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EmploymentThe University of North Carolina, Kenan-FlHistory:Sarah Graham Kenan Distinguished Professor of Executive Director, Frank H. Kenan Institute of Research Director, Institute for Private Capital, Vice President, Kenan-Flagler Business School Professor of Finance, 2009-2018 Associate Professor of Finance, 1998-2004		essor of Finance, 2019-present tute of Private Enterprise, 2015-present apital, 2014-present School Foundation, 2009-present
	Amundi Smith Breeden (formerly, Smith ASB, now part of Amundi Pioneer, is a g institutional fixed income portfolios. Director of Research, 2012-2018 Research Consultant, 2009-2012	
	Federal Reserve Board of Governors , Research Associate, Economic Activity S	5
Education:	The University of Texas at Austin Ph.D. Finance, 1998. Minors in Statistics	and Management Science.
	Duke University Bachelor of Science with Honors, 1990.	Physics and Economics.
Refereed Publications:	"Crowded Trades and Tail Risk," with Pl Revise and resubmit, forthcoming <i>Rev</i>	1
	"Private Portfolio Attribution Analysis," Tom Keck, Nov. 2020, forthcoming.	
		Private Equity?" with Robert Harris, Wendy d David T. Robinson, <i>Journal of Financial</i> 77.
	"The Evolution of Private Equity Fund V Journal of Alternative Investments, Sp	
	"Private Equity in the Global Economy: Serdar Aldatmaz, <i>Journal of Corpora</i>	• •
	"Have Private Equity Returns Really Dec of Private Equity, Fall 2019, 22 (4) 11	clined?" with Steven N. Kaplan <i>The Journa</i> -18.
	"Do Private Equity Funds Manipulate Re Oleg Gredil, <i>Journal of Financial Eco</i>	ported Returns?" with Steven Kaplan and <i>pnomics</i> , May 2019, 132(2), 267-297.

- "Oil Price Movements and Risks of Energy Investments," with Raymond Chan, Wendy Hu, and Jian Zhang, *Journal of Alternative Investments*. Spring 2017, 19(4), 24-38
- "How Important is Financial Risk?" with Söhnke Bartram and William Waller, Journal of Financial and Quantitative Analysis, August 2015, 50(4), 801-824.
- "Are Hedge Funds Systemically Important?" with Jeremiah Green and John Hand, *The Journal of Derivatives*, Winter 2012, 20(2), 8-25.
- "Why Are U.S. Stocks More Volatile?" with Söhnke Bartram and Rene Stulz, *Journal of Finance*, 2012, 67(4), 1329-1370.
- "The Effects of Derivatives on Firm Risk and Value," with Söhnke Bartram and Jennifer Conrad, *Journal of Financial and Quantitative Analysis*, 2011, 46(4), 967-999.
- "Resolving the Exposure Puzzle: The Many Facets of Exchange Rate Exposure," with Söhnke Bartram and Bernadette Minton, *Journal of Financial Economics*, February 2010, 95(2), 148-173.
- "International Evidence on Financial Derivative Usage" with Söhnke Bartram and Frank Fehle, *Financial Management*, Spring 2009, 38(1), 185-206. Citations of Excellence Award for 2013 Award for Best Paper in Financial Management, 2009
- "Estimating Systemic Risk in the International Financial System," with Söhnke Bartram and John Hund. *Journal of Financial Economics*, 2007, 86, 835-869.
- "Corporate Risk Management and Speculative Motives," with Zeigham Khokher, *Journal of Risk*, Winter 2007/2008, 10(2), 47-72.
- "Firm-Specific Risk and Equity Market Development," with Nishad Kapadia, *Journal of Financial Economics*, 2007, 84(2), 358-388.
- "Are Firms Successful at Selective Hedging?" with David Haushalter and Peter Crabb. *Journal of Business*, 2006, 79(6), 2925-2949.
- "Investor Sentiment and Asset Valuation," with Michael Cliff, *Journal of Business*, 2005, 78(2), 405-440 (lead article).
- "Investor Sentiment and the Near-term Stock Market," with Michael Cliff, *Journal* of Empirical Finance, 2004, 11(1), 1-27 (lead article).
- "Capital Structure and Financial Risk: Evidence from Foreign Debt use in East Asia," with George Allayannis and Leora Klapper, *Journal of Finance*, 2003, 58(6), 2667-2709.
- "How Firms Should Hedge," with Klaus B. Toft, *Review of Financial Studies*, 2002, 15(4), 1283-1324.
 Research Symposium Proceedings, Chicago Board of Trade, Spring 1998.
 Proceedings of the Chicago Risk Management Conference, 1998.
- "Managing Foreign Exchange Risk with Derivatives," Journal of Financial Economics, 2001, 60(2-3), 401-448.
- "Market Reaction to Public Information: The Atypical Case of the Boston Celtics,"

	with Jay C. Hartzell, Journal of Financial Economics, 2001, 60(2-3), 333-370.
	"Constructing Binomial Trees from Multiple Implied Probability Distributions," with Klaus B. Toft, <i>Journal of Derivatives</i> , 1999, 7(2), 83-100. Proceedings of the 7th Annual Derivatives Securities Conference, 1997. Proceedings of the 1st Annual Conference on Computational Finance, 1996.
	"Volatility, Sentiment, and Noise Traders," Financial Analysts Journal, 1999, 55(2), p. 82-90.
Other Publications:	"Private Equity: Accomplishments and Challenges" with Bob Harris, Tim Jenkinson, Steve Kaplan and David Robinson, <i>Journal of Applied Corporate Finance</i> 32(3), Summer, 2020, 8-20.
	"Private Equity Portfolio Companies: A First Look at Burgiss Holdings Data," with Robert Harris, Wendy Hu, Tim Jenkinson, Steven Kaplan, and David Robinson, January 2020). SSRN working paper No. 3532444.
	"The Persistence of PE Performance," with Raymond Chan, Wendy Hu, Kelly Meldrum, Tobias True, <i>Journal of Performance Measurement</i> , February 2018.
	"The U.S. Economic Crisis: Root Causes and the Road to Recovery," with Christian Lundblad. <i>Journal of Accountancy</i> , October 2009, 208(4), 42-49.
	"The Importance of Financial Flexibility," <i>The Financial Times</i> , September 8, 2005.
	"Legal Effectiveness and External Capital: The Role of Foreign Debt," with George Allayannis and Leora Klapper. World Bank Policy Paper No. 3530, 2005.
	"Seeking Security in a Volatile World," in <u>Mastering Risk</u> , Ed. James Pickford, Prentice Hall. Also appeared in <i>The Financial Times</i> , May 16, 2000.
	Corporate Risk: Strategies and Management, eds. Gregory W. Brown and Donald H. Chew Jr., Risk Publications: London, England, 1999.
	"If The Skew Fits," with Curt Randall, <i>RISK</i> , 12(4), April 1999, p. 62-5.
	"Re-engineering Corporate Finance," with Klaus B. Toft, <i>RISK</i> , 11(5), May 1998, p. 44-7.
Working Papers & Work-in- Progress:	"Finding Fortune: How Do Institutional Investors Pick Asset Managers?" with Oleg Gredil and Preetesh Kantek. Revise and resubmit, <i>Journal of Financial</i> <i>Economics</i> .
	"Nowcasting Net Asset Values: The Case of Private Equity," with Eric Ghysels and Oleg Gredil. Revise and resubmit, <i>Review of Financial Studies</i> .
	"Determinants of International Buyout Investments," with Serdar Aldatmaz and Asli Demirguc-Kunt. World Bank Policy Research Working Paper No. wps9191. Revise and resubmit, <i>Journal of Financial and Quantitative Analysis</i> .
	"Public or Private? Determining the Optimal Ownership Structure," with Andrea

Carnelli Dompé and Sarah Kenyon. SSRN working paper No. 3529421. Revise and resubmit, *Financial Analysts Journal*.

- "How Do Financial Expertise and Networks Affect Investing? Evidence from University Endowments," with Matteo Binfare, Robert Harris, and Christian Lundblad. (Winner of 2019 Western Finance Association, Two Sigma Award for Best Paper on Investment Management).
- "Should Defined Contribution Plans Include Private Equity Investments?" with Crouch, Ghent, Harris, Hochberg, Jenkinson, Kaplan, Maxwell, and Robinson. SSRN working paper No. 3747684.
- "Why is There a Secular Decline in Idiosyncratic Risk in the 2000s?" with Söhnke M. Bartram and René Stulz. (NBER Working Paper No. w24270)
- "Why do Stocks Have High Idiosyncratic Risk when Market Risk is High?" with Söhnke Bartram and Rene Stulz. (NBER working paper No. 22492).
- "Understanding Entrepreneurship: Facilitating Academic Research with a Shared Data Repository," with Paige Ouimet, David Robinson, and Ted Zoller.
- "What Do Different Commercial Data Sets Tell Us About Private Equity Performance?" with Robert Harris, Tim Jenkinson, Steven Kaplan, and David Robinson (PERC white paper).
- "Private Equity Cyclicality and Real Business Investment," with Wendy Hu.
- "Institutions, External Financing, and Growth around the World: A New Lease on Life?" with Larry Chavis and Leora Klapper.
- "Capital Flows, Institutions, and Financial Fragility," with Wipawin Promboon.
- "Growth Options and Dynamic Risk: An Empirical Evaluation," with Mike Cliff.

Selected Research Paper Presentations (includes co-author presentations):

"How Do Financial Expertise and Networks Affect Investing? Evidence from the Governance of University Endowments"

2019 Meetings of the Western Finance Association, 2019 Meetings of the American Economic Association, 9th Professional Asset Management Conference (Rotterdam), University of Virginia (Darden School of Business), Saint Johns University, 2018 IPC Spring Research Symposium.

- "Finding Fortune: How Do Institutional Investors Pick Asset Managers?" 2017 Novar-BPI Corporate Finance Conference, 2017 Private Equity Research Consortium Roundtable, 2017 SUNY-Albany Symposium, 2017 Institute for Private Capital Spring Symposium, 2016 Annual Meetings of the Financial Management Association, 2016 USC Ph.D. Conference.
- "Why do Stocks Have High Idiosyncratic Risk when Market Risk is High?" 2017 Meetings of the American Economic Association. Bank of Italy, EIEF, Frankfurt School of Finance and Management, Lancaster University, Queens University, University of Basel, University of Reading, University of Surrey.

"Do Private Equity Funds Manipulate Returns?"

2014 Meeting of the American Finance Association, 2014 Meeting of Financial Intermediation Research Society, 2014 Vanderbilt Private Equity and Venture Capital Conference, 2012 Global Private Investing Conference, 2013 Meeting of the European Finance Association, Berkeley-Haas Fraud and Misconduct Conference, George Mason University, North Carolina State University.

"Yes, U.S. Stocks are Getting Riskier"

2012 Annual Meetings of the European Finance Association, 2011 Conference on Financial Economics and Accounting, 21st Annual Derivatives Securities and Risk Management conference, Duke University.

"Why Are U.S. Stocks More Volatile?"

2010 Annual Meetings of the American Finance Association, University of Pittsburgh, The University of Calgary, UCLA, The University of South Florida, HEC-Paris.

"How Important is Financial Risk?"

2013 Meetings of the European Finance Association, 2009 Financial Intermediation Research Society Conference in Prague, Bank of England, City University of London, Cass Business School, Tel Aviv University, 2009 Annual Meetings of the American Finance Association, Texas Christian University.

"Growth Options and Dynamic Risk: An Empirical Evaluation" Financial Research Association Conference, Las Vegas, 2008

"A New Lease on Life: Institutions, External Financing, and Business Growth" World Bank, 2008 Annual Meetings of the American Finance Association, Duke University.

"The Effects of Derivatives on Firm Risk and Value"

2009 Western Finance Association Annual Meeting, State Street Global Advisors, 18th Annual Conference on Financial Economics and Accounting, 2007 Annual Meetings of the Financial Management Association, Exeter University, Florida State University, Georgia State University, Göttingen University, Hamburg University, Manchester University, Münster University, Regensburg University, York University, 2006 Financial Intermediation Research Society Conference.

"Resolving the Exposure Puzzle: The Many Facets of Exchange Rate Exposure" 2009 Western Finance Association Annual Meeting, London School of Economics, University of Toronto, Bank of Canada, FDIC Summer Research Workshop, Forum on Corporate Finance, Hong Kong University of Science and Technology, Humboldt University Berlin, Peking University, University of Texas at Austin, Warwick Business School.

"Firm-Specific Risk and Equity Market Development" The 2005 Utah Winter Finance Conference, Duke University workshop.

"Estimating Systemic Risk in the International Financial System"

Federal Reserve Bank of New York, The Bank of England, Temple University, University of Texas at Austin, Wake Forest University, Darden School, University of Virginia, Vanderbilt University, NBER conference on Risks of Financial Institutions, NBER Universities Research Conference on Structural Changes in the Global Economy: Implications for Monetary Policy and Financial Regulation, 2005 Australasian Conference on Banking and Finance 4th Joint Central Bank Research Conference on Risk Measurement and Systemic Risk, FDIC Summer Research Workshop, The FIRS conference in Capri, Annual Meetings of American Finance Association, Annual Meetings of European Finance Association Annual Meetings, 2004 Annual Meetings of Financial Management Association Annual Meetings, The EMG/ESRC workshop on International Diversification and Contagion, Lancaster University.

- "The Financial Risks of Corporations in the Global Economy" International Conference on Finance in Copenhagen, 2005 European Finance Association Meetings.
- "Legal Effectiveness and External Capital: The Role of Foreign Debt" Georgia Tech International Finance Conference
- "International Evidence on Financial Derivative Usage"

Washington University, 2004 American Finance Association Annual Meetings, San Diego, CA, University of South Carolina, Erasmus University Rotterdam, Goethe University Frankfurt, Tilburg University, University of Texas at Austin, Warwick Business School, 2004, The 2004 CEPR Summer Symposium in Financial Markets, London School of Economics, 2003 European Finance Association Annual Meetings, Glasgow, Scotland, ITSCE Portugal, University of Porto, Goethe University Frankfurt, Germany, Lancaster University, Duke University, Katholieke Universiteit Leuven.

"Are Firms Successful at 'Selective' Hedging?"

Rice University, 2002 Annual Meetings of the American Finance Association, DePaul University, Indiana University – Indianapolis, The University of North Carolina, The University of Oregon, Pennsylvania State University, Darden School of Business – University of Virginia.

- "Capital Structure and Financial Risk: Evidence from Foreign Debt use in East Asia" Southern Methodist University, William and Mary, Virginia Polytechnic Institute, Georgetown University, Pennsylvania State University, University of Virginia Darden School, 6th Georgia Tech International Finance Conference, The University of North Carolina at Chapel Hill, 2000 Annual Meetings of the European Financial Management Association, 11th Annual Financial Economics and Accounting Conference (Univ. of Michigan), The World Bank, Rice University, Cornell University.
- "Corporate Risk, Market Imperfections and Speculative Motives" The University of Western Ontario, The University of Texas at Austin.

"Managing Foreign Exchange Risk with Derivatives"

Duke University, 2000 American Finance Association Annual Meetings, Harvard Business School Conference on Complementary Research Methodologies, 1999 Financial Management Association Annual Meetings, 1999 International Association of Financial Engineers Annual Meetings, The University of Texas at Dallas.

"Investor Sentiment and Asset Valuation" (previously "Sentiment and the Stock Market") The Federal Reserve Board of Governors, Batten Young Scholars Conference at William and Mary, 1999 Western Finance Association Annual Meetings, 1999 Financial Management Association, Virginia Polytechnic Institute, The University of North Carolina at Chapel Hill. "How Firms Should Hedge"

2000 Conference on Mathematical Finance (University of Missouri), 1999 American Finance Association Annual Meetings, Dartmouth College, New York University, The Federal Reserve Board of Governors, The University of Maryland, Rice University, The University of North Carolina at Chapel Hill, The University of Georgia, The University of Florida, Emory University, The University of Wisconsin at Madison, The Chicago Risk Management Conference, 1998 Meetings of the International Association of Financial Engineers, 1998 Financial Management Association Annual Meetings, The Chicago Board of Trade Fall 1997 Research Seminar, The Institute for Computational Finance, University of Texas.

"Constructing Binomial Trees from Multiple Implied Probability Distributions" 1997 Western Finance Association Annual Meeting, Seventh Annual Derivative Securities Conference, 1997 Financial Management Association Annual Meetings, Conference on Numerical Methods in Finance (U. Toronto), 1997 International Association of Financial Engineers, INFORMS (invited paper), University of Missouri, University of Waterloo, Stanford University, First Annual Computational Finance Conference, 1996 FMA Doctoral Consortium, The University of Texas at Austin, University of Washington, Purdue University.

"Market Reaction to Public Information: The Atypical Case of the Boston Celtics" Harvard Business School Conference on Complementary Research Methodologies, 1999 American Finance Association Annual Meeting, 1996 Financial Management Association Annual Meetings, The University of Texas at Austin.

"Volatility, Sentiment, and Noise Traders" 1997 Financial Management Association Meetings, The University of Texas at Austin.

Teaching: The University of North Carolina at Chapel Hill Hedge Fund Strategies (co-taught with Mark Yusko) – MBA and BSBA. Advanced Derivative Securities – MBA and BSBA. Applied Investment Management – MBA. Macroeconomics - MBA and Executive MBA. Executive MBA Teaching Award, 2002. Analytic Skills Workshop (Finance) – In-coming MBA. Financial Management - BSBA/MAC. Derivative Securities Markets - Executive MBA and BSBA. The University of Texas at Austin Corporate Finance – Undergraduate. Academic & Associate Editor, Journal of Alternative Investments. Community Associate Editor, FMA-Online, (Derivatives and Risk Management) Service:

Ad-hoc Journal Referee:

Advances in Futures and Options Research, American Economic Review, Annals of Operations Research, The Energy Journal, Financial Analysts Journal, Financial Management, Financial Review, Global Finance, International Economic Review, International Review of Banking and Finance, Journal of Banking and Finance, The Journal of Corporate Finance, The Journal of Economics and Business, The Journal of Finance, The Journal of Financial Economics, The Journal of Financial and Quantitative Research, The Journal of Financial Research, The Journal of Futures Markets, The Journal of International Business Studies, The Journal of International Money and Finance, The Journal of Monetary Economics, The Journal of Risk, Quarterly Review of Economics and Finance, RAND Journal of Economics, The Review of Financial Studies.

Conference Session Chair:

American Finance Association Annual Meetings, Boston, MA, 2006 Western Finance Association Annual Meetings, Keystone, CO, 2006

Select Discussions:

American Finance Association Annual Meetings, Chicago, IL, 2007 Financial Economics and Accounting Conference, Chapel Hill, NC, 2005 American Finance Association Annual Meetings, Washington, DC, 2003 Western Finance Association Annual Meetings, Park City, UT, 2002 Western Finance Association Annual Meetings, Tuscon, AZ, 2001 UNC Tax Conference, Chapel Hill, NC, 2001 American Finance Association Annual Meetings, New Orleans, LA, 2001 Financial Management Association Annual Meetings, New Orleans, LA, 2004 Financial Management Association Annual Meetings, Orlando, FL, 1999 Financial Management Association Annual Meetings, Chicago, IL, 1998 Financial Management Association Annual Meetings, Honolulu, HI, 1997

Other:

Private Equity Research Consortium, Advisory Board, 2012-present NBER Risks to Financial Institutions Working Group, Member, 2009-present Kenan-Flagler Foundation Board (Vice-President), 2005-present Kenan-Flagler Business School Promotion and Tenure Committee, 2010-2017 Director, Center for Excellence in Investment Management, 2007-2015 Director, Capital Markets Lab, 2010-2015 Kenan-Flagler Dean Search Committee, 2013-2014 MBA Investment Management Concentration Coordinator, 2004-2011 Finance Area Chairman, 2008-2010. Faculty Advisory Committee (FAC), 2005-2008 Program Committee, Western Finance Association Annual Meetings, 2007-2021 Conference on Corporate Finance (Presenter), 2006 MBA Curriculum Revision Committee, 2004 Derivatives Track Chair, Financial Management Association Annual Meeting, 2003 Financial Risk Managers (FRM) exam writer, 2002, 2006 Program Committee, Financial Management Association Annual Meeting, 2002-12 Program Committee, Eastern Finance Association Annual Meeting, 2000 Finance Recruiting Committee, 1998-2000 MAC Curriculum Committee, 1999-2000 Undergraduate Honors Thesis Advisor, 1999, 2000, 2005 BSBA Coordinated Core Curriculum Faculty Member, 1998-1999 Durham Academy, Finance Committee, 2010-present Dissertation Committees and Co-author, Elyas Fermand, 2021

	Mateo Binfare, 2020 Preetesh Kantek, 2017 Maria Nykyforovych, 2017 Oleg Gredil, 2015 (chair) William Waller, 2015 (chair) Serdar Aldatmaz, 2013 (chair) Dinara Bayazitova, 2013 Wipawin Promboon, 2009 (chair) Yihui Wang, 2009 Bumjean Sohn, 2009 Nishad Kapadia, 2007 Kushal Kshirsagar, 2005 Maria Nondorf, 2003 Paisan Limratanamongkol, 2001 Mike Cliff, 2000	
Other Professional Experience and Consulting:	American Board of Pediatrics, 2011-present. Investment consultant to Long-term Investment Committee.	
	Brown Financial Consulting, 2005-present. Provide expert consulting services, reports and testimony for a variety of corporate, government, and individual clients regarding financial markets and instruments.	
	SciComp Corporation , Austin, TX, 1997-1998. Consulted on development of models for pricing and hedging exotic derivatives including modeling of volatility surfaces and multidimensional PDEs.	
	Dell Computer Corporation , Austin, TX, 1998. Consulted with foreign exchange group regarding financial risk management.	
	University of Texas at Austin , 1993-1997. Instructor and Research Assistant.	