

Arturo Cifuentes, Ph.D.

Principal Researcher
CLAPES UC/ Catholic University of Chile
Alameda 440, Floor 13
Santiago, CHILE
aocusa@gmail.com

Private Office: Arturo Cifuentes Consultora SpA
<https://www.arturocifuentes.com>

USA: New York, NY
Phone: +1-646-870-7685
Cellular: +1-914-217-0808

CHILE: Los Leones 1300, Suite 1202
Providencia, Santiago
Phone: +56-2-2789-7447

ac@arturocifuentes.com
aocusa@gmail.com

SUMMARY OF QUALIFICATIONS

- Senior financial professional with broad international experience in academia, private sector, and public service
- Adjunct Professor, Columbia University Business School, New York, (June 2016-December 2019)
- Member of: (i) Adolfo Ibáñez University Board (2018-2022); (ii) Adolfo Ibáñez University Endowment Investment Committee (2022 to present); (iii) Colunquén Investment Committee (2017 to present); (iv) Sociedad Canal de Maipo Investment Committee (2015-2023); (v) Pasadena Private Lending Board (2022 to present)
- Recipient of a US\$ 180,000 grant (Fondecyt # 1170178), from the Chilean government, to study quantitative investment strategies for the Chilean pension system
- Member of the Chilean Sovereign Fund Investment Committee (US\$ 25 billion in assets) (August 2011-August 2014); during part of this period, he also presided the Committee
- Member of the Financial Supervision and Regulatory Reform Committee (August 2010- March 2011); appointed by the Chilean Minister of Finance
- Member of the Chair's Council, Division of Humanities and Social Sciences, California Institute of Technology (Caltech); served two terms (2009-2013)
- Testified twice before the U. S. Senate as an expert witness, in relation to the subprime crisis, at the request of the Senate Banking Committee (2008, 2010)
- Advised the U. S. Treasury (Office of the Comptroller of the Currency), the U.S. Senate, the State of Connecticut Insurance Commissioner, and Chilean financial regulators on several topics (2005-2010)
- Executed and negotiated more than US\$ 1.4 billion in complex financial transactions
- Raised US\$ 330 million from U. S. and European institutional investors to start an investment fund; managed said fund with excellent returns
- Developed two modeling techniques (the Binomial Expansion Technique and the Diversity Score concept) that became industry standards in the global fixed income market
- Published extensively (more than sixty refereed papers, three books and five book-chapters) on a wide range of topics: finance, art markets, mechanical and civil engineering, and applied math
- Frequent contributor to the Financial Times; regular columnist: El Mercurio and La Tercera (the two most important Chilean newspapers)
- Former Associate Editor, Journal of Credit Risk
- Experience as an expert witness/adviser in international financial litigation

EXPERIENCE

CLAPES UC, Catholic University, Santiago, Chile

January 2017 to present

Principal Researcher

- In charge of several finance-related projects with a strong public policy orientation
 - ❖ Strategy to develop a high-yield bond market in Chile
 - ❖ Development of a real estate index for the Chilean market
 - ❖ Study on the effect of crime on the real estate market in Chile
 - ❖ Several studies related to finance and the international art markets
 - ❖ Development of investment policies and strategies for pension funds and endowments
- Recipient of a US\$ 180,000 grant (Fondecyt # 1170178), awarded jointly with B. Pagnoncelli, to develop investment strategies for the Chilean pension system
- Supervise and mentor junior colleagues

Adolfo Ibáñez University, Santiago, Chile

March 2018 to March 2022

Board Member

Columbia University, New York

June 2016 to December 2019

Adjunct Professor

Division of Finance & Economics

- Designed and taught Finance & the Art Markets, an innovative and very popular elective course for the MBA program. The course focused on the application of financial tools and techniques to analyze the art market. This was —and still is— the only university-level course on this topic
- Research-oriented activities focused on financial topics (pension funds, fixed income securities and derivatives, valuation techniques)

University of Chile, Santiago, Chile

May 2013 to December 2016

Academic Director, CREM

The CREM, Financial Regulation and Macro-Stability Center, is under the umbrella of the Faculty of Economics and Business

- Led the center interaction with the private sector, regulators, and government entities to carry out relevant regulation-related studies, maintained an active schedule of seminars, and offered specialized courses aimed at the Latin American market
- Taught undergraduate and graduate level courses/seminars covering numerous financial topics.
- Supervised a variety of research projects carried out by students

Universidad Adolfo Ibáñez, Santiago, Chile

March 2012 to January 2013

Full-Time Professor, Business School

- Taught, with excellent reviews, a wide variety of financial topics

University of Chile, Santiago, Chile

March 2010 to February 2012

Professor and Director, Financial Studies Center, Department of Industrial Engineering

- Taught several undergraduate and graduate-level courses and directed many research theses covering credit derivatives, corporate finance, and fixed-income-related topics

Atacama Partners, New York, NY

January 2009 to February 2010

Founding member

- Structured and placed a mortgage-backed securities fund in partnership with Declaration Management & Research

R.W. Pressprich & Co., New York, NY

August 2005 to November 2008

Managing Director, Structured Products Department

- Founding member of the structured products group at R.W. Pressprich & Co.
 - ❖ The group completed more than US\$ 1.4 billion in transactions since its inception
 - ❖ Transactions included: specialized ABS fund; low-leverage senior secured bank loan fund; special opportunity mortgage fund; and structured notes
- Led the design and implementation of firm's investment banking strategy, the development of the quantitative models employed to analyze/structure credit derivative products; and spearheaded the firm's expansion to the Latin American market (especially in Mexico and Costa Rica)

Wachovia Securities, New York, NY

July 2003 to April 2005

Managing Director, Global Head of CDO Research

- Set up, organized, and managed a research group that was quickly recognized by market participants as relevant, independent, investor-friendly, and original
- Instrumental in expanding Wachovia's presence in the U. S., Latin America, Europe, and the Middle East by speaking at numerous conferences and meeting with many potential clients, investors, regulators, and senior government officials
- Advised Wachovia clients (typically, asset managers and senior executives from the financial sector) on market trends and strategy
- Hired and mentored the members of the CDO research group

Triton Partners, New York, NY

May 2000 to January 2003

Managing Director and Co-Head, Structured Products Department

- Managed the Triton Opportunity Fund, a US\$ 330 million leveraged fund that invested in CDOs. To this day, this fund (which was called by the investors on its first call day) remains one of the best performers in its class. During its later, and mostly "static" phase, the fund was managed by the ZAIS Group
- Played a leading role in the development of the above-mentioned fund: structured the transaction; negotiated with underwriters, rating agencies, warehouse providers, and financial guarantors; designed marketing material; raised the capital; selected, valued, and purchased the initial pool of assets

Ambac Assurance Corporation, New York, NY

September 1999 to April 2000

Managing Director, CBO/CLO Group

- In a short period of time:
 - ❖ Brought a new client and closed a US\$ 700 million transaction
 - ❖ Developed new underwriting criteria for CDOs
 - ❖ Developed an innovative methodology to price reinsurance premiums for structured products

Moody's Investors Service, New York, NY
Senior Vice President, Structured Finance Department

January 1996 to August 1999

- Rated more than forty structured finance transactions including many pioneering CDOs: the first emerging market CDO, the first REIT CDO, the first distressed debt CLO, the first balance sheet CLO, and the first French CLO
- Major contributor to a number of modeling techniques that are widely used in the fixed income community including one that has become an industry standard: The Binomial Expansion Method (BET)
- Trained all members of the structured products group (more than thirty at the time) in New York, London, and Paris
- Active in marketing the firm's business in Brazil, Chile, and Argentina
- Advised the project finance group and the Latin American finance team on several innovative transactions (e.g. a bond issuance to finance an expansion of the Santiago airport)

IBM Corporation, Yorktown Heights, NY
Advisory Engineer, IBM T.J. Watson Research Center, Yorktown Heights, NY
Advisory Engineer, Electronic Packaging Laboratory, East Fishkill, NY

July 1989 to December 1995

The MacNeal-Schwendler Corporation, Los Angeles, CA
Staff Scientist, Research Department
Project Engineer, Engineering Applications Department

June 1984 to June 1989

OTHER ACTIVITIES

Public Service

- Assisted the U. S. Senate Committee on Banking, Housing and Urban Affairs in topics related to the subprime crisis and the role played by the rating agencies
- Testified twice as an expert witness before the U. S. Senate in relation to the subprime crisis
- Member of the Chair's Council for the Division of Humanities and Social Sciences at Caltech
- Advised the Chilean Ministry of Finance on Financial Regulation and Supervision
- Member of the Investment Committee that oversees the Chilean Sovereign Fund

Mentoring

Mentored and supervised thesis & research projects of several students who are currently pursuing (or already finished) graduate studies at some prestigious universities, such as:

- University of California at Santa Barbara.
- Stony Brook University, New York.
- University of California at Los Angeles (UCLA).
- Massachusetts Institute of Technology.
- London School of Economics.
- Harvard University.
- University of Maryland.
- Rutgers University, New Jersey.

Teaching and Public Speaking

- Developed, in collaboration with Guillermo Larrain (University of Chile), a two-day seminar entitled "Entorno Macroeconómico de los Directorios", aimed at senior managers and board members, with the purpose of updating them on recent economic, financial and risk management techniques and trends. The seminar was offered for the first time in Santiago, Chile, in October-November, 2016
- Developed and taught many specialized in-house seminars on structured products and credit risk management (E&Y Peru; Banco Santander, New York; Banco de Crédito e Inversiones, Santiago, Chile; U. S. Treasury/ Office of the Comptroller of the Currency, Washington D. C., invited four times; State of Connecticut Insurance Department, Hartford, Connecticut)
- Frequent speaker, moderator, and chairperson at professional finance conferences throughout the world (IMN/Euromoney, RISK, GARP, CFA Institute, Pinnacle Group, etc.)
- Broad experience teaching applied math and mechanical engineering graduate and undergraduate courses: University of Southern California (1986-1989), California State University (1984) and University of Chile (1977-1980)

Writing and Journalism

- Frequent contributor to the Financial Times
- Monthly columnist: El Mercurio (Santiago, Chile) on business and economics topics, from March 2011 until March 2022; and regular contributor to La Tercera (Santiago, Chile) since January 2012
- Authored or co-authored three books and four book chapters (mostly on financial topics) plus many monographs and trade magazines articles
- From 1985 to 1994 wrote a monthly opinion column (in Spanish) for a Southern California-based Latin American weekly; also, contributed several op-ed pieces (in English) for the Los Angeles Times Syndicate Service
- Invited twice by the U. S. State Department to participate in the Media-Diplomat conference in Washington D. C. (1990, 1991)

Scientific Research

- Wrote more than sixty refereed papers for many academic journals (the majority on numerical and modeling techniques applied to engineering and financial problems)
- Active participant in scientific conferences (more than fifty contributions to different conference proceedings)

EDUCATION

New York University: MBA, Finance (Stern Scholar award)	1997
California Institute of Technology: Ph.D., Applied Mechanics	1985
California Institute of Technology: M.S., Civil Engineering	1981
University of Chile: Civil Engineering degree (Structures/Applied Math)	1977

LIST OF PUBLICATIONS

- [1] Finance
- [2] Engineering and Applied Math
- [3] General Interest

[1] FINANCE

BOOKS

A. Cifuentes and V. Charlin, *The Worth of Art: Financial Tools for the Art Markets*, Columbia University Press, New York, August 2023.

A. Cifuentes and B. Lancaster, *Collateralized Debt Obligations: Structures, Strategies and Innovations*, Wachovia Securities, New York, September 2004.

BOOK CHAPTERS

A. Cifuentes, [The Company Men](#), chapter for the book "*Cine y casos de negocios*," January 2017, published by Universidad Adolfo Ibañez/ RiL Editores.

J. Prince, A. Cifuentes and N. Bakalar, [Synthetic CDOs: An Investor's' Guide](#), Chapter 31 in *The Handbook of Fixed Income Securities*, Edited by Frank J. Fabozzi, 7th Edition, McGraw Hill, 2005.

A. Cifuentes et al., [Buying and Selling Credit Risk](#), Chapter 8, in *Credit Derivatives*, RISK Books, London, 1998.

A. Cifuentes et al., [Credit- and Insurance-Linked Notes and Collateralised Debt Obligations](#), Chapter 19, in *Alternative Investment Strategies*, Euromoney Publications, London, May 1998.

REFEREED PAPERS IN ACADEMIC JOURNALS

[Adding Art to Your Portfolio: A New Risk-Assessment Framework](#), (with V. Charlin), *The Journal of Wealth Management*, Fall 2023, 26(2), 67-82. DOI: 10.3905/jwm.2023.1.217

[The quality of the Argentinean Malbec and the weather in the Mendoza region](#), with (V. Charlin), *International Journal of Wine Business Research*, 2023, 35(3), 487-503.
<https://doi.org/10.1108/IJWBR-10-2022-0036>

[A Useful \(But Painful\) Risk-Management Lesson from the Chilean Pension System](#), (with B. Pagnoncelli and S. Redroban), *Journal of Retirement*, May 2023. DOI: 10.3905/jor.2023.1.135

Weather and wine quality in Chile's Casablanca Valley, (with V. Charlin, L. Gonzales and F. Larrain), *Journal of Wine Research*, May 2023.
<https://doi.org/10.1080/09571264.2023.2205118>

On the Performance of Portfolios Based on ESG Ratings, (with J. Alfaro), *The Journal of Impact & ESG Investing*, April 2023. DOI: 10.3905/jesg.2023.1.071

ESG ratings: an industry in need of a major overhaul, (with V. Charlin and J. Alfaro), *Journal of Sustainable Finance & Investment*, August, 2022. DOI: 10.1080/20430795.2022.2113358

A Synthetic Data-plus-Features Driven Approach for Portfolio Optimization, (with B. Pagnoncelli, D. Ramirez and H. Rahimian), *Computational Economics*, June, 2022.
DOI: 10.1007/s10614-022-10274-2

Crime and (Price) Punishment in the Chilean Real Estate Market: the Case of Santiago, (with N. Andrade), *Crime, Law & Social Change*, 76, 497-523, July, 2021.

Perception, Preference, and Prices in Josef Albers' Square Series, (with V. Charlin) *Art & Perception*, 9(3), 199-219, May, 2021. DOI: <https://doi.org/10.1163/22134913-bja10025>.

On the Performance of the Black and Scholes Options Pricing Formulas During the Subprime and Covid-19 Crises, (with S. Redroban), *Journal of Corporate Accounting and Finance*, May, 2021.

A Numerical Simulation Approach to Study Systemic Risk in Banking Systems, (with F. Hawas and E. Chavarria), *Journal of Network Theory in Finance*, March 2021, pp 1-29.
DOI: 10.21314/JNTF.2021.001

A General Framework to Study the Price-Color Relationship in Paintings with an Application to Mark Rothko Rectangular Series, (with V. Charlin), *COLOR Research & Application*, July 2020.
DOI: 10.1002/col.22559

The Effect of Regularization in Portfolio Selection Problems, (with B. Pagnoncelli and F. del Canto), *Journal of the Spanish Society of Statistics and Operations Research*, July 2020.

Molecular Biology and Economics: A Few Funerals Are Needed, (with B. Pagnoncelli), *Journal of Portfolio Management*, 46(7), July 2020.

Art-secured Lending: a Risk Analysis Framework, (with V. Charlin), *Journal of Credit Risk*, 16(2), June 2020, pp. 67-93. DOI: 10.21314/JCR.2020.261

Quantifying Value with Effective Complexity, (with M. Murialdo), *Journal of Interdisciplinary Economics*, May 2020.

An Options-Based Approach to Analyze Auction Guarantees in the Art Market, (with V. Charlin), *North American Journal of Economics and Finance*, January 2020, Vol. 51.
DOI: 10.1016/j.najef.2019.101094

DNPV: A Valuation Methodology for Infrastructure Projects That Is Consistent with Prospect Theory, (with D. Espinoza, J. Rojo and J. Morris), *Journal of Construction Management and Economics*; 2020, Vol. 38(3), pp. 259-274. DOI: 10.1080/01446193.2019.1648842

The Role of Traditional Discounted Cash Flows in the Tragedy of the Horizon: Another Inconvenient Truth, (with D. Espinoza et al.), *Mitig Adapt Strateg Glob Change*, April 2020, Vol. 25, pp. 643-660. DOI: <https://doi.org/10.1007/s11027-019-09884-3>

Can Asset Allocation Limits Determine Portfolio Risk–return profiles in DC Pension Schemes? (with T. Gutierrez, B. Pagnoncelli, and D. Valladao), *Insurance Mathematics and Economics*, May 2019, Vol. 86, pp. 134-144.

A Two-Step Hybrid Investment Strategy for Pension Funds (with G. Denis and B. Pagnoncelli), *The North American Journal of Economics and Finance*, Vol. 42, pp. 574-583, 2017.
DOI: 10.1016/j.najef.2017.09.001

Reliability and Agreement of Credit Ratings in the Mexican Fixed-Income Market (with V. Charlin), *Journal of Credit Risk*, Vol. 13(3), September 2017.

On the Uncertainty of Art Market Returns (with V. Charlin), *Finance Research Letters*, May 2017, Vol. 21, pp. 186-189. DOI: 10.1016/j.frl.2016.12.005.

Operational Risk and the Solvency II Capital Aggregation Formula: Implications of the Hidden Correlation Assumptions, (with V. Charlin), *Journal of Operational Risk*, Vol. 11(4), December 2016.

Credit-Risk Behavior of Homogeneous Portfolios: A Theoretical Result with Surprising Practical Implications, (with B. Pagnoncelli and F. Hawas), *Journal of Structured Finance*, Vol. 22(2), Summer 2016.

On the Stability of Synthetic CDO Credit Ratings, (with J. Zapata), *Journal of International Finance*, Vol. 19(2), June 2016.

Valuation of Projects with Minimum Revenue Guarantees, (with F. Hawas), *The Engineering Economist*, March 2016,

On the Correlation Between Stocks and Art Market Returns, (with V. Charlin), *Applied Economic Letters*, Vol. 24(2), 2017, pp. 128-131. Published online April 2016. DOI: 10.1080/13504851.2016.1170924

Demystifying Credit Risk Derivatives and Securitization: Introducing the Basic Ideas to Undergraduates, (with B. Pagnoncelli), *Journal of Derivatives*, December 2014, Vol. 22 (2), pp. 110-118.

Credit-Risk Assessment of Fixed Income Portfolios Using Explicit Expressions, (with B. Pagnoncelli), *Financial Research Letters*, Vol. 11(3), September 2014, pp 224-230.

An Investor-Oriented Metric for the Art Market, (with V. Charlin), *Journal of Alternative Investments*, Summer 2014, Vol. 17(1) pp. 87-101.

Valuation of Projects with Stochastic Cash Flows and Inter-Temporal Correlations, (with F. Hawas), *ASCE Journal of Construction Engineering and Management*, Vol. 40, Issue 6, June 2014.

The One-Factor Gaussian Copula Applied To CDOs: Just Say NO (Or, If You See A Correlation Smile She Is Laughing At Your Results), (with G. Katsaros), *Journal of Structured Finance*, Fall 2007, Vol 13, Number 3, pp 60-71

SUBMITTED & WORKING PAPERS

A Conceptual Framework for Strong Emergence Based on The Halting Problem, (with M. Murialdo), submitted.

A Modified Conditional GAN-Plus-Features Based Method for Optimal Asset Allocation, (with O. Larre, D. Ramirez, F. Suarez and M. Pena), submitted.

The Effects of Climate Change on the Quality of Chile's Maipo Valley Cabernet Sauvignon Wines (with V. Charlin), submitted.

Reducing Non-Systematic and Systematic Risk in Portfolio Construction: A Simple Correlation-Based Formula, submitted.

Risk Analysis of Conglomerates with Debt and Equity Links, (with R. Roman), submitted.

Additional Peculiarities of the Black-and-Scholes (B-S) Model, submitted.

Revenue-Sharing Agreements in the Live Entertainment Industry: A Practical Risk Analysis Framework, (with V. Charlin), submitted.

Real Options Applied to Infrastructure Investments: A Volatility-Free Framework Based on Closed-Form Expressions, (with V. Charlin), available from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3336296

An Alternative Derivation of the Black and Scholes (B-S) Options Pricing Formulas Based on Occam's Razor (with S. Redroban), Clapes Working Paper Number 97, April, 2021.

Pension Funds in Mexico and Chile: a Risk-Reward Comparison, (with B. Pagnoncelli and H. Schlechter), March, 2019, available from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3359920

The Discounted Cash Flow (DCF) Method Applied to Valuation: Too Many Uncomfortable Truths, available from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2845341

TECHNICAL REPORTS AND MONOGRAPHS

A. Cifuentes and R. Roman, Risk Analysis of Conglomerates with Debt and Equity Links, Clapes Report, November, 2023.

J. Alfaro and A. Cifuentes, El Precio del Cobre: Examinando a los Expertos, Clapes Report, June, 2023.

A. Cifuentes, Revenue-sharing Agreements in the Live Entertainment Industry: A Practical Risk Analysis Framework, Clapes Report, June, 2023.

J. Alfaro and A. Cifuentes, Recomendaciones para Mejorar la Política de Inversiones de los Fondos de Pensiones Chilenos, Clapes Report, May, 2023.

J. Alfaro and A. Cifuentes, Veinte Años de Multifondos Chilenos: Diagnóstico y Recomendaciones, Clapes Report Number 118, November, 2022.

J. Alfaro and A. Cifuentes, ESG Ratings-Driven Investing: Does It Pay? Clapes Report Number 117, October, 2022.

A. Cifuentes, On the Most Vexing Portfolio Diversification Question: How to Choose N? Clapes Report Number 114, June, 2022.

A. Cifuentes and V. Charlin, On the Quality of the Argentinean Malbec: How Much Does the Weather Matter? Clapes Report Number 113, May, 2022.

A. Cifuentes, V. Charlin and J. Alfaro, ESG Ratings: An Industry in Need of a Major Overhaul, Clapes Report Number 111, March, 2022.

A. Cifuentes and V. Charlin, Weather and Wine Quality: The Case of the Chilean (Maipo Valley) Cabernet-Sauvignon, Clapes Report Number 113, March, 2022.

S. Redroban and A. Cifuentes, Algunas Reflexiones Sobre la Política de Inversiones de los Fondos de Pensiones Chilenos, Working Paper Number 108, Clapes UC, December, 2021.

A. Cifuentes and V. Charlin, A New Risk-Return Framework to Evaluate the Merits of Art Investments, Working Paper Number 107, Clapes UC, December, 2021.

A. Cifuentes and V. Charlin, Valuation of a Toll Road with a Potential to Expand: A Comparison Between Two Real Options-Based Approaches, Working Paper Number 104, Clapes UC, August, 2021.

S. Redroban and A. Cifuentes, Sandboxes regulatorias: oportunidades y desafíos para Chile, Working Paper Number 100, Clapes UC, April, 2021.

A. Cifuentes and B. Pagnoncelli, On Estimating the Price of European Options: Time to Think Differently, CLAPES-UC, May 2020.

A. Cifuentes, Financiamiento de Largo Plazo en Tiempos de Crisis: Una Solución Publico-Privada Usando Técnicas de Securitización, CLAPES-UC, April 2020.

A. Cifuentes, Inversiones Sustentables: Mitos y Realidades, Verdades a Medias y Verdades Incomodas, CLAPES-UC, April 2020.

A. Cifuentes, F. Hawas & E. Chavarria, A Computational Approach to Assess Systemic Risk in Banking Systems: from Early Diagnosis to Regulatory Response, CLAPES-UC, March 2020.

A. Cifuentes and V. Charlin, Valuation of Engineering Projects Using Real Options: A Volatility-Free Framework Based on Closed-Form Expressions, CLAPES-UC, March 2020.

A. Cifuentes and V. Charlin, The Price of Color in Mark Rothko's Paintings, CLAPES-UC, January 2020.

N. Andrade & A. Cifuentes, Crime and (Price) Punishment in the Chilean Real Estate Market, CLAPES-UC, January 2020.

H. Schlechter, B. Pagnoncelli & A. Cifuentes, Pension Funds in Mexico and Chile: a Risk-Reward Comparison, CLAPES-UC, March 2019.

A. Cifuentes and P. Algabli, Desarrollo Estrategia e Implementación de un Índice de Precios del Sector Inmobiliario para la Region Metropolitana de Santiago, CLAPES-UC, April 2018.

A. Cifuentes, Estrategia para desarrollar un mercado de bonos high yield en Chile, CLAPES-UC, August 2017.

A. Cifuentes, Desarrollo de un Índice Inmobiliario para Santiago: Estudio de Factibilidad (with P. Hempel), January 2016, CREM, University of Chile.

A. Cifuentes and E. Valdivieso, Discounted Cash Flow Analysis: A New Conceptual Framework, University of Chile, Department of Industrial Engineering, Financial Studies Center, July 2011.

J. Desormeaux, A. Cifuentes, L. Cordero, P. Correa, A. Ferreiro, R. Fischer and A. Yrarrazabal, Informe de la Comisión de Reforma a la Supervisión Financiera (in Spanish), Ministry of Finance, Chile, March 2011.

A. Cifuentes, Testimony Before U.S. Senate, Wall Street and The Financial Crisis, April 2010, available from www.gpoaccess.gov/cpncgress/index.html.

A. Cifuentes and J.M. Cruz, White Paper on Rating Agency Reform, report requested by the U.S. Senate, included in *Wall Street and the Financial Crisis, Permanent Subcommittee on Investigations*, United States Senate, pages 794-802, April 2010.

A. Cifuentes, Testimony Before U.S. Senate, Turmoil in the U.S. Credit Markets: The Role of the Rating Agencies, April 2008; available from <http://banking.senate.gov/public/index.cfm>

A. Cifuentes and G. Katsaros, CDOs and Their Ratings: Chronicle of a Foretold Disaster, *Total Securitization*, June 4, 2007, pp 11-12.

A. Cifuentes, N. Chen, M. Desai, and A. Ray, CDOs with "Alternative Waterfalls": No Shift in Paradigm, Wachovia Securities, Structured Products Research Report, March 2005.

N. Chen, A. Cifuentes, M. Desai, and A. Ray, The Long and Winding Road to Recovery: Can Recovery Swaps Revive the High-Yield CBO Market? Wachovia Securities, Structured Products Research Report, February 2005.

N. Chen, A. Cifuentes, M. Desai, and A. Ray, The Young and The Restless: Correlation Drama at the Big Three Rating Agencies, Wachovia Securities, Structured Products Research Report, February 2005.

A. Cifuentes, A. Ray, N. Chen, and M. Desai, CDO Managers: Rank Them All—And Let Zorro Sort Them Out! Wachovia Securities, Structured Products Research Report, January 2005.

N. Chen, A. Cifuentes, M. Desai, and A. Ray, Secondary Market ABS CDOs: A Rational Alternative to NAV Analysis, Wachovia Securities, Structured Products Research Report, January 2005.

A. Cifuentes and M. Desai, Anatomy of a Monte Carlo: Things Your Mother Never Told You (and Your Quant Will Never Tell You), Wachovia Securities, Structured Products Research Report, November 2004.

A. Cifuentes, CDO of CDOs: Investors' Basic Considerations, *Institutional Investor*, November 2004.

A. Cifuentes and M. Desai, Interest or Principal: That Might (or Might Not) Be The Question, Wachovia Securities, Structured Products Research Report, September 2004.

A. Cifuentes and M. Desai, Introduction to CDOs, Wachovia Securities, Structured Products Research Report, August 2004.

A. Cifuentes and M. Desai, CLO Equity Performance: The Forgotten Factor, Wachovia Securities, Structured Products Research Report, July 2004.

A. Cifuentes and M. Desai, A Marriage of Convenience: Money Market Tranches and CDO Structures, Wachovia Securities, Structured Products Research Report, June 2004.

A. Cifuentes et al., CDO Equity Investing, Part Deux: Alternative Thoughts on an Alternative Asset, Wachovia Securities, Structured Products Research Report, May 2004.

A. Cifuentes et al., How Good Are My Children? Wachovia Securities, Structured Products Research Report, April 2004.

A. Cifuentes et al., CDO Equity Investing: A Fistful of Tips, Wachovia Securities, Structured Products Research Report, March 2004.

A. Cifuentes et al., Monte Carlo Methods: The Devil Is in the Details! Wachovia Securities, Structured Products Research Report, March 2004.

A. Cifuentes et al., Five Easy Wishes, Wachovia Securities, Structured Products Research Report, January 2004.

J. Prince and A. Cifuentes, CPORTS: A Tailor-Made CDO Investment, Wachovia Securities, Structured Products Research Report, November 2003.

A. Cifuentes and J. Prince, CDOs and Correlation: Are Your Ventures in One Bottom Trusted? Wachovia Securities, Structured Products Research Report, October 2003.

A. Cifuentes et al., Analyzing the Risk of Structured Credit (CDO) Tranches: The Modified Binomial Expansion Method, Triton Partners Research Report, September 2000.

A. Cifuentes et al., Reaching for the STARS: A Aaa/AAA Senior CDO Bond with Equity Participation, Triton Partners Research Report, August 2000.

A. Cifuentes and E. Choi, Stability Analysis of CBO Tranches: What Does It Take to Downgrade a CBO, Moody's Investors Service, Special Report, December 1998.

A. Cifuentes et al., The Double Binomial Method and Its Application to a Special Case of CBO Structures, Moody's Investors Service, Special Report, March 1998.

A. Cifuentes et al., Who's on Top? Subordinated Pieces in CBO/CLO Structures, Moody's Investors Service, Special Report, December 1997.

J. Gluck, A. Cifuentes and E. Murphy, CBO/CLO Market Update: Full Speed Ahead in 1997, Moody's Investors Service, Special Report, October 1997.

A. Cifuentes et al., 1996 CBO/CLO Year In Review and 1997 Outlook, Moody's Investors Service, Special Report, March 1997.

A. Cifuentes et al., Mind The Gap: Moody's Rating of "Low-Coupon" Structured Instruments, Moody's Investors Service, Special Report, February 1997.

A. Cifuentes et al., The Binomial Expansion Method Applied To CBO/CLO Analysis, Moody's Investors Service, Special Report, December 1996.

A. Cifuentes et al., Emerging Market Collateralized Bond Obligations, Moody's Investors Service, Special Report, October 1996.

CONFERENCE PRESENTATIONS & INVITED TALKS

A Machine Learning Plus-Features Based Approach for Optimal Asset Allocation, invited talk, Blackrock, New York, November, 2023.

A Machine Learning Plus-Features Based Approach for Optimal Asset Allocation (with the Fintual team), 4th ACM International Conference on AI in Finance, New York, November, 2023.

El Régimen de Inversiones del Sistema Chileno de Pensiones: Diagnóstico y Recomendaciones, ICARE Seminar, Santiago, Chile, October, 2023.

The Worth of Art: Financial Tools for the Art Markets, (with V. Charlin), invited talk, Christie's, New York, September, 2023.

The Worth of Art: Financial Tools for the Art Markets, (with V. Charlin), Clapes UC Seminar, Patricia Ready Art Gallery, Santiago, Chile, August, 2023.

The Worth of Art: Financial Tools for the Art Markets, (with V. Charlin), invited talk, Larraín Vial, Wealth Management Division, Santiago, Chile, August, 2023.

Investing in Picasso: What Have We Learned?, Bloomberg Financial Engineering Seminar, New York, June, 2023.

Los Fondos de Pensiones Chilenos y sus Políticas de Inversión: Una Conversación Necesaria, Clapes UC Seminar, Santiago, Chile, March, 2023.

El Mercado Inmobiliario: Índices y Reflexiones, Clapes Seminar, Santiago, Chile, December 2022.

Chile: Past, Present, and (What Kind of) Future? Santiago, Chile, August, 2022, invited talk delivered to Portland University MBA students visiting Chile at the request of Austral Group.

Markowitz and the Portfolio Selection Problem: A Critical Assessment, Clapes Seminar, Santiago, Chile, August, 2022.

ESG Investing: Theory & Practice, Clapes Seminar, Santiago, Chile, May, 2022.

The Influence of Weather on the Quality and Price of Wine, April, 2022, New York City, Bloomberg Quant Seminar.

Chile and its Capital Markets, Santiago, Chile, March, 2022, invited talk for UCLA MBA students visiting Chile, at the request of Prof. Sebastian Edwards from UCLA.

Innovación Financiera y Regulación: Lo Bueno, lo Malo, y lo Nuevo, Clapes (Zoom) Seminar, Santiago, Chile, June, 2021.

Crimen y Delincuencia: Impacto en el Mercado Inmobiliario y la Calidad de Vida en la Ciudad, Clapes (Zoom) Seminar, Santiago, Chile, March, 2021.

El Mercado Inmobiliario Después de la Pandemia, Clapes (Zoom) Seminar, Santiago, Chile, November, 2020.

Price and Color: The Paintings of Josef Albers, Bloomberg Quant (Zoom) Seminar, New York, October, 2020.

Riesgo Sistémico y el Sistema Financiero, Clapes (Zoom) Seminar, Santiago, Chile, September 2020.

Rethinking the Meaning of Economic Value, Clapes (Zoom) Seminar, Santiago, Chile, July 2020.

Reflexiones sobre los Criterios ESG, Clapes (Zoom) Seminar, Santiago, Chile, June 2020.

Financiamiento privado de infraestructura de uso público, Seminar (Zoom) organized by the Chilean Council of Infrastructure Development, Santiago, Chile, May 2020.

Finance & the Art Market, invited talk, Georgia State University, Finance Department, Atlanta, March 2020.

Art-Secured Lending: a General Approach to Estimate Risk, Bloomberg Quant Seminar, New York, October 2019.

Art as an Alternative Investment, panel discussion, Columbia Business School Alumni Seminar, New York, October 2019.

Invirtiendo en un Mundo Complicado: Consideraciones sobre las Inversiones Sustentables, Convención Anual de la Industria de los Seguros, Viña del Mar, Chile, October 2019.

Pricing Beauty: Is It Risky to Invest in Art? Columbia Global Center Conference, Santiago, Chile, September 2019.

Pricing Art Guarantees in the Art Market, Bloomberg Quant Seminar, New York, June 2019.

On the Investment Guidelines of the Chilean Pension Funds: Diagnosis & Recommendations, Consejo Técnico de Inversiones, Chilean Pension Funds Supervision Office, Santiago, June 2019.

Pension Funds & Portfolio Management: Lessons from Chile and Mexico, IMF presentation, Washington D.C., April 2019.

Pension Funds and Portfolio Management: Lessons from Mexico & Chile, Columbia University, New York, Mathematics Department, Finance Seminar, April 2019.

Pension Funds in Latin America, invited talk, Yale University, School of Management, New Haven, CT, April 2019.

Pension Systems and Investment Regulations, Seminar Clapes UC, Santiago, Chile, March 2019.

Price and Color: The Paintings of Mark Rothko, Bloomberg Quant Seminar, New York, October 2018.

Finance and the Art Markets, Annual Meeting, Chilean Association of Investment Funds, Vina del Mar, Chile, September 2018.

Capital Basado en Riesgo, Contexto y Desafíos, Annual Meeting, Chilean Association of Insurance Companies, Vina del Mar, Chile, September 2018.

The Lehman Bankruptcy, Before & After, Clapes UC Seminar, Santiago, Chile, September 2018.

The Lehman Bankruptcy, Ten Years Later, Libertad y Desarrollo Seminar, Santiago, Chile, September 2018.

Finance & the Art Markets, Harvard University Club, Art Experts Symposia Seminar, New York, June 2018.

Credit Risk Behavior of Homogeneous Portfolios, Columbia University, Mathematics Department, Finance Seminar, April 2018.

The intellectual bankruptcy of the Discounted Cash Flow method, Bloomberg Quant Seminar, New York, October 2017.

Finance and its Challenges, California Institute of Technology, Division of Humanities and Social Science Seminar, invited talk, Pasadena, California, October 2017.

What's New in the Financial Markets? Invited talk, Annual Meeting of the Chilean Association of Investment Funds, Vina del Mar, Chile, September 2017.

Valuation of Infrastructure Projects: Recent Advances & Pending Issues, CLAPES UC Seminar, August 2017, Santiago, Chile.

Valuation of Infrastructure Investments, Santiago, Chile, December 2016, invited talk, Comité Técnico de Inversiones, Superintendencia de Pensiones.

Paintings Are Just Expensive Real Estate, New York, November 2016, talk presented at the Bloomberg Quant Seminar.

Entorno Macroeconómico de los Directorios, Santiago, Chile, October-November 2016, Seminar sponsored by Deloitte/ University of Chile and co-organized with Dr. Guillermo Larrain.

Chilean Investors Forum, Santiago, Chile, September 2016, panelist, Asset Allocation Strategies for Institutional Investors' forum.

Chile & The Global Financial Markets, Santiago, December 2015, talk for UCLA MBA students visiting Chile, at the request of Prof. Sebastian Edwards from UCLA.

Chilean Investors Forum, Santiago, Chile, November 2015, panelist, Chilean capital markets: structure and regulation; and moderator, Investing, Issuing and Understanding Corporate Debt.

Systemic Risk and Financial Systems: a Numerical Simulation Approach, Superintendencia de Bancos e Instituciones Financieras, Invited Talk, Santiago, Chile, November 2015.

Systemic Risk and Financial Systems: a Numerical Simulation Approach, Financial Seminar Series, Universidad A. Hurtado/Ilades, Santiago, Chile, May 2015.

A Numerical Simulation Approach to Study Systemic Risk in Banking Systems, University of Chile Seminar, Faculty of Business and Economics, April 2015.

Investment Landscape for Reserve Funds in Latin America, Latin American Fixed Income Investors Forum, Panama City, Panama, March 2015.

Crisis Financieras y Desafíos Regulatorios, Coopeuch, invited talk, Santiago, Chile, October 2014.

Risk Management and Core Competences, Chilean Investors Forum, Santiago, Chile, August 2014.

On the Actual Behavior of Credit Derivatives Based on Homogeneous Reference Portfolios, University of Chile Seminar, Faculty of Business and Economics, August 2014.

Discounted Cash Flow (DCF) Analysis: What's Wrong with It, And How to Fix It, University of Chile Seminar, Faculty of Business and Economics, July 2014.

Riesgo Sistémico: Temas para Pensar, Superintendencia de Pensiones (Chile's Private Pension Regulatory Body), Santiago, June 2014.

Dollars and Sense in the Art Market, The 18th Cultural Economics Conference, Montreal, Canada, June 2014.

The Capital Asset Pricing Model (CAPM) Applied to Paintings, The 18th Cultural Economics Conference, Montreal, Canada, June 2014.

Art Market Returns: Misgivings and Certainties, The 18th Cultural Economics Conference, Montreal, Canada, June 2014.

A Cash Flow-Based Approach to Estimate Default Probabilities, Jornada de Regulación y Estabilidad Macro-Financiera, University of Chile, Faculty of Economics and Business, Santiago, Chile, January 2014.

Credit Risk Assessment of Fixed Income Portfolios: and Analytical Approach, Primera Jornada de Regulación y Estabilidad Macro-Financiera, University of Chile, Faculty of Economics and Business, Santiago, Chile, January 2014.

Credit Ratings in the Chilean Fixed Income Market: Some Empirical Observations, Primera Jornada de Regulación y Estabilidad Macro-Financiera, University of Chile, Faculty of Economics and Business, Santiago, Chile, January 2014.

Capital Basado en Riesgo: Antecedentes, Reflexiones y Peligros, talk delivered at the Annual Convention of the Chilean Association of Insurance Companies, Vina del Mar, Chile, October 2013.

Recomendaciones de la Comisión Desormeaux, Seminar organized by Libertad y Desarrollo, keynote speaker, Santiago, Chile, July 2013.

Inversionistas Institucionales: Riesgos, Beneficios, y Desafíos Regulatorios, lecture delivered at the Conferencia de Integración Financiera Latinoamericana, University of Chile, Centro de Regulación y Estabilidad Macro-Financiera, Santiago, Chile, January 2013.

Dissecting Abacus: Risks That Investors Should Have Seen, (co-author J. Zapata), The Macrotheme Conference, Finance, Investments, and Policy Making Session, Paris, October 2012.

The Financial Crisis: Halfway Through the Tunnel, invited talk, The Chile Club, Santiago, Chile, September 2012.

Credit Crunch in Chile, Panel Discussion organized by Centro de Regulación y Estabilidad Macro-Financiera, University of Chile, Santiago, Chile, August 2012.

Structured Products and their Ratings: Current and Pending Issues, invited talk, Catholic University, School of Business, Santiago, Chile, August 2012.

Los Nuevos Retos del Risk Management, invited talk, Sexto Congreso de Créditos y Cobranzas, Santiago, Chile, September 2011.

Credit Default Swaps: Simple Concept; Complex Issues, invited talk, Chilean Central Bank, Santiago, Chile, June 2010.

Modeling Structured Finance Products, Capital Markets Specialist Conference, Federal Financial Institutions Council, Arlington, Virginia, June 2009.

The Subprime Crisis: Key Issues and Pending Problems, invited talk, Chilean Central Bank, Santiago, Chile, April 2009.

La Crisis Subprime: Dinámica de un Desastre Anunciado, invited talk, Universidad Adolfo Ibáñez, Santiago, Chile, April 2009.

Fantasy, Fraud, and Foolishness: Where Do We Go from Here? Keynote Speaker, Baker & McKenzie Annual Partners Meeting, New York, NY, October 2008.

Credit Ratings and the Alternative Banking System: A Critical Assessment, invited talk, Market Liquidity & Implications on World Economy Conference, Singapore, August 2008. (Plus, a half-day post-conference seminar: Understanding the Different Rating Methodologies: An Independent Assessment).

Fantasy, Fraud, and Foolishness: The Three Drivers Behind The Subprime Mess, invited talk, Professional Liability Underwriting Society of Canada Conference, Toronto, Canada, May 2008.

Collateralized Debt Obligations: Basic Concepts and Recent Developments, Half-Day Seminar presented at the request on the Connecticut Insurance Department, Connecticut Insurance Department Annual Conference, Hartford, Connecticut, March 2008.

Debating the Future of the CDO, (with Zachary Rosenbaum), presentation made at NERA's Subprime and The Credit Crisis Conference, New York, February 2008.

CDOs: Alchemy or Science, (with Zachary Rosenbaum), presentation made at the Hedge Fund Due Diligence Conference, New York, October 2007.

Modeling Credit Risk in Fixed Income Portfolios, CFA/ Fixed Income Management Annual Conference, Boston, October 2007.

Collateralized Debt Obligations: Key Concepts & Recent Developments, invited seminar, United States Treasury, Office of the Comptroller of the Currency, Washington D.C., April 2007.

To Measure is to Understand: Can the Rating Agencies Measure? Do They Understand? invited talk, Euromoney CDO Conference, Amsterdam, September 2006. (Also presented in a slightly modified fashion at the Terrapinn CDO conference, New York, March 2007.)

The Role of the Manager in a CDO Transaction, invited talk at CDO Summit Asia 2006, Taipei, Taiwan, May 2006.

Collateralized Debt Obligations for Bank Examiners, one day seminar, United States Treasury, Office of the Comptroller of the Currency, Washington D.C., April 2006.

I Like Your Model, invited talk (keynote speaker), U.S. CDOs & Credit Derivatives Conference sponsored by IMN/Euromoney, New York, March 2006.

Truth or Consequences: Default Correlation Assumptions in the Modeling and Structuring of CDOs, invited talk delivered at the CFA Institute-New York University Structured Credit Instruments Conference, New York, November 2005. Published later in a slightly modified fashion under the title CDOs and Correlation: A Few Modeling Misconceptions, CFA Institute Conference Proceedings Quarterly, June 2006, pages 53-58.

Three Controversial Thoughts and One Wild Idea, invited talk delivered at the IMN CDOs/ Credit Derivatives Conference, Venice, Italy, September 2005.

The CDO Market This Time Around, presentation at the Fixed Income Forum, Senior Delegates Roundtable, Institutional Investor, Laguna, California, July 2005.

Understanding CDOs, CDO Summit (conference organized by The Institute of International Research), New York, June 2005.

Credit Derivatives: Concepts & Applications, one-day seminar for senior managers and risk professionals, Banco de Crédito e Inversiones (BCI), Santiago, Chile, June 2005.

Introduction to Collateralized Debt Obligations (CDOs), one day seminar given at the request of the United States Treasury, Office of the Comptroller of the Currency, Washington D.C., June 2005.

A Critical Look at CDO History: The Good, The Bad, and The Useless, CDOs & Credit Derivatives (US), IMN/Euromoney Conference, New York, March 2005.

Essentials of Collateralized Debt Obligations: Structures, Strategies & Innovations, Global Association of Risk Professionals Seminar, New York & London, March 2005.

CDOs and Correlation: Solved and Pending Issues, GARP Annual Conference, New York, February 2005.

CDO Equity Performance: History Will Teach Us Nothing, IMN CDO Conference, Vienna, September 2004.

CDO Equity Investing: Do's & Don'ts, CDO Summit, New York, July 2004.

CDOs and the Rating Agencies: Assessing the Rating Models and Measurements Used, Global Risk Professionals Association Conference, London, May 2004.

Earthquakes, Defaults and CDOs: Managing the Unpredictable, IMN CDO Conference, Amsterdam, September 2003.

CDO Equity Tranches & Van Gogh Paintings: Similarities and Differences, IMN CDO Conference, Berlin, September 2002.

The Utilization of CBO/CLO Technology to Securitize Non-Conventional Assets, IMN CBO/CLO Conference, Munich, September 19-20, 2000.

How Do You Spell CBO in Spanish? SRI CBO/CLO in the Year 2000 Conference, Chicago, May 16-17, 2000.

Examining Rating Criteria for Cash Flow CBOs, Workshop presented at the CBO/CLO Issuance Conference, Institute for International Research, New York, September 13-14, 1999.

Credit Risk Management: An Overview, Class taught at the XXII Systems Engineering Conference, University of Chile, Industrial Engineering Department, Santiago, Chile, July 13-16, 1999.

Special Issues and Considerations in Emerging Market CBOs, The Next Step: CBOs/CLOs, IMN Conference, London, June 9-10, 1999.

How Much Would You Pay for an Earthquake-Linked Bond? invited lecture, California Institute of Technology, Pasadena, California, February 1999.

Latin American Outlook for the CBO/CLO Market, Asset Securitization in Latin America Conference, Sao Paulo, Brazil, November 1998.

The Role of the Rating Agencies in the Development of the Credit-Derivatives Market, Credit-Derivatives Conference, Sao Paulo, Brazil, October 1998.

Emerging Market and High-Yield CBO/CLO Structures, The Asset Backed Market Conference, New York, June 1998.

Evaluating New Asset Classes in the Application of CBOs, CLOs and Credit-Linked Notes, RISK Conference on CBOs, CLOs and Credit-Linked Notes, New York, May 1998.

Examining Today's CBO/CLO Market and Gauging What's Ahead in the Future, Second Annual Summit on Emerging and Niche Asset Securitization, New York, May 1998.

Mezzanine Pieces in CBO Structures, Asset Backed Conference, Bermuda, September 1997.

Synthetic Asset CBOs, Asset Backed Conference, Bermuda, September 1997.

Collateralized Bond Obligations, 7th Annual High-Yield Conference, New York, June 1997.

[2] ENGINEERING AND APPLIED MATH

BOOKS

A. O. Cifuentes, *Using MSC/NASTRAN: Statics and Dynamics*, Springer-Verlag Inc., New York, July, 1989.

BOOK CHAPTERS

Chilean Seismic Code, (Chapter 10), in *International Handbook of Earthquake Engineering*, Editor: Mario Paz, Chapman Hall, New York, 1995.

REFEREED PAPERS IN ACADEMIC JOURNALS

H. Jensen and A. Cifuentes, A Global Multi-Dimensional Sensitivity Analysis of Electronic Systems Subjected to Time-Dependent Excitations, *ASME Journal of Electronic Packaging*, Volume 120, December 1998, pp 391-394.

H. Jensen and A.O. Cifuentes, A Global Sensitivity Approach for the Dynamic Response of Printed Wiring Boards, *ASME Journal of Electronic Packaging*, Volume 117, Number 1, March 1995, pp 7-13.

A.O. Cifuentes, N. Shulga and C.A. Neff, A Sensitivity Study of Printed Wiring Board Vibrations Using A Statistical Method, *Journal of Sound and Vibration*, Volume 181, Number 4, April 1995, pp 593-604.

J.N. Burghatz, A.O. Cifuentes and J. Warnock, A Low-Capacitance Bipolar/BiCMOS Isolation Technology, Part II--Circuit Performance and Device Self-Heating, *IEEE Transactions on Electron Devices*, Volume 41, Number 8, August 1994, pp 1388-1395.

A.O. Cifuentes, Estimating The Dynamic Behavior of Printed Circuit Boards, *IEEE Transactions on Components, Packaging and Manufacturing Technology*, Volume 17, Number 1, February, 1994, pp 69-75.

A.O. Cifuentes and I.A. Shareef, Some Modeling Issues on the Finite Element Computation of Thermal Stresses in Metal Lines, *ASME Journal of Electronic Packaging*, Volume 115, Number 4, December, 1993, pp 392-403.

S.R. Stiffler and A.O. Cifuentes, The Effect of Trench Corner Shapes on Local Stress Fields: A 3-D Finite Element Modeling Study, *IEEE Transactions on Electron Devices*, Volume 40, Number 3, March, 1993, pp 557-563.

A.O. Cifuentes and A. Kalbag, A Performance Study of Tetrahedral and Hexahedral Elements in 3-D Finite Element Structural Analysis, *Journal of Finite Elements in Analysis and Design*, Volume 12, 1992, pages 313-318.

A.O. Cifuentes and S.R. Stiffler, Modeling Thermal Stresses in Periodic Structures: Some Observations Regarding the Boundary Conditions, *ASME Journal of Electronic Packaging*, Volume 114, Number 4, December, 1992, pages 397-402.

A. O. Cifuentes and I. Shareef, Manufacturing of Multilevel Structures: A General Method for Analyzing Stress Evolution During Processing, *IEEE Transactions on Semiconductor Manufacturing*, Volume 5, Number 2, May 1992, pp 128-137.

A. O. Cifuentes and S. Lalapet, A General Method to Determine the Dynamic Response of a Plate to an Orbiting Mass, *Computers and Structures*, Volume 42, Number 1, 1992, pp 31-36.

A.O. Cifuentes, A Note on the Determination of the Thermal Stresses in Multi-Metal Beams Subjected to Temperature Variations, *ASME Journal of Electronic Packaging*, Volume 113, December 1991, pp 425-427.

A. O. Cifuentes, Elastoplastic Analysis of Bimaterial Beams Subjected to Thermal Loads, *ASME Journal of Electronic Packaging*, Volume 113, December 1991, pp 355-358.

A. O. Cifuentes and M. Paz, Determination of Influence Lines and Surfaces Using Finite Elements, *Journal of Finite Elements in Analysis and Design*, Volume 7, 1991, pp 299-305.

A. O. Cifuentes, T. L. Bock and R. N. Coppolino, A Finite Element Technique for Tape-Head Interaction Problems: The Steady-State Case, *Applied Mathematical Modelling*, Volume 14, Number 12, December, 1990, pp 661-665.

B.E. MacNeal, L.A. Larkin, J.R. Brauer and A.O. Cifuentes, Elimination of Finite Element Spurious Modes Using a Modal Transformation Technique, *IEEE Transactions on Magnetics*, Vol. 26, Number 5, September, 1990, pp 1765-1768.

A.O. Cifuentes and R.N. Coppolino, Computation of the Eigenfrequencies of Acoustic Cavities: A New Penalty Method, *Communications in Applied Numerical Methods*, Volume 6, No. 4, May, 1990, pp 289-296.

A. O. Cifuentes, T. L. Bock and R. N. Coppolino, A Finite Element Method for Gas-Lubricated Bearings, *Journal of Engineering Computations*, Volume 7, Number 1, March, 1990, pp 32-36.

A. O. Cifuentes, Dynamic Response of a Beam Excited by a Moving Mass, *Journal of Finite Elements in Analysis and Design*, Vol. 5, 1989, pp 237-246.

A. O. Cifuentes and W. D. Iwan, Nonlinear System Identification Based on Modeling of Restoring Force Behavior, *Soil Dynamics and Earthquake Engineering*, 1989, Vol. 8, Number 1, pp 2-8.

A. O. Cifuentes, Solution of Incompressible Steady Flow Problems Using a Structural Analogy, *Journal of Engineering Computations*, Vol 5, Number 2, June 1988, pp 165-168.

W. D. Iwan and A. O. Cifuentes, A Model for System Identification of Degrading Structures, *Journal of Earthquake Engineering & Structural Dynamics*, Vol. 14, No. 6, Nov/Dec 1986, pp 877-890.

A. Cifuentes et al., Pupil Opening Control, A Biomathematical Model (in Spanish). *Sigma, Chilean Journal of Applied Mathematics*, April, 1981.

A. Cifuentes et al., Simulation of the Main Phenomena Occurring in the Ocular Globe: a Biomathematical Model of the Normal Eyeball, (in Spanish), *Sigma, Chilean Journal of Applied Mathematics*, 6(2): 37-79, 1980.

CONFERENCE PROCEEDINGS ARTICLES & MONOGRAPHS

H. Jensen and A.O. Cifuentes, Improved Approximations for Structural Reliability in Thermal Analysis, Proceedings of the 45th Electronic Components and Technology Conference, Las Vegas, May, 1995, Volume II, pp 1152-1160.

A.O. Cifuentes and N. Shulga, Dynamic Behavior of Printed Wiring Boards: A Sensitivity Analysis Technique Based on Multi-Linear Expansions, Proceedings of the Fourth Pan-American Congress of Applied Mechanics, Buenos Aires, Argentina, January, 1995, Volume 2, pp 173-178.

A.O. Cifuentes and N. Shulga, A Technique for Sensitivity Analysis of Natural Frequencies Using ABAQUS, Proceedings of the ABAQUS Users Conference, Newport, Rhode Island, June 1994, pp 221-230.

H. Jensen and A.O. Cifuentes, Probabilistic Sensitivity Analysis for the Dynamic Response of Electronic Systems, Proceedings of the 44th Electronic Components and Technology Conference, Washington, D.C., May 1994, pp 107-114.

A.O. Cifuentes, Dynamic response of PC Boards: Some Useful Analysis Guidelines, Proceedings of the ASME Winter Annual Meeting, New Orleans, Louisiana, November 1993, paper 93-WA-EEP-1.

A.O. Cifuentes and A. Kalbag, Dynamic Behavior of Printed Wiring Boards: Increasing Board Stiffness by Optimizing Support Locations, Proceedings of the 43th Electronic Components and Technology Conference, Lake Buena Vista, Florida, June 1993, pages 270-275.

J.N. Burghatz, A.O. Cifuentes et al., SPIRIT --A Bipolar/BiCMOS Isolation Technology for High Performance VLSI, Proceedings of 1993 VLSI Symposium, Kyoto, Japan, May 1993.

A.O. Cifuentes and A. Kalbag, A Comparison of Tetrahedral and Hexahedral Elements in Finite Element Structural Analysis, Proceedings of the Third Panamerican Congress of Applied Mechanics, Sao Paulo, Brazil, January 1993, pages 259-262.

A. O. Cifuentes and I. Shareef, A Simple Finite Element Technique to Model the Stresses in the Fabrication of Multilayered Structures for Electronic Components, Proceedings of the ASME Annual Meeting on Structural Analysis in Electronic Packaging and Fiber Optics, Atlanta, December 1991, paper 91-WA-EEP-3.

A. O. Cifuentes and S. Lalapet, Transient Response of a Plate to an Orbiting Mass, Proceedings of the Second Panamerican Congress of Applied Mechanics, Valparaiso, Chile, January 1991, p 193.

A. Cifuentes, Finite Elements and Structural Mechanics in Electronic Packaging: Present and Future, Proceedings of the MSC/Nastran Users' Conference, Los Angeles, California, March 1990.

A. O. Cifuentes and R. N. Coppolino, A Modified Penalty Function Method for Modal Analysis of Acoustic Cavities, Proceedings of the 12th Biennial ASME Conference on Mechanical Vibration and Noise, Montreal, Canada, September 17-20, 1989, pp 289-294.

A. O. Cifuentes, T. L. Bock and R. N. Coppelino, A Finite Element Technique for Tape-Head Interaction Problems in High Speed Recording: The Steady-State Case, Proceedings of the 5th International Symposium on Numerical Methods in Engineering, Lausanne, Switzerland, September 11-15, 1989.

A. O. Cifuentes and M. Paz, A Computational Algorithm to Determine Influence Lines and Influence Surfaces, Proceedings of the 6th Conference on Computing in Civil Engineering, Atlanta, Georgia, September 11-13, 1989.

A. O. Cifuentes, B. E. MacNeal and R. N. Coppelino, Finite Element Analysis of Cavities and Waveguides Using a Modified Penalty Function Method, Proceedings of the 1989 IEEE APS/URSI International Symposium, June 26-30, San Jose, California.

A. O. Cifuentes, T. L. Bock and R. N. Coppelino, A Finite Element Method for a Certain Class of Compressible Lubrication Problems, Proceedings of the 12th Canadian Congress of Applied Mechanics, May 28-June 2, 1989, Ottawa, Canada, pp 778-779.

A. O. Cifuentes, Finite Element Solution of Incompressible Steady Flow Problems in Closed Conduits Using a Structural Analogy, Proceedings of the 7th International Conference of Finite Elements Methods in Flow Problems, Huntsville, Alabama, April 3-7, 1989, pp 874-877.

A. O. Cifuentes, Dynamic Analysis of Railway Bridges, Proceedings of the 1988 Joint ASME/IEEE Railroad Conference, Pittsburgh, PA., April, 1988, pp 95-103.

A. O. Cifuentes, A Combined Finite Element- Finite Difference Technique to Determine Structural Response to "Bourdon" Load. Proceedings of the 11th Canadian Congress of Applied Mechanics, University of Alberta, June, 1987, Vol. II, pp D14-D15.

A. O. Cifuentes, Non-Linear Dynamic Problems Using a Combined Finite Element- Finite Difference Technique, Proceedings of the 6th Conference on the Mathematics of Finite Elements and Applications, Brunel University, London, April/May 1987.

A. O. Cifuentes, Dynamic Analysis with MSC/NASTRAN, The MacNeal-Schwendler Corporation, Los Angeles, California, June, 1986.

A. O. Cifuentes, Basic Linear Static and Normal Modes Analysis with MSC/NASTRAN, The MacNeal-Schwendler Corporation, Los Angeles, California, March, 1986.

A. O. Cifuentes and W. D. Iwan, On the Modeling of a Class of Deteriorating Structures Subjected to Severe Earthquake Loading, Proceedings of the Third U.S. National Conference on Earthquake Engineering, Charleston, South Carolina, August 1986, pp 967-978.

A. O. Cifuentes and D. H. Herting, Transient Response of a Beam to a Moving Mass Using a Finite Element Approach, Proceedings of the Fourth International Symposium on Numerical Methods in Engineering, Atlanta, Georgia, March 1986, pp 533-539.

A. O. Cifuentes, Modeling Deteriorating Structures- The Imperial County Services Building, Earthquake Research Affiliates Conference, Pasadena, California, February, 1985.

A. Cifuentes, Optimum Design of Hydraulic Networks, (in Spanish), Proceeding of the First Latin American Congress of Computational Methods in Engineering, Porto Alegre, Brazil, December, 1979.

A. Cifuentes, A Computational Algorithm to Design Welded Joints in Tubular Structures, (in Spanish), Infor Congress of Computational Methods in Engineering, Antofagasta, Chile, November, 1979.

A. Cifuentes, Structural Analysis of Skew Plates, (in Spanish), Chilean Engineering Association Journal, April, 1979.

A. Cifuentes, Development of a Cost Minimization Procedure to Design Water Supply Systems, (in Spanish). III Economic and Cost Engineering Panamerican Congress, Santiago, Chile, October, 1978.

A. Cifuentes et al., Variational Methods for the Solution of Free Boundary Problems in Elastoplasticity, (in Spanish). Notes for a course taught at the Third Chilean Conference of Applied Mathematics, Santiago, Chile, July, 1978.

[3] GENERAL INTEREST

Financial Times

Chile's pioneering pension system now needs reform, op/ed, December 28, 2023

Bankman-Fried's new world record, Letter to the Editor, November 24, 2022.

Timeless relevance of Markowitz's ideas for finance and investing, March 18, 2022.

Ten Years After the Lehman Collapse Few Lessons Have Been Learned, August 21, 2018

Infrastructure Investing and the Peril of Discounted Cash Flows, November 3, 2016.

Date More Worthy of Lucy's Talents, Letter to the Editor, July 12, 2013.

Get Technical to Fix the Rating Agencies, March 4, 2013.

Novelist Lacks Depth When Writing About Finance, Letter to the Editor, April 28, 2012.

Legal Quirk Means US Debt Should Be Junk Already, Letter to the Editor, July 29, 2011.

Time to Start Rating the Full Influence of Bond Graders, July 28, 2009.

PR Crisis is Taking Heavy Toll on Credit Derivatives, November 12, 9, 2008.

How to Avoid a Ratings Fiasco: Just Say NO to Black Boxes, July 9, 2008.

Beautiful but Flawed, Letter to the Editor, April 18, 2008.

Credit Crisis Lurches from Bad Numbers to Bad Writing, March 11, 2008.

Weak Basel II May Not Be Enough to Calm Credit Fears, December 18, 2007.

Managers Fear Looking Stupid, Modellers Simply Fall in Love, Letter to the Editor, November 1, 2007.

Insight: Credit of the Big Three Rating Agencies Under Fire, September 11, 2007.

La Tercera/Pulso (Chilean Business Newspaper)

De Presidentes y Socavones, December, 2023.

¿Cuándo Retirarse?, October, 2023.

Analistas financieros: renovarse o morir, August, 2023.

Pensiones, la Reforma Olvidada, June, 2023.

Picasso: la opinión del mercado, April, 2023.

La Importancia de la Evidencia Empírica, February, 2023.

Desastres de Tres Letras, December, 2022.

Fútbol y Otras Cosas, October, 2022.

Criptomonedas y Electricidad, August, 2022.

Inversiones ESG: La Confusión Continúa, June, 2022.

Ratings ESG: Mas Confusión que Ayuda, April, 2022.

¿Cuánto vale este proyecto?, November, 2021.
Arte para Todo Inversionista, September, 2021.
El Descontento de los Economistas, July, 2021.
Creatividad y Tercera Edad, November, 2020.
Un Final Incompleto, September 2020.
Aún nos quedan los ojos, July 2020.
El virus nos robó la sonrisa, May 2020.
El Peligro del Equilibrio, March 2020.
¿Es peligroso invertir únicamente en Chile?, February 2020.
Inversiones Sustentables, November 2019.
¿Hacia una Ética Probabilística? September 2019.
La Importancia del Olvido, July 2019.
Inglés: Soñemos un Chile Bilingüe, May 2019.
La Igualdad Pierde Terreno, March 2019
La Generosidad de Nueva York, December 2018
La Tragedia Después de la Risa, October 2018
Tarjetas de Crédito, Regulación al Debe, August 2018
Diez Años Después de Lehman, Tres Temas Ignorados, August 2018
La Vivienda Demótica, February 2018
Un Mundo Raro, December 2017.
Adiós a Zadeh, October 2017.
Frases para la Historia, August 2017.
Mercados Adaptativos: El Nuevo Paradigma, June 2017.
Hamlet: Los Seis Monólogos Olvidados, March 2017.
Libre Competencia y Tecnología, January 2017.
La Tragedia de las Universidades Chilenas, December 2016.
Proyectos de Infraestructura: Partir de Cero, October 2016.
Uber y el Movimiento Impresionista, June 2016.
Algunas Ideas para Botar a la basura, April 2016.
Las Mujeres y el Trabajo en Grupo, February 2016.
A Propósito de Olas y Elefantes, December 2015.
Los Beneficios del Azar, October 2015.
El Mito del Trueque, August 2015.
Traducciones: Ciencia, Arte o Mucho Mas, July 2015.
Recordando a Ada Lovelace, April 2015.
Teoría y Práctica de la Cita Eficiente, February 2015.
Libros que Nunca Termine, December 2014.

El Hamlet de Zurita, October 2014.
A Propósito de la Desigualdad, August 2014.
La Sorprendente Naturaleza Humana, July 2014.
¿Un Verdadero Vermeer? May 2014.
Muerte a la Frase Larga, March 2014.
Apología del Sanguuche chileno, December 2013.
Los chilenos y la Desconfianza, November 2013.
Desmoronando el Mito del Brainstorming, September 2013.
La Trivialización de la Privacidad, July 2013.
El Portafolio de Markowitz, April 2013.
La Ciudad, el Flaneur, y los Perros, March 2013.
Juntémonos Como a las Tres, December 2012.
Iowa: Obama Será Reelecto, November 2012.
Traducciones y Traiciones, August 2012.
Crisis Subprime: Lecciones y Temas Pendientes, July 2012.
Nadie Sabe Para Quien Enseña, July 2012.
Parra, Yo, y el Conjunto Vacío, April 2012.
Finanzas y Literatura, Shakespeare y Flaubert, March 2012.
Tomándole El Pulso al 2011, December 2011.

El Mercurio, (Chilean Newspaper)

Inversiones ESG: el Problema que se Avecina, December, 2021.
¿Vale la pena invertir en arte?, November, 2021.
Vino: ¿lo Guardo o lo Tomo, September, 2021.
Black & Scholes y el Covid-19, August, 2021.
Entrevistas Infernales, July, 2021.
Manzanas Conflictivas, May 2021.
¿Tenemos Suficientes Datos?, April, 2021.
Markowitz y Sklar: Correlación y Cópulas, March, 2021.
¿Es Ético Enseñar Falsedades?, September 2020.
Economía y Finanzas, July 2020.
Los Modelos Lineales, June 2020.
Un Mundo Raro, May 2020.
Llego la Hora de la Innovación, April 2020.
Otra Crisis Subprime, January 2020.
La tasa Libre de Riesgo, December 2019.
Esta Vez es Distinto, October 2019.

Crimen y Mercado Inmobiliario, September 2019.
Analfabetismo Computacional, August 2019.
¿Recuperar el AA?, July 2019.
Satélites e Información Alternativa, June 2019.
Crimen y Castigo (Bursátil), April 2019
Las Buenas Ideas Son Peligrosas, March 2019
El Mercado del Arte y los Derivados, January 2019
Invirtiendo con Data Science, December 2018.
Margaret Atwood y Fintech, November 2018
El Problema de los Artistas, July 2018
La Próxima Crisis, June 2018
Pensiones: Tres Verdades Incómodas, March 2018
Bonos High Yield: ¡Ahora! January 2018
Regulación e Innovación, December 2017.
Riesgo de Monedas, October 2017
El Cine y el Retail, September 2017
Los Limites de la Varianza, June 2017.
Más Bodegas y Menos Tiendas, May 2017.
Longevidad y Tontinas, April 2017.
La Predicción del Teólogo Jesuita, March 2017.
La Persistente Incertidumbre de Todos los Días, February 2017.
Los Nuevos Mercados Emergentes, January 2017.
Demócratas, Republicanos y la Economía, October 2016.
Tasas Negativas: Una Piedra en el Zapato, September 2016.
Deuda Soberana: Cuanto Es Mucho, August 2016.
BancoEstado y Riesgo Sistémico, June 2016.
Pensiones e Inversión Pasiva, May 2016.
Pensiones: Tres Reformas Necesarias, April 2016.
El Complicado Futuro de los Bancos Globales, March 2016.
Riesgo Operacional y Seguros, February 2016.
Invirtiendo en Juicios, December 2015.
El Caso Volkswagen y los Gobiernos Corporativos, November 2015.
El VIX y la Nueva Normalidad, September 2015.
Estrategias para Operar un Taxi, August 2015.
Los Vinos Como Inversión Alternativa, July 2015.
Gobiernos Corporativos: Burocracia y Eficiencia, May 2015.
Riesgo Sistémico y Regulación Financiera, April 2015.

Tres No Es Suficiente, March 2015.
Las Proyecciones del FMI, January 2015.
Mensaje a la Comisión Bravo, December 2014.
El Mercado del Arte, November 2014.
La SEC y las Clasificadoras de Riesgo, October 2014.
El Persistente Atractivo de los CLO, September 2014.
SEC, Regulador o Extorsionador?, August 2014.
¿Bancos Zombies en Europa?, July 2014.
Pensiones: Dos Temas Claves, June 2014.
Dinero, Sangre y Revolución, May 2014.
Un Banco a la Deriva, March 2014.
Una Mala Idea, February 2014.
Burbujas e Índices Inmobiliarios, January 2014.
Los chilenos y sus Pensiones: Tres factores Importantes, December 2013.
A Propósito de las Heladas, November 2013.
Lehman, Cinco Años Después, September 2013.
¿Cuánto Vale un Matta?, August 2013.
La Insoportable Levedad de la Recuperación, July 2013.
Goldman Sachs, IKB y ACA, June 2013.
Rentas Vitalicias y Riesgo de Longevidad, April 2013.
¿Qué Significa que un País Sea AAA?, March 2013.
¿Podrá E.E.U.U Volver a Crecer Como Antes?, February 2013.
Gobiernos Corporativos: Todavía Falta Mucho, December 2012.
Investigación Científica, Burocracia, y Mediocridad, November 2012.
Regulación y Riesgo Sistémico, October 2012.
Bonos del Siglo: Llegó el Momento, September 2012.
Ventas Cortas y Miopía Regulatoria, August 2012.
¿Es el VAR Suficiente?, July 2012.
Keynes y la Crisis Europea, June 2012.
Bancos Centrales y Crisis, May 2012.
Escuela de Negocios: ¿Qué Enseñar?, April 2012.
La SVS en La Polar: Implacable o Impecable, March 2012.
Algunos Índices Financieros Alternativos, February 2012.
Hace Solo 5 Años, January 2012.
Uso y Abuso de los Modelos Matemáticos, December 2011.
La Tragedia Europea, November 2011.
El Puente Se Va a Caer, October 2011.

Calificadoras de Riesgo Crediticio: Un Panorama Curioso y Complejo, September 2011.

La Reforma Financiera No Debe Esperar, August 2011.

Grecia: Mas Allá de la Insolvencia, July 2011

Las Finanzas y la Naturaleza, June 2011.

El Mejor de los Tiempos, El Peor de los Tiempos, May 2011.

Las Aprensiones del Banco Central (with R. Fischer), April 2011.

Regulación y Supervisión de los Mercados Financieros, April 2011.

¿Cuánto Debe Estados Unidos? March 2011.

Other Publications

¿Que salió mal con el prometedor sistema chileno de pensiones?, Diario Financiero, Chile, December, 2023.

De las estructuras a las finanzas, Chilean Association of Engineers Bulletin, July-September 2015 issue, number 211.

¿Cuán Globalizado Está Usted? (with E. Engel), La Tercera, Santiago, Chile, February 6, 2012.

Arturo Cifuentes Sugiere: El Origen de las Crisis Financieras, La Tercera, Santiago, Chile, July 24, 2011.

Literatura Subprime, CAPITAL, June 26/July 9, 2009.

Error de Matemáticos, CAPITAL, April 3/April 16, 2009.

Regulación y Crisis, CAPITAL, March 20/April 2, 2009.

Cuesta Abajo en la Rodada, CAPITAL, April 4/April 17, 2008, page 56.

La Crisis más Severa que Vamos a Ver y Vivir, CAPITAL, February 2008.