



RESEARCH PROPOSAL

CHILD HEALTH, POVERTY AND THE ROLE OF SOCIAL POLICIES

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RESEARCH PROPOSAL ON CHILD HEALTH, POVERTY AND THE ROLE OF SOCIAL POLICIES

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I. Introduction

It is now fairly widely acknowledged that investments in education, investment in sanitation, investment in health facilities, scientific development, diffusion of information and communication progress usually defined as technical progress, in general, may not only improve the chances for survival of the infant but also enhance their opportunities for escaping from poverty as adults. Infant mortality declined in Brazil in the last 30 years: in 1970 it was 117 in 2000 it was 32. Even though infant mortality rates decrease quite a lot off the dispersion across Brazil permits rates around 70 in northeast and as low as 10 in the Santa Catarina a southeastern state of Brazil. Alves (2003) shows that reduction of illiteracy rate, improvement in sanitation and health facilities along with technical change contribute a great deal to explain the decline in infant mortality rates between these two moments in time¹. With these considerations in mind, a number of poverty alleviation programs in Latin America (such as PROGRESA in Mexico, PRFA in Honduras, RPS in Nicaragua, Familias en Accion in Colombia, and PATH in Jamaica) have shifted the poverty alleviation effort towards helping families invest in their children survival and education². These programs

are based on the premise that the fundamental causes of infant mortality are factors related to demand such as low household income and/or infrequent use of health facilities

¹ Alves (2003a) used 1991 and 2000 censuses data at the municipality level to form a panel to study infant mortality decline. The 2000 census data used in the study were still preliminary. Several important variables were not available at the time the study was done. However, the available data present supported evidence that education, sanitation and health facilities contribute significantly to the decline of infant mortality rates in Brazil. The study also showed that dispersion of infant mortality rates is still quite large: southeastern regions presenting numbers quite low while northeastern region presenting very high rates.

(Skoufias and Parker, (2001)). As pointed out by the TR³ Skoufias and Parker (2001) conclude that “even in the programs for which rigorous impact evaluations have been undertaken it is practically impossible to distinguish whether the observed improvement in children’s health is a consequence of the cash transfers provided by the program, or whether child health is improved simply because the program provides households with micronutrient supplements and requires visits to public health facilities on a prescribed frequency”.

The TR argues, “more generally, the primary factors that determine household investments in children are yet to be determined”. And poses the question for the reseserchs to address: “Are they factors that contribute improve child health, such as low level of household income and education, or factors that relate to constraints on the supply side such as ease of access to information and public health facilities?”

In Brazil there are large differences in infant mortality rates across regions, and large inequalities in the distribution of income and health across and within regions. Thus, there still remain serious challenges for policy makers striving to alleviate poverty, reduce inequality and improve human capital and development in a cost-effective manner. Improved information about the determinants of infant mortality rate and child health would facilitate the development of better policies to help meet these challenges.

II. Objectives

The objective of this research proposal is to address some of these issues by examining the private and public determinants of household investments in one specific form of human capital: children’s health during their first years of life in Brazil. Malnutrition at the early

² Bolsa Escola is an example of this new orientation in program goals: cash money received by the family only when the child is at school.

³ Latin American Research Network, “ Child Health, Poverty and the Role of Social Policies”, IDB, Washington, DC, USA, 2003., it will referred to as TR for Terms of Reference.

stages of life can lower child resistance to infections, increase child morbidity and mortality⁴. Identifying the influence of household characteristics and community characteristics on the determination of children's health is useful for planning effective health policy. Health planners need such information to plan and set priorities for intervention strategies to reduce infant mortality, to improve child health, and to assess the effect of interventions⁵. Specifically, the objectives of the project are to identify:

- (i) The private and public determinants of infant mortality and child health;
- (ii) The extent to which the private and public determinants interact and whether interactions suggest gross substitution or complementarities.
- iii) The types of programs and interventions that are associated with improved child health and, consequently, with lower infant mortality.

Child nutrition and health are among the main commodities produced within the household. Because these commodities typically are produced under the responsibility of mothers, the human capital embodied in mothers may have significant impact on children's health status. If better educated parents are more successful at protecting or improving their children's health status (holding everything else constant), the cost-effectiveness of public health programs aimed at reducing infant mortality such as programs to improve child nutrition and health, can be increased by prioritizing the types of households to be targeted.

⁴ The consequences of child malnutrition during the preschool period have been studied extensively (Beaton, *et al.*, 1993, Bhutta, *et al.*, 1999, Bleichrodt and Born 1994, Lozoff and Wachs 2000, Pelletier, Frongillo and Habicht 1993, Pelletier, *et al.*, 1995, Rose, Martorell and Rivera 1992, Wachs 1995). One consequence is increased mortality. It is estimated that more than half of all deaths in developing countries in children less than five years of age are due to the interaction between malnutrition and common infections such as diarrheal diseases, respiratory infections and measles. These infections kill children easily only in the presence of malnutrition, which impairs immune function and lowers resistance to infections. Rosenberg, Alves, Timmins and Evenson (2000) shows that infant mortality rates at the municipal level in Brazil are explained by low income level, education and the interaction with climate variables associated to diseases such as respiratory and hydric, both associated to bad housing conditions in the Brazilian cities.

⁵ Examples from the literature include Alderman and Garcia (1994) for Pakistan, Barrera(1990) for the Philippines, Strauss (1990) for Cote d'Ivoire, Thomas, Strauss, and Henriques (1992) for Brazil, Thomas (1994) for the US, and Wolfe and Behrman (1987) for Nicaragua, references presented by the terms of reference, RES /IDB (2003)

Survey articles with more exhaustive lists of references include Cochrane, Leslie and O'Hare(1982), Behrman and Deolalikar (1988) and Strauss and Thomas (1995, 1998).

Further, as discussed in detail by Barrera (1990), characteristics such as education, race and ethnic background may serve as a substitute for or complement to community programs in the sense that there may be significantly negative or positive interactions of these characteristics with public health programs. By documenting the patterns of such interactions one may draw inferences on what are the most likely channels through which parental schooling affects child health. The interaction between the type of public health program and the role of education determines which municipalities and regions of the country benefit more from the program.

III. Methodology

The project proposes to analyze the issues in three separated but complementary studies:

1. Factors Explaining Infant Mortality in Brazil: 1980-2000.
2. The Household Demand for Child Health: Comparisons Between a Poor and a Rich Brazilian Region
3. Demand for Child Health: Household Decision and the Impact of Different Government Programs.

The first study will use censuses and secondary data and the third study uses primary data. The first study proposes to use census data from 1980 up to 2000, in panel format, at the municipal level, attempting to provide a time and cross section wise picture of the determinants of infant mortality rates in Brazil. It is a continuation of the study of Alves (2003) expanded to include the complete 2000 census and the 1980 census. The second study will use the PPV, a standard of living survey held in 1997/98, representative of two very different Brazilian regions: the poor northeast and the rich southeast. This study will follow along the lines of the Terms of Reference of RES/IDB⁶ in the modeling of child health subject to income constraint and the supply of health services.

⁶Latin American Research Network, “ Child Health, Poverty and the Role of Social Policies”, IDB, Washington, DC, USA, 2003.

The third study is a household demand for child health for the city of São Paulo, the largest Brazilian city. There is a consumption survey for 1998 for the city. This study intends to obtain a sub-sample of the 2200 households of the 1998 survey in such a way as to have a panel of households. The new sample will cover in more details the health status of the household members. The new sample will permit a cross-section as well as an inter temporal comparison. Some of the endogeneity problems that might arise in demand analysis will be more efficiently handled if one has data from the past, which might not be endogenous when used today as instrumental variables.

In the first study child health will be seen along the last 20 years and across Brazilian municipalities. This study will provide a concise historical perspective on the major factors explaining child health, approximated by infant mortality rate at the municipio level. The idea is to attempt to formulate a model that takes into account characteristics of the population, characteristics of the municipio structure such as supply of health services, level of public utilities services, government social programs and their interaction with the municipio characteristics either through its population or through its structure to attend the public services demand by its population.

IV. Factors Explaining Infant Mortality in Brazil: 1980-2000

This study will provide using, however, a regression function estimates of a model based on municipal observations, to explain infant mortality rates, such as:

$$(1) \text{imort}_i = \beta_0 + \alpha_2 t_2 + \alpha_3 t_3 + \beta_k X_{ki} + \gamma_h Z_{hi} + d_l X_{ki} Z_{hi} + a_i + u_i$$

where subscript i indexes municipalities, vector $X_i = [x_m \ x_h \ x_c]$ describes three sets of characteristics of the municipality: x_m representing characteristics of the municipio population such as education, age distribution, migration, etc, vector x_c captures the characteristics of the municipality such as population density (per area and per household), proportion of household with treated running water, proportion of households with sewage disposal, proportion of households with garbage collection, climate and regional factors; x_h

characterizes the supply of the health services of the municipality such as physicians per habitant, hospital beds per habitants, etc. Z_{hid} a set of variables representing governmental programs to improve child health in the municipality such as breast feeding programs, nutritional supplement for children, family health, vaccination programs, etc. t_1 and t_2 represent the 1991 and 2000 censuses, respectively. α_i are the unobserved heterogeneity of the municipality.. They captures some unobserved factors intrinsic to the municipality that we cannot observe, but might explains dispersion in child health across municipalities⁷. u_i is a disturbance.

One of the main objectives of this project is to study the extent to which the parameter δ_l summarize whether there are any interactions between socioeconomic characteristics of the municipality as well as health services with health programs sponsored by government agencies. For example, suppose that x_m is the average level of education of the municipal population and Z_l denotes the availability of an information program for mothers regarding child nutrition by breast-feeding. A significantly negative value for δ_l would then suggest that education is a substitute for such a program so that municipalities with lower average level of education derive greater benefits from the program. Other possible interaction between programs and characteristics of health services and/or other characteristics of the municipality can also be used to test additional hypothesis concerning the relation of programs and municipal characteristics.

Part one of the project will have a national dimension attempting to shed some light on the structure of child health along the last two decades in Brazil by analyzing the behavior of infant mortality rates through time and across municipalities. The study will set up the scenario for a microeconomic analysis of the demand for child health at the household level.

⁷ Municipalities, which received a large inflow of migrants from European and Asiatic populations in the beginning of the 20th, might have taken advantage of their better education and skills, reflecting in lower infant mortality rates along the years.

IV.1 Description of the Data

The data used in this study is a combination of the Census of Population 2000⁸ and data on infant mortality and health program covering Brazilian municípios released by DATASUS⁹. Infant mortality has declined drastically in Brazil since 1970: from 117 to 29 in 2002¹⁰. Even though infant mortality rates declined drastically in the three decades period they are still well above the ones reported by developed and developing countries¹¹. Table 1 summarizes the data for the year 2000. Infant mortality rates present a great deal of variation across Brazilian municipalities. Quite a few of them present rates well above 100. They are located in the northeast region of Brazil¹². The northeast region is the region where per capita income is very low and poverty is rampant. The southeastern and southern regions are the most developed regions. Per capita income is higher and infant mortality rates are among the lowest in Brazil. For some states in the southern regions infant mortality rates are similar to the ones observed for developed countries.

V. Household Model for Child Health

In the two last suggested studies, households may be assumed to choose child health h^3 , leisure l , consumption of goods and services c , as if they are maximizing a household welfare function subject to the health production function constraint and budget constraint. The following utility function are assumed to characterize the preferences

$$(2) \quad u = u(h, l, c; x_h)$$

⁸ Censo Demográfico 2000, Fundação IBGE, (2002), RJ, Brasil

⁹ Ministério da Saúde, Brasília: <http://www.datasus.gov.br>, infant mortality is defined as the number of deaths per 1000 births up to one year after birth.

¹⁰ See Alves (2003) for a discussion of the decline of infant mortality rates in Brazil.

¹¹ They far way from 9,4 for the US, 8,4 for Italy or even 10,7 for Cuba or the 14,8 for Costa Rica reported by Alves (2003).

¹² It is important to observe that there are exceptions: some municipalities in the Northeastern region present quite low infant mortality rates.

¹³ Infant mortality is a consequence of poor child health. Thus, when the utility function is formulated in terms of child health bad health and, its result, infant mortality mean disutility for the household, which infant mortality representing total disutility associated with the utility of child health.

where x_h is a vector of household characteristics including the education level of the household head and his spouse. Child health is generated by a production function

$$(3) \ h = f(y, x_i, x_h, x_c, v)$$

where y is a vector of health inputs such as nutrient intake, health care practices (immunization), disease incidence, and health services availability, x_i is a vector of the characteristics of the parents such as age, race, education, etc, x_c is a vector of characteristics that come from the outside of the household influenced by the outside community such as migration, religion composition and v is a vector summarizing all unobservable characteristics of the population, household, and the community that affect infant mortality. In addition, it is assumed that the household choices are limited by its full income constraint

$$(4) \ I = (p_c c + w l + p_y y)$$

. where p_c , w , and p_y are the price vectors of consumption goods, leisure and health inputs, respectively, and I is full income including the value of the time endowment of the household and non-labor income. In this framework, the reduced form function for infant mortality is

$$(5) \ \text{imort} = f(x_i, x_h, x_c, I, p_c, w, p_y, v)$$

whereby the particular functional form of the function $f(.)$ depends on the underlying functions characterizing household preferences and the health production function.

V.1 The Household Demand for Child Health: Comparisons Between a Poor and a Rich Brazilian Region

The objective of this part of the project is to estimate household demand for child health¹⁴. The dependent variable, representing child health will be defined as a measurement relating child's height to child's age and child's weight as presented in the IDB Call. The idea of a zero one dependent variable, also suggested by the IDB Call

will also be implemented. However, some of the interesting question related to police actions adopted in the past and in present days will not be possible to be addressed to due to data limitations. The reduced form equation presented in the call and reproduced above will be estimated. Even with data limitations to estimate the impact of specific programs to improve child's health it still be possible to answer important questions as for instance the impact of mother's and father's education on child's health. It will also be possible to ask and answer important behavioral questions related to differential reactions of poor and rich families to changes in income and in education between poor and rich Brazilian regions.

In studies like the one here proposed, it is usual to be confronted with questions of endogeneity. Some of the variables as pointed out by the IDB Call might be contaminated by endogeneity and or measurement errors and, as usual in those cases, instruments are necessary to handle the problem. In the Brazilian LSMS data, although subject to criticism household per capita income, a strong candidate to suffer from the endogeneity, can be instrumented for by the household stock of durables goods, usually resulting from past acquisitions and thus less subject to endogeneity thus uncorrelated with the disturbance but highly correlated to per capita income.

The study will be able to answer several of the questions put forward by the IDB Call. The relevance of mother's education vis a vis father's education, regional household behavior and the interaction between the regional variable and the relevant explanatory variable. The child variables such as order of birth, number of brothers and sisters, race, etc will be used to answer questions always raised related to the fact that parents might give better treatment to boys than to girls in their childhood years leading to better care of their health.

This part of the project will permit to understand household behavior towards child health in two very different regions of Brazil as well as to perceive how socioeconomic variables interacts among themselves to explain household demand for child health.

¹⁴ Children will be defined as children up to 10 years old.

V.2 Demand for Child Health: Household Decision and the Impact of Different Government Programs

A question always raised with respect to government programs is related to the effectiveness of different programs. In Brazil different government levels have pursued several programs with the objective of raising the well being of the poor population. With the democratization of the country's political process candidates to public offices became aware of the political importance of the large number of poor people living in very bad condition all over Brazil. In almost all Brazilian regions, there exists a large part of the population that is poor. The dispute for the votes, made political parties as well as politicians running for congress or for government to propose several programs to help the poor. They went from free milk distribution up to "Bolsa Escola" or "Renda Mínima" in disputing the political scene to see which was better to help the poor and as consequence to conquer the preference of the voters. They have been introduced in some cases by municipal governments and other cases by state governments as well as by the federal government.. The city of São Paulo has been the major park for the

dispute of different programs to help the poor. In the last decade different parties have the control of the city government. The state government also has changed hands several times along those years. Several programs have been introduced by different level of government to help the poor. The city of São Paulo not only has been the laboratory to experiment different programs but also is a representative sample of most of the contradictions and political struggles facing Brazilian society in present days. It cannot be representative of the problems related to the agrarian sector although it represents the place to go for most of the rural workers that become unemployed in the small towns in the countryside of Brazil.

* This proposed study could only be carried out if additional funding is obtained from sources other than the IDB financing. This is so because as will be shown in the financial budget for the project to carry out survey with some 300 households in the consumption survey will require resources of the order of US 40,000.00. Thus some US\$ 30,000.00 will have to be obtained from other funding sources for this study to be done.

The objective of this part of the proposal is to take advantage of the existence of a consumption survey for the year 1998 for the city of São Paulo that can be used with some additional effort to understand the impact of several programs some of biased in the direction of income supplementation others aimed to improve the health of the family as well as the health of children.

V.2.1 The Model

The model for the demand for child health¹⁵ where the definition of child involves children up to 14 years of age will follow the lines of the model already described in the second part of this proposal with some variations along the lines suggested by the study of Case, Lubostky, and Paxson (2002). These authors, studying USA Data show that the inverse relationship between family income and children's health status persists for children of all ages and the correlation becomes progressively more negative with age. These results are contrary to those reported by West (1997) where he concludes that the negative correlation between child health and income disappears in adolescence. In this part of the study we intend to test this negative relationship between child health and income found by Case, Lubostky and Paxson using their model, which is variation of the model present by RES/IDB.

The methodology for this part of the project is to survey a sub sample constituted of the same families that were part of the 1998 consumption survey. The 1998 survey did not take health measurements of the children, however several other information related to health expenditure is part of the consumption survey questionnaire¹⁶.

If some 300 households for which we have the 1998 questionnaires were interviewed in 2003 we would be able to obtain a panel data in which health measurement would be taken for each household member. Furthermore existing 1998 police programs already were part of the 1998 consumption survey thus it will be possible not only analyze the

¹⁵ The definition of children will cover children up to 14 years in order to analyze the health income relationship for a larger age span.

¹⁶ Alves (2001) used the information on health expenditure contained in the POF survey to analyze the impact of the presence of children and old age people on the health expenditure of the household.

impact of these programs in the status of child health in 2003 as well as the impact of new programs that were introduced from 1998 on.

V.2.1 Description of the 1998 Consumption Survey

The 1998 São Paulo Consumption Survey- “Pesquisa de Orçamentos Familiares para a Cidade de São Paulo” (POF) carried by the Fundação Pesquisa Econômicas (FIPE) as part of the São Paulo Cost of Living Index constitutes a household consumption survey in which data are collected for some 400 consumption items. Furthermore, data are collected for the socioeconomic characteristics of each household member as well as the stock of durables and on the characteristics of the families housing conditions.

The idea of this study is to obtain a sub sample of 300 observations of the 1998 survey to obtain a panel in which the 1998 and 2003 can be compared; however for the 2003 sub sample the health characteristics of the household members would be part of the survey similar to questions on health that were part of the LSMS IBGE Survey.

The panel data would not be complete in terms of the health variable, however it will permit to analyze the impact of governmental programs on the health status of the population.

VI. Products

1. Infant Mortality Study at the Municipal Level Using 1980, 1991 and 2000 Census Data.
2. Child Health Demand at the Household Level Comparing the Poor Northeast to the Richer Southeast
3. The Impact of Governmental Programs on Child Health Household Demand for the City of São Paulo¹⁷.

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¹⁷ This product will be delivered only if additional funding is obtained by FIPE.

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VII. **Research Team**

Project Coordinator: Denisard Alves, Professor, São Paulo University.

Alves was the project coordinator of two previous IDB Calls, one concerning the impact of geography on economic development and the other a study of the Brazilian health system from the perspective of social exclusion.

Walter Belluzzo Jr: Assistant Professor, São Paulo University.

Belluzzo Jr has participated in several research projects with Alves. Belluzzo master dissertation was derived from a research project coordinated by professor Alves on the willingness to pay for water use for the state of São Paulo. His PhD dissertation presented at Illinois University was also on methodological issues concerning the use of willingness to pay measurement to use in micro economic evaluation of public investment projects.

Rodrigo Delosso Bueno: Graduate Student, Chicago University. Bueno wrote his master dissertation at USP under the supervision of professor Alves, presented at São Paulo University. He used cointegration methods to analyze the relationship between black market price of dollar in Brazil and future exchange rate price.

Daniel Monte: Graduate Student, Yale University. Presently is a second year graduate student at Yale University PhD program in economics. He has been working with professor Christipher Timmins from the Economics Department of Yale University analyzing the amenity cost of marginal climate changes using a hedonic wage analysis.at the Economics Department of The Univ

Igneiz Tristão: Graduate Student, Maryland University. Ms Tristão is a second year graduate student at the Economics Department of Maryland University. She has worked with professor Alves in the geography project sponsored by IDB and she wrote her final undergraduate research paper on the impact of claimate changes on infant mortality in Brazil.

Camila Campos: Graduate Student at São Paulo University. Ms Campos is finishing her master program in economics at São Paulo University being already accepted at Yale University to star her PhD program in the 2003/4 academic year.

Ana Carolina Giubertti: Graduate student in the master program in economics at São Paulo University. Ms Giubertti was professor Alves research assistant; she has worked in several of the projects coordinated by professor Alves. She has a great deal of experience in working with data banks using Stata and Eviews software's.

Fabiana Tito: Under Graduate Student, São Paulo University. She has been Research Assistant to professor Alves in the last three year. She is presently writing her undergraduate research paper final, under the supervision of professor Alves, dealing with international comparisons of infant mortality rates. She also has great deal of experience in handling large data banks using Stata or Eviews.

Annex 1.CV of the Participants of the Research Team

CURRICULUM VITAE

Denisard Cnéio de Oliveira Alves

Personal

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1. EDUCATION

- 1967 B.A. in Economics, School of Economics, São Paulo University.
- 1971 Master of Arts in Economics, Yale University.
- 1976 Ph.D. in Economics, Yale University.

2. PROFESSIONAL EXPERIENCE

- 1967 Teaching Assistant, Economics Department, School of Economics and Business, São Paulo University.
- 1974 Assistant Professor, São Paulo University
- 1977 Associate Professor, Economics Department, School of Economics and Business, São Paulo University
- 1984 Full Professor, School of Economics and Business, São Paulo University .

3. PROFESSIONAL EXPERIENCE

1971/73 Research Associate – Brooking Institution, Washington, DC, USA

- | | |
|---------|--------------------------------------------------------------------------------------------------------------------------------|
| 1974/79 | Senior Research Fellow, Fundação Instituto de Pesquisas Econômicas -FIEPE , São Paulo, SP, Brazil |
| 1978/79 | Visiting Fellow, Yale University, New Haven, CT, USA |
| 1980/81 | Visiting Professor, University of Notre Dame, South Bend , IN, USA |
| 1982/83 | Manager Of the Health and Social Assistance Program of São Paulo University, São Paulo, SP, Brazil |
| 1983/85 | Finance Secretary of the City of São Paulo |
| 1986/87 | Vice-Chairman in Charge of Finance of the Banco do Estado de São Paulo S.A., São Paulo, SP, Brazil |
| 1988/93 | Senior Research Fellow at the Fundação Instituto de Pesquisas Econômicas, São Paulo, SP, Brazil |
| 1993/94 | Chairman of the Economics Department, School of Economics, Business and Accounting, São Paulo University, São Palo, SP, Brazil |
| 1994/98 | Dean of the School of Economics, Business and Accounting, São Paulo University, São Paulo, SP, Brazil |
| 1998/00 | Chairman of the Economics Department, School of Economics, Business and Accounting, São Paulo University, São Paulo, Brazil |

4. HONORS, FELLOWSHIPS

- | | |
|---------|-------------------------------------------------------------------------------------------|
| 1965 | Awarded a fellowship by the Associação Universitária Inter-Americana |
| 1968 | Awarded the Institute of Economics Reserch from São Paulo University Graduate Frellowship |
| 1969/73 | Awarded a Graduate Fellowship by the USAID |

5. PUBLICATIONS

- ALVES, Denisard Cneio de Oliveira; BUENO, Rodrigo de Losso da Silveira. Short-run, long-run and cross elasticities of gasoline demand in Brazil. *Energy Economics*, Inglaterra, 2003.
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- Economica, Plano Real e Analise de Intervenção, *Revista Brasileira de Economia - Vol.51. REVISTA BRASILEIRA DE ECONOMIA, FGV - RIO*, v. 51, p. 133-143, 1997.
- ALVES, Denisard Cneio de Oliveira. Acordo Internacional do Café e o Mercado Internacional do Café. *Estudos de Política Agrícola*, Rio de Janeiro, v. 23, 1994.
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p.45-71.

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Walter Belluzzo Junior

Education

PhD in Economics - University of Illinois at Urbana-Champaign, 2001

Master Degree in Economics: Economia - Instituto de Pesquisas Econômicas, FEA-USP, São Paulo, 1995.

Bacharel in Economics: - FAAP - Fundação Armando Álvares Penteado, São Paulo, 1991.

Professional Activities

Assistant Professor, Faculdade de Economia, Administração e Contabilidade da Universidade de São Paulo, FEARP-USP, since Feb./ 1996.

Publications

- Avaliação contingente para valoração de projetos de conservação e melhoria dos recursos hídricos. *Política e Programação Econômica*, Vol. 29 (1), 1999.

Curriculum Vitae

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Máster Degree in Economics

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São Paulo - SP

Mar,1996 – 05/13/1999.

Undergraduate Degree in Economics

Faculdade de Economia, Administração e Contabilidade - USP

São Paulo - SP

Fev,1992 – Dez,1995.

High School

Escola Preparatória de Cadetes do Exército

Campinas - SP

1988 - 1990.



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Publications

1. Movimento de Preços por Faixa de Renda: Uma nota [co-autor com Paulo T. P. Soares e Heron E. Carmo]. Revista de Estudos Econômicos, vol. 25, n.º Especial, p. 101-128, 1996.
1. “Hedge”: Variância Mínima [co-autor com Denisard C. O. Alves]. São Paulo: I Encontro Brasileiro de Finanças (Annals), a publicar.]. Submetido à Revista de Econometria.
2. Co-persistence in Conditional Variance of Brazilian, Korean and US Stock Indexes [co-author with Denisard C. O. Alves]. Vitória: XX Encontro Brasileiro de Econometria (anais), vol. 1, p. 31-43, 1998.
3. Fundamentos de Cálculo Financeiro e Aplicações. [co-authors: Armênio de Souza Rangel e José Carlos de Souza Santos]. (2002);
4. Soluções para o Manual de Econometria. São Paulo: Atlas, (2001);;
5. Short-run and Long-run Elasticities of Electrical Energy in Brazil [co-author with Denisard C. O. Alves].
6. Short-run, Long-run and Cross Elasticities of Gasoline Demand in Brazil [co-author with Denisard C. O. Alves]. São Paulo: IPE/USP, 07/29/01, Energy Economics, 2003;

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Fields of Concentration:

Microeconomic Theory

Public Finance

Comprehensive Examinations Completed:

Microeconomics and Macroeconomics, Yale University, May 2002 (Written)

Degrees:

Ph.D. Economics, Yale University, Expected May 2005

M.A. Economics, Yale University, Expected Fall 2003

M.Phil. Economics, Yale University, Expected Fall 2003

B.A. Economics, University of Sao Paulo, Dec 2000

Fellowships:

Yale University Fellowship, 2001-2005

CNPq –Brazil (National Council of Research) Scholarship, 2000

Research and Teaching Experience:

Research Assistant, Prof. Denisard C.O. Alves, University of Sao Paulo, 2001

Teaching Assistant, Econometrics - Time Series, University of Sao Paulo, 2001

Non-Academic Experience:

Trainee for BBA Creditanstalt (investment bank, Sao Paulo)

areas: Back -office of Commercial Area

Economic Support for Trading Desk

Papers and Work in Progress:

“Technology Diffusion with Knowledge Accumulation”, Yale University, 2002

"The Amenity Costs of Marginal Climate Change: A Wage-Hedonic Analysis of

Brazilian Cities," with Christopher Timmins (2003)

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Personal

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Education

2001-today: **University of Maryland-College Park, USA**

PhD Economics

1996- 1999: **University of Sao Paulo, Sao Paulo, Brazil**

B.A. Economics

Work Experience:

University of Maryland-College Park, USA

Research assistant in the project “*An Empirical Analysis of the Social Security Disability Application, Appeal and Award Process*”.

Researcher: John Rust, Sep/02 – Present

International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria

Research assistant in the project “*Patents and Production Frontier between Developing Countries*”

Researcher: Robert Evenson, Mar/00 – Jun/01

Economic Growth Center of Yale University, New Haven, USA

Research assistant in the following projects:

“Global Warming Impacts in the Productivity of Brazilian Agriculture”.

Researchers: Robert Evenson, Denisard Alves and Christopher Timmins, Feb/00 – Jun/01

“Global Warming Impacts in Health Patterns in Brazil” .

Researchers: Robert Evenson, Denisard Alves and Christopher Timmins, Feb/00 – Jun/01

“Economic Analysis of Rural Households in Philippines - Agricultural Sector Studies”

Researcher: Robert Evans, Feb/00 – Jun/01

“Analysis of Genetic Improvements in Crops for Latin America, Asia, Sub-Sahara and Middle North - East Africa”

Researcher: Robert Evenson, Feb/00 – Jun/01

Institute of Applied Research in Economics (IPEA) , Rio de Janeiro, Brazil

Research assistant in the project “Nemesis”

Researcher: Denisard Alves, Feb/99 – Dec/99

Found. for Research in Economics (FIPE) & Inter-American Development Bank, Sao Paulo, Brazil

Research assistant in the project “Health, Development and Policies in a Warming Environment: The Brazilian Case”

Researchers: Denisard Alves, Robert Evenson and Christopher Timmins, Oct/98 – Dec/99

Found. for Research in Economics (FIPE), Sao Paulo, Brazil

Research assistant in the project “Real and Nominal Income Convergence between Brazilian Metropolitan Regions: one Panel Data Analysis”

Researcher: Tatiane Menezes, Sep/97 – Jan/98

Institute Foundation in Business Administration (FIA-PENSA), Sao Paulo, Brazil.

Research assistant for the program “Business Studies of the Agro-industrial System”, Jan/98 – Sep/98.

Teaching Experience:

T.A. for Macroeconomics (UMDCP - Undergraduate. Professor Edward Montgomery, Sep/01 – May/02)

T.A. for Econometrics III (Univ. Sao Paulo - Undergraduate. Professor Denisard Alves, Feb/99 – Jul/99)

T.A. for Econometrics II (Univ. Sao Paulo - Undergraduate. Professor Denisard Alves, Aug/99 – Dec/99)

Monitor at the Computer Laboratory (Univ. Sao Paulo – Undergraduate. Jul/96 – Jan/98)

Scholarships/Fellowships:

Project: Analysis of the Brazilian Public Debt Financing before and after Real Plane

Institution: Visconde de Cairu Academic Center of FEA/ Univ. Sao Paulo, May/99 – Dec/99.

Project: Economic Rationality

Institution: School of Economics, Business and Accounting – Univ. Sao Paulo, Mar/98 – Dec/98.

Project: Solidarian USP – Two-year Experimental Project to Develop the Region of Candeal - BA

Institution: Executive Coord. for Cooperation and Especial Activities of Univ. Sao Paulo, Oct/97 – Dec/98.

Project: Mathematics Fundamentals Analysis of Microeconomics

Institution: Visconde de Cairu Academic Center of FEA/ Univ. Sao Paulo, Mar/97 – Agu/97.

Project: Analysis of Feudalism-Capitalism Transition in Japan

Institution: Visconde de Cairu Academic Center of FEA/ Univ. Sao Paulo, Mar/97 – Aug/97.

Project: Analysis of Brazilian Economy in the period 1964-1980

Institution: Visconde de Cairu Academic Center of FEA/ Univ. Sao Paulo, Jul/96 – Dec/96.

Honors: University award for final Dissertation: “Analysis of the Determinants of Infant Mortality in Brazil”. The dissertation was presented at the Annual Meetings of the Nemesis Project at the Institute of Applied Research in Economics – IPEA, Rio de Janeiro, Brazil, Dec/99.

Computer Skills:

Statistical packages: Stata, E-views, SPSS, TSP, Matlab and Gauss.

Computer Map and Graphics packages: MapInfo and PhotoShop.

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Fellowships and Awards:

CNPq –Brazil (National Council of Research) Scholarship, 2001-2003

First Place National Exam of Economic Courses- 2000

Research and Teaching Experience:

Teaching Assistant, Microeconomic Theory (Graduate Level), University of Sao Paulo, 2002

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Education

Graduação em economia pela Faculdade de Economia e Administração da Universidade de São Paulo (FEA-USP) – dez/2002

Profissional Courses

Windows, Word, Excel, PowerPoint

Pacotes Econométricos: E-Views, Stata

Languages

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Experiência Profissional

**January to December, 2002 – Research Assistant, to Prof. Dr. Denisard
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Research Assistant to the Economics Department of São Paulo University under the supervision of professor Naércio Aquino de Menezes Filho.

Scholarship

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B. Academic Background

Bachelor's in Economics, University of Sao Paulo (Pass)

Period: 02/99 to 12/03

C. Academic Experience

1. Teaching Assistant while in the undergraduate school in the following courses :

1.1 - Introduction to Econometrics I (undergrad.), Department of Economics, University of Sao Paulo, 2000;

1.2 - Introduction to Econometrics II (undergrad.), Department of Economics, University of Sao Paulo, 2001

(1st. Semester);

1.3 - Time Series Econometrics (undergrad.), Department of Economics, University of Sao Paulo, 2003

(1st.Semester);

D. Professional Experience

- Work at Empresa Júnior FEA-USP – Projeto Interação as instructor of Financial and Stock Exchange operates – August/99 –Jan/00;

Research Assistant at Fundação Instituto de Pesquisas Econômicas -FIPE , São Paulo, SP, Brazil – with professor Denisard Alves - FEV/2000-JULHO/2001

Research Assistant at Economic Growth Center – Yale University , New Haven,CT,USA with professor Robert Evenson and Christopher Timmins- AUG/2001-AUG/2002

-Research Assistant at Instituto de Pesquisas Econômicas Aplicadas – IPEA, São Paulo,SP,Brazil- with professor Denisard Alves SEP/2002-

Working Papers as research assistant:

- ALVES, Denisard Cneio de Oliveira. Gastos com Saúde: uma análise por domicílios para a cidade de São Paulo. Pesquisa e Planejamento Econômico, Rio de Janeiro, v. 31, n. dez 2001, p. 479-493, 2001.

- ALVES, Denisard Cneio de Oliveira; EVENSON, R. E. Technology, Climate Change, Productivity and land Use in Brazilian Agriculture. In: MOTTA, Ronaldo Seroa da. (Org.). Environmental Economics And Policy Making In Developing Countries. 2001, p. 155-176.

- ALVES, Denisard Cneio de Oliveira; CATI, R.; FAVA, V. Purchasing Power Parity in Brazil: a test for fractional cointegration. Applied Economics, v. 33, p. 1175-1185, 2001.

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- ALVES, Denisard Cneio de Oliveira; BUENO, Rodrigo de Losso da Silveira. Short-run, long-run and cross elasticities of gasoline demand in Brazil. Energy Economics, Inglaterra, 2003.

- TIMMINS, Christopher. Endogenous Land Use and the Ricardian Valuation of Climate Change – Yale University Department and Economic Growth Center, 2002

E. Courses and Especializations :

- Designer of Maps – MapInfo – Geography Informática – 2000 –São Paulo, SP, Brazil
- Financial Market - BOVESPA- São Paulo, SP, Brazil.
- Econometric Course of Peter Phillips Fall (2001) and Spring (2002) at Yale University- Graduated Course
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