

GRAHAM A. DAVIS

1230 Judson Drive
Boulder, Colorado 80305, USA
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Education

Degrees:

- Ph.D., Mineral Economics, 1993**
Pennsylvania State University, USA
- MBA, 1988**
University of Cape Town, South Africa
- B.Sc. (with honors), Metallurgical Engineering, 1982**
Queen's University at Kingston, Canada

Employment

Academic:

- Professor, April 2006 –**
Division of Economics and Business, Colorado School of Mines

Undergraduate Courses Taught

- Microeconomics
- International Economics
- Economic Development
- Freshman Success
- Mathematical Economics
- Economics Field Session
- Investments
- Public Policy (Honors)

Graduate Courses Taught

- Microeconomics
- Resource Economics
- Economic Development
- Asset Valuation (Real Options)
- Mathematical Economics
- Mineral and Energy Policy Analysis
- Social License in Exploration and Mining
- Research Methodology
- Advanced Project Analysis

- Associate Professor, April 1999 - April 2006**
Division of Economics and Business, Colorado School of Mines

- Assistant Professor, August 1993 - April 1999**
Department of Mineral Economics, Colorado School of Mines

- Instructor, 1992 - 1993**
Department of Mineral Economics, The Pennsylvania State University

- Assistant Lecturer, 1988 - 1989**
The Graduate School of Business, University of Cape Town

Employment (continued)

Industry: **Resource Economics Consultant and Expert Witness**, 1993 - Present
 United States Dept. of Energy, United States Dept. of Justice, RMB Resources, Yates and Leal LLP, Hall and Evans LLP, Corporate Tax Management, Monument Resources, National Research Council, Pincock, Allen and Holt, Frommer Lawrence & Haug LLP, Platts Research & Consulting, Stevens Littman Biddison Tharp & Weinberg LLC, Berg Hill Greenleaf & Ruscitti LLP, Royal Gold, Community Systems Associates, Birch Mountain Resources, Westchester Resources, Africore (Ghana), Patterson Belknap Webb & Tyler LLP, De Beers, De Beers Canada, Duke Corporate Education, Shutts & Bowen LLP, Reoforce Inc., Australian Centre for Geomechanics, United Nations Conference on Trade and Development, Hines Norman Hines PL, Foulston Siefkin LLP, Rio Tinto Coal Australia, Yetter, Warden & Coleman, LLP, Boulder Scientific, GLG, Newmont Mining USA, CRC Mining, Ernst & Young LLP, Summit Consulting LLC, Debevoise and Plimpton LLP, Pomerantz Grossman Hufford Dahlstrom & Gross LLP, The Brattle Group.

World Bank Group Staff Member, 2013 - 2014

Consulting Metallurgist, 1986
 Deblin Mines (silver/lead/zinc), Swakopmund, Namibia

Mill Metallurgist, 1985 - 1986
 Equity Silver Mines Ltd. (Placer Dome), British Columbia, Canada

Metallurgical Engineer, 1982 - 1985
 Rössing Uranium Ltd. (RTZ), Swakopmund, Namibia

Research Grants

Inter-American Development Bank, 2016: \$30,000

Payne Institute for Earth Resources, 2015: \$12,500

Inter-American Development Bank, 2013: \$20,666

Denham Capital Management LP, 2011 - 2012: \$129,956

Ernst & Young LLP, 2011: \$2,580

Ernst & Young LLP, 2010: \$8,000

United Nations Industrial Development Organization, 2010: \$29,038.

World Trade Organization, 2009: \$9,396.

CRC Mining, 2009: \$9,331.

Research Grants (continued)

CRC Mining, 2008: \$30,000.

RCF Management LLC, 2008: \$1,367.

International Council on Mining and Metals: \$15,000.

AMEC Americas, 2004 - 2006: \$2,000 annually.

U.S. Dept. of Energy, Fossil Energy Division, 2002 - 2003: \$30,000.

International Council on Mining and Metals, 2002: \$10,400.

National Renewable Energy Laboratory, 2001: \$4,976.

Rio Tinto, 1997: \$10,000.

Rio Tinto, 1996: \$10,000.

National Science Foundation/Environmental Protection Agency Partnership for Environmental Research (NSF 95-48), R824705-01-0, 1995 - 1997: \$101,000.

Professional Awards, Appointments, and Distinctions

Honorary Professor, GĔRENS Escuela de Postgrado, Lima, Peru, 2016 -

William J. Coulter Chair in Mineral Economics, 2014 - 2016

Research Council, J.P. Morgan Center for Commodities, University of Colorado at Denver Business School, 2015 -

Associate Editor, Journal of Commodity Markets (Elsevier), 2015 -

Co-editor, Global Commodity Issues (Editor's Choice) eJournal, 2015 -

Mineral Economics Award, Society for Mining, Metallurgy and Exploration/American Institute of Mining, Metallurgical, and Petroleum Engineers, 2014.

Academic Advisor, The Brattle Group, 2013 -

Outstanding Instructor in Mineral and Energy Economics, Division of Economics and Business, Colorado School of Mines, 1995 - 1996, 1996 - 1997, 1997 - 1998, 2005 - 2006, 2007 - 2008, 2011 - 2012, 2012 - 2013, 2014 - 2015, 2015 - 2016.

Editorial Board, Resources Policy (Elsevier), 2007 -

Board of Trustees, Queen's University at Kingston (Canada), 2006 - 2012.

Board of Directors, Mineral Economics and Management Society, 2005 - 2007.

Professional Awards, Appointment, and Distinctions (continued)

Visiting Scholar, Centre Interuniversitaire de Recherches en Economique Quantitative (CIREQ), McGill University, 2004.

Member, National Research Council Standing Committee on Earth Resources, Board on Earth Sciences and Resources, 1999 - 2001.

Visiting Teaching Fellow, Department of Mineral Economics, Western Australia School of Mines, 1997.

Domingo Moreno Developmental Professorship in Mineral Economics, Colorado School of Mines, 1996 - 1997.

United Nations Conference on Trade and Development (UNCTAD) Secretary-General's Expert Group on Development Policies in Resource-based Economies, 1996.

Centennial Fellow, College of Earth and Mineral Sciences, Pennsylvania State University, 1996.

Visiting Scholar, Graduate School of Business, University of Cape Town, 1995.

Memberships

Member, American Economic Association (AEA)

Member, Association of Environmental and Resource Economists (AERE)

Registered Member, Society for Mining, Metallurgy, and Exploration (SME)

Fellow, Australasian Institute of Mining & Metallurgy (AusIMM)

Member, International Association for Energy Economics (IAEE)

Member, United States Association for Energy Economics (USAEE)

Member, Prospectors & Developers Association of Canada (PDAC)

Publications

Books:

Davis, G. A. South African Managed Trade Policy: The Wasting of a Mineral Endowment. Westport: Praeger (1994).

Publications (continued)

Chapters in Books:

(Refereed) Davis, G. A., "Replicating 'Sources of Slow Growth in African Economies'," in Methodological Challenges and New Approaches to Research in International Development, Laura Camfield, ed. London, Palgrave Macmillan (2014), 261-82.

Samis, M., and Davis, G. A., "Using Dynamic DCF and Real Options Methods to Value and Assess Flexible Mine Project Design," in Mineral Resources/Reserves and Valuation Standards, CIM Special Volume 56, Montreal: Canadian Institute of Mining, Metallurgy and Petroleum (2009), 632-50.

(Refereed) Davis, G. A., "Extractive Economies, Growth and the Poor," in Mining, Society, and a Sustainable World, Jeremy P. Richards, ed. Berlin: Springer-Verlag (2009), 37-60.

Davis, G. A., "Project Feasibility Evaluation: New Trends," in Sustainable Management of Mining Operations, edited by Jose A. Botin. Littleton, CO: Society for Mining, Metallurgy, and Exploration, Inc. (2009), 240-48.

(Refereed) Davis, G. A., and Samis, M. "Using Real Options to Value and Manage Exploration," in Wealth Creation in the Minerals Industry: Integrating Science, Business, and Education, edited by Michael D. Doggett and John R. Parry. Littleton, CO: Special Publication Number 12, Society of Economic Geologists (2006), 273-94.

Davis, G. A., and Tilton, J. E. "La Maldición de los Recursos Naturales," in Minería y Desarrollo, Foro en Economía de Minerales, Vol. III, edited by Gustavo Lagos. Santiago: Ediciones Universidad Católica de Chile (2005), 83-103.

Davis, G. A., and Moore, D. "Valuing Mineral Stocks and Depletion in Green National Income Accounts," in Natural Resource Accounting and Economic Development: Theory and Practice, edited by Charles Perrings and Jeffrey R. Vincent. Cheltenham: Edward Elgar (2003), 105-23. Reprinted from Environmental and Development Economics 5 (2000): 109-27.

Davis, G. A. "The Potential for Economic Recovery of Metals from the Sillamäe Site," in Turning a Problem into a Resource: Remediation and Waste Management at the Sillamäe Site, Estonia, edited by Cheryl K. Rofer and Tõnis Kaasik. Dordrecht: Kluwer Academic Publishers (2000), 195-206.

Davis, G. A. "Project Assessment Methodologies and Measures: The Contribution of Mining Projects to Sustainable Development," in Sustainable Development and the Future of Mineral Investment, edited by James M. Otto and John Cordes. Paris: United Nations Environment Programme (2000), 7.1-7.31.

Davis, G. A. "A Review of Option Valuation," in Evaluating Mineral Projects: Applications and Misconceptions, by Thomas F. Torries. Littleton, CO: Society for Mining, Metallurgy, and Exploration, Inc. (1998),: 117-23.

Publications (continued)

Considine, T. J., Davis, G. A. and Marakovits, D. "Costs and Benefits of Coke Oven Emission Controls," in Modeling Environmental Policy, edited by Wade E. Martin and Lisa A. McDonald. Boston: Kluwer Academic Publishers (1997), 103-22.

Davis, G. A. "The Declining Influence of Economic Growth on Metal Demand," in Productivity and Technology in the Metallurgical Industries, edited by M. Koch and J. C. Taylor. Warrendale: The Minerals, Metals, and Materials Society (1989), 159-86.

Refereed Journal Articles:

Davis, G. A., and Cairns, R. D. "The Odd Notion of 'Reversible Investment'." Journal of Banking and Finance 81 (2017): 172-80.

Kaffine, D. T., and Davis, G. A. "A Multi-row Deletion Diagnostic for Influential Observations in Small-sample Regressions." Computational Statistics and Data Analysis 108 (2017): 133-45.

Cairns, R. D., and Davis, G. A. "Mineral Depletion and the Rules of Resource Dynamics." Energy Journal 36.S11 (2015): 159-78.

Samis, M., and Davis, G. A. "Using Monte Carlo Simulation with DCF and Real Options Risk Pricing Techniques to Analyse a Mine Financing Proposal." International Journal of Financial Engineering and Risk Management 1.3 (2014): 264-81.

Davis, G. A. "Replicating Sachs and Warner's Working Papers on the Resource Curse." Journal of Development Studies 49.12 (2013): 1615-30.

Davis, G. A., and Vásquez Cordano, A. L. "The Fate of the Poor in Growing Mineral and Energy Economies." Resources Policy 38.2 (2013): 138-51.

Davis, G. A., and Vásquez Cordano, A. L. "International Trade in Mining Products." Journal of Economic Surveys 27.1 (2013): 74-97.

Davis, G. A. "Technical Note: Simulating the Two-factor Schwartz and Smith Model of Commodity Prices." Engineering Economist 57.2 (2012): 130-40.

Davis, G. A., and Cairns, R. D. "Good Timing: The Economics of Optimal Stopping." Journal of Economic Dynamics and Control 36.2 (2012): 255-65.

Davis, G. A. "The Resource Drag." International Economics and Economic Policy 8.2 (2011): 155-76.

Bertisen, J., and Davis, G. A. "Bias and Error in Mine Project Capital Cost Estimation." Engineering Economist 53.2 (2008): 118-39.

Davis, G. A. "Measuring Unambiguously Pro-poor Growth." Journal of Economic and Social Measurement 32.4 (2007): 253-61.

Publications (continued)

Cairns, R. D., and Davis, G. A. "Strike When the Force Is with You: Optimal Stopping with Application to Resource Equilibria." American Journal of Agricultural Economics 89.2 (2007): 461-72, with Erratum, American Journal of Agricultural Economics 89.5 (2007).

Samis, M., Davis, G. A., Laughton, D., and Poulin, R. "Valuing Uncertain Asset Cash Flows When There are No Options: A Real Options Approach." Resources Policy 30 (2006): 285-98.

Cairns, R. D., and Davis, G. A. "Comment: Rejecting the Hotelling Valuation Principle." Empirical Economics 30.2 (2005): 473-78.

Davis, G. A., and Tilton, J. "The Resource Curse." Natural Resources Forum 29.3 (2005): 233-42.

Davis, G. A., and Owens, B. "Optimizing the Level of Renewable Electric R&D Expenditures Using Real Options Analysis." Energy Policy 31 (2003): 1589-1608.

Davis, G. A. "The Impact of Volatility on Firms Holding Growth Options." Engineering Economist 47.2 (2002): 213-31.

Davis, G. A. "The Credibility of a Threat to Nationalize." Journal of Environmental Economics and Management 42 (2001): 119-39.

Cairns, R. D., and Davis, G. A. "Adelman's Rule and the Petroleum Firm." Energy Journal 22.3 (2001): 31-54.

Davis, G. A., and Moore, D. "Valuing Mineral Stocks and Depletion in Green National Income Accounts." Environment and Development Economics 5.1 (2000): 109-27.

Davis, G. A., and Cairns, R. D. "Valuing Petroleum Reserves using Current Net Price." Economic Inquiry 37.2 (1999): 295-311.

Davis, G. A. "The Minerals Sector, Sectoral Analysis, and Economic Development." Resources Policy 24.4 (1998): 217-28.

Cairns, R. D., and Davis, G. A. "On Using Current Information to Value Hard-rock Mineral Properties." Review of Economics and Statistics 80.4 (1998): 658-63.

Davis, G. A. "Estimating Volatility and Dividend Yield when Valuing Real Options to Invest or Abandon." Quarterly Review of Economics and Finance 38.3 Part 2 (special issue) (1998): 725-54.

Davis, G. A., and Cairns, R. D. "Simple Analytics of Valuing Producing Petroleum Reserves." Energy Journal 19.4 (1998): 133-42.

Cairns, R., and Davis, G. A. "Economic Theory and the Valuation of Mineral Reserves." OPEC Review 22.3 (1998): 169-83.

Publications (continued)

Davis, G. A., and Moore, D. J. "Valuing Mineral Reserves When Capacity Constrains Production." Economics Letters 60.1 (July 1998): 121-25.

Davis, G. A. "The Substitution Problem in the Theory of Effective Protection." Review of International Economics 6.2 (May 1998): 307-20.

Davis, G. A. "One Project, Two Discount Rates." Mining Engineering 50.4 (April 1998): 70-74. Reprinted in Business Valuation Review (March 2001): 18-23.

Underwood, R., and Davis, G. A. "Control of Buffer Stocks Modeled by Functional Differential Equations." Nonlinear Analysis, Theory, Methods & Applications 30.2 (1997), Proceedings of the Second World Congress of Nonlinear Analysts, Athens, Greece, 10–17 July, 1996: 1087-97.

Davis, G. A. "Effect of NAFTA on the Economics of Mineral Production." Mining Engineering September (1997): 57-61.

Davis, G. A. "Option Premiums in Mineral Asset Pricing: Are They Important?" Land Economics 72.2 (1996): 187-205.

Davis, G. A. "Using Commodity Price Projections in Mineral Project Valuation." Mining Engineering 48.4 (1996): 67-70.

Davis, G. A. "Brazil's Comparative Advantage in the Global Economy." Raw Materials Report: Journal of Mineral Policy, Business and Environment 11.4 (1995): 4-10.

Davis, G. A. "Learning to Love the Dutch Disease: Evidence from the Mineral Economies." World Development 23.10 (1995): 1765-79.

Davis, G. A. "(Mis)Use of Monte Carlo Simulations in NPV Analysis." Mining Engineering 47.1 (1995): 75-79.

Considine, T., Davis, G. A., and Marakovits, D. "Technological Change under Residual Risk Regulation: The Case of Coke Ovens in the U.S. Steel Industry." Environmental and Resource Economics 3 (1993): 437-55.

Davis, G. A. "Nationalisation of the Mines: Comment." South African Journal of Economics 59.4 (1991): 485-90.

Davis, G. A. "The Privatization of Electric Utilities: Economic Aspects." South African Journal of Economics 59.2 (1991): 160-72, with "Errata," 59.4 (1991): 516.

Davis, G. A. "Energy Catastrophes and Energy Consumption." Materials and Society 15.1 (1991): 31-39.

Other Published Articles:

Davis, G. A., and Tilton, J. E. "Why the Resource Curse is a Concern." Mining Engineering 60.4 (2008): 29-32.

Publications (continued)

Davis, G. A. "Reflections of a First-time Replicator." Journal of Economic and Social Measurement 32.4 (2007): 263-66.

Davis, G. A., and Bertisen, J., "Bias and Error in Mine Project Capital Cost Estimation," Preprint 07-082 (2007), 2007 SME Annual Meeting & Exhibit, Society for Mining, Metallurgy, and Exploration, Inc., Littleton, Colorado.

Samis, M. R., Laughton, D., and Davis, G. A. "Valuing Resource Extraction Projects Using Real Options." CIM Bulletin 98.1087 (May 2005): 82.

Davis, G. A. "An Empirical Investigation of Mining and Sustainable Development." Preprint Number 04-136 (2004), 2004 SME Annual Meeting & Exhibit, Society for Mining, Metallurgy, and Exploration, Inc., Littleton, Colorado.

Samis, M. R., and Davis, G. A. "Actively Recognizing Cash Flow Uncertainty Within the Net Present Value Calculation." Mineral Economics and Management Society (MEMS) Newsletter, 31 (Winter 2004): 13-19.

Davis, G. A., and Owens, B. Optimizing the Level of Renewable Electric R&D Expenditures Using Real Options Analysis, National Renewable Energy Laboratory Technical Report NREL/TP-620-31221 (February 2003).

Davis, G. A. "One Project, Two Discount Rates." Business Valuation Review 20.1 (March 2001): 18-23.

Davis, G. A. "One Project, Two Discount Rates." Preprint No. 97-39 (1997), 1997 SME Annual Meeting & Exhibit, Society for Mining, Metallurgy, and Exploration, Inc., Littleton, Colorado.

Davis, G. A. "The Effect of NAFTA on the Economics of Mineral Production." Preprint No. 96-44 (1996), 1996 SME Annual Meeting & Exhibit, Society for Mining, Metallurgy, and Exploration, Inc., Littleton, Colorado.

Davis, G. A. "(Mis)Use of Monte Carlo Simulations in NPV Analysis." Transactions of the Society for Mining, Metallurgy, and Exploration, Inc., 298. Littleton, CO: Society for Mining, Metallurgy, and Exploration, Inc. 1996, 75-79.

Davis, G. A. "Reply: (Mis)Use of Monte Carlo Simulations in NPV Analysis." Transactions of the Society for Mining, Metallurgy, and Exploration, Inc., 298. Littleton, CO: Society for Mining, Metallurgy, and Exploration, Inc. 1996, 861-62.

Davis, G. A. "Discussion of 'Discount Rates and Risk Assessment in Mineral Project Evaluations' by L. D. Smith." Transactions of the Institution of Mining and Metallurgy, Section A: Mining Industry 104 (1995): 188-89.

Davis, G. A. "Reply: (Mis)Use of Monte Carlo Simulations in NPV Analysis." Mining Engineering 47.9 (1995): 75-79.

Publications (continued)

Davis, G. A. "An Investigation of the Underpricing Inherent in DCF Valuation Techniques." Preprint No. 95-37 (1995), 1995 SME Annual Meeting & Exhibit, Society for Mining, Metallurgy, and Exploration, Inc., Littleton, Colorado.

Davis, G. A. "Using Commodity Price Projections in Mineral Project Valuation." Preprint No. 95-36 (1995), 1995 SME Annual Meeting & Exhibit, Society for Mining, Metallurgy, and Exploration, Inc., Littleton, Colorado.

Davis, G. A. "US Share of World Mineral Markets: Where Are We Headed?" Mining Engineering 46.9 (1994):1067-69.

Davis, G. A., and Considine, T. "An Economic Evaluation of Process Options that Reduce Coking Emissions at Integrated Steel Mills." Iron and Steelmaker March 1992: 57-62.

Papers in Proceedings:

(Refereed) Samis, M., Martinez, L., Davis, G. A., and Whyte, J. B. "Using Dynamic Discounted Cash Flow and Real Option Methods for Economic Analysis in NI43-101 Technical Reports." In The Valmin Seminar Series 2011-12 Proceedings, The Australian Institute of Mining and Metallurgy, Publication Series No 3/2012, 149-160.

(Refereed) Saavedra-Rosas, J., Newman, A. M., and Davis, G. A. "Energy in Mine Planning: An Operations Research Perspective." Proceedings, 35th IAEE International Conference, Perth, Australia, June 24-27, 2012.

(Refereed) Davis, G. A., and Newman, A. M. "Modern Strategic Mine Planning." Proceedings of the 2008 Australian Mining Technology Conference, AusIMM, Carlton, Australia. 2008, 129-39.

(Refereed) Samis, M. R., Davis, G. A., and Laughton, D. G. "Using Stochastic Discounted Cash Flow and Real Options Monte Carlo Simulation to Analyse the Impacts of Contingent Taxes on Mining Projects." Project Evaluation 2007, AusIMM, Carlton, Australia. 2007, 127-37.

Davis, G. A. "Economic Theory and the Valuation of Mineral Assets." Journal of Business Valuation - 2003, Proceedings of the Fifth Joint Business Valuation Conference of the Canadian Institute of Chartered Business Valuators and the American Society of Appraisers. 2003, 391-408.

Davis, G. A. "Brazil's Comparative Advantage in the Global Economy." Proceedings of the First International Symposium on Mining and Development, Universidade Estadual de Campinas, Campinas, Brazil. Ed. Saul B. Suslick. July 1995, 35-44.

Davis, G. A. "The South African Export Incentive Scheme: Boom or Bust for the Minerals Sector?" Proceedings of the Mineral Economics and Management Society. Eds. Henry N. McCarl and Carmine Nappi. March 1994, 174-86.

Reports

Davis, G. A. "Estimating the Mine Value Curve for Copper and Gold," July 2012. Final report for Denham Capital Management LP.

Publications (continued)

Davis, G. A. "Mineral Sector Strategic Analysis," June 2010. Commissioned background report for the 2011 United Nations Industrial Development Organization Report Strategic Directions on Industrial Policy in Mongolia.

Davis, G. A. "Trade in Mineral Resources." World Trade Organization Staff Working Paper ERSD-2010-01 (January 2010), WTO Economic Research and Statistics Division, Geneva. 2010. Commissioned background report for the 2010 World Trade Report Trade in Natural Resources: Challenges in Global Governance.

Book Reviews:

A Handbook of Primary Commodities in the Global Economy, by Marian Radetzki. Cambridge: Cambridge University Press, 2008. Resources Policy 34.3 (2009): 158-59.

Escaping the Resource Curse, edited by Macartan Humphreys, Jeffrey D. Sachs, and Joseph E. Stiglitz. New York: Columbia University Press, 2007. Resources Policy 33.4 (2008): 240-42.

Natural Resources: Neither Curse nor Destiny, edited by Daniel Lederman and William F. Maloney. Washington, DC: the World Bank, and Palo Alto, CA: Stanford University Press, 2007. Resources Policy 33.4 (2008): 243-45.

Mining Royalties: A Global Study of Their Impact on Investors, Government, and Civil Society, by James Otto, Craig Andrews, Fred Cawood, Michael Doggett, Pietro Guj, Frank Stermole, John Stermole, and John Tilton. Washington DC: The World Bank, 2006. Resources Policy 32.3 (2007): 146-47.

Angola: Anatomy of an Oil State, 2nd edition, by Tony Hodges. Norway: Fridtjof Nansen Institute, in association with James Currey and Indiana University Press, 2004. Energy Journal 26.4 (2005): 127-30.

Small-Scale Mining in Asia: Observations Towards a Solution of the Issue, edited by Satoshi Murao, Victor B. Maglambayan and Neoman de la Cruz. London: Mining Journal Books, c.2001. Resources Policy 30.1 (2004): 72.

The Green Myth – Economic Growth and the Quality of the Environment, by Marian Radetzki. Essex: Multi-Science Publishing Co. Ltd., 2001. Resources Policy 30.1 (2004): 71.

Oil and the Economy: Recent Developments in Historical Perspective, a special issue of The Quarterly Review of Economics and Finance 42.2 (2002), edited by James L. Smith. Energy Journal 24.4 (2003): 113-16.

Canadian Suppliers of Mining Goods and Services: Links Between Canadian Mining Companies and Selected Sectors of the Canadian Economy. Ottawa: Natural Resources Canada, 2000. Resources Policy 27 (2001): 273-78.

Why Governments Waste Natural Resources: Policy Failures in Developing Countries, by William Ascher. Baltimore: Johns Hopkins University Press, 1999. Resources Policy 26 (2000): 181-82.

Publications (continued)

The Economic Appraisal of Natural Gas Projects, by Willem J. H. Van Groenendaal. Oxford: Oxford University Press, 1998. Energy Journal 20.3 (1999): 161-62.

South African Minerals Yearbook 1997. Johannesburg: Raw Materials Group and Mineral and Energy Policy Centre. Natural Resources Forum 23.2 (1999): 180-81.

Trade and the Environment: Conflict or Compatibility?, edited by Duncan Brack. London: Earthscan Publications Ltd., 1998, and Washington: The Brookings Institution, 1998. Journal of Energy and Development 24.1 (1998): 117-19.

National Accounts and the Environment, edited by Ignazio Musu and Domenico Siniscalco. New York: Springer, 1996. Resources Policy 23.4 (1997): 205-07.

Trade Policy Implications of the Basel Convention Export Ban on Recyclables from Developed to Developing Countries, by Maria Isolda P. Guevara and Michael Hart, and A Statistical Review of International Trade in Metal Scrap and Residues, Parts I, II and III, by Ulrich Hoffmann. Ottawa, International Council on Metals and the Environment, 1996. Resources Policy 23.3 (1997): 147-48.

Trading Up: Consumer and Environmental Regulation in a Global Economy, by David Vogel. Cambridge, MA, Harvard University Press, 1997. Review of International Economics 5.2 (1997): 284-86.

Transnational Corporations and the International Trade in Primary Commodities. Geneva: the United Nations Conference on Trade and Development, 1994. Asian-Pacific Economic Literature 10.2 (1996): 70-72.

Investment under Uncertainty, by Avinash K. Dixit and Robert S. Pindyck, Princeton, Princeton University Press, 1994, and Real Options: Managerial Flexibility and Strategy in Resource Allocation, by Lenos Trigeorgis, Cambridge, MA, MIT Press, 1996. Resources Policy 22.3 (1996): 218-20.

Freer Trade, Protected Environment: Balancing Trade Liberalization and Environmental Issues, by C. Ford Runge, New York: Council on Foreign Relations Press, 1994, and Environment and Resource Policies for the World Economy, by Richard N. Cooper, Washington DC, The Brookings Institution, 1994. Resources Policy 21.1 (1995): 74-75.

Sustainable Investment and Resource Use: Equity, Environmental Integrity and Economic Efficiency, by M. D. Young. Paris: UNESCO, 1992. Resources Policy 20.1 (1994): 76-77.

Working Papers:

Kaffine, D., and Davis, G. A. "A simple Monte Carlo approach to examine sample robustness in growth regressions." WP2013-04, Colorado School of Mines, 2013.

Davis, G. A. "Replicating 'Sources of Slow Growth in African Economies'." WP2012-09, Colorado School of Mines, 2012.

Davis, G. A. "Replicating Sachs and Warner: The 1997 Working Paper." WP2012-08, Colorado School of Mines, 2012.

Publications (continued)

Davis, G. A. "The Resource Drag." USAEE Working Paper No. 10-049. 2010.

Davis, G. A., and Schantz, R. "Selling and Managing Offshore Oil Leases: A Real Options Analysis." 2002.

Davis, G. A., and Tilton, J. "Should Developing Countries Renounce Mining? A Perspective on the Debate." Colorado School of Mines, November, 2002.

Davis, G. A. "Option Premiums in Mineral Asset Valuation: Are They Important?" Working Paper 94-10, Colorado School of Mines, November, 1994.

Davis, G. A. "Reconsidering the Substitution Problem in the Theory of Effective Protection." Working Paper no. 77, Pennsylvania State University, November, 1992.

Davis, G. A., and Considine, T. "Process Choices for Steelmaking in the 1990s." Working Paper no. 55, Pennsylvania State University, May, 1991.

Davis, G. A., and Dellar, K. "A Method for Scenario Creation in Dynamic Environments." Working Paper no. 42, Pennsylvania State University, May, 1990. Revised January, 1992.

Davis, G. A. "An Environmental Scanning Exercise into the Trends that are Shaping the Financial Services Industry in South Africa." Confidential industry report, Graduate School of Business, University of Cape Town, 22 August, 1988.

Davis, G. A. "Metal Marketing Neglect: A South African Phenomenon." Working Paper no. 88-35, Graduate School of Business, University of Cape Town, 1988.

Presentations and Chaired Sessions

"An Overview of the Mining Industry, Price Volatility, and Business Cycles," Global Innovation Patterns in the Mining Industries, World Intellectual Property Organization (WIPO), Geneva, Switzerland, May 30 – 31, 2017.

"The Effects of CERCLA 108(b) on US Mining Operations," 2017 SME Current Trends in Mine Finance, New York, New York, May 2, 2017.

"The Market Approach to Valuation," 2017 SME Annual Conference & Expo, Denver, Colorado, February 21, 2017.

"The Effects of CERCLA 108(b) on US Mining Operations," 2017 SME Annual Conference & Expo, Denver, Colorado, February 21, 2017.

"Natural Resource Extraction with Reversible Stock Pollution" (with P. Yang), 39th International Association for Energy Economics Annual Conference, Bergen, Norway, June 19-22, 2016.

Presentations and chaired sessions (continued)

“Understanding Extractive Sector Project Planning, Economics, and Revenue Streams,” U.S.-Greenland Sustainable Development from the Extractives Sector Workshop, U.S. State Department, Nuuk, Greenland, October 8-9, 2015.

“The Odd Notion of ‘Reversible Investment’” (with R. Cairns), 19th Annual Real Options Conference, Athens and Monemvasia, Greece, June 17-20, 2015.

“The Comparison Sales Approach to Valuation: Science or Black Magic?” 2015 SME Annual Conference & Expo, Denver, Colorado, February 15-18, 2015.

“Mining, Oil, and Inequality,” 2015 SME Annual Conference & Expo, Denver, Colorado, February 15-18, 2015.

“Mining, Oil, and Inequality,” Canadian Resource and Environmental Economics Study Group Annual Conference 2014, Saskatoon, Saskatchewan, October 3-5, 2014.

Co-chair and session organizer (with Heather Douglas), “Mineral Economics: Approaches to Understanding and Managing Uncertainty and Risk,” Prospectors and Developers Association of Canada (PDAC) 2014 Annual Meeting, Toronto, Ontario, March 3, 2014.

“Explaining the Resource Curse,” GĚRENS Graduate School, Lima, Peru, October 4, 2013.

“Replicating Sachs and Warner: Sources of Slow Growth in African Economies,” 13th EADI General Conference, 2011 DSA Annual Conference, York, UK, September 19-22, 2011.

“The Economics of Optimal Stopping,” 2010 AAEA, CAES, & WAEA Joint Annual Meeting, Denver, Colorado, July 27, 2010.

“An Assessment of Mongolia’s Comparative Advantage in Value-added Mineral and Energy Processing,” Second Workshop on Industrial Policy in Mongolia, UNIDO and the Mongolian Government, Ulaanbaatar, Mongolia, June 3-4, 2010.

“Mine Planning and Sustainability” (with A. Newman), 2009 SME Annual Meeting and Exhibit, Denver, Colorado, February 22-25, 2009.

“Resource Booms and the Poor” (with A. Vasquez), 2009 SME Annual Meeting and Exhibit, Denver, Colorado, February 22-25, 2009.

“Resource Booms and the Poor” (with A. Vasquez), 28th US Association for Energy Economics/International Association for Energy Economics Annual North American Conference North American Conference, New Orleans, Louisiana, December 3-5, 2008.

“Resource Booms and the Poor” (with A. Vasquez), 2008 International Association for Energy Economics Asian Conference, Perth, Australia, November 7-9, 2008.

Presentations and chaired sessions (continued)

- “Modern Strategic Mine Planning” (with A. Newman), 2008 Australian Mining Technology Conference, Twin Waters, Queensland, Australia, September 16-18, 2008.
- “Can Resource Depletion Explain the Resource Curse?,” Pontificia Universidad Católica de Chile, Santiago, Chile, May 17, 2007.
- “Risk Analysis and Economic Valuation of Mining Projects” (with R. Halatchev and Y. Potvin), Australian Centre for Geomechanics, Brisbane, Australia, April 3-5, 2007.
- “Recent Advances in Project Evaluation,” Mineral Economics and Management Society 2007 Santiago Symposium, Santiago, Chile, March 26, 2007.
- “Modeling Exploration Decision Making in a Value-creation Framework” (with M. Samis), Denver Region Exploration Geologists’ Society, Denver, Colorado, November 6, 2006
- “A Unified Theory of Optimal Stopping” (with R.D. Cairns), West Virginia University, Morgantown, West Virginia, October 6, 2006
- “An Intuitive Approach to Optimal Stopping under Certainty and Uncertainty” (with R.D. Cairns), 10th Annual International Conference on Real Options, New York, New York, June 14-17, 2006
- “The Resource Curse: Assessing the Empirical Evidence,” 2006 Allied Social Science Associations (ASSA) Meetings, Boston, Massachusetts, January 6-8, 2006.
- “An Empirical Investigation of Resource Extraction and Sustainable Development,” 25th US Association for Energy Economics/International Association for Energy Economics Annual North American Conference, Denver, Colorado, September 18-21, 2005.
- “An Empirical Investigation of Mining and Sustainable Development,” Inaugural Global Sustainable Development Conference, Minerals Council of Australia, Melbourne, Australia, October 25-29, 2004.
- “Selling and Managing Offshore Oil Leases: A Real Options Analysis” (with R. Schantz), University of Auckland, Auckland, New Zealand, July 29, 2004.
- “An Empirical Investigation of Mining and Sustainable Development,” CRC Mining, Brisbane, Australia, July 18, 2004.
- “An Empirical Investigation of Mining and Sustainable Development,” CIM 2004 Annual Meeting & Exhibit, Edmonton, Alberta, May 12, 2004.
- Session Chair, “Mining’s View of Sustainability,” Mineral Economics and Management Society (MEMS) 13th Annual Conference, Toronto, Ontario, April 21-23, 2004.

Presentations and chaired sessions (continued)

“An Empirical Investigation of Mining and Sustainable Development,” Mineral Economics and Management Society (MEMS) 13th Annual Conference, Toronto, Ontario, April 23, 2004.

“Selling and Managing Offshore Oil Leases: A Real Options Analysis” (with R. Schantz), Centre Interuniversitaire de Recherches en Economique Quantitative (CIREQ), McGill University, Montreal, Quebec, March 19, 2004.

“An Empirical Investigation of Mining and Sustainable Development,” 2004 SME Annual Meeting & Exhibit, Denver, Colorado, Feb. 23-25, 2004.

“Selling and Managing Offshore Oil Leases: A Real Options Analysis” (with R. Schantz), INFORMS 2003 Annual Meeting, Atlanta, Georgia, October 19-22, 2003.

“The Economic and Financial Theory Behind the Income Method of Mineral Property Appraisal,” Center for Advanced Property Economics Mineral Appraisal Symposium, Denver, Colorado, October 1-3, 2003.

“Should Developing Countries Renounce Extractive Industries? A Perspective on the Debate,” World Bank Oil, Gas, Mining, and Chemicals Department, Williamsburg, Virginia, June 18-20, 2003.

Session Chair, “Financial Decision Making for Sustainable Development,” Mineral Economics and Management Society, 12th Annual Professional Program, Golden, Colorado, April 9-11, 2003.

“Economic Methods of Valuing Mineral Assets,” American Society of Appraisers/Canadian Institute of Chartered Business Valuators 5th Joint Business Valuation Conference, Orlando, Florida, October 24-26, 2002.

“Strike When the Force is With You: A Robust Rule Involving the Force of Interest and Natural Resources” (with R.D. Cairns), University of Colorado Environmental and Resource Economics Workshop, Boulder, Colorado, July 15-16, 2002.

Session Co-Chair, “Student Paper Session,” Mineral Economics and Management Society, 11th Annual Professional Program, Montreal, Quebec, April 10-12, 2002.

Session Co-Chair, “Student Paper Session,” Mineral Economics and Management Society, 10th Annual Professional Program, Pittsburgh, Pennsylvania, April 5-7, 2001.

“The Pitfalls of Real Options: How to Avoid Poor Management Decisions,” 50th Annual Meeting of the Midwest Finance Association, Cleveland, Ohio, March 29-31, 2001.

“Renewable Energy and Real Options Analysis,” National Renewable Energy Laboratory, Washington, D.C., March 8, 2001.

Presentations and chaired sessions (continued)

“Optimizing the Level of Renewable Energy Research and Development Using Real Options Analysis,” National Renewable Energy Laboratory, Golden, Colorado, March 2, 2001.

“The Pitfalls of Real Options: How to Avoid Poor Management Decisions,” Real Options 2000, hosted by the International Quality & Productivity Center, Chicago, Illinois, September 25-26, 2000.

Session Co-Chair, “Student Paper Session,” Mineral Economics and Management Society, Ninth Annual Professional Program, Boulder, Colorado, April 12-14, 2000.

“Selling Oil Leases: A Long-term Real Options Analysis,” (with R. Schantz), Allied Social Sciences Associations (ASSA) Annual Meeting, Boston, Massachusetts, January 7-9, 2000.

“The Potential for Economic Recovery of Metals from the Sillamäe Site,” NATO Advanced Research Workshop, Tallinn, Estonia, October 5-9, 1998.

“Estimating Volatility and Dividend Yield When Valuing Real Options to Invest or Abandon,” 2nd Annual Real Options Conference, Northwestern University, Chicago, Illinois, June 11-12, 1998.

Session Chair, “Financing Mining,” Mineral Economics and Management Society, Seventh Annual Professional Program, Washington, D.C., March 25-27, 1998.

“On Estimating Volatility and the Rate of Return Shortfall When Valuing Real Options to Invest or Abandon,” Midwest Finance Association, 47th Annual Meeting, Chicago, Illinois, March 19-21, 1998.

Session Chair, “Managing Capital in the Minerals Industry,” 1998 SME Annual Meeting & Exhibit, Orlando, Florida, March 9-11, 1998

“Accounting for and Managing Political Risk in Mineral Projects,” 1998 SME Annual Meeting & Exhibit, Orlando, Florida, March 9-11, 1998

“Valuing the Stock and Flow of Mineral and Renewable Assets in National Income Accounting,” 1997 Workshop on Valuation and Environmental Policy, National Science Foundation, Arlington, Virginia, April 7-8, 1997.

“One Project: Two Discount Rates,” 1997 SME Annual Meeting & Exhibit, Denver, Colorado, February 24, 1997.

“The Credibility of a Threat to Nationalize,” Graduate School of Business, University of Colorado at Denver, November 13, 1996.

“The Cost of a Threat to Nationalize,” 71st Annual Western Economic Association International Conference, San Francisco, California, June 28 - July 2, 1996.

“The Effect of NAFTA on the Economics of Mineral Production,” 1996 SME Annual Meeting & Exhibit, Phoenix, Arizona, March 12, 1996.

Presentations and chaired sessions (continued)

Session Chair, "Mining and NAFTA - Two Years Later," 1996 SME Annual Meeting & Exhibit, Phoenix, Arizona, March 12, 1996.

"Valuing Petroleum Reserves Using Current Net Price" (with R.D. Cairns), Front Range Finance Conference, University of Colorado, Boulder, Colorado, November 10, 1995.

"The Minerals Sector as Winner in Development Economics," 18th Annual Third World Studies Conference, University of Nebraska at Omaha, Omaha, Nebraska, October 12-14, 1995.

"Valuing Petroleum Reserves Using Current Net Price" (with R.D. Cairns), University of Colorado Department of Economics, September 22, 1995.

"Brazil's Comparative Advantage in the Global Economy," First International Symposium on Mining and Development, Universidade Estadual de Campinas, Campinas, Brazil, July 10-13, 1995.

Session Chair, "Using Financial Concepts in Mineral Management Decisions," Mineral Economics and Management Society, Fourth Annual Professional Program, Boulder, Colorado, March 9-11, 1995.

Session Chair, "Commodity Price Projections to 2000," 1995 SME Annual Meeting & Exhibit, Denver, Colorado, March 6-9, 1995.

"An Investigation of the Underpricing Inherent in DCF Valuation Techniques," 1995 SME Annual Meeting & Exhibit, Denver, Colorado, March 6-9, 1995.

"Using Commodity Price Projections in Mineral Project Valuation," 1995 SME Annual Meeting & Exhibit, Denver, Colorado, March 6-9, 1995.

"Demand and Supply in World Mineral Markets: Where Are We Headed?" Envirosciences Expo '93, Earth Resources Consortium, Denver, Colorado, October 7-8, 1993.

"The Empty Economics in South Africa's Industrial Policy," 68th Annual Western Economic Association International Conference, Lake Tahoe, Nevada, June 20-24, 1993.

"The South African Export Incentive Scheme: Boom or Bust for the Minerals Sector?", First Annual Mineral Economics and Management Society Professional Program, Sterling, Virginia, March 19-21, 1992.

"The Declining Influence of Economic Growth on Metal Demand," International Symposium on Productivity and Technology in the Metallurgical Industries, co-sponsored by The Minerals, Metals & Materials Society and Gesellschaft Deutscher Metallhütten-und Bergleute, Cologne, West Germany, September 17-22, 1989.

Executive Short Courses

“Using Dynamic DCF and Real Options to Design, Value and Manage Natural Resource Projects,” with Michael Samis. 8 hours or 24 hours of instruction, 2 Continuing Education units, offered through the Colorado School of Mines.

“Using Monte Carlo Simulation to Design, Value and Manage Mineral and Energy Projects,” with Michael Samis. 8 hours or 24 hours of instruction, 2 Continuing Education units, offered through the Colorado School of Mines.

Refereeing Services

Agricultural and Resource Economics Review, American Economic Review, American Journal of Agricultural Economics, Annals of Operations Research, Applied Economics, Applied Financial Economics, Applied Mathematical Modelling, The Australasian Institute of Mining and Metallurgy, Australian Journal of Management, Blackwell Publishing, Boston University, Canadian Institute of Mining and Metallurgy (CIM) Bulletin, Canadian Journal of Economics, China: An International Journal, Development & Society, Ecological Economics, Economic Development and Cultural Change, Economic Inquiry, Economics Bulletin, Energy - The International Journal, Energy Economics, Energy Journal, Energy Policy, Engineering Economist, Environment and Development Economics, Environmental and Resource Economics, European Journal of Development Research, European Journal of Finance, European Journal of Operational Research, Exploration and Mining Geology, Greener Management International, IEEE Transactions on Engineering Management, International Economic Review, International Journal of Industrial Organization, International Journal of Oil, Gas, and Coal Technology, International Journal of Risk Assessment and Management, International Review of Economics and Finance, Japan International Cooperation Agency Research Institute, Journal of Commodity Markets, Journal of Corporate Finance, Journal of Development Studies, Journal of Economics and Business, Journal of Economic Dynamics & Control, Journal of Energy and Development, Journal of Environmental Economics and Management, Journal of Industrial Ecology, Journal of International Development, Journal of Nonlinear Studies, Journal of Petroleum Science and Engineering, Journal of Political Economy, Letters in Spatial and Resource Sciences, Management Science, Mining Engineering, MIT Press, Natural Resources Forum, Natural Resources Research, New Zealand Economic Papers, Operations Research, Oxford University Press, PennWell Publishing, Policy Sciences, Raw Materials Report, Resource & Energy Economics, Resources Policy, Review of International Economics, SEG Newsletter, Studies in Comparative International Development, United States Environmental Protection Agency, United States National Science Foundation, United States National Research Council, The World Bank, World Development.