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EDUCATIONAL BACKGROUND

Ph.D., Agricultural Economics (Financial Economics minor) Texas A&M University, College Station, Texas 1994
M.S., Agricultural Economics, University of Missouri, Columbia, Missouri 1990
B.S., Agricultural Economics, Purdue University, West Lafayette, Indiana 1988

ACADEMIC APPOINTMENTS HELD

Professor & Hanson-Clegg-Allen Chair in Agricultural Banking & Finance, University of Nebraska-Lincoln, January 2017 to present
Professor of Finance, University of Northern Iowa, July 2015 to December 2016
Associate Professor of Finance (with tenure), University of Northern Iowa, July 2011 to June 2015
Associate Professor of Finance, University of Northern Iowa, August 2009 to June 2011
Associate Professor of Agricultural Economics (with tenure), Pennsylvania State University, July 2004 to August 2009
Assistant Professor of Agricultural Economics, Pennsylvania State University, February 1998 to June 2004
Assistant Professor of Agricultural Economics, University of Tennessee, January 1995 to January 1998

ARTICLES PUBLISHED IN REFEREED JOURNALS

40. Olsen, Brett C., and Jeffrey R. Stokes, 2014. "Is Farm Real Estate the Next Bubble?" *Journal of Real Estate Finance and Economics* 50(3):355-376.
39. Stokes, Jeffrey R., 2013. "What is the (Real Option) Value of a College Degree?" *Quarterly Journal of Finance*, 3(3&4):1-27.
38. Stokes, J., and A. Cox, 2013. "The Speculative Value of Farm Real Estate," *Journal of Real Estate Research* 36(2):169-186.
37. Balasubramayan, L., S. Stefanou, and J. Stokes, 2012. "An Entropy Approach to Size and Variance Heterogeneity in U.S. Commercial Banks," *Journal of Economics and Finance*, 36(3):728-749.

36. Stokes, J., 2012. "The Value of the Option to Preserve Farm Real Estate," *Journal of Economics and Finance*, 36(1):162-175.
35. Stokes, J., 2011. "Information Theoretic Generator Estimation with an Application to Ratings Process Migration," *Journal of Risk Management in Financial Institutions*, 4: 29-45.
34. Balasubramanian, L., J. Stokes, and S. Stefanou, 2010. "Declining Cost Efficiency as a Signal of Increasing Bank Vulnerability: An Entropy-Based Approach," *Applied Economics Letters*, 17: 1769-1781.
33. Dressler, J., and J. Stokes, 2010. "Survival Analysis and Mortgage Termination at AgChoice, ACA," *Agricultural Finance Review*. 70: 21-36.
32. Tozer, P., and J. Stokes, 2009. "Investing in Perennial Pasture Improvement: A Real Options Analysis," *Review of Agricultural Economics*, 31:88-102.
31. Stokes, J., R. Rajagopalan, and S. Stefanou, 2008. "Investment in a Methane Digester: An Application of Capital Budgeting and Real Options," *Review of Agricultural Economics*, 30: 664-676
30. Stokes, J., J. Dressler, and L. Balasubramanian, 2008. "Credit Risk Rating Migration and Unobserved Borrower Heterogeneity," *Agricultural Finance Review*, 68: 237-253.
29. Stokes, J., and J. Harper, 2008. "An Excel-based Decision Aid for Evaluating Financing Alternatives and Calculating the Marginal Cost of Capital," *Agricultural Finance Review*, 68: 339-348.
28. Turvey, C. and J. Stokes, 2008. "Market Structure and the Value of Agricultural Contingent Claims," *Canadian Journal of Agricultural Economics*, 56: 79-84.
27. Stokes, J., and B. Gloy, 2007. "Mortgage Delinquency Migration: An Application of Maximum Entropy Econometrics," *Journal of Real Estate Portfolio Management*, 13:153-160.
26. Choi, O., S. Stefanou, and J. Stokes, 2007. "Efficiency Differences of U.S. Agricultural Banks," *Agricultural Finance Review*, 67: 55-73.
25. Stokes, J., and B. Gloy, 2007. "Estimating Delinquency Migration and the Probability of Default from Aggregate Data," *Agricultural Finance Review*, 67: 75-85.
24. Stokes, J., P. Tozer, and J. Hyde, 2007. "Identifying Efficient Dairy Producers Using Data Envelopment Analysis," *Journal of Dairy Science*, 90:2555-2562.
23. Stokes, J., and P. Tozer, 2006. "Optimal Feed Mill Blending," *Review of Agricultural Economics*, 28:543-552.
22. Stokes, J., 2006. "Entry, Exit, and Structural Change in Pennsylvania's Dairy Sector," *Agricultural and Resource Economics Review*, 35:357-353.
21. Stokes, J. and D. Frechette, 2006. "Food Consumption Dynamics: A Nonparametric Approach Using Maximum Entropy Estimation," *Agricultural Economics*, 34:281-291.
20. Choi, O., S. Stefanou, and J. Stokes, 2006. "The Dynamics of Efficiency Improving Input Allocation," *Journal of Productivity Analysis*, 25: 169-181.
19. Stokes, J., 2005. "Dynamic Cash Discounts when Sales Volume is Stochastic," *The Quarterly Review of Economics and Finance*, 45:144-160.
18. Winsten, J. and J. Stokes, 2004. "The Efficacy of Controlling Phosphorus Loading: The Case of Management-Intensive Grazing," *Agricultural Systems*, 79: 283-303.
17. Stokes, J. and W. Nayda, 2003. "The Pricing of Revenue Assurance: Reply," *American Journal of Agricultural Economics*, 85:1066-1069.

16. Hyde, J., J. Stokes, and P. Engel, 2003. "Optimal Investment in an Automatic Milking System: An Application of Real Options," *Agricultural Finance Review*, 63:75-92.
15. Scaletta, T. and J. Stokes, 2003. "Optimal Agricultural Credit Association Branch Office Locations," *Journal of Agricultural and Applied Economics*, 35: 127-141.
14. Stokes, J. and P. Tozer, 2002. "Cost Minimization and Managing Soil Nutrient Loading: Conflict or Compromise?" *Canadian Journal of Agricultural Economics*, 50:151-169.
13. Tozer, P. and J. Stokes, 2002. "Producer Breeding Objectives and Optimal Sire Selection," *Journal of Dairy Science*, 85:3518-3525.
12. Stokes, J. and P. Tozer, 2002. "Sire Selection with Multiple Objectives," *Agricultural Systems*, 73:147-164.
11. Stokes, J. and B. Brinch, 2001. "Valuing Agricultural Mortgage-Backed Securities," *Journal of Agricultural and Applied Economics*, 33:493-511.
10. Tozer, P. and J. Stokes, 2001. "Using Multiple Objective Programming in a Dairy Cow Breeding Program," *Journal of Dairy Science*, 84: 2782-2788.
9. Brinch, B. and J. Stokes, 2001. "Quantifying the Impact of Farmer Mac Prepayment Penalties," *Agricultural Finance Review*, 61:141-166.
8. Tozer, P. and J. Stokes, 2001. "A Multi-objective Programming Approach to Feed Ration Balancing and Nutrient Management," *Agricultural Systems*, 67:201-215.
7. Stokes, J., K. Coble, and R. Dismukes, 2000. "Producer Behavior in the Presence of an Income Stabilization Program," *Agricultural Finance Review*, 60:33-59.
6. Stokes, J., 2000. "A Derivative Security Approach to Setting Crop Revenue Coverage Insurance Premiums," *Journal of Agricultural and Resource Economics*, 25:159-176.
5. Stokes, J., 1998. "Annual Effective Interest Rates When the Term Structure is Stochastic," *Agricultural Finance Review*, 58:17-31.
4. Stokes, J., H. Ziari, M. Rister, and B. McCarl, 1998. "Meat Packing Plant Production Planning: Application of Mixed Integer Goal Programming," *Agribusiness: An International Journal*, 14:171-181.
3. Stokes, J., W. Nayda, and B. English, 1997. "The Pricing of Revenue Assurance," *American Journal of Agricultural Economics*, 79:439-451.
2. Stokes, J., J. Mjelde, and C. Hall, 1997. "Optimal Marketing of Nursery Crops from Container-Based Production Systems," *American Journal of Agricultural Economics*, 79:235-245.
1. McCarl, B., M. Rister, J. Stokes, and H. Ziari, 1996. "Improving Shadow Price Information: Obtaining Relevant Shadow Prices from Problems with Decomposable Objectives," *American Journal of Agricultural Economics*, 78:699-705.

CURRENT WORKING PAPERS

4. Stokes, J., 2017. "How Much Stress Is Implied by Dodd-Frank Annual Stress Test (DFAST) Scenarios?" under review at *Journal of Banking and Finance*.
3. Stokes, J., 2016. "The Real Option Value of Farm Real Estate" under review at *Agricultural Finance Review*.
2. Stokes, J., 2016. "How to Stress a Matrix: An Application of the Entropy Concentration Theorem," in progress.

1. Stokes, J., and W. Nayda, 2016. "Temporal Data Disaggregation using Markov Chains and Matrix Regularization," in progress.

SELECTED PRESENTATIONS AND OTHER CREATIVE ACCOMPLISHMENTS

- Stokes, J., 2014, "Dodd-Frank Stress Testing: Macro-factors and Scenarios That Make Sense for FCS Institutions," *Farm Credit Council*, Washington, D.C.
- Stokes, J., 2012, "The Demand for Farm Debt and the Impact of the Farm Credit System on Interest Rates Faced by Producers," *Farm Credit Council*, Washington, D.C.
- Stokes, Jeffrey R., 2012. "What is the (Real Option) Value of a College Degree?" 16th Annual *Real Options International Conference*, London Business School, London, UK.
- Associate Editor, *Agricultural Finance Review*, 2008 to present.
- Dressler, J., and J. Stokes, 2006. "Mortgage Termination: A Survival Analysis Approach with Competing Risks," in *Proceedings of Regional Committee NC-1014 Annual Meeting*, Washington, D.C., A. L. Katchova, Ed., 161-173.
- Shields, M., J. Stokes, and J. Bae, 2004. "An Analysis of Bank Consolidation Trends in Rural Pennsylvania, Selected Paper, *AAEA Annual Meeting*, Denver, CO.
- Stokes, J., 2003. "Farmer Mac's Mission in 2003," *Journal of Agricultural Lending*, 16: 23-33.
- Stokes, J., 2002. "Using Simulation to Determine Bank Capital Adequacy," *Financial Engineering News* (Nov/Dec):4-5.
- Ellinger, P., E. LaDue, D. Leatham, and J. Stokes, 2000. "Information Technology and Credit Scoring Use," in *Proceedings of Regional Committee NC-221 Annual Meeting*, Minneapolis, Minnesota, J. R. Stokes, Ed., 1-18.
- Brinch, B. and J. Stokes, 2000. "An Analysis of Farmer Mac Prepayment Penalty Designs," in *Proceedings of Regional Committee NC-221 Annual Meeting*, Minneapolis, Minnesota, J. R. Stokes, Ed., 93-131.
- Stokes, J., "Bank Capital Adequacy Simulation I," Excel-based simulation model contributed to Decisioneering, Inc.'s example model library and available at: <http://www.crystalball.com>, Banking and Credit section.
- Stokes, J., "Bank Capital Adequacy Simulation II," Excel-based simulation model contributed to Decisioneering, Inc.'s example model library and available at: <http://www.crystalball.com>, Banking and Credit section.
- Stokes, J., "Granting Credit," Excel-based simulation model contributed to Decisioneering, Inc.'s example model library and available at: <http://www.crystalball.com>, Banking and Credit section.
- Approximately \$1 million in grant funds since 1998 through National Research Initiative (NRI), Higher Education Challenge Grant (HECG), and other Federal and State sources.
- Approximately 30 additional publications in popular press.
- Approximately 30 presentations at national and international professional meetings.
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TEACHING RELATED ACTIVITIES

University of Nebraska-Lincoln

Academic Advisor & Program Director, Nebraska Bankers Association Scholarship Program, Agricultural Banking & Finance Option
Club Advisor for Agricultural Economic Club

University of Northern Iowa

Academic Advisor for 80+ Finance and Real Estate undergraduate majors
Club Advisor for Rho Epsilon (Real Estate Club)
Faculty Advisor for NAIOP University Challenge

Pennsylvania State University

Member of the Penn State Graduate Faculty
Member of the Penn State Operations Research Faculty
Academic Advisor for over 200 undergraduate students
Committee Member or Committee Chair for 9 M.S., 10 Ph.D., and 3 Schreyer Honors students

University of Tennessee

Academic Advisor for over 30 undergraduate students
Committee Member for 2 M.S. students
Club Advisor for Agribusiness Club

SERVICE

University of Nebraska

Department
External Relations Committee

University of Northern Iowa

Department
Undergraduate Curriculum Committee
Professional Assessment Committee (promotion and tenure)

College

College of Business Administration *Faculty Senate Chair*
College of Business Administration *Faculty Senate*
College of Business Administration *Faculty Senate Curriculum Committee Chair*
Department of Finance Representative to *Professional Readiness Program*
College of Business Administration Representative to *University Honors Program*

University

College of Business Administration Representative to the *Graduate Council*
UNI Baseball Club *Advisor*
UNI Trap and Skeet Club *Advisor*
UNI Rugby Club *Advisor*

Pennsylvania State University

Undergraduate and Graduate Curriculum Committee
Doctoral Qualifying Examination Committee

University of Tennessee

Undergraduate Curriculum Committee

HONORS AND AWARDS

University of Northern Iowa

- 2012-13 UNI College of Business Administration Faculty Scholarship Award
 - 2010-11 University Book and Supply Outstanding Teacher
 - 2010 Apple Polishers Award
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COURSE DESCRIPTIONS

University of Nebraska-Lincoln

- AECN 452/852 - *Agricultural Finance*. Principles and concepts of financial management of farm and agribusiness firms developed. Various strategies for acquiring and using capital resources by the individual firm explored. Institutions providing the sources of agricultural credit are individually studied.
- AECN 453 - *Agricultural & Rural Property Appraisal*. Valuation of agricultural and rural real estate traced from the underlying theory of value through full development of principles, practices, and factors used by the appraisal profession to estimate value. The income approach, the market data approach, and the cost approach to value developed in detail. Appraisal procedure analyzed for such special purposes as farm loans, tax assessment, and condemnation.

University of Northern Iowa

- FIN 3110 – *Principles of Real Estate*. Introduction to the nature of residential, commercial, and agricultural real estate, investment value, and related decision analyses. Includes appraisal, investment analysis, location theory, financing, legal characteristics, and development.
- FIN 3125 - *Real Estate Finance*. Introduction to concepts, techniques, and instruments integral to the financing of residential, commercial, and agricultural real estate. Discussion of financial markets, institutions, secondary markets, mortgage derivatives and real options in real estate.

Pennsylvania State University

- AGBM 407 – *Farm Planning and Financial Management*. Financial management, financial statement analysis, applications of time value of money, capital budgeting, acquisition and use of debt capital, portfolio theory, risk management techniques for small businesses, and real estate finance.
- AGBM 408 – *Financial Decision Making for Agribusiness*. Working capital management, inventory policy, credit policy, the firm's credit granting decision and accounts receivable management, applications of Monte Carlo simulation.
- AGEC 527 – *Quantitative Methods I*. Applications of mathematical programming, stochastic dynamic programming, Markov process theory and applications, introduction to finite difference methods with applications to derivative security pricing.

AEREC 590 – *Colloquium*. Continuing seminars consisting of a series of individual lectures by faculty, students, and outside speakers.

AEREC 597 – *Maximum Entropy Econometrics*. Information theoretic econometric estimation and inference with applications to discrete choice-censored problems including Markov chain transition probability estimation.

University of Tennessee

AGEC 412 – *Agricultural Finance*. Financial management, financial statement analysis, applications of time value of money, capital budgeting, acquisition and use of debt capital, portfolio theory, risk management techniques for farm businesses, and real estate finance.

CONSULTING ACTIVITIES

PennAnalytics LLC, Denver, IA 50622, <http://www.pennanalytics.com>, PennAnalytics LLC assists financial services clients in model development, guidance, model validation, and various stress testing exercises including Dodd Frank Annual Stress Testing (DFAST) and Comprehensive Capital Analysis and Review (CCAR). Former clients include:

Farm Credit Administration, Washington, DC

Regulatory assistance/guidance for Federal Agricultural Mortgage Corporation

Standard & Poor, New York, NY

HECM and Jumbo rating model validation

State ratings model validation

Heath-Jarrow-Morton forward rate model calibration

Frost Bank, Austin, TX

Value-at-risk model guidance and validation

SNL Financial, Washington, DC

SNL Bank Risk Ratings and Second Pillar Bank Risk Ratings model developer

Prosperity Bank, Houston Texas

DFAST model validation

IBC Bank, San Antonio, TX

DFAST model validation

AgFirst FCB, Columbia, SC

ALLL stress testing model validation

Bank of China New York, New York, NY

AML/CTF model validation

First National Bank, Pittsburgh, PA

ALLL Stress testing model validation

DFAST model validation

AML/CTF model validation

Cathay Bank, Los Angeles, CA

DFAST model validation

*E*TRADE Financial Corporation*, Arlington, VA

Option trading and Hesston stochastic volatility model validation

U.S. Bancorp, Minneapolis, MN

Currency trading stress testing model validation
CCAR model validation
First Citizens Bank, Raleigh, NC
DFAST stress testing model validation
Farm Credit East ACA, Enfield, CT
Enterprise risk management assistance (through Second Pillar Consulting)
The Private Bank, Chicago, IL
Swap model validation
Network Solutions, Inc., Washington, DC
Validation of various capital budgeting models
Promontory Financial Group, Washington DC
Various expert opinion and model validation projects
Capital One Financial, Inc., McLean, VA
Interest rate risk model development
Federal Agricultural Mortgage Corporation, Washington DC
Model validation and stress testing
