

DOCTORAL THESIS

A study of the relationship between volatility premium and option returns over different time horizons: an ex-post and ex-ante empirical analysis using bid-ask data

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ABSTRACT

There are three distinct avenues of empirical research relating to option returns. (1) attempts to explain option returns; (2) analysis of models forecasting option implied volatility (IV) versus alternative forecasts of futures realized volatility (RV); and (3) estimation of the economic benefit of volatility forecasting. This study shows that the three apparently disparate fields of research are closely related since option returns are positively related to volatility spread, and asset returns are negatively related to volatility shock. We show that IV outperforms, and indeed subsumes, a subset of time-series historical volatility (TS-HV) forecasts in predicting RV, although the finding that TS-HV does not provide incremental information in forecasting RV, the use of the alternative predictor can enhance the economic profit to option traders. The study also shows that option horizons significantly affect the impact of option mispricing and market direction on option returns. We provide incremental evidence that puts are more expensive than calls and reinforce the argument that pricing asymmetry can be attributed to the greater skewness of put returns due to a negative return-volatility relationship.

TABLE OF CONTENTS

DECLARATION	i
ABSTRACT	ii
ACKNOWLEDGEMENTS	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	vii
LIST OF DIAGRAMS	xiii
1 INTRODUCTION	1
1.1 MAJOR CONTRIBUTIONS	5
2 LITERATURE REVIEW AND HYPOTHESES	8
2.1 LITERATURE REVIEW	8
2.2 MAIN HYPOTHESES	18
3 DATA AND METHODOLOGY	21
3.1 DATA	21
3.2 METHODOLOGY	23
3.2.1 <i>A pricing model for HS options</i>	23
3.2.2 <i>Return calculation</i>	25
3.2.2.1 <i>Futures returns</i>	25
3.2.2.2 <i>Short option returns as a percentage of the initial option price</i>	26
3.2.2.3 <i>Short option returns as a percentage of the initial futures price</i>	26
3.2.2.4 <i>Short per unit delta option returns as a percentage of the initial futures price</i>	27
3.2.3 <i>Time-Series Historical Volatility Forecasting Models (TS-HV)</i>	27
3.2.3.1 <i>Exponentially Weighted Moving Average (EWMA) model</i>	27
3.2.3.2 <i>Autoregressive Integrated Moving Average (ARIMA) model</i>	27
3.2.4 <i>Estimation method of Implied Volatility of an option group</i>	28
3.2.5 <i>Estimation of Realized volatility (RV) per annum</i>	28
3.2.6 <i>Tests of the performance of IV and TS-HV in forecasting future RV</i>	29
3.2.7 <i>A test of the Incremental benefit of incorporating TS-HV forecast in RV prediction</i>	29
4 SUMMARY AND INTERPRETATION OF EMPIRICAL RESULTS	30
4.1 SUMMARY STATISTICS OF OPTION CHARACTERISTICS	30
4.1.1 <i>Distribution of moneyness (X/F) of calls for each delta and days-to-maturity category</i>	31
4.1.2 <i>Distribution of delta of call for each delta and days-to-maturity category</i>	31
4.1.3 <i>Distribution of call option prices (percentage of initial futures price) for each moneyness and days-to-maturity group</i>	32

4.1.4	<i>Distribution of call theta for each moneyness and days-to-maturity group</i>	32
4.1.5	<i>Distribution of call price decay (index points) for each moneyness and days-to-maturity group</i>	32
4.1.6	<i>Distribution of call Gamma for each moneyness and days-to-maturity group</i>	33
4.1.7	<i>Distribution of call Vega for each moneyness and days-to-maturity group</i>	33
4.1.8	<i>Distribution of call price elasticity for each moneyness and days-to-maturity group</i>	34
4.1.9	<i>Distribution of moneyness (X/F) of put options for each delta and days-to-maturity category</i>	34
4.1.10	<i>Distribution of delta of the put options for each delta and days-to-maturity category</i>	35
4.1.11	<i>Distribution of put option prices (percentage of initial futures price) for each moneyness and days-to-maturity group</i>	35
4.1.12	<i>Distribution of put theta for each moneyness and days-to-maturity group</i>	36
4.1.13	<i>Distribution of put price decay (index points) for each moneyness and days-to-maturity group</i>	36
4.1.14	<i>Distribution of put Gamma for each moneyness and days-to-maturity group</i>	36
4.1.15	<i>Distribution of put Vega for each moneyness and days-to-maturity group</i>	37
4.1.16	<i>Distribution of put price elasticity for each moneyness and days-to-maturity group</i>	37
4.1.17	<i>Comparisons of sample characteristics of put and call options</i>	38
4.2	RETURNS AND RISKS FROM SELLING OPTIONS.....	38
4.2.1	<i>Returns (% of call price) from selling call options</i>	39
4.2.2	<i>Risks from selling call options</i>	39
4.2.3	<i>Returns (% of put price) from selling put options</i>	40
4.2.4	<i>Risks from selling put options</i>	40
4.2.5	<i>Return and Risk Comparisons between short call and short put options</i>	41
4.3	FACTORS THAT CONTRIBUTE TO RETURNS FROM SELLING CALL AND PUT OPTIONS.....	43
4.3.1	<i>Risk-neutral probability of exercise (implied by option prices) versus ex-post relative frequency of exercise</i>	43
4.3.1.1	<i>Risk-neutral probability of exercise (implied by option prices) versus ex-post relative frequency of exercise for call options</i>	43
4.3.1.2	<i>Risk-neutral probability of exercise (implied by option prices) versus ex-post relative frequency of exercise for put option</i>	44
4.3.2	<i>Ex-post Volatility Spreads of call and put options</i>	45
4.3.2.1	<i>Ex-post Volatility Spreads of call options</i>	45
4.3.2.2	<i>Ex-post Volatility Spreads of put options</i>	47
4.4	THE PERFORMANCE OF VARIOUS OPTION WRITING STRATEGIES.....	48
4.4.1	<i>Risk and Return from writing (per unit) delta of Call Options</i>	48
4.4.2	<i>Risk and Return from writing (per unit) delta of put Options</i>	49
4.4.3	<i>Risk and Return from writing (per unit) delta of straddles/strangles</i>	50
4.4.4	<i>Comparison of performance between short call, short put, and short straddles/strangles strategies</i>	51

4.4.4.1	<i>A comparison of Sharpe ratio between call, put, and straddle</i>	51
4.4.4.2	<i>A Comparison of adjusted Sharpe Ratios for call, put, and straddle</i>	52
4.5	THE IMPACT OF VOLATILITY SHOCKS (RV-IV) ON FUTURES AND OPTIONS RETURNS	53
4.5.1	<i>The impact of volatility shocks on futures returns</i>	53
4.5.2	<i>The impact of volatility shocks on short call returns</i>	55
4.5.3	<i>The impact of volatility shocks on short put returns</i>	57
4.5.4	<i>The impact of volatility shocks on short strangle returns</i>	59
4.6	THE FORECASTING PERFORMANCE OF TIME-SERIES HISTORICAL VOLATILITY PREDICTIONS VERSUS OPTION IMPLIED VOLATILITY	62
4.6.1	<i>The forecasting performance of a single predictor of future RV</i>	62
4.6.2	<i>The incremental benefit of including TS-HV in RV forecasting</i>	63
4.6.2.1	<i>The incremental benefit of including TS-HV in RV forecasting</i>	63
4.7	THE ECONOMIC BENEFIT OF INCORPORATING TS-HV FORECAST FOR TRADING FUTURES AND OPTIONS	65
4.7.1	<i>The economic benefit from incorporating TS-HV forecast information into trading index futures</i>	65
4.7.2	<i>The economic benefit of incorporating TS-HV forecasts into trading call options</i>	66
4.7.3	<i>The economic benefit of incorporating TS-HV forecasts in trading put options</i>	71
4.7.4	<i>The economic benefit of incorporating TS-HV forecasts when trading straddles</i>	74
5	CONCLUSIONS	78
	REFERENCE	80
	CURRICULUM VITAE	243