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2021 / 01

Diversification Potential in Real Estate Portfolios

Bertrand Candelon, Franz Fuerst, Jean-Baptiste Hasse

Real estate, despite its spatial fixity, is subject to considerable cross-border investment flows. However, it may be surmised that the diversification potential of international real estate investments dwindles if markets become increasingly interlinked. Building on a unique dataset of direct real estate markets covering 16 OECD countries over the period 1999-2018, we compare country-level and sector-level diversification potential. We apply a relative Sharpe ratio loss approach and develop a modified version of this measure, relying on the modified Value-at-Risk, which is robust to non-normality. Using a studentized circular blockbootstrap procedure, robust confidence intervals for both measures are built. This new diversification test provides investors and analysts with a valuable tool as it delivers both estimates and robust significance levels. The empirical findings broadly reveal that international diversification strategies outperform sectoral diversification of real estate assets.

Keywords : Portfolio diversification ; Real estate markets

2021 / 02

Macrofinancial information on the post- COVID-19 economic recovery: will it be V, U or L-shaped?

Bruno De Backer, Hans Dewachter, Leonardo Iania

We use a standard macrofinancial no-arbitrage term structure model to forecast key macroeconomic variables such as GDP. Simple adaptations to the model are proposed in order to generate plausible forecasts in the context of the COVID-19 crisis. The financial market variables included in the model are shown to improve GDP forecasts. The model forecasts of real GDP conditioned on macrofinancial information up to August 2020 suggest that the shape of the recovery will most likely be between a U and an L in most euro area countries considered, with substantial persistent losses.

Keywords : COVID-19 ; shape of the recovery ; term structure ; sovereign yields

2021 / 03

Do retail investors bite off more than they can chew? A close look at their return objectives

Catherine D'Hondt, Rudy De Winne, Maxime Merli

Using information self-reported by retail investors in a risk-return profiling survey, we investigate the determinants of individual return objectives as well as the capacity of investors to reach them. Controlling for a large set of covariates, we provide empirical evidence that return objectives are related to subjective individual characteristics (such as financial literacy and risk tolerance), some sociodemographics (age, education), as well as recent past trading intensity. Retail investors with higher return objectives perform better, compared to their counterparts who want to avoid any risk of capital loss. The capacity to reach the return objective however decreases as the level of return objectives increases.

Keywords : Return objectives, Risk tolerance, Financial literacy, Retail investors, MiFID

JEL codes : G11, G40

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Machine Learning Time Series Regressions With an Application to Nowcasting

Andrii Babii, Eric Ghysels, Jonas Striaukas

This paper introduces structured machine learning regressions for high-dimensional time series data potentially sampled at different frequencies. The sparse-group LASSO estimator can take advantage of such time series data structures and outperforms the unstructured LASSO. We establish oracle inequalities for the sparse-group LASSO estimator within a framework that allows for the mixing processes and recognizes that the financial and the macroeconomic data may have heavier than exponential tails. An empirical application to nowcasting US GDP growth indicates that the estimator performs favorably compared to other alternatives and that text data can be a useful addition to more traditional numerical data. Our methodology is implemented in the R package *midasml*, available from CRAN.

Keywords : high-dimensional time series, fat tails, tau-mixing, sparse-group LASSO, mixed frequency data, textual news data

2021 / 05

Portfolio Selection: A Target-Distribution Approach

Nathan Lassance, Frédéric Vrins

We introduce a general framework to the portfolio-selection problem in which investors aim at targeting a distribution of returns, which can accommodate a wide range of preferences. The resulting optimal portfolio has a return density that is as close as possible to the target-return density. We study the theoretical properties of this approach for two classes of target distribution that allow for different first four moments. Three results that stand out are, first, that the fit to higher moments is controlled by the entropy of standardized portfolio returns when targeting a Gaussian distribution. Second, when targeting a specific Dirac-delta distribution, no norm-constrained portfolio can stochastically dominate the proposed optimal portfolio. Third, if the target-return mean and variance are located on or above the efficient frontier, the optimal portfolio is mean-variance efficient when asset returns are Gaussian. For non-Gaussian returns, the optimal portfolio may move away from the frontier to better fit the higher moments of the target distribution. The empirical analysis illustrates that the proposed framework helps the investor obtain portfolio returns in line with her preferences.

Keywords : portfolio selection, higher moments, tail risk, Kullback-Leibler divergence

JEL codes : G11, G12

2021 / 06

Asymmetric short-rate model without lower bound

Frédéric Vrins, Linqi Wang

We propose a new short-rate process which appropriately captures the salient features of the negative interest rate environment. The model combines the advantages of the Vasicek and Cox-Ingersoll-Ross (CIR) dynamics: it is flexible, tractable and displays positive skewness without imposing a strict lower bound. In addition, a novel calibration procedure is introduced which focuses on minimizing the Kullback-Leibler (KL) divergence between the model- and market-implied forward rate densities rather than focusing on the minimization of price or volatility discrepancies. A thorough empirical analysis based on cap market quotes shows that our model displays superior performance compared to the Vasicek and CIR models regardless of the calibration method. Our proposed calibration procedure based the KL divergence better captures the entire forward rate distribution compared to competing approaches while maintaining a good fit in terms of pricing and implied volatility errors.

Keywords : Finance, affine short-rate model, negative interest rates, Kullback-Leibler divergence, implied density calibration

JEL codes : C52, C61, E43, G12, G13

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2021 / 07

A Multicountry Model of the Term Structures of Interest Rates with a GVAR

Bertrand Candelon, Rubens Moura

Global interdependencies have caused affine term structure models (AT SMs) to adopt a multicountry dimension. Nevertheless, recent referenced AT SMs face issues of tractability as the model dimension becomes larger. To close this gap, this paper proposes a AT SM in which the risk factor dynamics follow a global vector-autoregressive (GV AR). AT SM – GV AR renders a parsimonious yield curve parametrization, which allows for a fast estimation process, enables meaningful statistical inference of economic relationships, and produces accurate bond yields out-of-sample forecasting. To empirically illustrate our novel AT SM, we build a markedly integrated economic system composed of three Latin American economies and China. We find that, consequent to its prominent role in the worldwide economy, China's economic stances have nonnegligible impacts on Latin American yield curve dynamics.

Keywords : Term Structure of Interest Rates, Global Financial Market, GVAR

JEL codes : C58, E44, G15

2021 / 08

Blaming or praising passive ETFs?

Catherine D'Hondt, Younes Elhichou Elmaya, Mikael Petitjean

We use random matching to study the trading behaviors of retail investors who hold passive exchange traded funds invested in stocks (P-ETFs). Using both trading records and survey data to control for all the key investor characteristics, we find strong evidence that retail investors trade differently when they hold P-ETFs. They have a higher portfolio size, a lower turnover, and keep their assets for a longer period of time than the control group of retail investors who hold individual stocks only. P-ETF retail investors are also better protected against stock gambling and those among them who follow a core-satellite approach are least likely to hold lottery-like stocks.

Keywords : ETFs, Stocks, Retail Investors, Passive Investing, Gambling Behavior

JEL codes : G11, G40, G53

2021 / 09

Asymptotic Single Risk Factor Models with Stochastic and Correlated Loss Given Default

Matteo Barbagli, Frédéric Vrins

In line with the recent steer of the Basel Committee to foster a regulatory framework balancing greater risk-sensitivity, simplicity and comparability, we propose two extensions to the asymptotic single risk factor (ASRF) model in order to account for stochastic and correlated losses given default. In either setups, the strength of the PD-LGD link is controlled via a single additional risk parameter, as for the default dependence in the standard Basel framework. This parameter is connected to the correlation between the default rate and average observed loss given default, which is an observable statistic. We provide portfolio-invariant semi-analytical formulas for computing value-at-risk, solely by supplying new regulatory mapping functions translating unconditional LGDs into conditional LGDs. These ASRF extensions provide control on the PD-LGD link and give full flexibility regarding the choice of the marginal LGD distributions without disrupting the standard Basel machinery. This contributes to enhance regulatory capital computations by considering well-documented empirical evidence while maintaining computational tractability.

Keywords : Credit Risk ; Factor Model ; Value-at-risk ; Basel Banking Regulations ; Capital requirement

JEL codes : G21 ; G28 ; G32

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Harmonization, Mutual Recognition or National Treatment: a Melitz approach

Malo Beguin

This paper builds on a Melitz model to compare the welfare effects of three classic legal frameworks used in trade agreements: national treatment, mutual recognition, and harmonization. I specifically deal with two countries setting quality standards in a world where love-for-quality is heterogeneous across country. My results show that harmonization is the best choice in terms of national welfare when exporters are confronted with both lower and higher foreign standards. In addition, with a higher foreign standard, harmonization improves competition in a better way than mutual recognition.

Keywords :

2021 / 11

Target Returns and Negative Interest Rates

Catherine D'Hondt, Rudy De Winne, Aleksandar Todorovic

In this paper, we question whether it is the zero interest rate level or the target return that most impacts the risk-taking behavior of individuals when making investment decisions. In our experiment, we assign either a low or a high target return to participants and ask them to make independent investment decisions as the risk-free rate fluctuates around their target return and, for some of them, becomes negative. We find that the prevailing reference point is the target return, regardless of the level of the risk-free rate. This result still holds even when the risk-free rate is negative, suggesting that the target return drives risk-taking more than does a zero interest rate.

Keywords : Negative interest rates ; Risk-taking ; Target return

JEL codes : G11, G21, G40, G41, G51

2021 / 12

Migration to the PRIIPs framework: what impact on the European risk indicator of UCITS funds ?

Donovan Herr, Emilien Clausse, Frédéric Vrins

Since 2011, managers of European UCITS funds are required to publish a risk indicator, called SRRI, in order to communicate the risk of their investment fund to retail investors in an understandable way. However, as of mid-2022, the implementation of the new PRIIPs regulation will lead to a complete review of the calculation methodology employed to determine this risk indicator. The latter, formerly based on a traditional measure of standard deviation, will now be determined from a more sophisticated tail-risk measure, namely Value-at-Risk (or, more precisely, the modified VaR, which is an approximation based on the first four moments of the fund returns). Additional changes deal with the data frequency and history used in the estimation procedure. In this article, we break down the changes brought by the regulation and analyze them through an empirical study in order to take a critical look on the new PRIIPs methodology, that will impact a substantial portion of the 4 500 asset management companies active in Europe¹. Our results, built from a random selection of 200 funds, show that the impact of the change in the risk measure is not as significant as expected. By contrast, the impact resulting from the changes in the chosen frequency and length of returns history seems material. Secondly, the redefinition of volatility buckets used to map the risk measure to the risk indicator has a side effect : a loss of granularity for non-extreme funds, which are now crowded in classes 2 to 4.

Keywords :

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Maximizing the Out-of-Sample Sharpe Ratio

Nathan Lassance

Maximizing the out-of-sample Sharpe ratio is an important objective for investors. To achieve this, we characterize optimal portfolio combinations maximizing expected out-of-sample Sharpe ratio. When investing in the risk-free asset is allowed and combination coefficients are unconstrained, as in Kan and Zhou (2007), we uncover that combining portfolios to maximize expected out-of-sample utility optimizes expected out-of-sample Sharpe ratio as well. However, the two criteria are not equivalent for portfolios fully invested in risky assets, and in this case we show how to adapt the optimal portfolio combination of Kan, Wang, and Zhou (2021) to maximize expected out-of-sample Sharpe ratio. We find that the proposed mean-variance portfolio combinations calibrated to maximize expected out-of-sample Sharpe ratio generally outperform the considered benchmarks. Relative to the minimum-variance portfolio estimated with a nonlinearly shrunk covariance matrix, the annualized out-of-sample Sharpe ratio increases from 0.988 to 1.110 before transaction costs, and from 0.914 to 1.007 net of transaction costs, on average across four typical datasets.

Keywords : Mean-variance portfolio ; parameter uncertainty ; estimation risk ; out-of-sample performance

2021 / 14

Optimal Portfolio Diversification via Independent Component Analysis

Victor DeMiguel, Nathan Lassance, Frédéric Vrins

A natural approach to enhance portfolio diversification is to rely on factor-risk parity, which yields the portfolio whose risk is equally spread among a set of uncorrelated factors. The standard choice is to take the variance as risk measure, and the principal components (PCs) of asset returns as factors. Although PCs are unique and useful for dimension reduction, they are an arbitrary choice: any rotation of the PCs results in uncorrelated factors. This is problematic because we demonstrate that any portfolio is a factor-variance-parity portfolio for some rotation of the PCs. More importantly, choosing the PCs does not account for the higher moments of asset returns. To overcome these issues, we propose to use the independent components (ICs) as factors, which are the rotation of the PCs that are maximally independent, and care about higher moments of asset returns. We demonstrate that using the IC-variance-parity portfolio helps to reduce the return kurtosis. We also show how to exploit the near independence of the ICs to parsimoniously estimate the factor-risk-parity portfolio based on Value-at-Risk. Finally, we empirically demonstrate that portfolios based on ICs outperform those based on PCs, and several state-of-the-art benchmarks.

Keywords : portfolio selection ; risk parity ; factor analysis ; principal component analysis ; higher moments

2021 / 15

Fragmentation in the European Monetary Union: Is it really over?

Bertrand Candelon, Angelo Luisi, Francesco Roccazzella

Sovereign bond market fragmentation represents one of the major challenges European authorities have had to tackle since the outburst of the euro area debt crisis in 2010. By investigating the inter-country shock transmission through a new methodology that reconciles Factor and Global Vector Autoregressive models, we first show that fragmentation risk well preceded the sovereign debt crisis outburst. Most importantly, by analyzing the recent period, we document a rise in fragmentation risk in the euro area during the COVID pandemic. This rise, connected to the pressure on public debts and deficits due to the pandemic period, questions the European integration process and calls for early measures to avoid a new sovereign debt crisis.

Keywords : Euro area ; Sovereign bond ; Fragment

JEL codes : F36 ; F37 ; G12 ; H63

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International Earnings Announcements: Tone, Forward-looking Statements, and Informativeness

Elaine Henry, James Thewissen, Wouter Torsin

This paper examines two attributes of earnings press releases issued by firms cross-listed on U.S. stock exchanges: the tone and frequency of forward-looking statements. A more conservative tone and a greater proportion of forward-looking statements are often viewed as contributing to more credible disclosures. Our analysis indicates that culturally and institutionally more distant firms are generally less positive in their disclosures and include more forward-looking statements than U.S. firms. Further, we find that the tone and frequency of forward-looking statements of crosslisted firms' earnings announcements are more informative than those of U.S. firms in predicting future firm performance, and this informativeness generally increases with the cultural and institutional distance of the home country from the U.S. In explaining market reaction to earnings announcements, tone informativeness in particular increases with the cultural distance of the home country from the U.S. Overall, in the context of home bias theory, we interpret our findings as suggesting that a cautious disclosure tone and more forward-looking information serve to mitigate potential home bias-related credibility and asymmetric information concerns arising from cultural and institutional distance.

Keywords : Disclosure ; tone ; forward-looking ; credibility ; home bias ; cross-listed firms

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Earnings Management Methods and CEO Political Affiliation

Arslan-Ayaydin Özgür, James Thewissen, Wouter Torsin

This paper examines whether CEO risk aversion – proxied by their political affiliation – explains the method used to manage earnings. We argue that, even though real earnings management can have severe long-term consequences for firm performance, Republican managers are likely to prefer real over accruals-based earnings management because the former incurs significantly lower litigation risk costs than the latter and is relatively more difficult to detect. Based on a sample of more than 20,000 firm-year observations, we find that firms led by Republican (i.e. more risk averse) CEOs tend to manage their earnings through real activities manipulation, while those led by Democratic (i.e. more risk taking) CEOs tend to favor accruals-based earnings management. We also show that the positive (negative) relation between Republican-leaning managers and real (accruals-based) is more positive (less negative) for CEOs whose compensation is more oriented towards risk-taking.

Keywords : Accruals earnings management ; CEO Risk Aversion ; Political affiliation ; Political donations ; Real activities manipulation

JEL codes : M41

2021 / 18

Unpacking the black box of ICO white papers: a topic modeling approach

Anna M. Pastwa, Prabal Shrestha, James Thewissen, Wouter Torsin

We apply a novel topic modeling method to map Initial Coin Offerings' (ICOs') white paper thematic content to analyze its information value to investors. Using a sentence-based topic modeling algorithm, we determine and empirically quantify 30 topics in an extensive collection of 5,210 ICO white papers between 2015 and 2021. We find that the algorithm produces a semantically meaningful set of topics, which significantly improves the model performance in identifying successful projects. The most value-relevant topics concern the technical features of the ICO. However, we find that white paper's informativeness substantially diminishes after the token is listed. Moreover, we show that credibility-enhancing mechanisms (i.e., regulations and ICO analysts) reinforce the information value of ICO white papers. Overall, our results suggest that the topics discussed in white papers and the attention devoted to each topic are useful ICO performance indicators.

Keywords : ICOs ; White paper informativeness ; Topic modeling ; ICO regulation ; ICO analysts

JEL codes : G15, M13, L26, D80