**CURRICULUM VITAE**

**SANDIP MUKHERJI**

**PROFESSOR OF FINANCE**

Dept. of Finance & International Business E-mail: smukherji@howard.edu

School of Business, Howard University Phone: (301) 869-8282

Washington, DC 20059

WORK EXPERIENCE

**Howard University Academic Director, HPS Center for Financial Excellence 2021-Date**

**Director, Center for Financial Services 2005-2021**

**Tenured Professor 2000-Date**

**Tenured Associate Professor 1996-2000**

**Assistant Professor 1992-1996**

Teaching undergraduate/graduate courses in financial modeling, valuation, and advanced financial analysis. Providing academic support to the HPS Center for Financial Excellence. Organizing annual Wall Street on Campus financial strategy education seminars for students and faculty. Conducting Trading Challenges for students each semester. Published 59 research papers in 28 refereed journals. Presented 37 research papers at academic conferences.

**Morgan Stanley Foundation Research Fellow 2008-2009**

Conducted research on accurately estimating and forecasting the U.S. equity risk premium.

**Goldman Sachs Group Consultant 2004**

Developed a comprehensive trading case for training traders in fixed income securities, currencies, and commodities, Human Capital Management Division, New York.

**Goldman Sachs Group Faculty Intern 2000**

Developed three case studies involving portfolio restructuring, synthetic securitization, and commodities hedging for the Associates’ training program, Fixed Income, Commodities & Currencies Division, New York.

**Goldman Sachs Group Faculty Intern 1999**

Participated in global study of credit card industry, Investment Research Department, New York.

**Bank of New York Faculty Intern 1997**

Conducted research on Personal Savings and Investments, Investment Research Division, New York.

**Bank of New York Faculty Intern 1995**

Constructed databases to increase export letter of credit revenues, Europe Division, International Banking Group, New York.

**Cooper's & Lybrand Faculty Intern 1993**

Worked on management consulting project assisting D.C. government in obtaining $5 million in federal grants for homeless shelters.

**Reserve Bank of India Banking Officer 1982-88**

Supervised and inspected banks, managed currency functions and administration.

**Punjab National Bank Manager 1975-82**

Appraised and supervised credit, managed branch inspections.

QUALIFICATIONS

CFA Institute Investment 1997-99 CFA

University of Cincinnati Finance 1989-92 Ph.D.

University of Cincinnati Finance 1988-90 M.B.A.

Indian Institute of Bankers Banking 1976-78 Certificate

Jadavpur University Comparative Literature 1974-76 M.A. (Gold Medal)

Alliance Francaise, Calcutta French 1973-75 Diploma

University of Delhi Economics 1970-73 B.A. (Honors)

PUBLICATIONS IN REFEREED JOURNALS

1. “Primary Drivers of Major U.S. Financial Asset Returns,” *Journal of Business and Accounting*, Vol. 17, No. 1, 2024,

pages 30-41.

1. “Predicting Market Risk Premiums with Historical Patterns,” *Journal of Investing*, Vol. 32, No. 6, 2023, pages 96- 107.

3. “Mean Reversion of Low and High Stock Returns,” with B. P. Choi and J. Jeong, *Journal of Accounting and*

*Finance*, Vol. 23, No. 3, 2023, pages 7-17.

4. “Asymmetric Mean Reversion of Stock Returns,” *American Journal of Finance and Accounting*, Vol. 7, No. 1, 2023,

pages 51-70.

5. “The Asset Class of Bitcoin and Its Contributions to Investment Portfolios,” *Journal of Business and Accounting*,

Vol. 15, No. 1, 2022, pages 1-19.

6. “Long-term International Diversification of Equities,” with J. Jeong, *Global Finance Journal*, Vol. 50, November,

2021, pages 1-10.

7. “Mean Aversion and Reversion of Asset Returns,” *Journal of Accounting and Finance*, Vol. 20, No. 7, 2020, pages

65-77.

8. “Empirical Evidence on Bitcoin Returns and Portfolio Value,” *International Journal of Business and Finance*

*Research*, Vol. 13, No. 2, 2019, pages 71-81.

9. “Optimal ETF Portfolios for Different Objectives and Horizons,” *Journal of Accounting and Finance*, Vol. 18, No. 9,

2018, pages 163-173.

10.“Active Learning with a Trading Simulation,” with M. Etta-Nkwelle and D. Streeter, *Journal of Financial Education*,

Vol. 44, No. 1, 2018, pages 98-124.

11. “Flexible Optimal Models for Predicting Stock Market Returns,” *International Journal of Business and Finance*

*Research*, Vol. 12, No. 2, 2018, pages 39-48.

12. “Impact of the Risk-free Rate on Required Returns and Alphas of Stocks*,” Journal of International Finance and*

*Economics*, Vol. 17, No. 3, 2017, pages 41-48.

13. “Predicting Annual Stock Market Returns with Market Variables,” *Review of Business Research*, Vol. 17, No. 4,

2017, pages 33-38.

14. “Predicting Stock Market Returns with Time-Varying Models and Parameters,” with J. Jeong and N. Kundagrami,

*The Journal of Wealth Management*, Vol. 19, No. 4, 2017, pages 72-84.

15. “Optimal Portfolios Based on Different Performance Measures,” *Journal of International Finance and Economics*,

Vol. 16, No. 3, 2016, pages 55-60.

16. “Evaluation of U.S. Financial Assets with Different Performance Measures,” *Journal of International Financial*

*Studies*,Vol. 15, No. 2, 2016, pages 7-14.

17. “Mean-Variance Optimal Portfolios Considering Skewness and Kurtosis,” *Journal of International Finance and*

*Economics*, Vol. 15, No. 3, 2015, pages 23-30.

18. “Distributions of U.S. Asset Returns over Different Investment Periods,” *Journal of International Finance Studies,*

Vol. 15, No. 2, 2015, pages 7-14.

19. “Optimal Asset Allocations in Different Stages of Business Cycles,” *Journal of International Finance and Economics,*

Vol. 14, No. 3, 2014, pages 85-91.

20. “U.S. Bond and Stock Yields around Business Cycle Turning Points,” *Journal of International Finance Studies*,

Vol. 14, No. 3, 2014, pages 87-92.

21. “U.S. Inflation and Asset Returns around Business Cycle Turning Points,” *Journal of International Finance Studies*,

Vol. 13, No. 3, 2013, pages 139-144.

22. “A Study of Some Potential Biases in Student Evaluations of Teaching,” *Review of Business Research*, Vol. 13, No.

3, 2013, pages 25-30.

23. “Explanatory Factors for Market Multiples and Expected Returns,” with Y. Lee, *The International* *Journal of*

*Business and Finance Research*, Vol. 7, No. 1, 2013, pages 45-54.

24. “The Appropriate Return Interval for Beta Estimation,” *Journal of International Finance Studies*, Vol. 12, No. 3,

2012, pages 94-99.

25. “Mean Reversion of Abnormal Stock Returns,” *Journal of Wealth Management*, Vol. 14, No. 4, 2012, pages 122-

129.

26. “The Performance of U.S. Financial Assets in Expansions and Recessions,” with M. Etta-Nkwelle, *Journal of Academy*

*of Business and Economics*, Vol. 11, No. 4, 2011, pages 204-209.

27. “The Capital Asset Pricing Model’s Risk-Free Rate,” *International Journal of Business and Finance Research*, Vol.

5, No. 2, 2011, pages 75-84.

28. “Are Stock Returns Still Mean-Reverting?” *Review of Financial Economics*, Vol. 20, No. 1, 2011, pages 22-27.

29. “Optimal Portfolios for Different Holding Periods,” with B. Paul Choi, *Journal of Business & Economics Research*,

Vol. 8, No. 10, 2010, pages 1-6.

30. “The Impact of the Return Interval on Beta Estimation,” *Journal of International Finance and Economics*, Vol. 9, No.

1, 2009, pages 117-122.

31. “Do Dow Stocks Offer a Value Premium?” with J. Jeong and Y. Lee, *The Journal of Wealth Management*, Vol. 12,

No. 3, 2009, pages 95-103.

32. “A Study of Time Diversification with Block Bootstraps and Downside Risk,” *Business Review*, Vol. 10, No. 1, 2008,

pages 55-60.

33. “Teaching Evaluations: Perceptions of Students and Faculty,” with N. Rustagi, *Journal of College Teaching and*

*Learning*, Vol. 5, No. 9, 2008, pages 45-53.

34. “Relations between Portfolio Returns and Market Multiples,” with W. C. Barbee, Jr., and J. Jeong, *Global Finance*

*Journal*, Vol. 19, Issue 1, 2008, pages 1-10.

35. “An Analysis of Analysts’ Projected Gains,” with J. Jeong and Y. Lee, *Journal of Investing*, Vol. 17, Summer 2008,

pages 47-54.

36. “Optimal Portfolios for Regular Investments,” *Journal of Investing*, 2006, Vol. 15, Winter 2006, pages 79-87.

37. “Explanatory Factors for Overall Instructor and Course Ratings,” *Journal of College Teaching and Learning*, Vol. 3,

No. 2, February 2006, pages 29-38.

38. “A Spreadsheet Model for Analyzing Home Buying and Financing Decisions,” *Advances in Financial Education*, Vol.

3, Spring 2005, pages 72-88.

39. “Characteristics of Consumers Targeted and Neglected by Credit Card Companies,” with A. Kidane, *Financial*

*Services Review*, Vol. 13, 2004, pages 185-198.

40. “Can Composite Value Measures Enhance Portfolio Performance?” with M. S. Dhatt and Y. H. Kim, *Journal of*

*Investing*, Vol. 13, Winter 2004, pages 42-48.

42. “Optimum Portfolios for Different Holding Periods and Target Returns,” *Financial Services Review*, Vol. 12, No. 1,

2003, pages 61-71.

43. “A Spreadsheet Project for an Analyst’s Report on a Common Stock,” *Journal of Financial Education*, Vol. 29,

Summer 2003, pages 80-97.

43. “Stocks, Bonds, Bills, Wealth, and Time Diversification,” *Journal of Investing*, Vol. 11, No. 2, Summer 2002, pages

39-51.

44. “An International Investigation of the Influence of Growth Opportunities on Firm Liquidity,” with Y. H. Kim and Y.

Lee, *International Journal of Finance*, Vol. 13, No. 1, 2001, pages 2044-2057.

45. “Cash Dividend Payments: An Examination of the Signaling and Agency Cost Hypotheses,” with M. S. Dhatt and C.

F. Richards, *Advances in Working Capital Management*, Vol. 4, 2001, pages 171-190.

46. “The Value Premium for Small-Capitalization Stocks," with M. S. Dhatt and Y. H. Kim, *Financial Analysts Journal*,

Vol. 55, 1999, pages 60-68.

47. “Relations Between Stock Returns and Fundamental Variables: Evidence from a Segmented Market,” with M. S.

Dhatt and Y. H. Kim, *Asia-Pacific Financial Markets*, Vol. 6, 1999, pages 221-233.

48. "Issue, Purchase, and Ownership of Stocks in the U.S.A.," *Southern Business and Economic Journal*, Vol. 22, 1999,

pages 232-242.

49. “International Diversification of U.S. Portfolios with Segmented Markets,” with P. Fanara and Y. H. Kim, *Emerging*

*Capital Markets: Finance and Investment Issues*, J. J. Choi and J. Doukas, editors, Greenwood Publishing Group,

1998, pages 61-68.

50. “A Fundamental Analysis of Korean Stock Returns,” with M. S. Dhatt and Y. H. Kim, *Financial* *Analysts Journal*,

Vol. 53, 1997, pages 75-80.

51. “The Effect of Stock Splits on the Ownership Structure of Firms,” with Y. H. Kim and M. C. Walker, *Journal of*

*Corporate Finance*, Vol. 3, 1997, pages 167-188.

52. “The Role of Stock Dividends in Korea,” with M. S. Dhatt and Y. H. Kim, *Global Finance Journal*, Vol. 8, 1997,

pages 295-308.

53. “Did the 1986 Tax Reform Act Affect Market Reactions to Stock Splits? A Test of the Tax-Option Hypothesis,” with

M. S. Dhatt and Y. H. Kim, *Financial Review*, Vol. 32, 1997, pages 249-271.

54. “Seasoned Equity Issues: The Korean Experience,” with M. S. Dhatt and Y. H. Kim, *Pacific-Basin Finance Journal*,

Vol. 4, 1996, pages 31-43.

55. “Do Sales-Price and Debt-Equity Explain Stock Returns Better Than Book-Market and Firm Size?” with W. C.

Barbee and G. A. Raines, *Financial Analysts Journal*, Vol. 52, 1996, pages 56-60.

56. “Stock Dividends in Korea: A Test of Different Hypotheses,” with M. S. Dhatt and Y. H. Kim, *Research in Finance*,

Supplement 2, 1996, pages 183-202.

57. “The Demise of Stock Splits in Korea,” with Y. H. Kim and Y. Lee, *International Journal of Finance*, Vol. 8, 1996,

pages 338-351.

58. “Is the Stock Dividend Ex-day Effect Due to Market Microstructure? Contrary Evidence from Korea, with M. S.

Dhatt and Y. H. Kim, *Global Finance Journal*, Vol. 7, 1996, pages 89-99.

59. “Japanese Stock Price Reactions to Stock Dividend Distributions,” with M. S. Dhatt and Y. H. Kim, *Pacific-Basin*

*Finance Journal*, Vol. 2, 1994, pages 43-59.

**RESEARCH PAPERS PRESENTED AT CONFERENCES**

1. “Optimal Stock-Bond Portfolios for Different Investor Objectives, Horizons, and Target Returns,” International

Academy of Business & Publication Administration Disciplines, Las Vegas, October 2024.

2.“Primary Drivers of Major U.S. Financial Asset Returns,” American Society of Business and Behavioral Sciences

Conference, Los Angeles, March 2024.

3. “Predicting Stock Market Risk Premiums Based on Historical Patterns,” American Society of Business and Behavioral

Sciences Conference, Las Vegas, March 2023.

4. “The Return Distribution and Portfolio Contributions of Bitcoin,” American Society of Business and Behavioral

Sciences Conference, Las Vegas, March 2022.

5. “An Investigation of Bitcoin Returns,” Global Conference on Business and Finance, Las Vegas, January 2019.

6. “Impact of the Risk-free Rate on Required Returns and Alphas of Stocks*,”* International Academy of Business and

Economics Conference, Las Vegas, December 2017.

7. “Predicting Annual Stock Market Returns with Market Variables,” International Academy of Business and Economics

Conference, Las Vegas, December 2017.

8. “Optimal Portfolios Based on Different Performance Measures,” International Academy of Business and Economics

Conference, Las Vegas, October 2016.

9. “Evaluation of U.S. Financial Assets with Different Performance Measures,” International Academy of Business and

Economics Conference, Las Vegas, October 2016.

10. “Mean-Variance Optimal Portfolios Considering Skewness and Kurtosis,” International Academy of Business and

Economics Conference, Las Vegas, October 2015.

11. “Distributions of U.S. Asset Returns over Different Investment Periods,” International Academy of Business and

Economics Conference, Las Vegas, October 2015.

12. “Optimal Asset Allocations in Different Stages of Business Cycles,” International Academy of Business and

Economics Conference, Las Vegas, October 2014.

13. “U.S. Bond and Stock Yields around Business Cycle Turning Points,” International Academy of Business and

Economics Conference, Las Vegas, October 2014.

14. “U.S. Inflation and Asset Returns around Business Cycle Turning Points,” International Academy of Business and

Economics Conference, Las Vegas, October 2013.

15. “A Study of Some Potential Biases in Student Evaluations of Teaching,” International Academy of Business and

Economics Conference, Las Vegas, October 2013.

16. “The Appropriate Return Interval for Beta Estimation,” International Academy of Business and Economics

Conference, Las Vegas, October 2012.

17. “The Performance of U.S. Financial Assets in Expansions and Recessions,” International Academy of Business and

Economics Conference, Las Vegas, 2011.

18. “Predictable Patterns in Stock Returns,” Annual American Business Research Conference, Las Vegas, 2010.

19. “The Impact of the Return Interval on Beta Estimation,” International Academy of Business and Economics

Conference, Las Vegas, 2009.

20. “The Equity Premium: Estimates and Forecasts,” European Financial Management Association Conference,

Milan, Italy, 2009.

21. “Mean Reversion in Stock Returns,” Global Conference on Business and Finance, San Jose, Costa Rica, 2009.

22. “A Study of Time Diversification with Block Bootstraps and Downside Risk,” International Business and

Management Research Conference, Hawaii, 2008.

23. “Teaching Evaluations: Perceptions of Students and Faculty,” Academy of Business Education Conference,

Bermuda, 2007.

24. “Explanatory Factors for Overall Instructor and Course Ratings,” College Teaching & Learning Conference, Las

Vegas, 2005.

25. “The Efficiency of Individual and Composite Measures for Identifying Value Stocks,” Financial Management

Association, European Conference, Paris, France, 2001.

26. “The Value Premium for Small Capitalization Stocks,” Financial Management Association Conference, Key

West, 1999.

27. “The Value Premium for Small Capitalization Stocks,” Southern Finance Association Conference, Orlando, 1999.

28. “Are Working Capital Policies Related to Economic Fundamentals? Evidence from Four Major Economies,”

Financial Management Association Conference, Chicago, 1998.

29. “Explanatory Factors for Korean Stock Returns,” Global Finance Conference, Montreal, Canada, 1997.

30. “Explanatory Factors for Korean Stock Returns, Financial Management Association Conference, Honolulu, 1997.

31. “Why Do Companies Pay Stock Dividends?” Financial Management Association Conference, New York, 1995.

32. “The Market Impact of Rights Issues: Evidence from Korea,” American Finance Association Conference,

Washington, D.C., 1995.

33. “Seasoned Equity Issues: The Korean Experience,” Financial Management Association Conference, St. Louis,

1994.

34. “Market Reactions to Stock Splits: Effect of the 1986 Tax Reform Act,” Financial Management Association

Conference, Toronto, Canada, 1993.

35. “The Ex-Day Effect for Stock Dividends: Evidence from the Japanese and Korean Markets,” Financial

Management Association Conference, Richmond, 1993.

36. “The Effect of Stock Splits on the Ownership Structure of Firms,” Southern Finance Association Conference,

Jacksonville, 1992.

37. “An Evaluation of Shareholder Reactions to Stock Splits,” Financial Management AssociationConference,

Chicago, 1992.

**GRANTS AWARDED**

1. “Predictable Patterns in Stock Returns,” Howard University Sponsored Faculty Research Program in the Social

Sciences, Humanities, and Education, $10,000, 2009-10.

2. “The Equity Premium: Estimates and Forecasts,” Morgan Stanley Research Foundation, $40,000, 2008-09.

3. “Estimating and Forecasting the U.S. Equity Risk Premium,” Howard University Sponsored Faculty Research

Program in the Social Sciences, Humanities, and Education, $10,000, 2008-09.

4. “Developing Financial Modeling Projects for Real-World Applications,” Fund for Academic Excellence, $4,500,

2008-09.

5. “Optimal Asset Allocations for Dynamic Time Diversification,” Howard University Sponsored Faculty Research

Program in the Social Sciences, Humanities, and Education, $10,000, 2006-07.

6. “Optimal Portfolios for Regular Investments,” Howard University Sponsored Faculty Research Program in the

Social Sciences, Humanities, and Education, $9,000, 2003-04.

7. “Optimal Asset Allocations for Different Investment Horizons,” Howard University Sponsored Faculty Research

Program in the Social Sciences, Humanities, and Education, $8,000, 2001-02.

8. “Relations between Stock Returns and Fundamental Variables,” Howard University Sponsored Faculty Research

Program in the Social Sciences, Humanities, and Education, $7,500, 1996-97.

**PROFESSIONAL DEVELOPMENT**

1. University fellowship for 8-week Lumen Circles training on “Evidence-based teaching with generative AI,” February-April, 2025.

2. Completed 20-credit hour CFA annual continuing education program each year, 2001-2024.

3. Participated in annual Wall Street on Campus financial strategy education seminars with leading financial firms

at Howard University, 2006-2024.

4. Participated in 32 academic business conferences, 1992-2024.

5. Obtained and completed a $40,000 research fellowship from Morgan Stanley Foundation, 2008-09.

6. Participated in 3-day Redefining Investment Strategy Education forum, Dayton, March 29-31, 2006.

7. Developed a comprehensive trading case as a consultant for Goldman Sachs, Spring 2004.

8. Participated in 3-day Art & Craft of Case Writing Seminar at Harvard University, sponsored by Management

Education Alliance, October 2002.

9. Participated in a 4-day Executive Education Program on Valuation at Harvard University, sponsored by

Management Education Alliance, June 2002.

10. Developed three case studies as a faculty intern at Goldman Sachs, Summer 2000.

11. Participated in a global study of the credit card industry as a faculty intern at Goldman Sachs, Summer 1999.

12. Participated in a 3-day Finance Workshop organized by Management Development Alliance at Wharton and

Merrill Lynch, 1999.

13. Participated in one-week Seminar on International Business, Monterrey Institute of Technology, Monterrey,

Mexico, 1998.

14. Conducted research on Personal Savings and Investments as a faculty intern at Bank of New York, Summer 1997.

15. Constructed databases to increase export letter of credit revenues as a faculty intern at Bank of New York, 1995.

16. Worked on a management consulting project assisting D.C. government in obtaining $5 million in federal grants for

homeless shelters as a faculty intern at Cooper’s & Lybrand, 1993.

**SERVICE**

1. Academic Director of HPS Center for Financial Excellence, School of Business, 2021-2025.

2. Program Director of CFA Institute University Affiliation Program, 2015-2025.

3. Raised $325,000 in funds for Center for Financial Services/HPS Center for Financial Excellence from four

sponsoring firms, 2014-2024.

4. Organized annual Wall Street on Campus financial strategy education seminars at Howard University for students

from HBCUs and local universities, 2006-2024.

5. Conducted 10/11-week Trading Challenge competitions every semester for School of Business students, 2005-

2025.

6. Obtained and sponsored scholarships from the CFA Institute for several students taking the CFA level I exam each

year, 2000-2025.

7. Member of Department of Finance & International Business Executive Committee, 2000-2025.

8. Member of Department of Finance & International Business Appointments, Promotions, & Tenure Committee,

1996-2025.

9. Reviewed several research papers as external referee for the following journals: *Financial Analysts Journal,*

*Financial Services Review, Global Finance Journal, International Journal of Finance, Journal of Investing,*

*Review of Financial Economics, Southern Business and Economic Journal,* and *Business and Economic Review,*

1998-2024.

10. Director of Center for Financial Services, School of Business, 2005-2021.

11. Chair of Faculty Development and Teaching Committee, 2003-2008, 2010-2021.

12. Organized 9 webinars totaling 13 hours by leading financial firms for students and faculty, 2021.

13. Organized all-day Financial Analysis Workshops for School of Business students and faculty, 2015-19.

14. Member of the Board of Examiners to evaluate 11 Ph.D. theses submitted to Bharathiar University, Coimbatore,

India, 1993-2008.

15. Business Editor for *Journal of Intercultural Disciplines*, published by the National Association of African-

American Studies, 2005.

**HONORS/AWARDS**

**President’s Medal of Achievement, *Howard University*, 2023.**

**Research**

1. Member, Editorial Board, *S.M.A.R.T. Journal of Business Management Studies*, 2007-Date.

2. Keynote speaker at *American Society of Business and Behavioral Sciences Conference*, Las Vegas, 2023.

3. Faculty Award for Excellence in Scholarly Research, Dean, School of Business, 2021.

4. Earned Outstanding Research Award, *Global Conference on Business and Finance*, Las Vegas, January 2019.

5. Earned Quality Research Award, *Global Finance Conference*, Montreal, Canada, 1997.

6. Keynote speaker at *International Business and Management Research conference*, Hawaii, 2008.

7. Google Scholar shows that my published papers currently have 1,367 citations with h-index of 15 and i10-index of

18, May 2025.

8. ResearchGate shows that my published papers have 13,140 reads and 722 citations with Research Interest of 407,

which is higher than 83% of all members and 90% of members with work related to financial economics, May 2025.

9. One of my research papers has 3,094 downloads, and it was in the top 10% of papers downloaded, on SSRN, May

2025.

10. My published research papers have been cited by eminent researchers in top finance journals, such as *Journal of*

*Financial Economics, Journal of Finance, Financial Analysts Journal, Journal of Portfolio Management,* and

*Journal of Applied Corporate Finance,* and by financial journalists in popular magazines, such as *Forbes, Smart*

*Money,* and *CFA Digest*.

**Teaching**

1. Consistently high teaching evaluation scores from students, averaging 4.5 out of 5, 1992-2024.

2. Teaching Award for “exceptional classroom instruction” from Graduate School of Business students.

3. Nominated for Faculty Excellence Award, Graduate School of Business Students.

4. Certificate of Appreciation for Innovative Teaching, Dean, School of Business.