected stock markets. However, the thesis is UNIQUE is comparing predictive power of methods used. For instance, VECM/VAR and the GARCH model.
2	**Abugri**	2008	results reveal that domestic macroeconomic shocks have different effects within each of the Latin markets.		
3	**Fedorova et al**	2010	the results indicated that the Russian index was mainly affected by oil price and the us dollar exchange rate		
4	**Hising et al**	2011	the paper found that stock market is influenced by some macroeconomic variables		
5	**Hondroiannis et al**	2001	evidence revealed that the stock returns didn't lead changes in macro-variables and the macro-variables and foreign stock market only partially explained the stock market movements		

Appendix 25.6: Comparative Table of Selected Literature with Thesis Results

Objective 6: To determine any significant reactive effect of the 2008 financial crisis on relevant stock market indices

no.	authors	years	results	thesis results	comments
1	**Aweda et al**	2014	the financial crisis of 2008 has negative effect on the UK economy.	results suggest that the aforementioned structural breaks have influence on the stock market indices of the following countries: Brazil, Russia, China, South Africa, as well as France, Japan and UK.	Similar as the 2008 financial crisis impacted the UK in the present thesis.
2	**Bong-Han Kim et al**	2015	they concluded that the markets were vulnerable and fragile and agreed on the existence of the financial contagion around the fall of the Lehman brothers		Similar as the financial crisis of 2008 has proven affecting most of the selected economies.
3	**Neaime**	2012	results indicated that most of the countries were affected because they are correlated with developed countries that were mostly affected by the financial crisis except Saudi Arabia and Tunisia due to strong fiscal stance and firm appropriate foreign exchange reserves mechanisms		Similar has correlation exist between financial crisis and stock market index variations
4	**Rachdi et al**	2013	results reveal that the Tunisian index returns were not directly affected by the international financial crisis		Not similar as most of the BRICS countries except India were affected by the 2008 financial crisis. That should be the case for a developing country such as Tunisia.
5	**Naouui et al**	2010	There Exist a Significant Conditional Correlation Between All the Emerging Market Returns		As those market share contamination from outside, this prove that there is possible correlation between emerging markets

Appendix 25.7: Comparative Table of Selected Literature with Thesis Results

Objective 7: To determine the impact of the (US) quantitative easing monetary policy during the 2008 financial crisis on the relevant stock market indices

no.	authors	years	results	thesis results	comments
1	**Kurihara**	2006	The Interest Rate Have Not Impacted Japanese Stock Prices but The Exchange Rate and USA Did.	results suggest that the VECM/VAR models are not valid to predict the association among the stock market indices accurately. Moreover, causal relationships are found only from IBOV to RTS and to NIFTY from the BRICS countries, which complies with the results of all the causality tests.	Similar as quantitative easing has impact on the selected market
2	**Berkmen**	2012	The Paper Found Bank of Japan 'S Monetary Policy Had an Impact on Economic Activity		Similar to the present thesis where the quantitative easing decided in the US impact most of the selected economies in the research.
3	**Fujiki et al**	2002	Results revealed that the effect of the policy duration observed in Japanese financial markets emerged via the expectations channel on the future course of monetary policy actions, supplemented significantly by liquidity effects in the severe financial conditions		Similar as quantitative easing has impact on the selected market
4	**Kurihn**	2006	Results Reveal That It Was Effective but Limited to Scope		Similar as quantitative easing has impact on the selected market

Appendix 25.8: Comparative Table of Selected Literature with Thesis Results

Objective 8: To determine the nature of association (if any) between and across the relevant stock market indices

no.	authors	years	results	thesis results	comments
1	**Palamalai et al**	2013	the paper confirmed a well-defined long-run equilibrium relationship among the stock markets. the variance decomposition revealed stock market interdependencies and dynamic interaction among markets		Not similar are most of the countries specially in the BRICS context are not integrated expect Brazil with Russia and India
2	**Tripathi et al**	2012	the cointegration test documented the existence of a long -run and short -run between the Indian stock markets and the markets of the advanced emerging countries.		Similar even the long run between the country is not significant is the present thesis
3	**Singh**	2010	Chinese and Indian markets have at least had a unilateral causality with all four the developed markets.	results suggest that the VECM/VAR models are not valid to predict the association among the stock market indices accurately. Moreover, causal relationships are found only from IBOV to RTS and to NIFTY from the BRICS countries, which complies with the results of all the causality tests.	Not similar as China appears to be isolated from the other markets of the present study.
4	**Raj et al**	2008	results indicated that the presence on international integration of the Indian stock market in terms of the us dollar but not in its local currency		Not similar because India and the US are not integrated in the present thesis based on evidence
5	**Everaert et al**	2014	the results suggest that integration has increased in all countries from the 1980s onward until the great recession and that countries belonging to the EU and the euro area have not experienced higher integration than other European economies.		Similar because it seems that developed countries do not have a significant market integration.

Appendix 25.9: Comparative Table of Selected Literature with Thesis Results

Objective 9: To determine any dynamic relationship between the relevant stock market indices and the selected macroeconomic variables

no.	authors	years	results	thesis results	comments
1	**Iglesias et al**	2011	effects of monetary policy shocks are greater in the US while the effect of stock market is smaller in the US than in the Caribbean	The results of the impulse response and the variance decomposition analyses showed that the stock market indices of the developed countries are highly influenced and explained by their own innovations, which is estimated **70-80%**. Again, an exception is Japan, for which only approximately **60%** of NIKKEY is explained by its own innovations, and the **EXR and INF** among the macroeconomic variables also have high influence. In case of the BRICS countries, it is worth to note that **Chinese stock market index** is highly affected by its own **innovations** compared to the stock markets of the other countries for which, besides of being influenced by their own innovations, **the effect of some of the selected macroeconomic variables is more significant**.	Similar as macroeconomic variables have impact on the Japanese market index
2	**Sadorsky**	1999	evidence showed that oil prices and oil price volatility both play crucial roles in affecting real stock returns		Not similar as the selected macroeconomic variables do not impact developed economies, especially the US market.
3	**Balgacem et al**	2012	evidence showed a direct reaction of French and German investors to some common as well as specific macroeconomic news		Not similar as in the French and German context, the selected macroeconomic variables do not have an impact on the stock markets selected.
4	**Bjørnland et al**	2005	evidence showed a substantial degree of inter-dependence between monetary policy decisions and stock prices and a shock to either sector has a strong and immediate impact on the other sector.		Not similar as the selected macroeconomic variables do not impact developed economies. Developed countries stock market explained mostly the change in their respective indices, not macroeconomic factors.
5	**Li et al**	2007	results reveal that monetary policy shocks lead to a decrease in stock prices in both countries but has more impact on bigger economies as they stock prices fall significantly lower compared to small economies		Not similar as the selected macroeconomic variables do not impact developed economies. Developed countries stock market explained mostly the change in their respective indices, not macroeconomic factors.

Appendix 25.10: Comparative Table of Selected Literature with Thesis Results

Objective 10: To determine any dynamic relationship across sets of relevant stock market indices

no.	authors	years	results	thesis results	comments
1	**Arshanap**	1993	the results show that the degree of international co-movements among stock price indices has increased substantially, with the Nikkei index the only exception. furthermore, the us stock market is found to have a considerable impact on the French, German and UK markets in the post-crash period.	it must be noted that the **Chinese and Brazilian** stock markets are the most independent markets, **French stock market** is also considered as independent from the other stock markets. It is important to mention here, that when analysing by using the all stock markets, the **Brazilian market highly influences** all the other stock market except for the **Chinese stock market**, which can be the effect of the Cholesky ordering of the stock market indices. Finally, we can be sure only in the existence of the independent nature in the **Chinese stock market**.	Not similar as the French economies better explains changes in the French stock market.
2	**Ghosh et al**	1999	evidence suggests that some countries are dominated by the us, some are dominated by japan, and the remaining countries are dominated by neither during the time period investigate.		Not similar as the US and Japan do not dominated other stock market as before.
3	**Masihand et al**	2010	the results suggested that established markets and Hong Kong, consistently were the initial receptors of exogenous shocks to the (long-term) equilibrium relationships and the other newly industrialised countries stock markets, particularly the Singaporean and Taiwanese markets had to bear most of the burden of short-run adjustment to re-establish the long-term equilibrium relationship		Influence from other markets exits between countries except mainly for Brazil, China and France
4	**Phylaktis et al**	2002	results showed that the international investors would benefit from portfolio diversification by investing in most of the pacific basin economies since short run benefits exist due to the substantial transitory fluctuations		Similar as most of the markets enjoy short-run relationship.
5	**Yang et al**	2004	The research presents evidence that no long-term co-movements exist among East Asian stock markets, only short-term correlations		Similar as there is no long run between the selected markets