

Listed Volatility and Variance Derivatives

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Listed Volatility and Variance Derivatives

A Python-based Guide

DR. YVES J. HILPISCH

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Preface

Volatility and variance trading has evolved from something opaque to a standard tool in today's financial markets. The motives for trading volatility and variance as an asset class of its own are numerous. Among others, it allows for effective option and equity portfolio hedging and risk management as well as straight out speculation on future volatility (index) movements. The potential benefits of volatility- and variance-based strategies are widely accepted by researchers and practitioners alike.

With regard to products it mainly started out around 1993 with over-the-counter (OTC) variance swaps. At about the same time, the Chicago Board Options Exchange introduced the VIX volatility index. This index still serves today – after a significant change in its methodology – as the underlying risk factor for some of the most liquidly traded listed derivatives in this area. The listing of such derivatives allows for a more standardized, cost efficient and transparent approach to volatility and variance trading.

This book covers some of the most important listed volatility and variance derivatives with a focus on products provided by Eurex. Larger parts of the content are based on the Eurex Advanced Services tutorial series which use Python to illustrate the main concepts of volatility and variance products. I am grateful that Eurex allowed me to use the contents of the tutorial series freely for this book.

Python has become not only one of the most widely used programming languages but also one of the major technology platforms in the financial industry. It is more like a platform since the Python ecosystem provides a wealth of powerful libraries and packages useful for financial analytics and application building. It also integrates well with many other technologies, like the statistical programming language R, used in the financial industry. You can find links to all Python resources under <http://lvvd.tpq.io>.

I thank Michael Schwed for providing parts of the Python code. I also thank my family for all their love and support over the years, especially my wife Sandra and our children Lilli and Henry. I dedicate this book to my beloved dog Jil. I miss you.

YVES

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