

# Abstract

This monograph explores different aspects of social security and pension in Mexico. Chapter 1 provides the backdrop of the Mexican economy. In the second chapter, we trace the history of social security in Mexico starting with the pre-colonial era. During the colonial era, the system covered the armed forces, some federal bureaucrats and some specific professions. The “universal” pay-as-you-go social security started in 1943. It was only universal in a notional sense—it did not cover even half the population at the end of the twentieth century. The *privately* managed system started tentatively with a supplemental program in 1992. The privately managed program to replace the entire “old system” began only in 1997. Chapter 3 gives in-depth details of the old (which will continue to run for the next half century) and the new systems. Chapter 4 describes the details of the new system and

how it has performed during 1997–2000. Chapter 5 looks at the privately operated pension system from the point of view of services marketing. It discusses results of an ongoing longitudinal research project on customer satisfaction with the system. Chapter 6 discusses why private management of pension is not like privatization of other spheres of activities. The problem of replacing the pay-as-you-go system is that it imposes a cost on government that does not arise in other kinds of privatization. Chapter 7 discusses the problem of high management fees of privately managed pension funds that has plagued not just Mexico, but other countries as well. Chapter 8 takes a deeper look at fund management by privately managed funds. It shows that quantitative restrictions (as imposed by the current regulator) are of the wrong kind. Chapter 9 concludes with some specific recommendations.

# About the Author

Dr. Tapen Sinha is the ING Comercial America Chair Professor in the Department of Actuarial Studies at the Instituto Tecnológico Autónomo de México (ITAM). He also has a concurrent appointment as a Professor at the University of Nottingham. He is the founder and director of the International Center for Pension Research. He is also a Research Associate at the Centre for Risk and Insurance (CRIS), at the School of Business of the University of Nottingham.

He has won numerous research awards including: Society of Actuaries Award for Pension Symposium (2002), Lumina Award (2001), International Insurance Society (1999, 2000), and the National Insurance Commission of Mexico Award (1998).

Dr. Sinha has published over 85 research papers in diverse subject areas. His papers have been published in economics, finance, marketing, accounting, insur-

ance and medical journals. He has made over 100 presentations in research conferences, as well as presenting papers at various universities all over the globe.

Dr. Sinha has wide consulting experience in the U.S., Singapore, Australia and in Mexico. He has also taught courses for executives in a number of countries in Asia.

Dr. Sinha obtained his Bachelors and Masters degrees from the Indian Statistical Institute, and his Ph.D. in Economics from the University of Minnesota. He was a visiting professor at Ripon College in Wisconsin, then he joined the University of Wisconsin-Parkside. Later he moved to the National University of Singapore. Prior to joining ITAM, he was an Associate Professor of Finance and Insurance at Bond University in Australia.



---

# Acknowledgments

This book could not have been written without help from others. My principal debt is to Rebecca Benedict. The chapter on pension marketing is an extension of our joint research. In addition, she read and reread all the chapters and made valuable comments. Irma Hernandez helped me with collection of data, often under difficult circumstances. Talia Balmes helped me with the survey questionnaire. Her untimely death saddens us all. Jaime Villasenor gave me all the information available at the CONSAR. In particular, I am grateful to him for making the Value at Risk data available to me. Help from Connie Barrios and Felipe

Martinez for running complicated simulations is gratefully acknowledged.

This book would not have come about if the Society of Actuaries did not make the AERF grant AP137 available to me. I therefore thank all the people involved with it. In particular, Curtis Huntington, Oliva Sanchez, Alan Stonewall and Judy Yore did splendid work in their respective roles. Judy Anderson helped me behind the scenes. I would also like to thank Megan Potter for her role as the Associate Editor.

I would like to dedicate this monograph to the people of Mexico and to the victims of the events and the aftermath of September 11, 2001.

# References

- A.M. Best Co. 2000. "Best's Viewpoint: Mexico Now Fully Open To U.S. and Canadian Insurers." Special report, January 24, A.M. Best, Oldwick, NJ.
- Arce Cano, G. 1972. *De Los Seguros Sociales: A la Seguridad Social*. Mexico City: Editorial Purrua.
- Asher, M. G. 1999. "The Pension System in Singapore," in *Pension Reform Primer*. Washington, DC: World Bank.
- Bank for International Settlements. 1994. *Risk Management Guidelines for Derivates*. Basel, Switzerland: Basel Committee on Banking Supervision, Bank for International Settlements.
- . 1995. *An Internal Model-Based Approach to Market Risk Capital Requirements*. Basel, Switzerland: Bank for International Settlements.
- . 1996. *Amendment to the Capital Accord to Incorporate Market Risks*. Basel, Switzerland: Bank for International Settlements.
- Bank of Mexico, 1997. Mexican Economy Internet Version. Online at <http://www.banxico.org.mx>.
- Behrman, J., S. Duryea, and M. Székely. 1999. "Decomposing Fertility Differences Across World Regions and Over Time." Working Paper no. 406, Inter-American Development Bank, Washington, DC.
- Berkowitz, E. D. 1997. "The Transformation of Social Security," *Social Security Reform Proceedings*, Conference Series no. 41. Boston: Federal Reserve Bank of Boston, pp. 19–28.
- Berry, L., and A. Parasuraman, 1997. "Listening to the Customer—The Concept of a Service-Quality Information System," *Sloan Management Review* (Spring): 65–76.
- Blake, D. 1998. "Financial System Requirements for Successful Pension Reform." Paper presented at the Conference on Pension Systems in Asia, Manila.
- Carstens, C. M. 1992. "The Retirement Saving System: Mexico's Revolutionary Pension," *Business Mexico* (April): 20–5.
- Case, B. M. 1997. "Mexico Welcomes Managers to Its New Pension Funds," *Pensions & Investments* 25(5).
- Clavijo, F., and Valdivieso, S. 2000. "Reformas Estructurales y Política Macroeconómica: El Caso de México 1982–1999," *Serie Reformas Economicas* 12, ECLAC.
- CONSAR. 1997a. *Reglas Generales de Inversion*.
- CONSAR. 1997b. *Modificaciones a las Reglas Generales de Inversion*.
- CONSAR. 1999. *Modificaciones y Adiciones a las Reglas Generales de Inversion*.
- Cronin, J. J., and S. A. Taylor. 1992. "Measuring Service Quality: A Reexamination and Extension," *Journal of Marketing* 56 (July) 55–68.
- Crosby, A. 1979. "Virgin Soil Epidemics as a Factor in the Aboriginal Depopulation of America," *William and Mary Quarterly*, 33: 289–99.
- Cutler, D. 1999. "Comments" on "Social Security: Tune It Up, Don't Trade It In" by Henry Aaron in Henry Aaron and John Shoven edited: *Should the United States Privatize Social Security?* Cambridge: MIT Press.
- Davis, E. P. 2001. "Portfolio Regulation of Life Insurance Companies and Pension Funds." Working paper, The Pensions Institute, Birkbeck College, London.
- de Palma, A. 1996. "Two Decisions in Mexico May Aid U.S. Companies," *New York Times* (April 27): 38.
- Diamond, P. A. 1977. "A Framework for Social Security Analysis," *Journal of Public Economics* 8: 275–98.
- . 1998. "The Economics of Social Security Reform." Working paper No. 6719, National Bureau of Economic Research, Cambridge.
- . 1999. "Administrative Costs and Equilibrium Charges with Individual Accounts." Working paper No. 7050, National Bureau of Economic Research, Cambridge.
- Diamond, P. A. and J. Gruber. 1997. "Social Security and Retirement in the United States." Working paper No. 6097, National Bureau of Economic Research, Cambridge.
- Dooley, M. 1994. "A Retrospective on the Debt Crisis." Working paper No. 4963, National Bureau of Economic Research, Cambridge.
- Edwards, S. 1996. "The Chilean Pension Reform: A Pioneering Program." Working paper No. 5811, National Bureau of Economic Research, Cambridge.
- Espinosa, M. and S. Russell. 1999. "Fully funded Social Security: Now You See It, Now You Don't?" *Federal Reserve Bank of Atlanta Economic Review* 84(4).
- Espinosa, M. and T. Sinha. 2000. "A Primer and Assessment of Social Security Reform in Mexico," *Federal Reserve Bank of Atlanta Economic Review* 85(1): 1–23.
- Ford Motor Company. 1990. "Memorandum to Dealers," October 3.
- Fornell, C., and B. Wernerfelt. 1988. "Defensive Marketing Strategy by Customer Complaint Management: A Theoretical Analysis," *Journal of Marketing Research*, 24: 337–46.
- Fox, L., and E. Palmer. 1999. "Latvian Pension Reform." Working paper, World Bank, Washington, DC.
- Friedman, M. 1999. "Speaking the Truth About Social Security Reform," *New York Times*, January 11.
- Gale, B. 1992. *Monitoring Customer Satisfaction and Market-Perceived Quality*, Worth Repeating Series no. 922CS01. Chicago: American Marketing Association.
- García Cruz, M. 1962. *Evolución Mexicana del Ideario de la Seguridad Social*. Mexico City: Instituto de Investigaciones Sociales, Universidad Nacional Autónoma de México.
- Geanakoplos, J., O. S. Mitchell, and S. P. Zeldes. 1998a. "Social Security Money's Worth." Working paper No.

- 6722, National Bureau of Economic Research, Cambridge.
- . 1998b. “Would a Privatized Social Security System Really Pay a Higher Rate of Return?” Working paper No. 6713, National Bureau of Economic Research, Cambridge.
- Guerrero, V., and T. Sinha. 2000. “Market Share Modeling in a Mandatory Privatized Pension Market.” Paper presented at the American Risk and Insurance Association Annual Meeting in Baltimore, August.
- Holzmann, R. 1996. *Pension Reform, Financial Market Development, and Economic Growth: Preliminary Evidence from Chile*. Working Paper WP/96/94. International Monetary Fund.
- Instituto Mexicano del Seguro Social (IMSS). 1968. *Hom-enaje a los Fundadores (en el XXV Aniversario de la Expedición de la Ley del Seguro Social)*. Mexico City: IMSS.
- James, E. 1995. “Providing Better Protection and Promoting Growth: A Defense of Averting the Old Age Crisis,” *International Social Security Review* 48 (3/4).
- James, E. 1998. “Social Security Reform in Other Nations.” Heritage Foundation Lecture, April 9.
- Kellison, S. G. 1991. *The Theory of Interest* (2nd ed.). Homewood, IL: Irwin.
- Koska, M. T. 1990. “High Quality Care and Hospital Profits: Is There a Link?” *Hospitals* (March 5), pp. 62–3.
- Kotler, Philip (1994), *Marketing Management Analysis, Planning, Implementation, and Control* (8th ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Krtizer, B. E. 1996. “Social Security in Mexico,” *Social Security Bulletin* 59 (1):97.
- Laurell, A. C. 1997. *La Reforma Contra la Salud y la Seguridad Social: Una Mirada Crítica y Una Propuesta Alternativa*. Mexico City: Fundacion Friedrich Ebert.
- Maddison, A. et al. 1993. *La Economía Política de Pobreza, la Igualdad y el Crecimiento: Brasil y México*. Mexico City: Fondo de Cultural Económica.
- Markowitz, H. 1959. *Portfolio Selection: Efficient Diversification of Investments*. New York: John Wiley.
- Mendelowitz, J. 1992. “Proof that Quality Pays Off.” Paper presented at the Customer Satisfaction and Quality Measurement Conference, sponsored by the American Marketing Association and the American Society for Quality Control in San Francisco, March 8–10.
- Mesa-Lago, C. 1978. *Social Security in Latin America: Pressure Groups, Stratification and Inequality*. Pittsburgh: University of Pittsburgh Press.
- Mitchell, O. 1997. “Building an Environment for Pension Reform in Developing Countries.” Working paper, World Bank, Washington, DC.
- . 1998. *Building an Environment for Pension Reform in Developing Countries*. Washington, DC: Human Development Network, Social Protection Group, The World Bank.
- . 1999. “Evaluating Administrative Costs in Mexico’s AFOREs Pension System.” Working paper No. PRC WP 99-1, Pension Research Council, The Wharton School, University of Pennsylvania.
- Mitchell, O. S., and G. Fields. 1994. “Designing Pension Systems for Developing Countries.” Working paper 95-12 prepared for World Bank ESP Division, Pension Research Council, Washington, DC.
- Mitchell, O. S., and S. Zeldes. 1996. “A Framework for Analyzing Social Security Privatization.” *American Economic Review*, May.
- Morley, S. A., R. Machado, S. Pettinato. 1999. “Indexes of Structural Reform in Latin America,” *Serie Reformas Economicas*, 12, ECLAC.
- Muralidhar, A. and R.J.P. van der Wouden. 1998. “Welfare Costs of Defined Contribution Plans—The Case for an Alternative Pension Scheme.” Working paper, Investment Management Department, World Bank, Washington, DC.
- Murthi, M., J. M. Orszag, and P. R. Orszag. 1999. “The Charge Ratio on Individual Accounts: Lessons from the U.K. Experience.” Working paper 2/99, Birkbeck College, London.
- Myers, R. J. 1993. *Social Security* (6th ed.). Philadelphia: University of Pennsylvania Press.
- Orszag, J. M., P. R. Orszag, D. J. Snower, and J. E. Stiglitz. 1999. “The Impact of Individual Accounts: Piecemeal versus Comprehensive Approaches.” Paper presented at the Annual Bank Conference on Development Economics, The World Bank, Washington, DC.
- Orszag, P. R. and Stiglitz, J. E. 1999. “Rethinking Pension Reform: Ten Myths about Social Security Systems,” World Bank Conference on New Ideas about Old-Age Security, Washington, DC. September 14–15.
- Parasuraman, A., V. A. Zeithaml, and L. L. Berry. 1985. “A Conceptual Model of Service Quality and Its Implications for Future Research,” *Journal of Marketing* 49(Fall): 41–50.
- . “SERVQUAL: A Multi-Item Scale for Measuring Consumer Perceptions of Service Quality,” *Journal of Retailing* 64(Spring): 2–40.
- Peters, T. J., and N. K. Austin. 1989. *A Passion for Excellence*. New York: Warner Books.
- Philips, L. W., D. R. Chang, and R. D. Buzzell. 1983. “Product Quality, Cost Position and Business Performance: A Test of Some Key Hypotheses,” *Journal of Marketing* 47(Spring): 26–43.
- Queisser, M., and D. Vittas. 2000. *The Swiss Multi-pillar Pension System: Triumph of Common Sense?* Washington, DC: Development Research Group, The World Bank.
- Quinn, J. F. 1997. “Criteria for Social Security Reform. Department of Economics.” Working Paper in Economics No. 367, Boston College.
- Reichheld, F. F., and E. Sasser. 1990. “Zero Defections: Quality Comes to Services,” *Harvard Business Review* 68 (October–November): 105–11.
- Richard, M. D., and A. W. Allaway. 1993. “Service Quality Attributes and Choice Behavior,” *Journal of Services Marketing* 7(1): 59–68.
- Rofman, R. 1993. “Social Security and Income Distribution: Mortality and Equity in Pension Plans.” Ph.D. dissertation in demography, University of California, Berkeley.

- 
- Rust, R. T., and A. J. Zahorik. 1993. "Customer Satisfaction, Customer Retention, and Market Share," *Journal of Retailing* 69(2): 193–215.
- Rust, R. T., A. J. Zahorik, and T. L. Keiningham. 1995. "Return on Quality (ROQ): Making Service Quality Financially Accountable," *Journal of Marketing* 59(April): 58–70.
- Sinha, T. 1998. "A Review of Privatized Pension in Mexico," *Pensions and Investments* (September): 14.
- . 1998. "The Great Pension Reform: AFOREs and the Future of Privatized Retirement in Mexico," *Texas Business Review* (October): 1–4.
- . 1999. "Are Large Marketing Expenditures Generating Large Number of Customers for the Pension Plans? Evidence from Mexico," Working paper, ITAM, Mexico City.
- . 2000. "Social Security in Mexico: Past, Present, and Future," *The Actuary* 34(9): 6–7, 9.
- . 2000. *Pension Reform in Latin America and Its Lessons for International Policymakers*. Boston: Kluwer Academic Publishers.
- Sinha, T., R. Benedict, C. Hollis, and J. Smith. 1994. "Modelling Superannuation," *Quarterly Journal of the Institute of Actuaries of Australia* (June): 6–27.
- Sinha, T., and F. Chamú. 2000. "Comparing Different Methods of Value at Risk," Paper presented at the American Risk and Insurance Association Annual Conference, Baltimore, Maryland (available at <http://www.gloriamundi.org/var/pub/tapens.pdf>).
- Sinha, T., F. Martínez, and C. Barrios-Muñoz. 1999. "Publicly Mandated Privately Managed Pension in Mexico: Simulations with Transactions Cost," *Actuarial Research Clearing House* 1: 323–54. Earlier version online at <http://balducci.math.ucalgary.ca/aps.html>.
- Sinha, D., and T. Sinha. 1998. "Cart Before the Horse? Saving-Growth Nexus in Mexico," *Economics Letters* 61(1): 43–7.
- Social Security Administration. 1999. *Social Security Programs Throughout the World*, SSA Publication No. 13-11805. Washington, DC: Social Security Administration, 1999.
- Solis-Soberon, F. *The Regulation of Investments in Latin American Defined Contribution Public Pension Schemes*. CONSAR, November 1999.
- Storbacka, K., T. Strandvik, and C. Grönroos. 1994. "Managing Customer Relationships for Profit: the Dynamics of Relationship Quality," *International Journal of Service Industry Management* 5(5): 21–38.
- Technical Panel Reports. 1995. "Report to the Social Security Advisory Council on Trends and Issues in Retirement Saving." Online at <http://www.ssa.gov/policy/adccouncil/report/toc.htm>.
- Vittas, D. 1995. "Sequencing Social Security, Pension and Insurance Reform," Policy research working paper No. 1551, World Bank, Washington, DC.
- Vives, A. 1999. "Pension Funds in Infrastructure Project Finance: Regulations and Instrument Design," *Journal of Project Finance* (Summer) 37–52.
- Watson Wyatt Worldwide. 1999. *Fiftieth Edition of the Survey on Investment Performance for Pension Plans in Mexico*. Washington, DC: Watson Wyatt Worldwide.
- Weeks, J. 1999. "Have Workers in Latin America Gained from Liberalization and Regional Integration?" CDPR Discussion Paper No. 1199, Centre for Development Policy Research, London, England.
- World Bank. 1994. *Averting the Old Age Crisis*. New York: Oxford University Press.
- Wyss, J. M. "Mexican mutual funds," *Business Mexico*, Oct. 1996, 24–28.
- Zahorik, A., and R. T. Rust. 1992. "Modeling the Impact of Service Quality on Profitability—A Review," in *Advances in Service Marketing and Management*, Vol. 1, pp. 247–76, edited by Teresa Schwartz, David E. Bowen, and Stephen W. Brown. Greenwich, CT: JAI Press.
- Zeithaml, V. A., and M. Bitner. 1996. *Services Marketing*. New York: McGraw Hill.
- Zeithaml, V. A., L. L. Berry, and A. Parasuraman. 1988. "Communication and Control Processes in the Delivery of Service Quality," *Journal of Marketing* 52(April): 35–48.
- . 1996. "The Behavioral Consequences of Service Quality," *Journal of Marketing* 60(April): 31–46.

PRINTED IN THE UNITED STATES OF AMERICA

Copyright © 2002, Society of Actuaries

All rights reserved by the Society of Actuaries (SOA). Printed in the United States of America. Permission is granted to make brief excerpts for a published review. Permission is also granted to make limited numbers of copies of items in this monograph for personal, internal, classroom, or other instructional use, on condition that the foregoing copyright notice is used so as to give reasonable notice of the SOA's copyright. This consent for free limited copying without prior consent of SOA does not extend to making copies for general distribution, for advertising or promotional purposes, for inclusion in new collective works, for resale, or for any other purpose.

Expressions of opinion stated in this book are those of the author and are not the opinion or the position of the Society of Actuaries, and SOA does not assume any responsibility for statements made or opinions expressed in this book. The use of general descriptive names, trade names, trademarks, etc., in this publication, even if the former are not especially identified, is not to be taken as a sign that such names, as understood by the Trade Marks and Merchandise Act, may accordingly be used freely by anyone.

ISBN 0-938959-72-7

---

# **Retrospective and Prospective Analysis of the Privatized Mandatory Pension System in Mexico**

---

Tapen Sinha, Ph.D.

**SOA Monograph M-RS02-1**

June 2002



**Actuarial Education and Research Fund  
475 North Martingale Road, Suite 800  
Schaumburg, IL 60173**

---