

# Sebastian Fossati

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## Contact Information

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Department of Economics, University of Washington, Box 353330, Seattle, WA 98195-3330, USA.  
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## Education

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Ph.D. Economics, University of Washington, 2010 (expected).

- Dissertation Title: “Unit Root Tests, Structural Change, and Stationary Covariates”.
- Committee: Eric Zivot (Chair), Charles Nelson, Chang-Jin Kim, and Richard Startz.

M.A. Economics, University of Washington, 2006.

Licenciado en Economía, Universidad de la República (Uruguay), 2003.

## Fields of Concentration

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Research: Time Series Econometrics, Applied Econometrics, and Empirical Macroeconomics.

Teaching: Econometrics, Statistics, and Macroeconomics.

## Refereed Publications

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“Regional and International Market Integration of a Small Open Economy”, with F. Lorenzo and C.M. Rodríguez. *Journal of Applied Economics*, Vol X, No. 1 (May 2007), 77-98.

## Working Papers

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“Dating U.S. Business Cycles with Macro Factors”.

“Unit Root Testing with Stationary Covariates and a Structural Break in the Trend Function”, submitted.

“Covariate Unit Root Tests with Good Size and Power”, submitted.

“Break Fraction Estimation in Covariate Unit Root Tests with a Structural Break” (manuscript in progress).

“Forecasting U.S. Recessions with Macro Factors” (in progress).

## Teaching Experience

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Instructor, University of Washington:

- Econometric Applications (Autumn 09, Winter 10).
- Intermediate Macroeconomics (Summer 05, Winter 07, Spring 07, Autumn 07).

Teaching Assistant, University of Washington:

- Introductory Microeconomics (Autumn 04, Winter 05, Autumn 05, Winter 06).
- Introductory Macroeconomics (Spring 05).
- Graduate Microeconomics I (Autumn 06).

Teaching Assistant, Universidad de la República (Uruguay):

- Probability Models and Inference (2001 - 2004).
- Probability and Mathematical Finance (2002 - 2004).
- Econometrics I and II (2003 - 2004).

## Research and Professional Experience

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Intern at the Portfolio Strategies Group, Russell Investment Group. Tacoma (WA), Summer 2007.  
Research Assistant for Professor Yu-chin Chen. University of Washington, Spring 2006.  
Research Assistant at Arthur Andersen Uruguay (CPA Consultores). Uruguay, 2001.  
Intern at the Department of Monetary Analysis, Central Bank of Uruguay. Uruguay, 2000.

## Conference Presentations

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“Dating U.S. Business Cycles with Macro Factors”  
- NBER - NSF Time Series Conference, 2009, University of California, Davis, USA.  
“Unit Root Testing with Stationary Covariates and a Structural Break in the Trend Function”  
- Latin American Meeting of the Econometric Society (LAMES), 2008, Rio de Janeiro, Brazil.  
- Econometric Society European Meeting (ESEM), 2009, Barcelona, Spain.  
“Regional and International Market Integration of a Small Open Economy”  
- LACEA 2003, Universidad de las Américas, Puebla, México.  
- International Conference in Economics VII, ERC / METU, 2003, Ankara, Turkey.  
- Latin American Meeting of the Econometric Society (LAMES), 2003, Panama City, Panama.  
- Jornadas de Economía 2003, Central Bank of Uruguay.

## Referee

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*Journal of Applied Economics, Oxford Bulletin of Economics and Statistics.*

## Honors and Awards

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2008/09 Grover and Creta Ensley Fellowship, University of Washington.  
2007/08 Buechel Memorial Fellowship, University of Washington.  
2004/08 Department of Economics four-year guaranteed funding, University of Washington.

## References

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### **Professor Eric Zivot (Chair).**

Department of Economics, University of Washington, Box 353330, Seattle, WA 98195-3330, USA.  
Phone: +1 206 543 6715  
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### **Professor Charles R. Nelson.**

Department of Economics, University of Washington, Box 353330, Seattle, WA 98195-3330, USA.  
Phone: +1 206 685 1382  
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### **Professor Chang-Jin Kim.**

Department of Economics, University of Washington, Box 353330, Seattle, WA 98195-3330, USA.  
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Email: changjin@u.washington.edu

### **Professor Eugene Silberberg (teaching reference).**

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## Other Skills

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Econometric software: Matlab, R, S-Plus, EViews, and Gauss.

Relevant Graduate Coursework: Macroeconomics I-II-III; Microeconomics I-II-III; Econometrics I-II; Macro-Econometric Theory; Econometric Theory I-II; Time Series (Statistics Department); Capital Market Theory; Asset Pricing (Financial Research); Derivatives: Theory, Statistics, and Computation; Computational Economics; International Finance; Stochastic Calculus for Option Pricing; Computer Programming I.

Languages: English, Spanish, Portuguese.

## Personal

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Membership: Econometric Society.

Citizenship: Uruguay.

U.S. Visa Status: F-1.

## Working Papers - Abstracts

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### **“Dating U.S. Business Cycles with Macro Factors”**.

*Abstract* - I propose a framework for the assessment of current business conditions using a factor-augmented autoregressive probit model where the dependent variable is the state of the economy as defined by the NBER. Results show that latent common factors estimated by principal components analysis from a large number of macroeconomic series have important predictive power for NBER recession dates. The models generate in-sample recession probabilities that almost perfectly reproduce NBER dates. A pseudo out-of-sample forecasting exercise, designed to approximate real time conditions, shows that predicted recession probabilities consistently rise during subsequently declared NBER recession dates. With the appropriate classification rule, the models exhibit good performance as real time dating algorithms. The latent variable in the probit model can be interpreted as an index of business conditions which is used to assess the strength of an expansion or the depth of a recession.

### **“Unit Root Testing with Stationary Covariates and a Structural Break in the Trend Function”, submitted.**

*Abstract* - I consider the issue of testing for a unit root allowing for a structural break in the trend function. The focus is on the construction of more powerful tests using the information in relevant multivariate data sets. The proposed test adopts the GLS detrending approach and uses correlated stationary covariates to improve power. As it is standard in the literature, the break date is treated as unknown. I derive the asymptotic distributions of the test and a set of asymptotic and finite sample critical values are tabulated. Asymptotic local power functions show that power gains can be large. Finite sample results show that the test exhibits small size distortions and power that can be far beyond what is achievable by univariate tests.

### **“Covariate Unit Root Tests with Good Size and Power”, submitted.**

*Abstract* - I consider the selection of the truncation lag using information criteria for covariate unit root tests. Simulation results show that standard information criteria such as the BIC or the AIC can result in tests with large size distortions. In the case of the test proposed by Elliott and Jansson (2003), a modified information criterion for cointegration tests introduced by Qu and Perron (2007) yields big size improvements and powerful tests. The selection rule suggested by Pesavento (2006) yields tests with small size distortions only for a certain class of models. A simple modification yields tests with improved power.

**“Regional and International Market Integration of a Small Open Economy”, with F. Lorenzo and C.M. Rodríguez. *Journal of Applied Economics*, Vol X, No. 1 (May 2007), 77-98.**

*Abstract* - This paper studies the relationship between a set of commodity prices in a small open economy like Uruguay and the corresponding international and regional prices. The empirical methodology used is the multivariate cointegration procedure based on maximum likelihood methods introduced by Johansen (1988) as well as estimations of half-life persistence indicators. In the case of cereals, the evidence suggests strong market integration between domestic and regional markets and, to some extent, also to international markets. Therefore, directly or indirectly, domestic prices are connected with the efficient price signal. Results for beef indicate strong market integration between the domestic market and the regional market, which is not so well connected with international markets. Thus, domestic price appears to be linked to a regional price that is not linked to the efficient price signal.