

## ANH LE

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### EDUCATION

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2007                      Ph.D. in Finance, Stern School of Business, New York University  
2001                      Bachelor of Commerce (First Class Honors), Queensland University, Australia  
1998 - 2000              Bachelor of Commerce (Accounting & Finance), Monash University, Australia

### RESEARCH AND TEACHING INTERESTS

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Research                Asset Pricing, Credit Modelling, Risk Management, Term Structure Modelling  
Teaching                Financial Instruments, Derivatives, Risk Management, Corporate Finance

### WORKING PAPERS

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Separating the Components of Default Risk: A Derivatives-Based Approach, Working Paper, New York University, 2006  
Discrete-time Dynamic Term Structure Model with Generalized Market Prices of Risks, under revision for resubmission to the *Review of Financial Studies*, 2006 (with Qiang Dai and Kenneth Singleton)  
Risk-Neutral Dynamics of Interest Rates, Work in Progress, 2006 (with Kenneth Singleton)

### COURSES TAUGHT

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Foundations of Financial Markets (41 students, rating: 6.1/7), Summer 2006, NYU

### CONFERENCE AND SEMINAR PRESENTATIONS

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Separating the Components of Default Risk: A Derivatives-Based Approach, Working Paper, New York University, 2006

Presented at Trans-Atlantic Doctoral Conference, LBS, May 2006  
Presented at Department of Finance Seminar, NYU, Oct 2006  
Presented at Moody's Workshop Series, Dec 2006

Discrete-time Dynamic Term Structure Model with Generalized Market Prices of Risks, Working Paper, Stanford University and New York University, 2006

Bank of Canada Conference, Ottawa, May 2006 (presented by co-author as keynote lecture)  
Presented at the 2007 AFA Conference, Chicago, Jan 2007

## HONORS AND AWARDS

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2007	David Graifman Best Dissertation Award
2006-2007	Benjamin J. Levy Fellowship
2006	Stern School of Business's Ph.D. Excellence Teaching Award
2002-2006	Stern School of Business Ph.D. Fellowship
2001	Dean's Commendation List
2001	Butterworth Prize for Excellent Academic Achievement leading to the Bachelor's Degree
2000	Sir John Monash Award for Excellence
2000	CPA Australia Medal for Top Performance in Accounting Studies
2000	Australasian Institute of Banking & Finance Award for Top Performance in Banking and Finance Studies
2000	Winner of the Australasian Institute of Banking & Finance's Treasury Competition
1996	Top Student in Hanoi Foreign Trade University Entrance Examination (out of ~5000)

## REFERENCES

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### **Separating the Components of Default Risk: A Derivatives-Based Approach, Working Paper, New York University, 2006**

In this paper, I propose a general pricing framework that allows the *risk-neutral* dynamics of loss given default ( $L^Q$ ) and default probabilities ( $\lambda^Q$ ) to be separately and sequentially discovered. The key is to exploit the differentials in  $L^Q$  exhibited by different securities on the same underlying firm. By using equity and option data, I show that one can efficiently extract pure measures of  $\lambda^Q$  that are not contaminated by recovery information. Equipped with this knowledge of pure default dynamics, prices of any defaultable security on the same firm with non-zero recovery can be inverted to compute the associated  $L^Q$  corresponding to that particular security. Using data on credit default swap premiums, I show that, cross-sectionally,  $\lambda^Q$  and  $L^Q$  are positively correlated. In particular, this positive correlation is strongly driven by firms' characteristics, including leverage, volatility, profitability and q-ratio. For example, 1% increase in leverage leads to .14% increase in  $\lambda^Q$  and .60% increase in  $L^Q$ . These findings raise serious doubts about the current practice, by both researchers and practitioners, of setting  $L^Q$  to a constant across firms.

### **Discrete-time Dynamic Term Structure Model with Generalized Market Prices of Risks, under revision for resubmission to the *Review of Financial Studies*, 2006 (with Qiang Dai and Kenneth Singleton)**

This paper develops a rich class of discrete-time, *nonlinear* dynamic term structure models. Under the risk-neutral measure, the distribution of the state vector  $X_t$  resides within a family of discrete-time affine processes that nests the *exact* discrete-time counterparts of the entire class of continuous-time models in Duffie and Kan (1996) and Dai and Singleton (2000). Moreover, we allow the market price of risk  $\Lambda_t$ , linking the risk-neutral and historical distributions of  $X$ , to depend generally on the state  $X_t$ . The conditional likelihood functions for coupon bond yields for the resulting nonlinear models under the historical measure are known exactly in closed form. As an illustration of our approach, we estimate a three factor model with a cubic term in the drift of the stochastic volatility factor and compare it to a model with a linear drift. Our results show that inclusion of a cubic term in the drift significantly improves the models statistical fit as well as its out-of-sample forecasting performance.

### **Risk-Neutral Dynamics of Interest Rates, Work in Progress, 2006 (with Kenneth Singleton)**

A critical assumption underlying many term structure models in the literature is that the state variables are affine or exponentially affine under the risk-neutral measures. This assumption is mainly for convenience since it allows for analytical pricing of bond prices. This paper develops a simulation technique that can compute bond prices efficiently, allowing for general nonlinearity and inter-dependence of the state variables under the risk neutral measures. We show that this technique can be used to investigate whether US interest rates data exhibit any nonlinearity under the risk neutral measures while making no prior assumptions on the physical distribution of the state variables. A better understanding of the risk-neutral dynamics of interest rates will ultimately enhance our knowledge of the dynamics of premiums required by investors to bear interest rate risks.