Granger Causality In Risk And Detection Of Risk

This book is devoted to the analysis of

causal inference which is one of the most difficult tasks in data analysis: when two phenomena are observed to be related, it is often difficult to decide whether one of them causally

influences the other one, or whether these two phenomena have a common cause. This analysis is the main focus of this volume. To get a good understanding of the causal inference, it is important to

have models of economic phenomena which are as accurate as possible. Because of this need, this volume also contains papers that use non-traditional economic models, such as fuzzy models and

models obtained by using neural networks and data mining techniques. It also contains papers that apply different econometric models to analyze real-life economic dependencies. Employing

compensation data provided by 63 banks from 16 European countries for the period from 2000 to 2010 this paper empirically investigates the impact of excess variable compensation on bank risk. As a

main finding, we provide evidence for a risk-increasing impact of excess variable pay for both executive variable cash-based and variable equity-based compensation. This baseline finding holds

under various robustness checks, in particular when controlling for likely reverse causality between bank risk and variable compensation by employing Grange r-causality tests and

instrumental variable regressions. In addition, results from a large number of sensitivity analyses including board and banking characteristics as well as the financial crisis period and the

quality of a country's regulatory framework provide further important implications for banking regulators and politicians in Europe.
This book studies the information

spillover among financial markets and explores the intraday effect and ACD models with high frequency data. This book also contributes theoretically by providing a new statistical methodology with

comparative advantages for analyzing comovements between two time series. It explores this new method by testing the information spillover between the Chinese stock market and the

international market, futures market and spot market. Using the high frequency data, this book investigates the intraday effect and examines which type of ACD model is particularly suited in

capturing financial duration dynamics. The book will be of invaluable use to scholars and graduate students interested in comovements among different financial markets and

financial market microstructure and to investors and regulation departments looking to improve their risk management. We find nonlinear feedback between the stock market and certain macroeconomic

factors. This evidence calls into question the adequacy of these factors as a basis for a linear pricing model. It also means that the interaction between the economy and the stock market is more complicated

than given by the simple relationship in Chen, Roll and Ross (1986). It also suggests that the univariate evidence for nonlinear dynamics in the stock market may be due to the complicated

relationship between the macroeconomy and the stock market. Relationships with Investment and Risk Information Spillover Effect and Autoregressive Conditional Duration Models

Download File PDF Granger Causality In Risk And Detection Of Risk
An Econometric Analysis
Risk-Taking Incentives Through Excess Variable Compensation -- Evidence from European Banks
Macroeconomic Uncertainty, Stock Market Risk and Potential

Outcomes Causality Cryptocurrencies, Mainstream Asset Classes and Risk Factors - A Study of Connectedness

We use Granger-causality techniques to evaluate the intertemporal

relationships among risk, efficiency and capital. We use two different measures of bank efficiency, i.e., cost and profit efficiency, since these measures reflect different managerial

abilities. One is the ability to manage costs, and the other is the ability to maximize profits. We find that lower cost and profit efficiency Granger-cause increases in credit risk. We

also identify that credit risk negatively Granger-causes cost and profit efficiency, thus revealing a bidirectional relationship between these measures. Most importantly, our

results show a positive relationship between capital and credit risk, thus displaying that moral hazard (due to limited liability and deposit insurance) does not apply to our

sample of cooperative banks. On the contrary, we find evidence that banks with low capital are able to improve their loan quality in subsequent periods. These findings may be

important to regulators, who should consider banks' business models when introducing new regulatory capital constraints.
This paper examines the relationship between various

macroeconomic variables and banking stock returns in order to find out significant sources of systematic risks in banking stock returns in India. Monthly data for the period

2002-2014 (further divided into a pre crisis and a post crisis period) has been analysed using unit root test, correlation, regression, Granger causality (both short and long run) and

cointegration tests. Results reveal that exchange rate, market factor and long term interest rate are significant in explaining banking stock returns in India in total and post

crisis periods (with R Square being 82% and 87% respectively). Short run causality results reveal unidirectional causality from long run interest rate to banking

stock returns and from banking stock returns to market returns. On the other hand, long run causality results reveal that inflation and money supply Granger cause bankex while

bankex Granger causes IIP and short term interest rate. Hence, there seem to be a lead lag relationship between banking stock returns and various macroeconomic sources of risks.

We found long run cointegration of banking stock returns with money supply and short run interest rate. These results provide support to the argument that besides market risk,

interest rate risk and currency risk are also priced in banking stock returns. These findings are pertinent for policy makers, regulators and investors at large.
This study aims

to investigate the occurrence of causality in banking risks and its impact on probability of default. This study used individual bank data of five countries, i.e: Indonesia,

Malaysia, Singapore, Thailand, and the Philippine. In order to investigate whether there is causality in banking risks, we used VAR-Granger Causality model.

In addition, OLS regression models are used to investigate the impact of this causality on default probability. Results of this study revealed that the causality between credit

risk and liquidity risk only occurred in Malaysia, while the causality between credit risk and interest rate risk occurred in the Philippine, Malaysia, Thailand, and all banks in ASEAN.

However, the impact of the interaction between bank risks on default probability is not significant. Furthermore, credit risk, bank size, and gross domestic product are significantly

impact probability of default.
We propose several econometric measures of systemic risk to capture the interc onnectedness among the monthly returns

of hedge funds, banks, brokers, and insurance companies based on principal components analysis and Granger-causality tests. We find that all four sectors have become highly

interrelated over the past decade, increasing the level of systemic risk in the finance and insurance industries. These measures can also identify and quantify financial crisis periods, and seem to

contain predictive power for the current financial crisis. Our results suggest that hedge funds can provide early indications of market dislocation, and systemic risk

arises from a complex and dynamic network of relationships among hedge funds, banks, insurance companies, and brokers.
Legal Aspects of Automatic Data Processing

Dividend Policy Research in Finance
Sources of Systematic Risks in Indian Banking Stock Returns - Some Empirical Evidences
An Industrial and Cross-industrial Study

A Leave-One-Out Approach

This book offers an introduction to wavelet theory and provides the essence of wavelet analysis — including Fourier analysis and spectral analysis; the maximum overlap discrete wavelet transform; wavelet

variance, covariance, and correlation — in a unified and friendly manner. It aims to bridge the gap between theory and practice by presenting substantial applications of wavelets in economics and finance. This book is the first to provide a comprehensive

application of wavelet analysis to financial markets, covering new frontier issues in empirical finance and economics. The first chapter of this unique text starts with a description of the key features and applications of wavelets. After an overview of wavelet analysis, successive

chapters rigorously examine the various economic and financial topics and issues that stimulate academic and professional research, including equity, interest swaps, hedges and futures, foreign exchanges, financial asset pricing, and mutual fund markets. This detail-

oriented text is descriptive and designed purely for academic researchers and financial practitioners. It assumes no prior knowledge of econometrics and covers important topics such as portfolio asset allocation, asset pricing, hedging

strategies, new risk measures, and mutual fund performance. Its accessible presentation is also suitable for post-graduates in a variety of disciplines — applied economics, financial engineering, international finance, financial econometrics, and fund management. To

facilitate the subject of wavelets, sophisticated proofs and mathematics are avoided as much as possible when applying the wavelet multiscaling method. To enhance the reader's understanding in practical applications of the wavelet multiscaling method,

this book provides sample programming instruction backed by Matlab wavelet code. Contents:Methodology: Introduction to Wavelet AnalysisMultiscale Hedge Ratio Between the Stock and Futures Markets: A New Approach Using Wavelet Analysis and High Frequency

DataModeling the International Links Between the Dollar, Euro and Yen Interest Rate Swap Markets Through a Multiscaling ApproachLong Memory in Rates and Volatilities of LIBOR: Wavelet AnalysisCross-Listing and Transmission of Pricing Information of

Dually-Listed Stocks: A New Approach Using Wavelet AnalysisOn the Relationship Between Stock Returns and Risk Factors: New Evidence From Wavelet AnalysisCan the Risk Factors Explain the Cross-Section of Average Stock Returns in the Long Run?Multiscale

Relationships Between Stock Returns and Inflations: International EvidenceMutual Fund Performance and Investment HorizonA New Assessment of US Mutual Fund Returns Through a Multiscaling Approach Readership: Graduate students and

researchers in the fields of econometrics, money & banking, investments, international finance, financial engineering, and fund management. Keywords:Wavelets;Finance; Economics;Wavelet Analysis;Multiscaling MethodKey Features:This book

covers the essence of wavelet analysis — such as the maximum overlap discrete wavelet transform, wavelet correlation, and variance — in a unified manner. It covers important topics in finance, such as portfolio asset allocation, asset pricing, hedging strategies, new risk

measures, and mutual fund performanceThis is the first book to provide a comprehensive application of wavelet analysis to financial markets, covering equity, interest swap, futures, foreign exchange, and mutual fund marketsThe focus of this book is descriptive and

designed purely for practitioners. Sophisticate proofs and mathematics are avoided as much as possible when applying the wavelet multiscaling method. Sample instruction and wavelet code and output from the chapters are presented as an integral part of the

textReviews: “ The book targets not only academic researchers, but also practitioners. Its accessible presentation is also suitable for post-graduates in a variety of disciplines. To facilitate the subject of wavelets, sophisticated proofs and mathematics are

avoided as much as possible when applying the wavelet multiscaling method. ” Zentralblatt MATH
“ This is a book for the specialist researcher in the subject. Chapters are specialized and short, with lots of references to the literature. ” Mathematical Reviews Clippings

This paper studies the exposure and contribution of financial institutions to systemic risks in financial markets. We employ three popular indicators of a financial institution's exposure to systemic risks: the systemic risk index (SRISK) and marginal expected shortfall

(MES) of Brownlees and Engle (2012) and the conditional Value-at-Risk (CoVaR) of Adrian and Brunnermeier (2011). We use a primary database of Taiwan financial institutions for our empirical study. A panel containing data of stock market returns and balance sheets of

31 Taiwan financial institutions for 2005-2014 is grouped in three categories: financial holding companies, bank companies, and insurance companies. We focus on systemic risk analysis so as to understand the dynamics of volatility, interdependency, and risk during the recent

financial crisis. We then report the time series dynamics and cross sectional rankings of these systemic risk measures. The main results indicate that although these three measures differ in their definition of the contributions to systemic risk, all are quite similar in

identifying systemically important financial institutions (SIFIs). Moreover, we find empirical evidence that systemic risk contributions are closely related to certain institution characteristic factors. The results of the Granger causality tests prove that a

systemic risk measure is a great alternative tool for monitoring early warning signals of distress in the real economy.
Diebold and Yilmaz (2015) recently introduced variance decomposition networks as tools for quantifying and ranking the systemic risk of individual firms.

The nature of these networks and their implied rankings depend on the choice decomposition method. The standard choice is the order invariant generalized forecast error variance decomposition of Pesaran and Shin (1998). The shares of the forecast error

variation, however, do not add to unity, making difficult to compare risk ratings and risks contributions at two different points in time. As a solution, this paper suggests using the Lanne-Nyberg (2016) decomposition, which shares the order invariance property.

To illustrate the differences between both decomposition methods, I analyzed the global financial system during 2001 – 2016. The analysis shows that different decomposition methods yield substantially different systemic risk and vulnerability rankings. This suggests caution

is warranted when using rankings and risk contributions for guiding financial regulation and economic policy.
The unusual severity of the recent global financial crisis has drawn much attention to systemic risk, particularly its measurement, and the institutions that

contribute most to it. This paper provides an empirical examination of the systemic risk potential among banking institutions in Asia using CoVaR and Granger causality network approaches. The empirical evidence for a potential systemic crisis among Asia

banks is ambiguous. The analysis reveals that the degree of interconnectedness has general gone up among banks in Asia. Nevertheless, the causal network among the banks has become less dense after the global financial crisis in 2007-2009. Banks from developed Asia

economies generally rank higher compared to those from emerging market counterparts. Finally, we find that the greatest contributors to systemic risk are not necessarily large banks.

Causal Inference in Econometrics

Handbook on Systemic Risk

Sovereigns and Banks in the Euro Area
Applied Econometrics
A Study on Granger Causality in the CAPM.
Risk, Competition and Efficiency in Banking
Causal analytics methods can revolutionize the use of data to make effective

decisions by revealing how different choices affect probabilities of various outcomes. This book presents and illustrates models, algorithms, principles, and software for deriving causal models from data and for using them

to optimize decisions with uncertain outcomes. It discusses how to describe and summarize situations; detect changes; evaluate effects of policies or interventions; learn what works best under different

conditions; predict values of as-yet unobserved quantities from available data; and identify the most likely explanations for observed outcomes, including surprises and anomalies. The book resents practical techniques for

causal modeling and analytics that practitioners can apply to improve understanding of how choices affect probabilities of consequences and, based on this understanding, to recommend choices that are more likely to accomplish their

intended objectives.The book begins with a survey of modern analytics methods, focusing mainly on techniques useful for decision, risk, and policy analysis. Chapter 2 introduces free in-browser software, including the Causal Analytics

Toolkit (CAT) software, to enable readers to perform the analyses described and to apply modern analytics methods easily to their own data sets. Chapters 3 through 11 show how to apply causal analytics and risk analytics to practical risk

analysis challenges, mainly related to public and occupational health risks from pathogens in food or from pollutants in air. Chapters 12 through 15 turn to broader questions of how to improve risk management decision-making by individuals,

groups, organizations, institutions, and multi-generation societies with different cultures and norms for cooperation. These chapters examine organizational learning, community resilience, societal risk management,

and intergenerational collaboration and justice in managing risks. Risk Management Post Financial Crisis: A Period of Monetary Easing provides further insights into postcrisis developments in the global

economic and financial environment including advances in measuring and reporting risk and liquidity. Contributions come from leading banks, international organisations and worldrenowned universities.

This paper uses high frequency market value data on credit default swap spreads and intra-day stock prices to measure systemic risk in the insurance sector. Using the systemic risk measure, we examine the inter-connectedness between banks and

insurers with Granger causality tests. Based on linear and non-linear causality tests, we find evidence of significant bidirectional causality between insurers and banks. However, after correcting for conditional

heteroskedasticity, the impact of banks on insurers is stronger and of longer duration than the impact of insurers on banks. Stress tests confirm that banks create significant systemic risk for insurers but not vice versa. Purpose ndash;

This paper analyzes forecasting problems from the perspective of information extraction. We study circumstances under which the forecast of an economic variable from one domain (country, industry,

market segment) should rely on information regarding the same type of variable from another domain even if the two variables are not causally linked. Thus, Granger causality linking variables from different domains

may be the rule and should be exploited for forec asting.Design/meth odology/approach ndash; The article applies information economics, in particular the study of rational information extraction in order to shed light on the debate on causality

and forecasting.Findings ndash; It is shown that the rational generalization of information across domains can lead to effects that are hard to square with economic intuition but are nevertheless worth being taken into consideration for

forecasting. Information from one domain is shown to affect another domain if there is at least one common factor affecting both domains which is not (or not yet) observed when a forecast has to be made. The analysis suggests the

theoretical possibility that the direction of such effects across domains can be counter-intuitive. In time-series econometrics such effects will show up in estimated coefficients with the ldquo;wrongrdquo; sign.Practical

implications ndash; This study helps forecasters by indicating a wider set of variables relevant for prediction. The analysis offers a theoretical basis for using lagged values from the type of variable to be forecast but from another

domain. E.g., when forecasting the bond risk spread in one country we suggest introducing in the time-series model the lagged value of the risk spread from another country. Two empirical examples illustrate this principle for

specifying models for prediction. While we limit the application to risk spreads and inflation rates the approach suggested here is widely applicable. Originality/value ndash; The present study builds on a probability theoretical analysis

to inform the specification of time-series forecasting models.
A Wavelet Multiscale Approach
A Period of Monetary Easing
Note
Small Business Lending and Credit Risk

Systemic Risk and the Inter-Connectedness Between Banks and Insurers Measuring Systemic Risk Potential Across Banks in Asia Granger-causality measures of interconnectedness between financial

institutions are useful indicators of systemic risk (Billio et al., 2012) [Journal of Financial Economics], as they help in evaluating how far the distress of one institution is disseminated across the whole of the financial system through networks.

This article provides a critical assessment of Granger-causality networks, showing that they can lead to inconsistent measures of systemic risk contributions because of the presence of spurious causalities

arising from indirect contagion effects. The traditional solutions for controlling for these effects using inference on conditional Granger-causality lead to the curse of dimensionality though. To solve this, we provide a

measure of financial network systemic risk contributions that is based on the leave-one-out (LOO) concept. For a given financial institution, the new measure evaluates how far the total number of significant Granger-causalities breaks

down when this institution is excluded from the system. We control for spurious causalities between the remaining institutions due to the indirect contagion effect of the excluded financial institution using a conditional

Granger-causality test, which is free of the curse of dimensionality. Empirical applications are conducted using daily market returns for a sample of the world's largest banks. The results show that our measure gives a

meaningful ranking of the systemic importance of financial institutions that is consistent with the ranking of global systemically important banks (G-SIBs) provided by the Financial Stability Board (FSB). Moreover, our measure is

shown to be a robust and significant early-warning indicator of large losses from a systemic event, and is strongly driven by balance-sheet variables related to size, business model and profitability.
This book consists

of two essays on new approaches for the Arbitrage Pricing Theory and the Present Value Model, and one essay on cross-sectional correlations in panel data. The new approaches are designed to study a large number of

securities over time. They can be employed by security analysts to discover market anomalies without assuming observable factors or constant risk premium. The book shows how these two approaches can be used to

determine how many systematic factors affect the U.S. stock market. Contents:AbstractD o We Have to Know Betas? An Autoregressive Method for Testing the APTVariable-Expected Returns and the Present Value Model: A

Panel StudyApplication of the Newey-West Matrix for Correction of Heteroskedasticity and Cross-Sectional Correlation Readership: Traders, financial analysts and brokers. keywords: This study attempts

to identify and trace inter-linkages between sovereign and banking risk in the euro area. To this end, we use an indicator of banking risk in each country based on the Contingent Claim Analysis literature, and 10-year government yield

spreads over Germany as a measure of sovereign risk. We apply a dynamic approach to testing for Granger causality between the two measures of risk in 10 euro area countries, allowing us to check for contagion in the

form of a significant and abrupt increase in short-run causal linkages. The empirical results indicate that episodes of contagion vary considerably in both directions over time and within the different EMU countries.

Significantly, we find that causal linkages tend to strengthen particularly at the time of major financial crises. The empirical evidence suggests the presence of contagion, mainly from banks to sovereigns.
This paper tests the

interrelationships between risk, competition and efficiency in the Chinese banking industry over the period 2003-2013 under a Granger Causality test. The current study contributes to the empirical research by using an

Efficiency-adjusted Lerner index and stability inefficiency as the indicators of competition and insolvency risk and more importantly, it is the first piece of research testing the interrelationships between different types of risk, efficiency and

competition in the context of Chinese banking. The results show that Chinese commercial banks with higher levels of efficiency have higher credit risk and insolvency risk, but lower liquidity risk and capital risk. Higher competition leads to lower credit

risk, lower insolvency risk, but higher liquidity risk. The results further show that Chinese commercial banks with higher credit risk and insolvency risk have higher efficiency, but the impact is significant and negative for liquidity risk and

capital risk. Finally, it is found that lower liquidity risk increases the market power (lower the competitive condition) in the Chinese banking industry.
The Determinants of the Model-Free Positive and Negative Volatilities

Business Innovation and Development in Emerging Economies
Financial Signal Processing and Machine Learning
Granger Causality Evidence

Measuring the Propagation of Financial Distress

with Granger-Causality Tail Risk Networks
The relationship between default risk and equity returns is investigated in this study from an industrial and economic cycle

decomposition point of view. The portfolio approach and Fama-MacBeth regression are used in the analysis. This dissertation provides evidence that investors

charged a premium for stocks with both lower and higher credit risks. However, the specific relationship is different across industries and economic cycles. This study also

notices two unique patterns of the banking industry when it comes to default risk. First, higher default risks are more likely to be compensated by higher returns. Second, as

compared to other industries, the higher default risk of the banking industry is accompanied with larger banks; furthermore, this positive relationship

only exists during the post-1980 period. The Granger Causality tests suggest that the default risk of the banking industry is more likely to cause the default risk

of other industries, not vice versa. The significance of this causality is related to an industry's dependence on the banking industry. This study further explores the

possibility whether the change of bank default risk is a systematic risk. The empirical results from the Fama-MacBeth approach show that the change of bank default risk affects the

equity returns of other industries only during the economic contraction stages. In addition, this effect is slightly negative, indicating that during the economic

contraction periods the increase of bank default risk actually drives funds to flow from the banking industry to other industries in a period as short as one

month.
Small Business Lending and Credit RiskGranger Causality EvidenceInformation Spillover Effect and Autoregressive Conditional Duration Models

Routledge
Although the theme of the monograph is primarily related to “Applied Econometrics”, there are several theoretical contributions

that are associated with empirical examples, or directions in which the novel theoretical ideas might be applied. The monograph is associated with significant and

novel contributions in theoretical and applied econometrics; economics; theoretical and applied financial econometrics; quantitative finance; risk; financial

modeling; portfolio management; optimal hedging strategies; theoretical and applied statistics; applied time series analysis; forecasting; applied

mathematics; energy economics; energy finance; tourism research; tourism finance; agricultural economics; informatics; data mining; bibliometrics;

and international rankings of journals and academics.
In this document I study the effects of the macro volatility on the stock market volatility,

relying on the assumptions of Lechner (2010) for potential-outcomes causality. This is done at the Colombian level with a VAR model and at the international

level using a dynamic panel data model with unobserved heterogeneity. As in Diebold and Yilmaz (2008), the results show that fundamental risk or volatility

Granger-causes movements in the systematic risk of asset markets. Also, I argue that assumptions for Granger causality to imply Potential Outcomes causality hold.

Econometric measures of systemic risk in the finance and insurance sectors
New Methods for the Arbitrage Pricing Theory and the Present Value Model

Default Risk in Equity Returns
Causal Analytics for Applied Risk Analysis
Risk Management Post Financial Crisis
Nonlinearity and Endogeneity in Macro-Asset

Pricing
In this paper we analyze the role of macroeconomic and financial determinants in explaining stock market volatilities in the U.S. market. Both implied and realized volatility are computed model-

free and decomposed into positive and negative components, thereby allowing us to compute directional volatility risk premia. We capture the behavior of each component of implied volatility

and risk premium in relation to their different determinants. The negative implied volatility appears to be linked more towards financial conditions variables such as uncertainty and geopolitical risk indexes, whereas

positive implied volatility is driven more by macro variables such as inflation and GDP. There is a clear shift in importance from macro towards financial determinants moving from the pre towards the post

financial crisis. A mixed frequency Granger causality approach uncovers causality relationships between volatilities and risk premia and macro variables and vice versa, a finding which is not detected with a

conventional low frequency VAR model.

Offers insights into economic systems as packages containing multiple real options where the rational exercise of these options then shapes the outcomes from the system. This title

also includes chapters that explore the use of commodities like oil as a means of improving the diversification of portfolios containing equities. The banking and finance industry plays a significant

role in the economy of a nation. As such, continuous research and up-to-date feeds are necessary for it to stay competitive and resilient. Due to its revolving and dynamic nature as well as its significance and interlinkages with

other industries, a well-functioning banking and finance system is vital in safeguarding the interest of all stakeholders. Banking and Finance covers a wide range of essential topics

highlighting major issues related to banking and finance. The book is rich with empirical evidence, scientific researches, best practices, and recommendations, making it a compact yet handy reference for readers,

especially those who are in the field of banking and finance.

We investigate whether the accusations raised by the popular press regarding the potential destabilizing force of sovereign wealth

fund investment have merit. Specifically, we examine the effect of sovereign wealth fund (SWF) investment on return and volatility, both for the target firm and the local market index. We find evidence of

both a reduction of target returns and risk, but find that risk is not sufficiently reduced to offset the change in return. We also find that the market wide return to risk ratios indicate uncompensated risk following SWF

investment for the market as a whole. Firm volatility decomposition suggests that both total risk and idiosyncratic risk relative to returns are not compensated at the same level following SWF investment as they

were preceding it. In a limited Granger causality analysis, we find that SWF investment Granger-causes the firm level return/risk relation to deteriorate. We do not, however, find that the media Granger-causes the

poor performance. The decrease in return without a corresponding decrease in volatility suggests that sovereign wealth fund investment could be potentially destabilizing. Generalization of Information,

Granger Causality, and Forecasting
Sovereign Wealth Fund Investments and Market Destabilization
Exploring Nonlinearities in Financial Systemic Risk
Proceedings of the 5th Sebelas Maret

International Conference on Business, Economics and Social Sciences (SMICBES 2018), July 17-19, 2018, Bali, Indonesia Relationship Analysis Between Bank Risks and Probability of

Default in ASEAN. Improving Risk Analysis

We propose a new methodology of assessing the effects of individual institution's risk on the others and on the system as a whole. We build

upon the Conditional Value-at-Risk approach, however, we introduce the explicit Granger causal linkages and we account for possible nonlinearities in the financial time series. Conditional

Value-at-Risk-Nonlinear Granger Causality, or NCoVaR as we call it, has regular asymptotic properties which makes it particulary appealing for practical applications. We

Download File PDF Granger Causality In Risk And Detection Of Risk
test our approach empirically and assess the contribution of the euro area financial companies to the overall systemic risk. We find that only a few financial institutions pose a

serious ex ante threat to the systemic risk, whereas, given that the system is already in trouble, there are more institutions which hamper its recovery. Moreover, we discover non-

negligible nonlinear structures in the systemic risk profile of the euro zone.

The modern financial industry has been required to deal with large and diverse portfolios in a

variety of asset classes often with limited market data available. Financial Signal Processing and Machine Learning unifies a number of recent advances made in signal processing and machine

learning for the design and management of investment portfolios and financial engineering. This book bridges the gap between these disciplines, offering the latest information on

key topics including characterizing statistical dependence and correlation in high dimensions, constructing effective and robust risk measures, and their use in

portfolio optimization and rebalancing. The book focuses on signal processing approaches to model return, momentum, and mean reversion, addressing theoretical and implementation

aspects. It highlights the connections between portfolio theory, sparse learning and compressed sensing, sparse eigen-portfolios, robust optimization, non-Gaussian data-

driven risk measures, graphical models, causal analysis through temporal-causal modeling, and large-scale copula-based approaches. Key features: Highlights signal processing and

machine learning as key approaches to quantitative finance. Offers advanced mathematical tools for high-dimensional portfolio construction, monitoring, and post-trade

analysis problems. Presents portfolio theory, sparse learning and compressed sensing, sparsity methods for investment portfolios. including eigen-portfolios, model return,

momentum, mean reversion and non-Gaussian data-driven risk measures with real-world applications of these techniques. Includes contributions from leading researchers and

practitioners in both the signal and information processing communities, and the quantitative finance community. Business Innovation driven by the advancement of

technology has dramatically changed the business landscape over recent years, not only in advanced countries but also in emerging markets. It is expected that business

innovation could help achieve economic inclusion, which has been a global initiative over the last decade, creating opportunities for all people to benefit from the economic

development. These proceedings provide an outlet for discussing the importance of business innovation, especially in emerging countries in helping to reach

inclusive economies. The papers cover the subject areas management, accounting, finance, economics and social sciences. We investigate connectedness within and across

two major groups or assets: i) five popular cryptocurrencies, and ii) six major asset classes plus two commonly employed risk factors. Granger-causality tests uncover six direct channels of

causality from the elements of the mainstream assets/risk factors group to digital assets. On the other hand, there are two statistically significant causal links going in the other direction. In

order to provide some perspective on the magnitude of the uncovered linkages we supplement the analysis by estimating networks from forecast error variance decompositions.

The estimated connectedness within the groups is relatively large, whereas the linkages across the two groups are small in comparison. Namely, less than 2.2 percent of future uncertainty

of any cryptocurrency is sourced from all non-crypto assets combined, while the joint contribution of all digital assets to non-crypto uncertainty does not exceed 1.5 percent.

Do Cooperative Banks Suffer from Moral Hazard Behaviour? Evidence in the Context of Efficiency and Risk
A Tale of Two Crises
Estimation and Model-based Combination of

Causality Networks

An Introduction to Wavelet Theory in Finance

'Sleeping with the Enemy' or 'An Ounce of Prevention'

Replication

Using the test of Granger-causality in

tail of Hong et al. (2009), we define and construct Granger-causality tail risk networks between 33 systemically important banks (G-SIBs) and 36 sovereign bonds worldwide. Our purpose is to exploit the structure of the Granger-causality

tail risk networks to identify periods of distress in financial markets and possible channels of systemic risk propagation. Combining measures of connectedness of these networks with the ratings of the sovereign bonds, we propose a flight-to-quality indicator to

identify periods of turbulence in the market. Our measure clearly peaks at the onset of the European sovereign debt crisis, signaling the instability of the financial system. Finally, we use the connectedness measures of the

networks to forecast the quality of sovereign bonds. We find that connectedness is a significant predictor of the cross-section of bond quality. Improving Risk Analysis shows how to better assess and manage uncertain risks when the

consequences of alternative actions are in doubt. The constructive methods of causal analysis and risk modeling presented in this monograph will enable to better understand uncertain risks and decide how to manage them. The

book is divided into three parts. Parts 1 shows how high-quality risk analysis can improve the clarity and effectiveness of individual, community, and enterprise decisions when the consequences of different choices are

uncertain. Part 2 discusses social decisions. Part 3 illustrates these methods and models, showing how to apply them to health effects of particulate air pollution. "Tony Cox's new book addresses what risk analysts and policy makers most need to

know: How to find out what causes what, and how to quantify the practical differences that changes in risk management practices would make. The constructive methods in Improving Risk Analysis will be invaluable in helping

practitioners to deliver more useful insights to inform high-stakes decisions and policy,in areas ranging from disaster planning to counter-terrorism investments to enterprise risk management to air pollution abatement policies. Better risk

management is possible and practicable; Improving Risk Analysis explains how." Elisabeth Pate-Cornell, Stanford University "Improving Risk Analysis offers crucial advice for moving policy-relevant risk

analyses towards more defensible, causally-based methods. Tony Cox draws on his extensive experience to offer sound advice and insights that will be invaluable to both policy makers and analysts in strengthening the foundations for

important risk analyses. This much-needed book should be required reading for policy makers and policy analysts confronting uncertain risks and seeking more trustworthy risk analyses." Seth Guikema, Johns Hopkins University

"Tony Cox has been a trail blazer in quantitative risk analysis, and his new book gives readers the knowledge and tools needed to cut through the complexity and advocacy inherent in risk analysis. Cox's careful exposition is detailed and

thorough, yet accessible to non-technical readers interested in understanding uncertain risks and the outcomes associated with different mitigation actions. Improving Risk Analysis should be required reading for public officials

responsible for making policy decisions about how best to protect public health and safety in an uncertain world." Susan E. Dudley, George Washington University
Experts in the field provide an introduction to the multifaceted aspects

of this critically important topic.
At the heart of the Capital Asset Pricing Model (CAPM) lies the concept of systematic risk. The systematic risk of a security is that component of the total risk of the security that is explained by market

risk. This is captured through the regression of security returns on market returns. The regression coefficient represents the sensitivity of returns of the security to changes in market returns.Current developments in

econometric theory, however, undermine the simplicity of this approach. Firstly, there should be some form of causality from changes in market returns to changes in security returns. In particular, Granger causality from market returns to

security returns must hold. Secondly, in order for the regression to be meaningful, the time series should be stationary. In particular, the presence of a unit root would undermine the significance of the regression

coefficient, and therefore threaten the entire basis of the CAPM.It is in this context that Granger causality and stationarity should be examined for the security line. This approach may be extended to determining the macroeconomic

variables that influence asset returns in general.

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