

# Advanced Macroeconomics 3 cod 40408

## Econometric Methods for Finance and Macroeconomics

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The objective of this course is to illustrate how VAR models can be applied to empirical models in finance and macroeconomics. We first illustrate how present value models are constructed and why they constitute a framework for integrating macroeconomic information in the determination of asset prices. We shall then illustrate the empirics by considering in turn, the Bond Market, the Stock Market the relation between Wealth and Consumer Behaviour and the analysis of the macroeconomic impact of fiscal policy. Data and draft of the MATLAB and E-VIEWS programme for replication are made available here, as well as a reading list for the discussion.

**EXAM:** The exam consists in an essay that each student has to write individually. Each essay should be based on one of the articles included in the reading list. Different students are not allowed to work on the same article. Each essay should contain three compulsory parts: 1) Replication of the main results in the original article 2) A referee's report on the article 3) A proposal, based on 1) and 2), for further research on the topic of the article.

1. [VARs and CVARs in macroeconomics and finance.](#)
2. [Models for the Term Structure](#)
3. Consumption and Asset Price Fluctuations, long-run risk
4. [Present Value Models for the Stock Market](#)
5. [The Econometric Analysis of Fiscal Policy](#)

#### 1. VARs and CVARs in macroeconomics and finance.

VARs and CVARs

Using VAR models

Identification and Description of VAR models

From VAR Innovations to Structural Shocks

Structural Shocks identified independently from VARs

Cointegration and Multivariate Trend-Cycle Decompositions

Global VARs

VARs in Finance

VARs in Macro

[LECTURE NOTES](#), [LECTURE NOTES \(P-T DECOMP\)](#)

#### READINGS

Campbell J.Y., A.W. Lo and A.C.MacKinley (1997) The Econometrics of Financial Markets, Princeton University Press, Chapter 7

[Campbell J.Y. and R.J. Shiller \(1987\) "Cointegration and Tests of Present Value Models", Journal of Political Economy, 95, 5, 1062-1088](#)

Cochrane J. (2000) "Asset Pricing", Princeton University Press, Chapter 20

Cochrane J.(1994) "[Permanent and Transitory Components of GNP and Stock Prices](#)", the Quarterly Journal of Economics, 109, 1, 241-26

Campbell J.Y. and R.J. Shiller(1988) "[Interpreting Cointegrated Models](#)" NBER W.P. 2568

[Garratt A., D. Robertson and S.Wright\(2003\) "Permanent vs Transitory Components and Economic Fundamentals"](#), mimeo

Lettau M. and S.Ludvigson(2004) [Understanding Trend and Cycle in Asset Values: Reevaluating](#)

[the Wealth Effect on Consumption](#). *American Economic Review*, 2004, March, Volume 94, No. 1, pages 276-299.

## EXERCISE 1

### DATA AND CODES

#### **2. Models for the Term Structure**

Single Equation Evidence on the Expectations Theory  
The Present Value approach  
Factor Models of the Term Structure  
Ad hoc Factor Models  
No Arbitrage Factor Models  
Affine Term Structure Models

### LECTURE NOTES, SLIDES

#### **READINGS**

Piazzesi M. and A. Ang (2003) [A No-Arbitrage Vector Autoregression of Term Structure Dynamics with Macroeconomic and Latent Variables](#)" *Journal of Monetary Economics* Volume 50, Issue 4, May 2003, 745-7

Ang A., Piazzesi M. and M. Wei (2003) "What does the yield curve tell us about GDP growth?" paper available from <http://www.columbia.edu/~aa610>

Campbell J., A. Lo and C. MacKinlay, 1997, *The Econometrics of Financial Markets*, Princeton University Press: Princeton

Campbell, J., and Shiller, R. "Cointegration and Tests of Present Value Models" *J.P.E.* 95 (1987) 1062-1088

Chen R.R. and L. Scott, (1993) "Maximum Likelihood estimation for a multi-factor equilibrium model of the term structure of interest rates" *Journal of Fixed Income*, 3, 14-31.

Cochrane, JH. 2005. *Asset Pricing*, revised ed. Princeton University Press, Princeton,

[Cochrane J. and M. Piazzesi \(2008\) "Decomposing the Yield Curve"](#)

Cochrane, JH and M Piazzesi. 2005. Bond Risk Premia. *American Economic Review* 95, 138—160

[Diebold and Li \(2005\) "Forecasting the Term Structure of Government Bond Yields"](#), *Journal of Econometrics*

Diebold F.X., Piazzesi M and G.D. Rudebusch (2005) "[Modeling Bond Yields in Finance and Macroeconomics](#)", [Appendix](#)

[Diebold and Li \(2005\) "Forecasting the Term Structure of Government Bond Yields"](#), *Journal of Econometrics*

Gürkaynak, RS, B Sack, and JH Wright. 2006, *The US Treasury Yield Curve*

[Ireland P. \(2015\) "Bond Risk Premia, Monetary Policy and the Economy" mimeo](#)

[Nelson C.R. and A.F. Siegel \(1987\) "Parsimonious modelling of yield curves"](#), *Journal of Business*, 60, 473-489

[Shiller, R. \(1979\) "The Volatility of Long Term Interest Rates and Expectations Models of the Term Structure" \*Journal of Political Economy\*, 87, 1190-1219](#)

[Thornton D. \(2003\) "Predicting the Short-Term Rate: Some Good and Bad News for the Expectations Hypothesis of the Term Structure of Interest Rates"](#), mimeo Federal Reserve Bank of St. Louis

[EViews programmes for computing the NS interpolant](#)

[EXERCISE 2, DATA AND CODES EXERCISE 3, DATA AND CODES](#)

[EXTENDED SOLUTION OF EXERCISE 3 \(by A. Gobbi\)](#) [EXTENDED SOLUTION OF EXERCISE 3 \(by Haoxi Yang\)](#)

### 3. Consumption and Asset Price Fluctuation, long-run risk

Consumption and Asset Pricing Puzzles

Long-run Consumption Growth

Stock returns and Cointegration between Consumption and Wealth

Consumption and Present Value Models for the Stock Market

Long-Run Risk

#### LECTURE NOTES

#### READINGS:

Bansal R.(2007) [Long-run risk and Financial Markets](#), Federal Reserve Bank of St Louis

Bansal Yaron (2002) [Risk for the Long-run: a Potential Resolution of asset pricing puzzles](#)

Bansal, Dittmar and Kiku (2007) "[Cointegration and Consumption risk in Asset Returns](#)" Review of Financial Studies

Beeler J and J.Campbell (2009) "[The long-run risks model and aggregate asset prices: an empirical assessment](#)"

Campbell J.Y., A.W. Lo, and A.C. MacKinlay(1997) "The Econometrics of Financial Markets", Princeton University Press

Cochrane J.(2001) "Asset Pricing", Princeton University Press

Cochrane J.(2005) [Financial Markets and the Real Economy](#), mimeo Chicago GSB.

Cochrane J.Y. and Hansen L.(1992) "[Asset Pricing Explorations for Macroeconomics](#)", NBER Macroeconomics Annual, vol.7, pp 115-165.

Epstein L. and S.Zin,(1989), "Substitution, Risk Aversion and the Temporal Behaviour of Consumption and Asset returns: A theoretical framework" *Econometrica*, 57, 937-968

Hansen L.P., J.C. Heaton and N.Li(2004) "Consumption Strikes Back?",

Julliard P.(2004) "Labor Income Risk and Asset Returns", Job Market Paper, Princeton University  
[M.Lettau and S.Ludvigson \(2001\) "Consumption, Aggregate Wealth and Expected Stock Returns", Journal of Finance, 56,3, 815-854](#)

Parker J.A and C.Julliard(2003) "Consumption Risk and Cross-Sectional Returns", NBER Working Paper 9538

Sargent T (2007) [Commentary to Bansal, Long-run risk and Financial Markets](#), Federal Reserve Bank of St Louis

#### EXERCISE 4

#### DATA AND CODES

### 4. Present Value Models for the Stock Market and the Term Structure of Stock Market Risk

#### (a) the Dynamic Dividend Growth model

Campbell, John Y., and Robert Shiller, 1988, [Stock Prices,Earnings, and Expected Dividends](#), *Journal of Finance*, 43, 661-676.

Campbell, John Y., and Robert Shiller, 1988, [The Dividend-Price Ratio and Expectations of future Dividends and Discount Factors](#), *Review of Financial Studies*, 1:195-228

Campbell, John Y., and Robert Shiller, 1998 [Valuation Ratios and The Long-Run Stock Market Outlook](#), 1998, *Journal of Portfolio Management*

Campbell, John Y., and Robert Shiller, 2001 [Valuation Ratios and The Long-Run Stock Market Outlook, an update](#), Cowles Foundation DP 1295

Cochrane John, 2006, [The dog that did Not Bark: a Defense of return Predictability](#), NBER WP 12026

Fama, Eugene and Kenneth R. French, 1988, [Dividend Yields and Expected Stock Returns](#), *Journal of Financial Economics*, 22, 3-26.

Robert J. Shiller. "[Do Stock Prices Move Too Much to be Justified by Subsequent Changes in Dividends?](#)" American Economic Review 71 (June 1981), 421-436. 21

#### **(b) Cointegration and the Dynamic Dividend Growth Model**

Campbell JY and R. Shiller (1987) "[Cointegration and Present Value Models](#)" Journal Of Political Economy, 95, 1062-1088

#### **(c) The Econometrics of Stock Market Predictability**

Boudoukh, Jacob, Richardson, Matthew and Robert F. Whitelaw, 2008, "[The Myth of Long-Horizon Predictability](#)", The Review of Financial Studies, 21, 4, 1577-1605.

Campbell, John Y., and Samuel B. Thomson, 2008, "[Predicting Excess Stock Returns Out of Sample: Can Anything Beat the Historical Average?](#)", The Review of Financial Studies, 21, 1509-1531.

Goyal, Amit, and Ivo Welch, 2008, "[A Comprehensive Look at the Empirical Performance of Equity Premium Prediction](#)". The Review of Financial Studies, 21-4, 1455-1508.

Ribeiro R.M.(2002) "[Predictable dividends and returns](#)" mimeo, GSB, Univeristy of Chicago.

Pesaran M.H. and A.Timmermann (1995) "[Predictability of Stock Returns: Robustness and Economic Significance](#)", Journal of Finance, 50, 4, 1201-1228

Valkanov, R., 2003. "[Long-horizon regressions: Theoretical results and applications](#)". Journal of Financial Economics 68, 201--232. 33

#### **(d) Cointegration between Dividends and Prices**

Boudoukh, J., Michaely, R., Richardson, M. and M. Roberts, 2007, "[On the Importance of Measuring Payout Yield: Implications for Empirical Asset Pricing](#)", Journal of Finance.

Favero CA, A.Gozluklu and A.Tamoni(2010) "[Demographic Trends, the Dividend-Price Ratio and the Predictability of Long-Run Stock Market Returns](#)"

Lettau, Martin, and Stijn Van Nieuwerburgh, 2008, "[Reconciling the Return Predictability Evidence](#)", Review of Financial Studies, 21, 4, 1607-1652.

#### **(e) Inflation and the FED model of the Stock Market**

Asness C.(2003) "[Fight the Fed model: the relationship between future returns and stock and bond market yields](#)", Journal of Portfolio Management, Fall 2003

John Y. Campbell and John Ammer (1993), "[What Moves the Stock and Bond Markets? A Variance Decomposition for Long-Term Asset Returns](#)," Journal of Finance 48, 337.

John Y. Campbell and Tuomo Vuolteenaho (2004), "[Inflation Illusion and Stock Prices](#)" (Cambridge: NBER Working Paper 10263)

Lander J., Orphanides A. and M.Douvogiannis(1997) "[Earning forecasts and the predictability of stock returns: evidence from trading the S&P](#)" Board of Governors of the Federal Reserve System, <http://www.bog.frb.fed.org>

Franco Modigliani and Richard Cohn (1979), "[Inflation, Rational Valuation, and the Market](#)," Financial Analysts' Journal.

Thomas J.(2006) "[Don't Fight the FED Model](#)", Yale University School of Management Discussion Paper.

#### **(f)Cointegration and Consumption based models of stock-market returns**

Lettau, Martin, and Sydney Ludvigson, 2005, "[Expected Returns and Expected Dividend Growth](#)", Journal of Financial Economics, 76, 583-626

Lettau, M., and S. Ludvigson. "[Consumption, Aggregate Wealth and Expected Stock Returns](#)." Journal of Finance, 56 (2001), 3, 815-849.

#### **(g) An Alternative Approach**

Ferreira and Santa Clara (2011) "[Forecasting stock market returns: The sum of the parts is more than the whole](#)." Journal of Financial Economics, forthcoming.

#### **(h) The Term Structure of risk**

Van Binsbergen J.H. and R.Kojnen, 2009, [Predictive Regression:a Present Value Approach](#), mimeo  
Campbell, J., and L. Viceira, (2005), "[The term structure of risk-return trade-off](#)"  
Campbell, J., and L. Viceira, (2004), "[Long-horizon mean-variance analysis. A Primer](#)"  
Favero CA and Tamoni A.(2010) "[Demographics and the Term Structure of Stock Market Risk](#)"  
Pastor and Stambaugh(2008) "[Are Stock less volatile in the long-run?](#)"  
Pastor and Stambaugh(2009) "[Predictive Systems. Living with imperfect predictors](#)" [Technical Appendix](#)

[NOTES, NOTES on Returns' Predictability and the TS of Stock Market Risk](#)  
[REPLICATION PS](#)  
[EXERCISE 5, CODES, DATA](#)

## 5. The Econometrics of Fiscal Policy

[SLIDES](#)

[Favero C. and M.Karamisheva\(2015\) What Do We know about Fiscal Multipliers? SLIDES](#)

Alesina A., Favero C.A. and F.Giavazzi (2015) "The Output effect of Fiscal Consolidation Plans", *Journal of International Economics*  
Auerbach, Alan, and Yuriy Gorodnichenko (2012), "Fiscal Multipliers in Recession and Expansion." in *Fiscal Policy after the Financial Crisis*, edited by Alberto Alesina and Francesco Giavazzi (Chicago: University of Chicago Press).  
Blanchard, Olivier and R. Perotti [2002]: "An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output", *Quarterly Journal of Economics*  
Caldara D.(2011) "[The Analytics of SVAR:A unified framework to measure fiscal multipliers](#)"  
Chari, V.V., P. Kehoe, and E. McGrattan, [Are structural VARs with long run restrictions useful in developing business cycle theory?](#), Fed of Minneapolis Staff Report, May 2007  
Christiano, L., M. Eichenbaum, and R. Vigfusson, [Assessing structural VARs](#)", NBER Macroeconomics Annual, 2006, 1-72  
Dai Q. and T.Philippon (2004) "[Fiscal Policy and the Term Structure of Interest Rates](#)", mimeo  
Favero C.A., Giavazzi F.(2011) "[Measuring Tax Multipliers: the narrative Method in fiscal VARs](#)" forthcoming the American Economic Journal, Economic Policy  
Fernandez-Villaverde, J. et al, [A,B,C's \(and D's\) for understanding VARs](#)", AER, June 2007, 1021-1026  
Chung Hess and E.Leeper [2007]: "[What has Financed Government Debt?](#)" NBER WP 13425  
Jordà, Oscar (2005), "Estimation and Inference of Impulse Responses by Local Projections", *American Economic Review*, 95(1): 161-182  
Jordà, Òscar and Alan M. Taylor (2013), "[The Time for A](#)