

## CURRICULUM VITAE

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Paul H. Brewbaker is the principal of TZ Economics, a Hawaii economics consultancy in corporate work, financial risk and development impact analysis, and litigation support. His background is in research on the Hawaii economy and financial risk analytics from a 25-year affiliation with Bank of Hawaii. He is a graduate of Stanford University and received his Ph.D. from the University of Hawaii, both in economics. He also did graduate work at the University of Wisconsin, taught at its Madison and Milwaukee campuses, and in the University of Hawaii system. He is a member of the American Economic Association, American Finance Association, and National Association for Business Economics with its Certified Business Economist designation. He is a former president of the Hawaii Economic Association.

## EDUCATION

**University of Hawaii at Manoa; Honolulu, Hawaii**  
Ph.D. Economics, 2004  
Thesis: *Dynamic Models of Hotel Investment in Hawaii*  
Worked under Professors James Mak, James Roumasset, and James Moncur

**University of Wisconsin—Madison; Madison, Wisconsin**  
(All but dissertation) Economics (1977-1980; 1982-83)  
Fields: Economic Development, International Finance, Natural Resource Economics  
Worked under Professors Jeffrey Williamson and Andre Sapir

**Stanford University; Stanford, California**  
A.B. Economics, 1977 (also completed History major)  
Extensive coursework under Professors Donald Harris, Jack Gurley, and Duncan Foley

## EMPLOYMENT HISTORY

*Senior Vice President and Chief Economist, Treasury Division (2002-2009); Vice President and Chief Economist, Treasury Division (1995-2002); Assistant Vice President and Associate Economist, Economics Department (1985-94); consultant (country risk analysis), International Banking Division (1981-84), Bank of Hawaii, 130 Merchant Street, Honolulu, Hawaii 96813*

As the bank's economist was a member of the Asset-Liability Committee and Quantitative Methods Control Committee, responsible for financial and economic risk analytics on the bank's balance sheet approximately \$10 billion); and in the bank's Asset Management Group was a member of the Investment Strategy Committee and its Asset Allocation Subcommittee (approximately \$10 billion in assets under management); also served on the Credit Policy Committee; began banking career as a regional economist doing country risk analysis when Bank of Hawaii had a presence in East Asia and the Pacific Islands; expanding to financial risk and capital management subsequent to the Asian Financial Crisis (1997).

# EXHIBIT E-23

Specialist in Hawaii regional economy. First worked as consulting economist while a graduate student and university lecturer (1981-84) in country risk analytics prior to the Latin American Debt Crisis (1982).

### *Lecturer in Economics*

#### **University of Hawaii (1990-2017)**

In Department of Economics, College of Arts & Sciences, taught undergraduate microeconomic and macroeconomic principles, intermediate theory courses, money and banking and financial economics courses, applied courses on Hawaii's Economy, tourism economics (Graduate School of Travel Industry Management (TIM)), international finance (Shidler College of Business); lectured in International Executive MBA, Executive MBA and Executive TIM programs; most recent courses include *Hawaii's Economy* (Spring 2017, Summer 2012), *Intermediate Macroeconomic Theory* (Fall 2016), *Principles of Microeconomics*, *Principles of Macroeconomics* (2010-2011), *Money and Capital Markets* (2009-2010)

#### **Hawaii Pacific University (1987-1995)**

Taught undergraduate microeconomic principles and graduate economic statistics in the MBA program

#### **University of Wisconsin—Madison (1977-80; 1982-84)**

Taught undergraduate intermediate macroeconomic theory, economic development (1982-84); Teaching Assistant in microeconomic and macroeconomic principles (1977-80), and in money and banking in the American Economic Association Summer Minorities Program (1982-84)

#### **University of Wisconsin—Milwaukee (1980-81)**

Taught international trade, international finance, and graduate international monetary theory

### **OTHER PROFESSIONAL TRAINING AND EXPERIENCE**

Completed National Association for Business Economics professional development courses “Time Series Analysis” (August 2015) and “Applied Econometrics” (March 2015) (both taught by Texas A&M Professor Oral Capps), and “Machine Learning and Data Science” (September 2020), taught by UC Irvine Professor Matthew Harding; recipient of the NABE Certified Business Economist designation

Completed Stanford Graduate School of Business “Credit Risk” one-week professional training course (2003, taught by Stanford Professors Darrell Duffie and Ken Singleton)

Completed Risk “Financial Risk Management” one-week training course (1999)

Certified as an expert witness in economics in Hawaii District Court

Extensive knowledge of EViews and Microsoft Office suite; familiarity with MATLAB, Python.

### **PRESENTATIONS AND PUBLICATIONS**

Presenter, “Hawaii (Western States Outlook),” at the Association for University Business Economic Research Annual Conference (October 29, 2012)

Principal author, publisher and contributor to Bank of Hawaii's external economics publications (1985-2009), as manager of 10-person research department downsized after 1994 (c. Internet), including:

*Hawaii Economic Trends* (on-line periodical, 1995-2009)  
*Hawaii* [year] (annual economic report, discontinued in 1999 (begun in 1949))  
*Construction in Hawaii* [year] (annual construction report, discontinued in 1999 (begun in 1965))  
*Business Trends* (bi-monthly periodical, discontinued in 1995 (begun in 1970s))  
*Pacific Islands Economic Reports* (French Polynesia, 1990; Fiji, 1992; discontinued in 2001))

Presenter, “The Spice of Paradise,” at the Western Economic Association Meetings (July 2008)

Author, “Tourism in Hawaii’s Economy: A Reference Note,” *Hawaii State Association of Counties Proceedings of the 1993 Annual Conference* (1993).

Contributing author, Randall Roth, *The Price of Paradise* (1992) Honolulu: Mutual Publishing.

Extensive exposure including various Hawaii media channels such as *Hawaii News Now*, *Honolulu Star-Advertiser*, *Pacific Business News*, *Civil Beat*, *Hawaii Business*, Neighbor Island publications, and global media channels such as *The Wall Street Journal*, *The New York Times*, *The Los Angeles Times*, *NHK*, *PBS*, *CNN* and *Bloomberg*; contributor to *Bloomberg* economic forecast surveys.

Invited presenter at conferences, business and professional meetings, since 2009 (as a private economist; updated only through 2014 but representative) and, since March 2020, in several webinars each month:

|                                                                                                                      |                                                                           |
|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| Air Cargo Alliance of Hawaii (10/16/13, 11/11/11, 10/16/12) and as Hawaii Air Cargo Association (10/19/10, 10/20/09) | East Oahu Realty (5/26/09)                                                |
| Alexander & Baldwin Corporation (investor presentation, 4/11/12)                                                     | East-West Center Jefferson Fellowship Awardees Conference (5/13/09)       |
| American Council of Engineering Companies of Hawaii (4/4/13)                                                         | FACE Hawaii Equity Summit (1/22/11)                                       |
| American Marketing Association, Hawaii Chapter (3/14/12)                                                             | Filipino Chamber of Commerce (4/9/14)                                     |
| American Water Works Association (5/14/09)                                                                           | Financial Planners Association (9/25/13)                                  |
| Architects and Engineers Association (2/4/11)                                                                        | Financial Professionals Association (11/5/09)                             |
| Ashford & Wriston (2/27/14)                                                                                          | Forest City Enterprises (12/4/13)                                         |
| Associated Builders & Contractors (2/6/13; 2/21/12)                                                                  | General Federation of Women’s Clubs (6/26/09)                             |
| Association of Legal Administrators (forthcoming 11/14/12; 6/15/11; 7/21/10; 7/15/09)                                | Hale Makua Health Services (2/11/14)                                      |
| Association of Pacific Ports (1/18/13)                                                                               | Haseko (public forum, 7/18/12)                                            |
| Association for University Business and Economic Research Annual Meeting (10/29/12)                                  | Hawaii 50 <sup>th</sup> Anniversary of Statehood Conference (8/21/09)     |
| Bank of Hawaii Private Client Group (11/4/09)                                                                        | Hawaii Association of Mortgage Brokers (10/30/12; 2/18/11; 5/12/09)       |
| Bank of Hawaii Hawaii Island Region (3/7/14)                                                                         | Hawaii Association of Public Accountants (6/9/11)                         |
| Bank of Hawaii Maui Region (3/14/14; 7/26/13)                                                                        | Hawaii Association of Realtors (10/27/10)                                 |
| Board of Hispanic Caucus Chairs (12/6/13)                                                                            | Hawaii Bar Association Collection Law Section (2/21/14)                   |
| Building Industry Association (11/21/13)                                                                             | Hawaii Business Magazine (12/2/10)                                        |
| CCIM/IREM National Convention (10/17/09)                                                                             | Hawaii Carpenters Union (7/17/10)                                         |
| Chamber of Commerce of Hawaii (1/25/12)                                                                              | Hawaii Civil Defense (7/10/13)                                            |
| Chamber of Commerce Young Professionals (10/12/11)                                                                   | Hawaii Construction Financial Management Association (3/12/14)            |
| Chevron Hawaii (2/23/12; 3/1/12)                                                                                     | Hawaii Council on Economic Education (3/15/12)                            |
| Coldwell Banker Hawaii (8/2/11)                                                                                      | Hawaii County Boards of Review (5/15/09)                                  |
| Construction Financial Management Association (7/29/10; 4/7/09)                                                      | Hawaii Credit Union Accountants Association (12/17/10)                    |
| Council for Advancement and Support of Education (10/1/10)                                                           | Hawaii Developers Council (11/18/11; 7/30/10)                             |
| Damon Key Leong Kupchak Hastert (8/16/13)                                                                            | Hawaii Department of Labor and Industrial Relations (3/20/13)             |
| David Bello and Associates (5/6/14; 10/29/13; 3/26/13)                                                               | Hawaii Economic Association (4/5/12; 10/1/10; 3/26/09)                    |
| Distinctive Homes Hawaii (9/10/13; 8/14/12; 7/28/11)                                                                 | Hawaii Employers Council (4/19/11; 11/19/09)                              |
|                                                                                                                      | Hawaii Government Employees Association (10/14/11, October-November 2012) |
|                                                                                                                      | Hawaii Health Systems Corporation (11/9/12)                               |
|                                                                                                                      | <i>The Hawaii Independent Ideas Summit</i> (1/18/13)                      |

Hawaii Institute for Public Affairs (1/10/14; 1/15/13; 5/28/09)

Hawaii Island Realtors (7/18/13; 10/22/10)

Hawaii Land Use Commission (expert testimony, 3/16/12)

Hawaii Life (investor presentation, 5/18/12)

Hawaii Nature Conservancy (5/14/09)

Hawaii-Pacific Steel Framing Alliance (10/29/09)

Hawaii Pacific University EMBA/MBA program (7/29/09)

Hawaii Sheet Metal Workers Union (10/1/09)

Hawaii Social Science Association (5/4/09)

Hawaii Society of Business Professionals (5/14/11, 9/20/12)

Hawaii Society of CPA (11/30/11)

Hawaii State Bar Association (5/28/09; 4/20/09)

Hawaii State House of Representatives Republican Caucus (10/11/11)

Hawaii State Legislature House Finance/Senate Ways & Means Committees (12/18/13; 1/4/13; 1/9/12; 1/7/11; 1/5/10)

Hawaii State Legislature House and Senate Labor Committee Joint Informational Briefing (4/7/09)

Hawaii State Legislature Children and Youth Summit (10/11/13; 10/1/12)

Hawaii Transportation Association (8/22/13; 8/25/11; 8/26/10; 8/27/09)

Hawaii Union Builders (5/24/09)

Hawaii Venture Capital Association (5/23/13)

Hawaii Water Works Association (11/23-24/13)

Hawaii Workforce Development Council (2/24/11)

Hawaiian Tax Free Trust (10/25/13; 10/27/12; 10/4/11; 9/30/10; 9/22/09)

Healthcare Association of Hawaii (11/4/09)

Hilton Hotels and Resorts (9/27/11)

HiComp (10/21/09)

Honolulu Board of Realtors (1/31/13)

Honolulu Board of Realtors Central Region (7/10/13; 3/14/12; 3/9/11)

Honolulu Board of Realtors East Oahu Region (3/6/14; 2/7/13; 3/1/12; 2/3/11; 4/8/09)

Honolulu Board of Realtors Leeward Regional Group (3/19/14; 3/26/13; 3/21/12; 1/19/11, 10/17/12)

Honolulu Board of Realtors North Shore Region (3/13/14; 2/14/13; 8/9/12; 2/10/11; 9/10/09)

Honolulu Board of Realtors Windward Region (2/27/14; 1/21/13; 1/26/12; 1/27/11)

Honsador (8/20/13)

HUD National Conference on Affordable Housing in High-Cost Metropolitan Areas (9/11/12)

HUD Rural Community Assistance Corporation (5/13/14)

*Insights on PBS Hawaii* (9/13/12; 2/23/12)

Institute for Internal Auditors (9/20/11)

International Brotherhood of Electrical Workers Local 1260 (4/2/09)

International Council of Shopping Centers (6/18/09)

Investors Group (Canada) (4/10/14)

Iolani School Economic Forum (4/1/09)

IREM/CCIM/BOMA (1/22/14; 1/23/13, 1/27/12, 1/13/11, 1/22/10)

Island Wealth Management (2/4/14)

Ka Ipu Kukui Fellows (3/17/14)

Kahala Associates (3/5/14; 11/8/13; 11/15/12; 11/18/11; 11/23/10)

Kahala Business Association (6/14/11; 4/21/09)

Kakaako Improvement Association (8/1/12)

Kaneohe Business Group (1/23/13; 4/27/11, 6/24/09)

Kauai County Affordable Housing Task Force (7/19/13)

Kauai Board of Realtors (7/9/13; 6/28/12; 8/31/11; 7/15/10; 8/7/09)

Kona Board of Realtors (10/28/11; 10/29/10)

Lambda Alpha Institute (5/27/11)

Land-O-Lakes Purina Feeds (6/14/11)

Lee Financial Group (9/22/10)

Maui Business Brainstormers (2/8/13)

Masonry Institute of Hawaii (1/20/10)

McDonald's of Hawaii (9/29/09; 9/28/10)

Mortgage Bankers Association of Hawaii (6/27/2013; 6/28/12; 6/23/11; 1/19/10; 5/12/09)

NAIOP (8/2/13; 6/29/12; 12/8/11)

National Association of Asian-American Professionals (1/30/13)

National Association of Realtors (11/14/09)

National Association of Women in Construction Honolulu Chapter (5/2/14)

North Shore Chamber of Commerce (5/17/12)

Oahu Credit Union Managers Association (2/21/13)

Oahu Filipino Community Council (6/12/11)

Old Republic Title (6/7/13; 6/10/13)

Outrigger Canoe Club (1/11/14)

Pacific Asia Travel Association/Travel and Tourism Research Association (2/6/14; 1/31/13; 2/28/12; 2/16/11)

Pacific Building Trade Expo (11/9/10)

Pacific Century Fellows (12/16/10)

Pacific Club Distinguished Speaker Series (5/8/14; 3/11/09)

PacPay Annual Meetings (5/5/2009)

Professional Women's Association (3/20/14)

Prudential Advantage Realty (9/16/11)

Prudential Locations (2/24/11; 2/18/10)

Realtors Association of Maui (7/21/13; 7/13/12; 7/8/11; 7/16/10)

Risk and Insurance Management Society (3/19/09)

Rotary Club of Honolulu (9/15/09)

Rotary Club of Pearlridge (1/21/11)

Royal Hawaiian Center (4/13/11)

SCORE (4/4/12)

Structural Engineers Association of Hawaii/Cement and Concrete Products Industry of Hawaii (10/16/09)

Team Praxis (9/18/09)

U.S. Forest Service Institute for Pacific Islands Forestry (10/20/10)

UH Federal Credit Union (11/5/11)

University of Hawaii Maui College (7/26/13)

United States Courts Ninth Circuit District Conference (4/9/09)

University of Hawaii at Hilo Speaker Series (9/26/12)

University of Wisconsin Alumni Association (5/27/09)

Urban Land Institute (2/13/13; 12/13/10, 12/2/09)

Waipahu Clubhouse (10/11/13)

West Hawaii Association of REALTORS (11/1/13)

West Oahu Economic Development Association (9/22/11)

Western States' Bar Conference (3/27/09)

Western States Petroleum Association (11/10/11; 10/15/09)

World Presidents Organization Hawaii Chapter (9/6/12)

Yale Class of 1951 Reunion (10/15/09)

Young Democrats of Hawaii (8/23/11)

## **PROFESSIONAL AND OTHER AFFILIATIONS**

American Economic Association

American Finance Association

National Association for Business Economics (designated Certified Business Economist)

Hawaii Economic Association (board member (1988-2020) and President (1990-91))

Member, Hawaii Wood Utilization Team (2015-2020)

Member and Vice Chair, City and County of Honolulu Property Tax Advisory Commission (2011-12)

Member, Hawaii Long-Term Care Commission (2011)

Member and Chair, Hawaii Council on Revenues (State of Hawaii revenue forecasting body) (1992-2011)

Member, University of Hawaii School of Social Work Advisory Committee (2001-2008)

Member, American Bankers Association Economic Advisory Committee (2003-2006)

Member, Hawaii Public Television Foundation Board of Directors (during its privatization; late-1990s)