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DATE OF BIRTH: 1 August 1975   **SEX**:M   **CITIZENSHIP**: Brazilian and German

PRE-DOCTORAL STUDIES:
2000 - 2001   MSc in Econometrics and Mathematical Economics, LSE
1997 - 1999   MA in Economics, Getulio Vargas Foundation (FGV), Brazil
1993 - 1998   BA in Economics, Federal University of Rio de Janeiro (UFRJ), Brazil

DOCTORAL STUDIES: London School of Economics

2001 – present   PhD in Economics

EXPECTED COMPLETION DATE: June 2007

THESIS ADVISOR AND REFERENCES:

Professor Oliver Linton (Advisor)
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1. Professor John van Reenen
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2. Professor David Webb
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3. Dr Alex Michaelides
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DESIRED TEACHING AND RESEARCH:

<u>Research</u>:

   Primary: Finance, Econometrics
   Secondary: Applied Microeconomics, Industrial Organization

<u>Teaching</u>:   Econometrics, Empirical Finance, Applied Industrial Organization

TEACHING EXPERIENCE:

<u>Instructor</u>
2006   Structural Estimation for Antitrust Practice, Brazilian Ministry of Justice
2002 – 2004 Introduction to GAUSS (PhD Economics), LSE
1999 – 2000 Statistics, Econometrics, Time Series (Undergraduate), IBMEC Business School, Brazil

<u>Teaching Assistant</u>
2003 – 2005 Econometrics (MSc Economics), LSE – Prof Nickell and Dr Hajivassiliou
2002 – 2003 Financial Econometrics (MSc Finance & Economics), LSE – Profs Linton and Connor
2001   Econometrics (Undergraduate, Summer School), LSE – Dr Schafgans
1999   Econometrics (PhD Economics), FGV – Prof Flôres
1994-1996 Calculus, Statistics, and Econometrics (Undergraduate), UFRJ

RELEVANT POSITIONS HELD:

2006 – present Research Assistant to Professor Oliver Linton
2001 – present Research Assistant, Financial Markets Group, LSE
2001 – present Member, STICERD Econometrics Group, LSE
2005 - present Research Assistant to Professor John van Reenen
2004 – present Consultant to the Brazilian Government on Structural Estimation for Antitrust
        Practice
2003 – 2005   Tutorial Fellow, Department of Economics, LSE
2002 – 2003   Tutorial Fellow, Department of Finance, LSE
1999 – 2000   Lecturer in Economics, IBMEC Business School

HONORS, SCHOLARSHIPS AND AWARDS:

2006   Journal of Applied Econometrics Young Scientist Award
2006   Mishio Morishima Award, STICERD-LSE
2005   Econometric Society Travel Award
2004   Young Statistician Award, Inter-American Statistical Institute
2001 - 2005 Scholarship for PhD studies, CNPq-Brazil
2002   Journal of Applied Econometrics Travel Award for Young Researchers
2000   Graduate Merit Award, London School of Economics
1999   Distinguished Faculty, IBMEC Business School Graduating Class
1997 - 1999 Scholarship for MA studies, CNPq-Brazil

LANGUAGES:

Fluent: English, Portuguese, German
Basic: Spanish

PRESENTATIONS:

Conferences:
2006   Econometric Society North American Summer Meetings, Minneapolis
              International Workshop on Spatial Econometrics and Statistics, Rome
2005   Econometric Society World Congress, London
              Air Transport Research Society Annual Meeting, Rio de Janeiro
2004   Semiparametrics in Rio, Rio de Janeiro
              Air Transport Research Society Annual Meeting, Istanbul
              Brazilian Finance Society Annual Meeting
              Brazilian Statistical Association Annual Meeting
2003   Brazilian Econometric Society Annual Meeting
              Brazilian Statistical Association Annual Meeting
2002   Econometric Society Latin American Meetings, São Paulo
              Common Features in Rio, Rio de Janeiro

External Seminars:
2005   Brazilian Competition Commission, Aeronautic Institute of Technology (ITA, Brazil)
2004   Brazilian Competition Commission

Paper Discussions:
2006   "Dynamic Copula Models for Multivariate High-frequency Data in Finance", by Alexandra
              Dias & Paul Embrechts, at the New Directions in Asset Pricing and Risk Management
              Conference, FMG-LSE.

              "Regional Evidence on the Finance-Growth Nexus", by Andrea Vaona, at the
              International Workshop on Spatial Econometrics and Statistics, Rome.

REFEREEING ACTIVITIES:

Referee for *Econometric Theory*, *Journal of Econometrics* (2), *Transportation Research E: Logistics and Transportation Review*, *Brazilian Review of Econometrics*, *Brazilian Review of Economics (2).*

JOB MARKET PAPER:

"*Term Structure Modelling with Observable State Variables*", mimeo.

This paper proposes and implements a parsimonious three-factor model of the term structure whose dynamics is driven uniquely by observable state variables. The method allows comparing alternative views on the way state variables - macroeconomic variables, in particular - influence the yield curve dynamics, avoids 'curse of dimensionality' problems commonly appearing in traditional models, and the identification strategy imposes less stringent assumptions than its main competitors. It also enables forecasting the term structure by using either forecasts of the state variables or expectations variables (such as those obtained in consensus forecasts), as well as to perform stress testing of the term structure. I simulate the small-sample properties of the procedure and conduct in- and out-of-sample studies using US data. I show that even a parsimonious model where the level, slope and curvature factors of the term structure are driven by, respectively, measures of inflation, monetary policy and economic activity consistently outperforms the (latent-variable) benchmark model out-of-sample when considering the five NBER-dated recessions in the last three decades.

RESEARCH IN PROGRESS:

Other Dissertation Chapters:

"An Autoregressive Model for the Term Structure Dynamics", in process.

This paper proposes a new approach to modelling the dynamic behaviour of the term structure of interest rates. Yield curves are estimated using non-parametric techniques, and yield curves of subsequent periods are linked by a suitable parameterization which nests the level-slope-curvature decomposition of the term structure dynamics. The parameters linking the yield curves need to satisfy restrictions in order to be consistent with financial theory, and the estimation procedure accounts for the fact that the yield curve is estimated rather than observed. I investigate the small-sample properties of the method and conduct in- and out-of-sample studies using US data. I show that the model consistently outperforms the benchmark out-of-sample and discuss further applications and extensions.

"*Comparing Nonparametric Regression Quantiles*", mimeo.

This paper investigates how conditional quantiles of a given distribution relate to one another. Given two conditional quantiles estimated nonparametrically, we investigate their relation by linking them through a parametric transformation. Asymptotic properties of the associated parameter vector are established, and its finite sample performance is evaluated by a set of simulation experiments. The method is illustrated with data from the Family Expenditure Survey (FES) of UK households, for which the quantile curves of the Engel relation are estimated and compared.

Other Research:

Industrial Organization:

"*Evaluating Incentives for Collusion in Differentiated Product Markets: Measuring the 'Coordinated Effects' of Mergers*", with Peter Davis (Competition Commission-UK) and John Van Reenen (LSE), in process.

In this paper we propose an empirical methodology for evaluating the incentives for collusion in

differentiated product markets. One important application of the techniques is to provide a practical, theoretically coherent, method for evaluating the likely 'coordinated effects' of proposed mergers by the competition authorities. We apply the techniques to the market for network servers. Specifically, we examine the impact of the merger between Compaq and Hewlett-Packard on the incentives for firms in the industry to tacitly collude.

"*Localized Competitive Advantage and Price Reactions to Entry: Full-Service vs. Low-Cost Airlines in the Brazilian Market*", with Alessandro Oliveira (ITA), mimeo.

Competition between rapidly expanding low cost carriers (LCC) and traditional network full-service carriers (FSC) has recently become one of the most significant issues regarding the airline industry. This paper addresses this matter by empirically investigating price reactions to the entry of LCC Gol Airlines in the Brazilian domestic market. Focusing on the significant reduction in yields on routes in which the LCC entered, a study of localized competitive advantage regarding the determinants of pricing power is then performed along with the analysis of the pattern of price reactions by incumbent legacy carriers. A single econometric framework is designed and estimated for a panel data of routes/airlines controlling for city-specific effects. Results indicate that (i) market structure at both route and airport levels are relevant in explaining pricing behavior; (ii) the degree of newcomer's product differentiation is a relevant feature in determining the intensity of reactions. We compare our results with the findings of Evans and Kessides (1993), which rejected market share effects at the route level, and conclude that our analysis better suits airline markets at a very recent and/or immature stage of economic liberalization. Estimated marginal effects show that price reactions are significant in many important cases and, the shorter the route (and the more the seats offered by the entrant LCC), the stronger the price reactions from the incumbents, with significant point estimates up to 22-26% for routes as short as 350km (approx 195 miles).

Finance and Industrial Organization:

"*Predation and Takeover: The case of Brazilian Beer*", with Alberto Salvo (Kellogg/Northwestern) and Eduardo Fiuza (IPEA), in process.

In this paper we examine the behaviour of firms interacting in both product and stock markets in an industry, and the measures undertaken by a bidder to weaken a target prior to (hostile) takeover. We apply the model to the Brazilian beer industry prior to the merger between the two main local producers. We jointly investigate the product and stock markets, evaluating the alleged attempts by the stronger firm to weaken the position of the other firm, thus increasing the likelihood of takeover. More generally, the paper builds a bridge between the IO and the finance literatures.

Industry Datasets for Current and Future Research:

Insurance, Beer

PUBLICATIONS:

In Refereed Journals

(Joint with Fabio Evangelho) "Investigating Business Traveller Heterogeneity: Low-Cost vs Full-Service Airline Users?", forthcoming in *Transportation Research E: Logistics and Transportation Review*, Volume 43, Issue 3 (May, 2007).

This paper investigates the main sources of differentiation between low-cost and full-service airlines using data from a survey carried out amongst (Brazilian) business travellers who were asked to value attributes such as frequency, punctuality, in-flight service, frequent flyer programs and business lounges. We use factor analysis to find that there are two types of travellers, each one valuing different groups of attributes in a very similar way. Then, ordered discrete response methods were used to assess which attributes are perceived in a different way by the two types of travellers identified by factor analysis, controlling for route and passenger characteristics. Attributes usually seen as perks, such as in-flight service and business lounges are valued less by passengers who have already used low-cost airlines, suggesting that previous exposure to the low-cost product makes passengers reassess their valuations. The results of the paper also suggest that, as opposed to previous findings for developed economies, there is a substantial portion of business travellers who did previously not fly on business in Brazil. Moreover, the significance of low-cost carrier experience suggests that marketing strategies aimed at getting business travellers to experiment the low-cost product are sensible.

(Joint with Fabio Evangelho and Alexandre Linhares) "Market Entry of a Low-Cost Airline and Impacts on the Brazilian Business Travellers", *Journal of Air Transport Management* Volume 11, Issue 2, 99-105 (March, 2005).

The wave of airline deregulation has brought out a worldwide phenomenon: low-cost carriers. A recent case is that of Brazil where after 3 years of operation Gol has 20% of the domestic market. The paper investigates whether there is a significant distinction between the market segment of business travellers using the low-cost entrant and those using the full-service carriers, and also looks at the perception of these travellers regarding the key attributes of the services offered. The findings indicate that there is segmentation in the business travel market, suggesting that the preference for traditional airlines is largely a matter of culture of larger organizations, rather than reflecting any type of prejudice concerning the low-cost model. The results are compared to similar studies conducted with UK business travellers.

Book Chapters:

(Joint with Alberto Salvo, in Portuguese) "Estimation and Identification of Demand and Supply". In: *Quantitative Methods Applied to Antitrust and Regulation*, edited by Eduardo P. S. Fiuza and Ronaldo Seroa da Motta (Instituto de Pesquisa Econômica Aplicada, IPEA). Brasília: SDE (Ministry of Justice), 2006.

COURSE MATERIALS, LECTURE NOTES ETC:

"An Introduction to GAUSS", 98 pages
"Applied Semi- and Nonparametric Econometrics", 83 pages
"Structural Methods in Industrial Organization: Theory, Practical Considerations, and Applications to Antitrust", with Alberto Salvo (Kellogg/Northwestern), 110 pages.