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# The Distribution of Realized Exchange Rate Volatility

Torben G Andersen, Tim Bollerslev, Francis X Diebold & Paul Labys

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## Abstract

Using high-frequency data on deutschemark and yen returns against the dollar, we construct model-free estimates of daily exchange rate volatility and correlation that cover an entire decade. Our estimates, termed realized volatilities and correlations, are not only model-free, but also approximately free of measurement error under general conditions, which we discuss in detail. Hence, for practical purposes, we may treat the exchange rate volatilities and correlations as observed rather than latent. We do so, and we characterize their joint distribution, both unconditionally and conditionally. Noteworthy results include a simple normality-inducing volatility transformation, high contemporaneous correlation across volatilities, high correlation between correlation and volatilities, pronounced and persistent dynamics in volatilities and correlations, evidence of long-memory dynamics in volatilities and correlations, and remarkably precise scaling laws under temporal aggregation.

Forecasting High-frequency data Integrated volatility Long-memory Quadratic variation

Realized volatility Risk management

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**KEY WORDS:** 

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Source: Mathematical Finance

No Contagion, Only Interdependence: Measuring Stock Market Comovements

Source: The Journal of Finance

International Market Correlation and Volatility

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The incremental volatility information in one million foreign exchange quotations

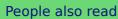
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