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Professional Summary

Dr. Panis is an economist and statistician with deep expertise in healthcare, pensions, employment, and damage calculations. He has extensive litigation support experience including as economic expert witness in healthcare, labor, and class action cases. He is widely published; was an award-winning teacher in MBA and undergraduate programs; and co-founded a successful company that developed statistical software to disentangle causality, reverse causality, and selection effects in economic models.

Prior to joining AACG, Dr. Panis led the Economic and Statistical Consulting group of Deloitte in the Pacific Southwest. Before that, he was a senior economist at the RAND Corporation, where his research on healthcare and pensions was funded by the National Institutes of Health, the Centers for Medicare and Medicaid Services, the U.S. Department of Labor, and other federal agencies. He served on the faculty of the University of Southern California and the University of California at Irvine, teaching undergraduate and graduate statistics and economics courses. His work has been published in the *Journal of Health Economics*, *Medical Care*, *Health Affairs*, *Health Policy Research*, *Pensions & Investments Online*, *Journal of Public Economics*, and other professional journals.

Education

- Ph.D., Economics, University of Southern California, Los Angeles, California
- J.D. (equivalent), Dutch Civil Law, University of Groningen, Netherlands
- M.A., Business Economics (cum laude), University of Groningen, Netherlands
- B.A., Economics (cum laude), University of Groningen, Netherlands

Selected Engagements

- Dr. Panis served as statistical expert in a matter involving alleged Medicare upcoding and Medicaid care violations by a chain of skilled nursing facilities (SNFs).
- In several separate matters involving the sale of deferred annuities to senior citizens, Dr. Panis served as expert on the benefits of lifelong-guaranteed income for retirement satisfaction and symptoms of depression.

- Dr. Panis analyzed the implementation of the compensation plan for enrollment advisors at an online university. He demonstrated that both soft skills and quantitative performance metrics determined salaries.
- Dr. Panis served as economic expert in support of a medical provider who allegedly overbilled Medicare. He demonstrated that 90% of the peer group of providers to which the DOJ compared the defendant were practicing in a different specialty field.
- Dr. Panis provided litigation support in several cases involving hospitals that allegedly manipulated their charges to collectively extract hundreds of millions of dollars in excess Medicare Outlier payments.
- Dr. Panis served as expert in a putative class action matter over fund fees charged to 401(k) investors.
- Dr. Panis provided litigation support in several cases involving hospitals that allegedly manipulated their charges to collectively extract hundreds of millions of dollars in excess Medicare Outlier payments.
- Dr. Panis served as statistical expert to document that health information recorded by certain medical devices is considered not individually identifiable under HIPAA because he determined that the risk is very small that the information could be used to identify patients.
- Dr. Panis served as economic expert on demographic trends, healthcare utilization, and their implications for future demand for hospital services.
- The U.S. Department of Labor (DOL) retained Dr. Panis to study self-insured health plans and to write substantial portions of the Secretary of Labor's 2011-2020 reports to Congress pursuant to the 2010 Affordable Care Act. Separately, DOL commissioned Dr. Panis to assess funding levels of retiree health benefits.
- Dr. Panis related workplace injury logs to worker demographics, production levels, and other factors in support of a criminal litigation matter in which a major manufacturing company was accused of workplace safety violations.
- Dr. Panis developed a projection model to forecast the demand for nursing home beds in the United States. He found that, alongside demographic factors, increasing prevalence of obesity, diabetes, and asthma in the younger population will boost demand for nursing home beds in the future.
- Dr. Panis developed a complex Monte Carlo simulation model of health status and medical expenditures for the Centers of Medicare and Medicaid Services (CMS) to assess the implications of major medical breakthroughs for Medicare's finances.
- In several separate matters, Dr. Panis served as economic expert to calculate lifetime lost earnings, including of someone who was injured before reaching her target occupation.
- In a variety of engagements, Panis designed statistical samples or reviewed the appropriateness of samples for financial audit, damages calculations, or other extrapolation purposes.

Professional Experience

- Principal, Advanced Analytical Consulting Group, Inc. 2009–present.
- Senior Manager / Manager, Deloitte Financial Advisory Services LLP, Economic and Statistical Consulting, 2004–2009.

- Senior Economist/Economist/Associate Economist/Consultant, The RAND Corporation, 1986–1996 and 1997–2004. Senior Economist, 1999–2004.
- Consultant, Analysis Group, 2004
- Co-founder and CEO, EconWare, Inc., 1999–2005
- Business Analyst, Computer Sciences Corporation, 1996–1997
- Adjunct Associate/Assistant Professor, University of Southern California, Economics Department and Marshall School of Business, 1993–2002 (part-time)
- Lecturer, University of California at Irvine, Graduate School of Management, 1992–1995 (part-time)

Expert Opinion and Expert Witness Experience

- United States of America ex rel. Anita Silingo v. Mobile Medical Examination Services, Inc. et al. United States District Court for the Central District of California, Case No. 8:13-cv-01348-FMO-JC. Expert report, November 22, 2019.
- Eric Cholly v. City of Montclair, Montclair Police Department, et al. Superior Court of California, County of San Bernardino, San Bernardino Court, Case No. Civds 1505514. Expert report, May 18, 2018.
- Sandra M. Peters v. Aetna, Inc., Aetna Life Insurance Company, and Optumhealth Care Solutions, Inc. United States District Court for the Western District of North Carolina, Case No. 1:15-cv-00109. Expert report, April 27, 2018. Deposition, May 30, 2018.
- The United States of America and the State of Florida ex rel. Meria Broadnax v. Sand Lake Cancer Center, P.A. and Vinicio Hernandez, M.D. United States District Court for the Middle District of Florida, Case No. 8:13-cv-2724-JDW-MAP. Expert report, April 2, 2018. Deposition, June 21, 2018.
- The United States of America and the State of Florida ex rel. Angela Ruckh v. CMC II, LLC et al., United States District Court for the Middle District of Florida, Tampa Division, Case No. 8:11-cv-1303-SDM-TBM. Reports and declarations: February 20, 2015; December 11, 2015; February 25, 2016; March 28, 2016; April 19, 2016; October 20, 2016; and January 31, 2017. Depositions: March 10, 2015 and March 17, 2016. Trial testimony: February 2017.
- State of New Mexico, ex rel. Hector H. Balderas, Attorney General, v. FastBucks Holding Company, et al. State of New Mexico, County of Santa Fe, First Judicial District Court. Case No. D-0101-CV-2009-01917. Deposition: August 23, 2016.
- California Department of Health Care Services v. Joseph A. Foroosh, Dental Corporation d.b.a. Desert Dental Group. Office of Administrative Hearings and Appeals, Appeal DC130113480. Testimony, June 5, 2014.
- United States ex rel. Michael Ruhe et al. v. Masimo Corporation. United States District Court, Central District of California, Case No. 2:10-CV-08169-CJC (VBKx). Report, July 31, 2013.
- United States of America ex rel. Alan M. Freedman v. Jose Suarezhoyos, MD, Steven Jay Wasserman, MD, et al.. United States District Court, Middle District of Florida, Case No. 8:04-CV-933. Declaration, April 21, 2012.

- *Rowe v. Bankers Life and Casualty Company*. United States District Court, Northern District of Illinois, Eastern Division, Case No. 09-CV-491. Declaration, January 31, 2011. Deposition, February 15, 2011.
- *Office of Inspector General of the U.S. Department of Education v. BridgePoint Education and Ashford University*. Expert reports, July 29, 2010 and February 23, 2011.
- *Hansen v. Conseco Insurance Company*. United States District Court, Northern District of California, San Jose Division, Case No. C-08-04726-RMW. Declaration, August 19, 2010.
- *Torday v. Secretary of Health and Human Services*. United States Court of Federal Claims, Office of Special Masters, Case No. 07-372V. Expert report, July 29, 2010.
- *Walsh v. Principal Life Insurance Company and Princor Financial Services Corporation*. United States District Court, Southern District of Iowa, Case No. 4:07-CV-00386-RP-CFB. Expert report, September 15, 2009. Deposition, September 30, 2009.
- *Sweeney, et al. v. National Western Life Insurance Company*. United States District Court, Southern District of California, Case No. 05 CV 1018 JLS. Declaration, September 3, 2009. Deposition, October 15, 2009.
- *County of Sonoma v. Sutter Medical Center of Santa Rosa*. Expert report, November 23, 2007.
- *Carrera v. Secretary of Health and Human Services*. United States Court of Federal Claims, Office of Special Masters, Case No. 03-2016V. Expert report, February 28, 2007.
- *United States of America ex rel. James Tiesinga v. Dianon Systems, Inc.* United States District Court, Connecticut, Case No. 3:02CV1573(MRK). Declaration, November 15, 2006.
- *Taylor, et al. v. Farmers Insurance Co., Superior Court, King County, Washington*, Case No. 02-2-08934-8 SEA. Deposition, March 1, 2006.
- *Rainbow Development Corp. v. Rhodes Design and Development Corp., et al.*, District Court, Clark County, Nevada, Case No. A392416. Report, April 19, 2005. Deposition, April 21, 2005.

Papers and Publications

- "Self-Insured Health Benefit Plans 2020" (with Michael Brien). 2020. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- "Self-Insured Health Benefit Plans 2019" (with Michael Brien). 2019. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- "Self-Insured Health Benefit Plans 2018" (with Michael Brien). 2018. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- "Self-Insured Health Benefit Plans 2017" (with Michael Brien). 2017. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- "Innovations and Trends in Annuities: Qualifying Longevity Annuity Contracts (QLACs)" (with Michael Brien). 2016. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- "Financial Risks due to Long-Term Care" (with Michael Brien). 2016. Report for the U.S. Department of Labor, Employee Benefits Security Administration.

- "Review of Selected Studies and Comments in Response to the Department of Labor's Conflict of Interest 2015 Proposed Rule and Exemptions" (with Karthik Padmanabhan and Timothy Tardiff). 2016. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- "Rates of Return of Broker-Sold and Direct-Sold Mutual Funds" (with Karthik Padmanabhan and Timothy Tardiff). 2016. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- "Self-Insured Health Benefit Plans 2016" (with Michael Brien). 2015. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- "Self-Insured Health Benefit Plans 2015" (with Michael Brien). 2014. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- "Brokerage Accounts in the United States" (with Michael Brien). 2015. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- "Savers With and Without a Pension" (with Michael Brien). 2015. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- "Target Populations of State-Level Automatic IRA Initiatives" (with Michael Brien). 2015. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- "Asset Allocation of Defined Benefit Pension Plans" (with Michael Brien). 2015. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- "Implications of Expanded Annuitization for Old-Age Well-Being" (with Michael Brien). 2015. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- "Comments on a Review of a White House Report on Conflicted Investment Advice." 2015. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- "Financial Asset Holdings of Households in the United States: 2014 Update" (with Michael Brien). 2014. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- "Review of Study by Quantria Strategies, LLC." 2014. Memorandum to the U.S. Department of Labor, Employee Benefits Security Administration.
- "Self-Insured Health Benefit Plans 2014" (with Michael Brien). 2014. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- "Classifying Portfolio Volatility" (with Michael Brien). 2013. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- "Defined Contribution Plan Employer Match Suspensions During the Financial Crisis" (with Michael Brien). 2013. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- "Matching Form 5500 Employee Benefit Plan Filings by Employer" (with Michael Brien). 2013. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- "Self-Insured Health Benefit Plans: 2013" (with Michael Brien). 2013. Report for the U.S. Department of Labor, Employee Benefits Security Administration.

- “Self-Insured Health Benefit Plans: 2012” (with Michael Brien). 2012. Report for the U.S. Department of Labor, Employee Benefits Security Administration. Also “Self-Insured Health Benefit Plans Supplemental Report 2012” with additional details.
- “An Analysis of 2007-2009 Filings of Form M-1, Report for Multiple Employer Welfare Arrangements (MEWAs) and Certain Entities Claiming Exception (ECES)” (with Michael Brien). 2012. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- “Anomalies in Form 5500 Filings: Lessons from Supplemental Data for Group Health Plan Funding” (with Michael Brien). 2012. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- “Strengths and Limitations of Form 5500 Filings for Determining the Funding Mechanism of Employer Provided Group Health Plans” (with Michael Brien). 2012. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- “Identifying Self-Insured Health Plans Using Research Data Sources” (with Michael Brien). 2012. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- “Annuities in the Context of Defined Contribution Plans” (with Michael Brien). 2011. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- “Self-Insured Health Benefit Plans” (with Michael Brien). 2011. Report for the U.S. Department of Labor, Employee Benefits Security Administration. Also “Self-Insured Health Benefit Plans Second Report” (2012) with additional details.
- “Large Group Health Plans Study” (with Michael Brien). 2011. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- “Volatility Metrics for Mutual Funds” (with Michael Brien and Karthik Padmanabhan). 2010. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- “Target Date Funds and Retirement Savings” (with Michael Brien et al.). 2010. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- “Supply of and Demand for Skilled Labor in the United States” (with Lynn Karoly.) 2009. Chapter 2 in *Skilled Migration Today: Prospect, Problems and Policies*, edited by Jagdish Bhagwati and Gordon Hanson. Oxford University Press.
- “Target Date Funds: Historical Volatility/Return Profiles” (with Michael Brien and Philip Cross). 2009. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- “Other Post-Employment Benefits: Overview” (with Michael Brien et al.). 2009. Report for the U.S. Department of Labor, Employee Benefits Security Administration.
- “Revenue Sharing in DC Plans: What Does It Mean for Plan Sponsors?” (With Michael Brien). *Pensions & Investments Online*, 2008. See <http://www.pionline.com/assets/docs/CO40932310.PDF>.
- “Generally Accepted Investment Theories” (with Joshua Schaeffer). 2007. Memo for the U.S. Department of Labor, Employee Benefits Security Administration.
- “An Analysis of the Choice to Cash Out, Maintain, or Annuitize Pension Rights upon Job Change or Retirement,” (with Michael Hurd). *Journal of Public Economics* 2006, 90(12): 2213-2217.

- "Health and Spending of the Future Elderly: Consequences of Health Trends and Medical Technology" (with Dana Goldman et al.). *Health Affairs Web Exclusive*, 26 September 2005. See <http://content.healthaffairs.org/cgi/reprint/hlthaff.w5.r5v1>.
- "Pension Annuitization and Social Security Claiming," (with Michael Hurd, James Smith, and Julie Zissimopoulos). 2004. Chapter 5 in *Developing an Annuity Market in Europe*, Elsa Fornero and Elisa Luciano (eds.). ISBN 1843764768. Edward Elgar, London.
- *The 21st Century at Work: Forces Shaping the Future Workforce and Workplace in the United States*, 2004 (with Lynn Karoly), RAND MG-164-DOL. ISBN 0-8330-3492-8. Santa Monica, California. See <http://www.rand.org/publications/MG/MG164>.
- "Disability Forecasts and Future Medicare Costs," (with Jayanta Bhattacharya et al.). *Health Policy Research* 2004, Volume 7: 75-94, David Cutler and Alan Garber (eds), MIT Press, Cambridge, Mass.
- "Annuities and Retirement Well-being," 2004, Chapter 14 in *Pension Design and Structure: New Lessons from Behavioral Finance*, Olivia S. Mitchell and Stephen P. Utkus (eds), ISBN 0-19-927339-1. Oxford: Oxford University Press.
- "The Size and Composition of Wealth Holdings in the United States, Italy, and the Netherlands," 2005, (with Arie Kapteyn). Chapter 9 in *Analyses in the Economics of Aging*, David Wise (ed.). National Bureau of Economic Research, The University of Chicago Press: Chicago, Illinois.
- *Health Status and Medical Treatment of the Future Elderly*, 2004 (with Dana Goldman et al.), RAND TR-169-CMS. ISBN 0-8330-3653-X. Santa Monica, California. See <http://www.rand.org/publications/TR/TR169>.
- *aML Multilevel Multiprocess Statistical Software, Version 2.0* (with Lee Lillard). 2003. EconWare, Los Angeles, California. Version 1.0, 2000.
- "Forecasting the Nursing Home Population," (with Darius Lakdawalla, Dana Goldman, Jayanta Bhattacharya, Michael Hurd, Geoffrey Joyce). *Medical Care*, 41(1): 8-20, January 2003.
- "Effects of Changing Social Security Administration's Early Entitlement Age and the Normal Retirement Age," (with Michael Hurd and David Loughran). Working paper, November 2002.
- "Workers That Claim Early Social Security Benefits," (with Julie Zissimopoulos). Working paper, October 2002.
- "Nonmarital Childbearing: Influences of Education, Marriage, and Fertility," (with Dawn Upchurch and Lee Lillard), *Demography* 39(2): 311-329, May 2002.
- "Microsimulations in the Presence of Unobserved Heterogeneity," University of Michigan, Michigan Retirement Research Center Working paper WP 2003-048, May 2003. See http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1090904.
- "MetLife Retirement Crossroads Study: Paving the Way to a Secure Future," 2002, Metropolitan Life Insurance Company, February 2002.
- "Determinants and Accuracy of Planned Retirement Age," (with Michael Hurd and David Loughran). Working paper, November 2001.
- "The Impact of Nonmarital Childbearing on Subsequent Marital Formation and Dissolution," 2001, (with Dawn Upchurch and Lee Lillard) in Wu, Haveman, and Wolfe (Eds.), *Out of Wedlock: Trends, Causes, and Consequences of Nonmarital Fertility*. Russell Sage, New York.

- "The Quality of Retrospective Data: An Examination of Long-Term Recall in a Developing Country," 2001, (with Megan Beckett, Julie DaVanzo, Christine Peterson, and Narayan Sastry), *Journal of Human Resources* 36(3): 593-625.
- "Comparing Disability Growth among the Young and Old," (with Darius Lakdawalla, Jayanta Bhattacharya, Dana Goldman, Michael Hurd, Geoffrey Joyce). RAND working paper, April 2001.
- "SSA Program Data User's Manual," June 2000, (with Roald Euler, et al.), Report for the Social Security Administration, RAND PM-973-SSA
- "Release of Confidential Microdata for Research: Case Studies of Federal Agencies and Recommendations for the Social Security Administration," May 2000 (with Cynthia Grant and Roald Euler), Report for the Social Security Administration, RAND PM-1044-SSA.
- *Citizens, Computers, and Connectivity: A Review of Trends*, September 1999, (with Tora Bikson), RAND MR-1109-MF.
- "Near Term Model Development, Part II," 1999 (with Lee Lillard), report for the Social Security Administration. See <http://www.socialsecurity.gov/policy/docs/contractreports/NearTermModelDev.pdf>.
- "Panel Attrition from the Panel Study of Income Dynamics: Marital Status, Income, and Mortality," (with Lee Lillard), *Journal of Human Resources* 1998, 33(2): 437-457.
- "Socioeconomic Differentials in the Returns to Social Security," February 1996, (with Lee Lillard). RAND DRU-1327-NIA.
- "Social Security: Equity, Adequacy, Reforms," 1996, (with Lee Lillard) RAND Documented Briefing, DB-167-NIA.
- "Social Security Reform: Touching the Rail," Winter 1995-96 (with Lee Lillard), *RAND Research Review*, Vol. XIX, No.3.
- "The Value of an Annuity When Payments and Survival Probabilities Depend on Future Events," 1997, (with Lee Lillard and Michael Brien).
- "Marital Status and Mortality: The Role of Health," (with Lee A. Lillard), August 1996, *Demography*, 33(3): 313-327.
- "Life Expectancy Projections for European Union Member Countries," Final report prepared for Directorate General V (Employment, Industrial Relations, and Social Affairs) of the European Commission (with Erwin Charlier and James Kahan). September 1996.
- "Computers and Connectivity: Current Trends," in *Universal Access to E-mail*, Robert H. Anderson, Tora Bikson, Sally Ann Law, and Bridger Mitchell (eds), RAND. Also in *Social Psychology of the Internet*, Sara Kiesler (ed.), Mahwah, New Jersey: Erlbaum, Inc., 1996. (With Tora K. Bikson).
- "Child Mortality in Malaysia: Explaining Ethnic Differences and the Recent Decline," *Population Studies* 49 (1995): 463-479 (with Lee Lillard).
- "Implications of Family Formation for Educational Attainment among Young Women," 1995 (with Lee Lillard and Dawn Upchurch).
- "Health Inputs and Child Mortality: Malaysia," *Journal of Health Economics*, 13 (1994): 455-489 (with Lee Lillard).
- "Interdependencies Over the Life Course: Women's Fertility, Marital, and Educational Experiences," 1996 (with Lee Lillard and Dawn Upchurch).

- "The Decline of Infant Mortality in Malaysia: Causes and Policy Implications." In *Health, Economics, and Development: Working Together for Change*, World Federation of Public Health Associations, pp. 71-72 (presented to the 7-th International Congress, Bali, Indonesia, December, 1994.)
- "The Piecewise Linear Spline Transformation with an Application to Age at First Marriage," *Stata Technical Bulletin* 18 (1994): 27-29.
- "Timing of Child Replacement Effects on Fertility in Malaysia," (with Lee A. Lillard), RAND Labor and Population Program, DRU-331-NICHD, June 1993.
- "The Logit Model: An Introduction for Economists," review of book by J.S. Cramer, *Journal of Regional Science*, 1992, 32: 392-394.

Peer Evaluation and Referee Experience

- Referee for the following academic journals:

Journal of Political Economy

Journal of Human Resources

National Tax Journal

Journal of the Royal Statistical Society, Series B

Statistical Modeling: an International Journal

Journal of Population Economics

Methodology

Demography

Social Security Bulletin

Demographic Research

Social Science & Medicine

Economic Journal

Empirica

- R03 Grant Reviewer, National Institute for Child Health and Human Development (2004)
- Review panelist, PENSIM Pension Simulation Model, Department of Labor (2000)