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REPRINT | 2021 / 01

Googlization and retail trading activity

Christophe Desagre, Catherine D'Hondt

A large body of literature documents a positive relationship between the Google Search Volume Index (SVI) and market returns or volumes. Such findings are consistent with a buying pressure due to increased attention. Unlike most of the studies that use market data, we use the trading accounts for a sample of retail investors. The advantage is twofold; we are able to disentangle purchases from sales, and our results are not biased by any institutional trading. We find that the relationship between the SVI and retail trading activity is positive but not stronger for purchases than for sales. We also demonstrate evidence of a bidirectional causality between attention and trading activity, though contemporaneous effects predominate. Our results are robust to controls based on sociodemographics or subjective investor characteristics, as well as various specifications of the SVI and different measures of trading activity.

REPRINT | 2021 / 02

Measuring the disposition effect

Rudy De Winne

Despite hundreds of papers confirming the existence of the disposition effect, too little attention has been devoted to the prevailing arguments on the choice of a given method to measure it. This paper fills this gap and compares different measurement approaches. First, based on empirical and simulationbased data, I show how results may differ across measures depending on market trends but, more importantly, on the frequency at which investors make their decisions. Second, the pitfalls in analyzing cross-sectional differences in the disposition effect are illustrated and discussed. Finally, I clearly show that hazard models are quite appropriate to measuring the disposition effect of any investor, be it a day trader or a typical retail investor who monitors his portfolio infrequently.

REPRINT | 2021 / 03

Global financial interconnectedness: a non-linear assessment of the uncertainty channel

Bertrand Candelon, Laurent Ferrara, Marc Joëts

The role of uncertainty in the global economy is now widely recognized by policy-makers but its specific effects on the international financial system are less understood. In this paper, we assess the impact of uncertainty fluctuations on the interconnectedness within the international system of equity prices. In this respect, we extend the measure of connectedness put forward by Diebold and Yilmaz by allowing for non-linear effects through the estimation of a non-linear Threshold VAR model whose regimes depend on the level on uncertainty. Results show that high uncertainty tends to generate more connectedness among equity indexes of a set of advanced and emerging countries. From an economic policy point of view, this result suggests that in the presence of high uncertainty, an adverse financial shock in a specific country is likely to propagate more widely and more strongly to the whole financial system. This result advocates for a close real-time monitoring of uncertainty measures.

REPRINT | 2021 / 04

Trading leveraged Exchange-Traded products is hazardous to your wealth

Catherine D'Hondt, Richard McGowan, Patrick Roger

Using a large set of both trading and survey data, we sketch the profile of the typical retail investor who trades Leveraged Exchange-Traded Products (LETPs). Our findings show that the typical user of LETPs looks like an overconfident gambler willing to take a high risk, though some highly loss averse investors use inverse leveraged Exchange-Traded Products (ILETPs) for hedging purposes. Aggregating holdings in both stocks and Exchange-Traded Products (ETPs), users of LETPs get a lower performance than retail investors who invest in vanilla ETPs (VETPs). The reason is twofold: they trade too much and hurt their returns when investing in LETPs. Though trading LETPs could be interpreted as rational gambling, the skewness of the monthly portfolio returns of LETP users does not offset the risk-return sacrifice in the mean-variance space.

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REPRINT | 2021 / 05

Portfolio selection with parsimonious higher comoments estimation

Nathan Lassance, Frédéric Vrins

Large investment universes are usually fatal to portfolio strategies optimizing higher moments because of computational and estimation issues resulting from the number of parameters involved. In this paper, we introduce a parsimonious method to estimate higher moments that consists of projecting asset returns onto a small set of maximally independent factors found via independent component analysis (ICA). In contrast to principal component analysis (PCA), we show that ICA resolves the curse of dimensionality affecting the comoment tensors of asset returns. The method is easy to implement, computationally efficient, and makes portfolio strategies optimizing higher moments appealing in large investment universes. Considering the value-at-risk as a risk measure, an investment universe of up to 500 stocks and adjusting for transaction costs, we show that our ICA approach leads to superior out-of-sample risk-adjusted performance compared with PCA, equally weighted, and minimum-variance portfolios.

REPRINT | 2021 / 06

Does managerial ability affect disclosure? Evidence from earnings press releases

Beibei Yan, Özgür Arslan-Ayaydin, James Thewissen, Wouter Torsin

Using a sample of about 24,000 earnings press releases by S&P1500 firms between 2004 and 2013, we find that low-ability managers inflate the disclosure tone to positively influence labor market's perceptions about their ability. This effect is magnified for younger and shorter-tenured managers, for firms with more intense monitoring and during bear markets. We also show that the tone of earnings press releases of low-ability managers is less informative to predict future firm performance and results in a lower stock price reaction. Overall, our findings confirm that managerial ability affects the credibility of qualitative information.

REPRINT | 2021 / 07

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 standard macrofinancial no-arbitrage term structure models to forecast key macroeconomic variables such as GDP. Simple adaptations to the models are proposed in order to generate plausible forecasts in the context of the COVID-19 crisis. The financial market variables included in the models are shown to improve GDP forecasts. 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.

REPRINT | 2021 / 08

How risk-prone are people when facing a sure loss? Negative interest rates as a convenient conceptual framework

Emir Efendić, Olivier Corneille, Catherine D'Hondt, Rudy De Winne

People occasionally face sure loss prospects. Do they seek risk in search of better outcomes or contend with the sure loss and focus on what is left to be saved? We addressed this question in three experiments akin to a negative interest rate framework. Specifically, we asked participants to allocate money (Experiments 1 and 2) or choose (Experiment 3) between two options: (i) a loss option where, for sure, they would end up with less, or (ii) a mixed gamble with a positive expected outcome, but also the possibility of an even larger loss. Risk aversion (i.e., choosing the sure loss) ranged from 80% to 36% across the three experiments, dependent on varied sizes of sure losses or expected outcomes. However, overall, the majority (> 50%) of allocations and choices were for the sure loss. Our findings indicate a tolerance for sure losses at the expense of mixed gambles yielding much better expected outcomes. We discuss the implications of this sure-loss tolerance for psychological research, its implications in terms of (cumulative) prospect theory, and what the results mean for the implementation of negative interest rates.

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REPRINT | 2021 / 09

Diversification potential in real estate portfolios

Bertrand Candelon, Franz Fuerst, Jean-Baptiste Hasse

In this paper, we study the international and sectoral diversification potential in real estate portfolios. Building on a unique dataset of direct real estate markets covering 16 OECD countries over the period 1999–2018, we introduce a statistical test to compare country-level and sectorlevel diversification potential. This new diversification test provides investors and analysts with a valuable tool as it delivers both estimates and robust significance levels. The empirical findings for real estate investments broadly reveal that international diversification dominates sectoral diversification.

REPRINT | 2021 / 10

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.

REPRINT | 2021 / 11

What leads people to tolerate negative interest rates on their savings?

O. Corneille, Catherine D'Hondt, Rudy De Winne, E. Efendic, Aleksandar Todorovic

Using an online experiment, we investigate intertemporal preferences to infer people's willingness to accept negative interest rates (NIRs) on their savings. We find some tolerance of NIRs, i.e., of people being willing to hold money in the bank rather than spend it, thereby accepting less savings at some future time. This tolerance strongly depends on the amount of savings, time horizon, actual savings behavior, and anchoring. Specifically, the higher the amount, the lower is the tolerance of NIRs, consistent with a reverse magnitude effect. Moreover, as the time horizon increases, the tolerance of NIRs decreases. Regular savers are more likely to tolerate NIRs than nonregular savers, which is consistent with status quo bias, higher familiarity with savings deposits, or a futureoriented mindset. We also find a higher tolerance of NIRs on savings when participants are anchored towards NIRs, i.e., when participants are first presented with NIRs and then with positive interest rates (PIRs).

REPRINT | 2021 / 12

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-varianceparity 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.

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REPRINT | 2021 / 13

Reconciling mean-variance portfolio theory with non-Gaussian returns

Nathan Lassance

Mean-variance portfolio theory remains frequently used as an investment rationale because of its simplicity, its closed-form solution, and the availability of well-performing robust estimators. At the same time, it is also frequently rejected on the grounds that it ignores the higher moments of non-Gaussian returns. However, higher-moment portfolios are associated with many different objective functions, are numerically more complex, and exacerbate estimation risk. In this paper, we reconcile mean-variance portfolio theory with non-Gaussian returns by identifying, among all portfolios on the mean-variance efficient frontier, the one that optimizes a chosen higher-moment criterion. Numerical simulations and an empirical analysis show, for three higher-moment objective functions and adjusting for transaction costs, that the proposed portfolio strikes a favorable tradeoff between specification and estimation error. Specifically, in terms of out-of-sample Sharpe ratio and higher moments, it outperforms the global-optimal portfolio, and also the global-minimum-variance portfolio except when using monthly returns for which estimation error is more prominent.

REPRINT | 2021 / 14

Optimal and robust combination of forecasts via constrained optimization and shrinkage

Francesco Roccazzella, Paolo Gambetti, Frédéric Vrins

We introduce various methods that combine forecasts using constrained optimization with penalty. A non-negativity constraint is imposed on the weights, and several penalties are considered, taking the form of a divergence from a reference combination scheme. In contrast with most of the existing approaches, our framework performs forecast selection and combination in one step, allowing for potentially sparse combining schemes. Moreover, by exploiting the analogy between forecasts combination and portfolio optimization, we provide the analytical expression of the optimal penalty strength when penalizing with the L2-divergence from the equally-weighted scheme. An extensive simulation study and two empirical applications allow us to investigate the impact of the divergence function, the reference scheme, and the non-negativity constraint on the predictive performance. Our results suggest that the proposed models outperform those considered in previous studies.

REPRINT | 2021 / 15

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 self-reported retail investor information from a risk-return profile survey, we investigate the determinants of individual return objectives as well as the capacity of investors to achieve 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 sociodemographic variables (age and education), and recent past trading intensity. Retail investors with higher return objectives perform better than their counterparts who want to avoid any risk of capital loss. The capacity to achieve the return objective, however, decreases as the level of the objective increases.

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REPRINT | 2021 / 16

Market Instability and Technical Trading at High Frequency: Evidence from NASDAQ Stocks

Deniz Erdemlioglu, Mikael Petitjean, Nicolas Vargas

The promotion of financial stability is the mission of central banks and market authorities. This mission is more difficult to accomplish when trading activity is associated with financial instability in the form of intraday price jumps. While the literature has widely shown that exogenous news releases trigger these jumps, very little is known about the consequences of endogenous technical trading on market instability. Using high-frequency 5-minute data on 460 NASDAQ stocks from February to September 2017, we provide new evidence that sharp price movements during the day are also triggered by technical trading around special market configurations. When technical trading activity dominates, intraday price jumps are detected more frequently, and their direction becomes significantly predictable, particularly in small caps and in the energy sector. Our results support the view that the explanations for intraday market instability are not limited to news releases.

REPRINT | 2021 / 17

Mini flash crashes: Review, taxonomy and policy responses

Floris Laly, Mikael Petitjean

We focus on extreme price movements known as mini flash crashes (MFCs). After reviewing the literature, we provide a taxonomy based on a sample of MFCs identified by Nanex on the U.S. financial markets over a three-year period. We detect significant differences between crashes and exchanges. In comparison to ‘up crashes’, we find that ‘down crashes’ exhibit lower absolute returns but have longer duration. We also show that the dynamics of MCFs varies across exchanges. For example, the MFCs on ARCA are on average both less severe and shorter in duration than those on the NASDAQ. We finally review all the key implications of MCFs in terms of public policy.

REPRINT | 2021 / 18

The rise of fast trading: Curse or blessing for liquidity?

Christophe Desagre, Catherine D’Hondt, Mikael Petitjean

We study how market liquidity on Euronext has evolved with the rise of fast trading. We identify fast traders by directly measuring message traffic and the lifetime of orders for every individual market member on Euronext using their identification codes. We observe an overall improvement in terms of liquidity between 2002 and 2006. However, the most exposed stocks to fast trading exhibit the weakest increase in liquidity and lose the liquidity advantage they had before the rise of fast trading.

REPRINT | 2021 / 19

Judging the functioning of equity markets in 2020: A bird's-eye (re)view

Mikael Petitjean

Relative to other global institutions, equity markets performed remarkably well in 2020 and investors ought not to be ashamed of their reactions relative to consumers. It would be a terrible abuse of language to characterize 2020 as being financially irrational. The Covid crisis in 2020 was one of the most orderly crises ever. The damage and the reward across companies, sectors, and countries made a lot of sense. Although there are pockets of extremely high valuations in the tech sector, humility has always been a virtue when it came to valuing tech firms. While stocks are very expensive in absolute terms especially in the US, they are not relative to governmental bonds. But there is a big caveat to all this: the rise in the monetary supply since 2010 has been so incredible that markets have dived deep in unchartered waters. Central banks must find our way back to homeland.

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REPRINT | 2021 / 20

What drives retail portfolio exposure to ESG factors?

Catherine D'Hondt, Maxime Merli, Tristan Roger

Using both survey and trading data from 9,286 retail investors for the 2005–2011 period, we highlight the impact of financial literacy and risk tolerance on retail stock portfolio exposure to environmental, social and corporate governance (ESG) factors. Our results also reveal that the three ESG factors are not homogeneous and should be considered separately. Lower exposure to ESG factors during the crisis period suggests that ESG investing is a luxury good for most investors.

REPRINT | 2021 / 21

Modeling Time-Varying Conditional Betas. A Comparison of Methods with Application for REITs

Marcel Aloy, Floris Laly, Sébastien Laurent, Christelle Lecourt

Beta coefficients are the cornerstone of asset pricing theory in the CAPM and multiple factor models. This chapter proposes a review of different time series models used to estimate static and time-varying betas, and a comparison on real data. The analysis is performed on the USA and developed Europe REIT markets over the period 2009–2019 via a two-factor model. We evaluate the performance of the different techniques in terms of in-sample estimates as well as through an out-of-sample tracking exercise. Results show that dynamic models clearly outperform static models and that both the state space and autoregressive conditional beta models outperform the other methods.

REPRINT | 2021 / 22

Regularized regression when covariates are linked on a network: the 3CoSE algorithm

Matthias Weber, Jonas Striaukas, Martin Schumacher, Harald Binder

Covariates in regressions may be linked to each other on a network. Knowledge of the network structure can be incorporated into regularized regression settings via a network penalty term. However, when it is unknown whether the connection signs in the network are positive (connected covariates reinforce each other) or negative (connected covariates repress each other), the connection signs have to be estimated jointly with the covariate coefficients. This can be done with an algorithm iterating a connection sign estimation step and a covariate coefficient estimation step. We develop such an algorithm, called 3CoSE, and show detailed simulation results and an application forecasting event times. The algorithm performs well in a variety of settings. We also briefly describe the publicly available R-package developed for this purpose.

REPRINT | 2021 / 23

ESG-Washing in the Mutual Funds Industry? From Information Asymmetry to Regulation

Bertrand Candelon, Jean-Baptiste Hasse, Quentin Lajaunie

In this paper, we study the asymmetric information between asset managers and investors in the socially responsible investment (SRI) market. Specifically, we investigate the lack of transparency of the extra-financial information communicated by asset managers. Using a unique international panel dataset of approximately 1500 equity mutual funds, we provide empirical evidence that some asset managers portray themselves as socially responsible yet do not make tangible investment decisions. Furthermore, our results indicate that the financial performance of mutual funds is not related to asset managers' signals but should be evaluated relatively using extra-financial ratings. In summary, our findings advocate for a unified regulation framework that constrains asset managers' communication.

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REPRINT | 2021 / 24

Affine term structure models: a time-change approach with perfect fit to market curves

Cheikh Mbaye, Frédéric Vrins

We address the so-called calibration problem which consists of fitting in a tractable way a given model to a specified term structure like, e.g., yield, prepayment or default probability curves. Time-homogeneous jump-diffusions like Vasicek or Cox-Ingersoll-Ross (possibly coupled with compound Poisson jumps, JCIR, a.k.a. SRJD), are tractable processes but have limited flexibility; they fail to replicate actual market curves. The deterministic shift extension of the latter, Hull-White or JCIR++ (a.k.a. SSRJD) is a simple but yet efficient solution that is widely used by both academics and practitioners. However, the shift approach may not be appropriate when positivity is required, a common constraint when dealing with credit spreads or default intensities. In this paper, we tackle this problem by adopting a time change approach, leading to the TC-JCIR model. On the top of providing an elegant solution to the calibration problem under positivity constraint, our model features additional interesting properties in terms of variance. It is compared to the shift extension on various credit risk applications such as credit default swap, credit default swaption and credit valuation adjustment under wrong-way risk. The TC-JCIR model is able to generate much larger implied volatilities and covariance effects than JCIR++ under positivity constraint, and therefore offers an appealing alternative to the shift extension in such cases.

REPRINT | 2021 / 25

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 completereview 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.