November 18, 2016

Oil and the Economy:

Adapting to a New Reality

A Joint Conference of the Federal Reserve Banks of Dallas and Kansas City







Q&A Discussion with Robert S. Kaplan

Moderator: James Hackett Riverstone Holdings LLC



Financial Sector 8:25 a.m. **Welcome Remarks** Chair: Michael Plante Robert S. Kaplan Federal Reserve Bank of Dallas Federal Reserve Bank of Dallas

Daniel Beltran Board of Governors of 8:30 a.m. **Opening Address** the Federal Reserve System Esther L. George

Federal Reserve Bank of Kansas City Gary R. Petersen EnCap Investments LP 9:15 a.m. Session I: Outlook for Global

Michael M. Coats Oil Markets Bank of Oklahoma Financial Corp. Chair: Martin Stuermer

> Federal Reserve Bank of Dallas 2:45 p.m. **Break** Adam Sieminski 3:00 p.m. Panel Discussion with Executives U.S. Energy Information

Moderator: Chad Wilkerson Administration Federal Reserve Bank of Kansas City Robert McNally Oklahoma City Branch The Rapidan Group

David A. Hager Amy Myers Jaffe Devon Energy Corp. University of California, Davis Hans Helmerich **Break** Helmerich & Payne Inc.

Martin S. Craighead **Session II: Oil and the Economy** Baker Hughes Inc. Chair: Nida C. Melek

Greg Armstrong Federal Reserve Bank of Kansas City Plains All American Pipeline LP James D. Hamilton

University of California, San Diego 4:00 p.m. **Closing Remarks** Fiona Greig Mine K. Yücel

JPMorgan Chase Institute Federal Reserve Bank of Dallas **James Diffley Troy Davig**

IHS Federal Reserve Bank of Kansas City

Noon Luncheon 4:05 p.m. **Adjourn**

10:30 a.m.

10:45 a.m.

Conference Bios

Greg Armstrong

Chairman and CEO

Plains All American Pipeline LP

Armstrong is chairman and CEO of Plains All American Pipeline LP, which engages in the transportation, storage, terminaling and marketing of crude oil, refined products and liquefied petroleum gas. He previously served as president, CEO and director of Plains Resources.

Armstrong is a member of the board of National Oilwell Varco and the National Petroleum Council, the advisory board of Cox School's Maguire Energy Institute at Southern Methodist University and the board of trustees of the Council on Alcohol and Drugs Houston.

He holds a bachelor's degree from Southeastern Oklahoma State University.

Daniel Beltran

Section Chief

Board of Governors of the Federal Reserve System

Beltran is section chief of the Global Capital Markets group in the International Finance Division at the Board of Governors of the Federal Reserve System. His team follows developments in international financial markets and conducts research related to private capital markets in both developed and developing economies. He previously worked as a senior financial analyst for Dixit Toga in Brazil, senior financial analyst for General Motors, Brazil, and as a quantitative analyst for Barclays Capital.

Beltran earned an MBA in finance from IBMED Business School in Sao Paulo, Brazil, a BA in economics from the University of Michigan, an MSc in applied economics and finance and a PhD in international economics from the University of California, Santa Cruz.

Michael M. Coats

Executive Vice President and Managing Director Bank of Oklahoma Financial Corp.

Coats is executive vice president and managing director of energy lending for Bank of Oklahoma Financial Corp., directly responsible for energy commercial lending offices in Tulsa, Oklahoma City, Denver, Houston and Dallas.

He is a member of the Oklahoma Independent Petroleum Association and the Independent Petroleum Association of America.

Coats earned a BS in mathematics from Oklahoma State University and an MBA from the University of Tulsa.

Martin S. Craighead

Chairman and CEO

Baker Hughes Inc.

Craighead is chairman and CEO of Baker Hughes Inc. Since joining Baker Hughes in 1986, Craighead has held technical and operational leadership responsibilities in the Americas and the Asia Pacific region. He previously served as group president of the drilling and evaluation business unit.

He is a former recipient of the C. Drew Stahl Distinguished Achievement Award from Pennsylvania State University.

Craighead earned a BS in petroleum and natural gas engineering from Pennsylvania State University and an International Executive MBA from Vanderbilt University.

Troy Davig

Senior Vice President

Federal Reserve Bank of Kansas City

Davig is senior vice president and director of research of the Federal Reserve Bank of Kansas City. He is the Kansas City Fed chief economic policy advisor and provides executive oversight for the Research division. His research focuses on monetary and fiscal policy. Davig has also published work on inflation, labor markets and banking issues.

He previously served as senior U.S. economist for Barclays Capital and as an assistant professor at the College of William & Mary.

Davig earned a BA in economics from the University of Colorado, Boulder, and a PhD in economics from Indiana University.

James Diffley

Senior Director

IHS

Diffley is senior director of IHS Economics' Consulting and Industry Services. From 1998 to 2013, he was

the chief economist of IHS Global Insight's U.S. Regional Services Group, with overall responsibility for U.S. Regional Services Group, the Regional Core Macroeconomic Service and the IHS Global Insight Real Estate and Construction Service. He is also responsible for customized consulting projects, which include long-term projections of cigarette consumption, analysis of the impact of changing oil prices on local economies, and the economic impacts of the investment and operations of various industries.

He served on the board of directors of the National Association of Business Economics.

Diffley earned a BA in mathematics and economics from State University of New York at Buffalo and an MA and a PhD in economics from State University of New York at Stony Brook.

Esther L. George

President and CEO

Federal Reserve Bank of Kansas City

George is president and CEO of the Federal Reserve Bank of Kansas City. In 2016, she is a voting member of the Federal Open Market Committee, which sets U.S. monetary policy.

George has more than 30 years of experience at the Kansas City Fed, primarily focused on regulatory oversight of nearly 200 state-chartered banks and 1,000 bank and financial holding companies in seven states. She was directly involved in the banking supervision and discount window lending activities during the banking crisis of the 1980s and post-9/11.

During the most recent financial crisis, she served as the acting director of the Federal Reserve's Division of Banking Supervision and Regulation in Washington, D.C. She hosts the Federal Reserve Bank of Kansas City's annual Economic Policy Symposium in Jackson Hole, Wyoming, which is attended by central bankers from around the world.

Fiona Greig

Director of Consumer Research

JPMorgan Chase Institute

Greig is the director of consumer research for the JPMorgan Chase Institute. She previously served as the deputy budget director for the city of Philadelphia from 2012–14 and an adjunct professor at the University of Pennsylvania. Greig also worked as a consultant at McKinsey & Company consulting public and social sector clients on strategy, operations and economic development.

In 2009, Greig started and ran Bank on DC, a financial inclusion program for the District of Columbia.

Her work on economic and public health has been published in journals such as the *American Economic Review* and *AIDS and Behavior*. Greig was named a Rising Talent by the Women's Forum for the Economy and Society.

She earned a BA from Stanford University and a PhD in public policy from Harvard University.

James Hackett

Partner

Riverstone Holdings LLC

Hackett is a partner at Riverstone Holdings LLC, a large private energy investment firm. Hackett previously served as the executive chairman of the board and former CEO of Anadarko Petroleum Corp., one of the world's largest independent oil and natural gas exploration and production companies. He also served as president and chief operating officer of Devon Energy Corp., as chairman, president and CEO of Ocean Energy, and chairman, chief executive officer and president of Seagull Energy Corporation. He has also served as president of the Energy Services division with Duke Energy and as executive vice president of Pan Energy. His energy experience includes positions in engineering, finance and marketing with NGC Corp., Burlington Resources and Amoco Oil Co.

Hackett is a director of Enterprise Products Partners LP, Fluor Corporation, National Oilwell Varco and Sierra Oil & Gas. He is a former chairman of the board of the Federal Reserve Bank of Dallas. He is a board member and former chairman of the Baylor College of Medicine and Rice University. He is also a former adjunct professor at Rice University's Jones Graduate School of Business.

He is a member of the Society of Petroleum Engineers and National Petroleum Council.

Hackett earned a BS from the University of Illinois, a master's degree in theological studies and an MBA from Harvard University.

David A. Hager

President and CEO

Devon Energy Corp.

Hager is president, CEO and member of the board of Devon Energy Corp., one of the nation's largest independent oil and natural gas producers. From 2007-09, Hager served on the board as executive vice president of exploration and production. He later served as chief operating officer.

Hager has served in a number of roles in the gas and oil business, including a geophysicist with Mobil Corp. and managing new projects with Oryx Energy. While at Kerr-McGee, Hager served as the company's chief operating officer until the company was acquired by Anadarko Corp. in 2006.

In 2015, Hager was elected to the board of directors of the American Petroleum Institute. He is a director of EnLink Midstream Partners and EnLink Midstream LLC, as well as the American Exploration and Production Council.

He earned a BS in geophysics from Purdue University and an MBA from Southern Methodist University.

James D. Hamilton

Professor

University of California, San Diego

Hamilton is a professor of economics at the University of California, San Diego. He has previously taught at Harvard University and the University of Virginia.

His research in econometrics, business cycles, monetary policy and energy markets has been cited by more than 40,000 other studies. His graduate textbook on time series analysis has sold over 50,000 copies and has been translated into Chinese, Japanese and Italian. He also contributes to *Econbrowser*, a popular economics blog.

Academic honors include election as a fellow of the Econometric Society, research associate with the National Bureau of Economic Research, receipt of the Best Paper Award for 2010–11 from the International Institute of Forecasters and 2014 award for Outstanding Contributions to the Profession from the International Association for Energy Economics. He has been a visiting scholar at the Board of Governors of the Federal Reserve System in Washington, D.C., as well as the Federal Reserve Banks of Atlanta, Boston, New York, Richmond and San Francisco.

He received a PhD in economics from the University of California, Berkeley.

Hans Helmerich

Chairman

Helmerich & Payne Inc.

Helmerich is chairman of the board of Helmerich & Payne Inc. He previously served as CEO for 25 years.

Helmerich is a board member of Atwood Oceanics and Cimarex Energy and is also a trustee of

Northwestern Mutual Life. He is a board member of the Gilcrease Museum National Board; Indian Nations Council; Boy Scouts of America; the Nature Conservancy, Oklahoma Chapter; Oklahoma Business Education Coalition; and Tulsa Community Foundation.

He earned a degree from Dartmouth College and completed Harvard Business School's Program for Management Development.

Amy Myers Jaffe

Executive Director, Energy and Sustainability University of California, Davis

Jaffe serves as executive director for energy and sustainability at the University of California, Davis, and senior adviser on energy and sustainability at the office of the chief investment officer, University of California Regents. She is also a global fellow at the Woodrow Wilson International Center for Scholars.

Jaffe previously served as founding director of the Energy Forum at Rice University James A. Baker III Institute for Public Policy. Jaffe is co-author of *Oil, Dollars, Debt and Crises: The Global Curse of Black Gold* with Mahmoud El-Gamal and co-editor of *Natural Gas and Geopolitics from 1970 to 2040*.

She currently serves as a member of the U.S. National Petroleum Council and chair of the Global Agenda Council on the Future of Oil and Gas with the World Economic Forum. Jaffe was awarded the Senior Fellow award from the U.S. Association for Energy Economics in 2015 for her career contributions to the organization and to the field of energy economics.

Robert S. Kaplan

President and CEO

Federal Reserve Bank of Dallas

Kaplan has served as the president and CEO of the Federal Reserve Bank of Dallas since Sept. 8, 2015. He represents the Eleventh Federal Reserve District on the Federal Open Market Committee in the formulation of U.S. monetary policy and oversees the 1,200 employees of the Dallas Fed.

Kaplan was previously the Martin Marshall Professor of Management Practice and a senior associate dean at Harvard Business School. Prior to joining Harvard in 2006, Kaplan was vice chairman of The Goldman Sachs Group Inc. He is the author of several books on leadership and management.

He serves as co-chairman of Project A.L.S. and cochairman of the Draper Richards Kaplan Foundation, a global venture philanthropy firm that invests in developing nonprofit enterprises dedicated to addressing social issues. He is also a board member of Harvard Medical School.

Kaplan holds a bachelor's degree in business administration from the University of Kansas and a master's degree in business administration from Harvard Business School.

Robert McNally

Founder and President

The Rapidan Group

McNally is founder and president of the Rapidan Group, an independent energy consulting and market advisory firm in Washington, D.C.

McNally served as special assistant to the president on the National Economic Council and in 2003, served as senior director for international energy on the National Security Council.

McNally is the author of the forthcoming book, Crude Volatility: The History and the Future of Boom-Bust Oil Prices. He has authored articles in Foreign Affairs (co-authored essay with Michael Levi, July/August 2011) and been interviewed by CNN, Bloomberg News, Fox Business, The Economist, Financial Times, the Washington Post, National Journal, Platts Energy Week TV, PBS' Great Decisions in Foreign Policy series and Aviation Daily.

He is a member of the National Petroleum Council and a nonresident fellow at Columbia University's Center on Global Energy Policy.

McNally earned a BA/BS in international relations and political science from American University and an MA in international economics and American foreign policy from Johns Hopkins Paul H. Nitze School of Advanced International Studies (SAIS).

Nida C. Melek

Economist

Federal Reserve Bank of Kansas City

Melek is an economist at the Federal Reserve Bank of Kansas City.

Her fields of research are macroeconomics and international economics with a focus on energy. Melek's research interests include the impact of government policies on productivity in developing countries, oil price volatility and the connections between macroeconomy and energy. She provides

economic analysis and policy briefings on energy to the Bank's president in preparation for Federal Open Market Committee meetings.

She earned a BS in mathematics from Middle East Technical University, Turkey, an MA in economics from Bilkent University, Turkey, and a PhD in economics from the University of California, Los Angeles.

Gary R. Petersen

Manager Partner and Co-Founder

EnCap Investments LP

Petersen is managing partner and co-founder of EnCap Investments LP, an investment manager and leading provider of private equity capital to the upstream and midstream sectors of the oil and gas industry. Prior to the formation of EnCap in 1988, Petersen was a senior vice president and manager of the Corporate Finance division of the Energy Banking group for Republic Bank Corporation from 1985 to 1988.

He has served as executive vice president and member of the board of directors of Nicklos Oil & Gas Company in Houston, and as a group vice president in the Petroleum and Minerals division of Republic Bank Dallas. In the U.S. Army, Petersen served as a first lieutenant in the Finance Corps and as an Army officer in the Army Security Agency.

Petersen serves on the board of multiple EnCap portfolio companies and is a member of the board of Plains All American, Inc. (NYSE: PAA) and EV Energy Partners (NASDAQ: EVEP). He is a member of the Independent Petroleum Association of America, the Houston Producers' Forum and the Petroleum Club of Houston.

He earned a BBA and an MBA in finance from Texas Tech University.

Michael Plante

Senior Research Economist

Federal Reserve Bank of Dallas

Plante is a senior research economist of energy at the Federal Reserve Bank of Dallas. He is also the project manager for the Dallas Fed Energy Survey.

His research interests include macroeconomics, monetary policy in developed and developing countries, and the connections between energy prices and the macroeconomy. His most recent research has focused on the macroeconomic impacts of fuel subsidies.

He previously served as assistant professor at Ball State University.

Plante earned a PhD in economics from Indiana University.

Adam Sieminski

Administrator

U.S. Energy Information Administration

Sieminski is the eighth administrator of the U.S. Energy Information Administration (EIA). The EIA is responsible for collecting, analyzing and disseminating independent and impartial energy information to promote sound policymaking, efficient markets and public understanding of energy and its interaction with the economy and the environment. EIA also prepares analyses and special reports on topics of current interest.

He previously served as senior director for energy and environment on the staff of the National Security Council. Prior to his government service, he had a 40-year career in the private sector as a senior energy analyst for several financial institutions.

Sieminski has served in leadership positions for the International Association for Energy Economics and U.S. Association for Energy Economics. He also has acted as a senior adviser to the Energy and National Security Program at the Center for Strategic and International Studies. In 2006, he was appointed as a member of the National Petroleum Council, a federally chartered and privately funded advisory group to the U.S. Secretary of Energy.

He is a member of the Washington, D.C., investment professional society and holds the Chartered Financial Analyst (CFA) designation.

Sieminski earned a BS in civil engineering and an MPA from Cornell University

Martin Stuermer

Research Economist

Federal Reserve Bank of Dallas

Stuermer is a research economist at the Federal Reserve Bank of Dallas. His research interests are macroeconomics with a focus on energy, commodities and natural resources. He studies the fluctuations and trends in energy and mineral commodity markets.

Stuermer earned a PhD in economics from the University of Bonn.

Chad Wilkerson

Vice President

Federal Reserve Bank of Kansas City Oklahoma City Branch

Chad Wilkerson is branch executive of the Kansas City Fed's Oklahoma City Branch office. In this role, he serves as the Bank's lead officer and regional economist in the state of Oklahoma. Wilkerson is responsible for recruiting and working with the branch's board of directors and for briefing the Kansas City Fed's president—a member of the Federal Open Market Committee—on economic activity in the state. His research focuses on trends in the energy and manufacturing sectors of the Tenth Federal Reserve District, and he also supervises several business surveys for the Kansas City Fed. Wilkerson has been with the Federal Reserve since 1998. He was appointed Oklahoma City Branch Executive in January 2006.

Wilkerson serves on the advisory board of trustees of the United Way of Central Oklahoma and is a member of the Economic Club of Oklahoma and National Association of Business Economists.

He holds a master's degree from the University of Chicago and a bachelor's degree from William Jewell College.

Mine K. Yücel

Senior Vice President and Director of Research
Federal Reserve Bank of Dallas

Yücel, senior vice president and director of research at the Dallas Fed, has been with the Bank since 1989. She is an adviser to the Dallas Fed president on regional and energy issues and has published numerous articles on energy and regional growth.

Yücel serves in leadership roles in economic and energy organizations, including the the executive boards of the National Association for Business Economics and Global Interdependence Center, and the University of Texas at Dallas Energy Board.

Before joining the Dallas Fed, Yücel was an assistant professor of economics at Louisiana State University.

She earned a BS and an MS in mathematics from Bogazici University in Istanbul, Turkey, and a PhD in economics from Rice University in Houston.