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DEVELOPMENT PROJECT

(Contract AID/NE-C-1701)

REPORT ON
SHORT-TERM STAFF ASSIGNMENT

Submitted by
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August 15 through December 15, 1983

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REPORT ON
SHORT-TERM STAFF ASSIGNMENT
at the
INSTITUTO UNIVERSITARIO DA BEIRA INTERIOR
COVILHA, PORTUGAL

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SUMMARY OF ACTIVITIES

1. Area of Assignment: Management/economics
2. Specific objectives of assignment:
 - a) Examine the curricula of BS degree program and suggest ways to strengthen it
 - b) Teach one graduate level course to IUBI faculty
 - c) Present one or more seminars
 - d) Direct IUBI faculty research efforts
3. Identification of Portuguese counterpart: Jose Manso, Chairman, Management/economics faculty
4. Accomplishments with respect to objectives: See Parts I and II following.
5. Identification and analysis of problems encountered: See Parts I and II following.
6. Future requirements and proposed actions: See Parts I and II following.

INTRODUCTION

The report is divided into three parts. Part I is a chronological recapitulation of activities at IUBI. Part II is observations and suggestions. PART III is an appendix which contains references cited in Parts I and II.

PART I

August 15, 1983 (Sunday)	Arrive Covilha
16	Portuguese holiday. Air freight boxes containing textbooks, teaching materials, personal effects, at U.S. Embassy in Lisbon.
17-19	Met IUBI staff (those still on campus), tour IUBI facilities, set up office, confirm arrangements for apartment near campus.
19	Move into apartment. Air freight boxes still in Lisbon.
22-23	Secretary to AID project goes on vacation. Familiarization with TRS (48K) desk top computer. Inventory computer programs. Begin 2 hour per day practice <u>reading</u> Portuguese. (A 48 lesson Portuguese language course was purchased in May 1983 as were dictionaries and practice materials).
24	Afternoon off ^{1/} Visit Castelo Branco.
25-26	Begin revise lesson plans in light of computer facilities and library holdings. Class size and student background(s) unknown.
29	Continue lesson plan revision. Continue reading practice. Air freight boxes arrive.

1/ Wednesday afternoons off authorized by Embassy during summer months.

- August 30-31 Order linear programming cassette for TRS from U.S. Tape damaged en route. Reordered. Continue lesson plan.
- September 1-2 Long-term advisor interested in having IUBI faculty do research and publish results. He advises that this is one of long-term goals of AID program. Discuss ways to accomplish. Conclude best way is develop a list of research projects that are relevant to Portugal but also have American counterparts. These to be incorporated into Managerial Economics course (see Appendix 1). Faculty research to be encouraged generally. STA will offer to jointly author papers. Will strongly urge Rector to support concept.
- 5-9 Continue Portuguese reading exercises, continue lesson plan revisions. Start work on list of research projects. Conclude that in a social science course even with basic student comprehension of English, a glossary of managerial economic terms would be helpful. (Partial payoff for Portuguese reading exercises.) Begin work on glossary (see Appendix 2).
- 12-14 Start planning for regional economic development conference to be held in fall. Immediate problem is availability of Portuguese economic data. None in IUBI library. Decision made to update 1970 input-output table on Portugal as basic reference source for seminar together with visits to industrial plants. The 1970 input-output table made available by Marcus Mendes, a IUBI instructor doing PhD research in economic development at Canterbury University. Marcus Mendes basic discipline is operations research. Write Pat Rivett, chairman of Operational Research Department at Sussex University and former President of British OR Society to keep an eye on Mendes and help where possible. (Pat Rivett is old friend of STA.)
- 15 Visit Evora University with LTA. Meet students planning to go to U.S. Meet Rector. Suggest ways for students/ university to maximize AID program dollars, i.e., identify relevant Portuguese research topics and begin research before departure. Obtain a summary of Portuguese economic

data (in English) published by Bank of Portugal (from A. Serrao, an Evora instructor). This became one of base documents for planned regional economic conference.

September 16

At Evora

19-23

Continue research for regional economic conference. Managerial economics glossary complete (see Appendix 2).

26-30

Revised lesson plan complete. Input-output table update complete. (Another payoff for reading Portuguese.)

October 3

Rector returns to campus on permanent basis. Appointment with Rector scheduled for October 6.

4-5

LTA asks that I prepare 1 to 1-1/2 hour presentation on application of statistics/econometrics to business problems for Vila Real faculty/students.

6

Meet with Rector. Proposed projects outlined. Rector OKs proposals. Outline of Managerial Economics course distributed to IUBI faculty (see Appendix 3).

7

Visited industrial park in Covilha.

10

Outline of proposed conference on the academic education of the Portuguese military officer sent to Rector (see Appendix 4).

11

Initial class meeting. Four students enroll. All instructors at IUBI. One definite candidate for U.S. Masters program.

Students

Academic area

Amando Baia

Regional economics/Math of finance

Margarida Batista

Operations research/econometrics

Carolina Cardoso

Economics

Helder Jacome

Financial management/organization theory/textile management

Request assistance from Strom Thurmand Institute for Public Policy Research regarding military education seminar.

October 12-13 Begin major revision of lesson plan (see Appendix 5) taking into consideration students' background.

13 Memo to Rector confirming responsibilities as per October 6 conference (see Appendix 6).

14 Visited industrial part of Evora.

18 Presentation at Vila Real cancelled by Vila Real administrators. Reason given was emergency faculty/staff meeting. Letter dated October 18 from Thurmond Institute offering \$100 contribution toward military education (see Attachment 7).

20 Travel

21 Visited Vila Real with LTA. Met Rector. Continued on to Cachao where visited "nordeste" agro-industrial complex.

24-28 Classes. Prepare military education seminar.

26 List of research projects given to students and general faculty (see Appendix 1).

31 Classes. Preparing outline of regional economics conference.

November 2 Outline of proposed regional economic conference submitted to Rector (see Attachment 8). Letter received from Strom Thurmond endorsing military education conference (see Attachment 9).

4 Visited Evora for purpose of discussing feasible range of agricultural processing plant sizes with Evora faculty. Upon arrival advised by AID (Portuguese secretary) coordinator that appointment had been cancelled. No acceptable reason given. Discussed possibilities of increased agricultural output with Evora AID STA Dr. Edwin Monke at breakfast meeting.

6 Entertained my students/spouses and wives of students already at Clemson. Clemson University color slide program presented.

- 14-18 Classes. Preparing merchant marine seminar. My newly published book on merchant marine arrives from U.S.
- 15 Meet with Rector. Regional economic conference set for December 7 at Covilha.
- 21-25 Classes. Seminar preparation. Class held on Thanksgiving morning due to missed classes on Portuguese holidays. U.S. ambassador visit to IUBI cancelled.
- 28-30 Class. Merchant Marine conference in Lisbon cancelled due to time constraint. Military education conference set for December 9 in Lisbon.
- 29 Regional economic conference moved from December 7 to December 13.
- December 1-2 Classes. Military education conference preparation. Letter received from Mel Greenhut, Distinguished Alumni Professor at Texas A&M University endorsing regional economics conference. Greenhut author of 10 books, hundred articles on location economics. One of best known in field in world (see Attachment 10).
- 5-7 Classes.
- 6 Discussed and approved research topic of Amando Baia. He will work on in Portugal and with me prior to coming to Clemson.
- 8 Travel.
- 9 Military education conference held at Portuguese Air Force Academy. Paper duplicated and distributed. Paper will be published in Air Force Journal. Managerial Economics students given final take home examination. Course evaluation questionnaires distributed.
- 12 Exam results given to Rector with copy to Professor Behery at Clemson (see Attachment 11).
- 13 Regional economics conference held at Covilha. My paper duplicated and distributed. Paper translated into Portuguese and distributed. Mel Greenhut letter translated and incorporated into conference program.

December 13	Course evaluations and suggestions given to Rector and Chairman of Economics/management faculty (see Attachment 12).
14	Leave Covilha for Lisbon
15	Leave Lisbon for New York
16	Leave New York for Clemson, S.C.

PART II

Observations

1. The value of a STA is severely constrained due to lack of planning (for his utilization) by IUBI administrators.

My background, particularly in location economics and regional science, was known to IUBI administration since May 1983. Twenty years of teaching and research in an area important to Portugal was definitely under-utilized. In addition to a conference given on December 13, several other presentations could have been scheduled.

Following the presentation at the Air Force Academy on December 9, two further invitations were extended, one at the Naval Academy and the other at the National Defense University. Lack of time prevented accepting. These seminars could have been given with some advance planning.

The merchant marine seminar was a natural given that my second book on the U.S. merchant marine had just been published (October 1983). A seminar based on this material relating American experience to Portugal would have been very valuable given the recent Portuguese commitment to rebuild its merchant and fishing fleets.

2. Administrative and hardware support for STAs is minimal. The AID secretary was also secretary to the Rector which severely limited her availability. All typing, including lesson plans, syllabus, letters, and proposals was done by the STA on a typewriter borrowed from the U.S. Embassy by the LTA. (Use of a typing pool at IUBI involves delays of 2-3 days and is not an option.)

There are only two (2) overhead projectors at IUBI. Fully one-third of my class presentations used overhead projectors. It was just too bad if they were already in use by a concurrently scheduled class. Also, during my tour, blank xerox transparencies ran out. It took 10 days to reorder.

Students at IUBI had access to only one TRS desk top computer. The small IBM (64K) was used for undergraduate instruction and financial record keeping. A single faculty member was in charge of this machine--when he could be found. Given the down time and use by other faculty of the TRS, firm homework assignments involving extensive computer use could not be made. To this extent, class work was degraded.

3. The STA should be prepared to revise his course syllabus after he has met his class. As a rule, he will be teaching students with diverse backgrounds and without benefit of a textbook. He must be prepared to utilize xerox transparencies (bring a box with him) and the blackboard extensively. At least one hour should be allowed to put the lecture on the blackboard before class begins.

4. The STA should bring as much handout material for his course as possible. The xerox capability at IUBI is one of the bright spots.

Material for students can be xeroxed prior to class and extra copies put in the library.

5. The STA should make arrangements to hire (at his own expense) a student assistant. The ongoing rate (December 1983) was \$1.25/hour. It is a bargain. Most students have a limited knowledge of English and can be useful in researching material for the STA.

6. The STA should be prepared to function on "Portuguese time." My class began anywhere from 10-15 minutes after the scheduled time. Accept it, joke about it, but do not criticize. The interest and attention of students easily makes up for this deficiency after the class begins.

7. The AID program should furnish a good Portuguese-English (not a pocket Berlitz) dictionary to every STA. He will need it and such dictionaries are difficult to come by in Covilha.

8. The International Herald Tribune can be delivered to Covilha. Subscriptions to it and one news magazine should be funded. My students were interested in United States news. Having such reference sources in the library would be a valuable teaching/research aid. A valuable side benefit would be the practice it would give students in preparing for their English language examinations.

There is no list of English language management and economics books in the IUBI library. This can be vexing to an STA who needs additional reference material for his class or wishes to assign readings in English.

One of the tasks of my student assistant was to compile a list

of all English language management and economics books in the IUBI library. A xerox of this list can be obtained by writing:
C. H. Whitehurst, Jr., Department of Management, Clemson University, Clemson, S.C. 29633. Also a list of TRS programs can be obtained in the same way.

Suggestions

1. Short-term advisors, if possible, should carry a portable typewriter, or the program should purchase an American keyboard electric typewriter for the exclusive use of STAs.

The program should also purchase at least one overhead projector for the exclusive use of STAs.

2. The STA should bring with him the most powerful pocket calculator his budget will allow, depending, of course, on his teaching/research assignment. Extra batteries are suggested.

3. There is absolutely no incentive for IUBI faculty to do research and publish results even in the most humble way. This is primarily due to the way faculty are rewarded. Research does not count. A teacher's responsibility is essentially to instruct assigned classes. The AID program might use a carrot/stick approach to encourage IUBI administration to improve this situation.

4. Faculty access to computer facilities is limited. The present TRS could not support even a limited research effort by more than two faculty. During the summer, Marcus Mendes, a Ph.D. student at Canterbury University (also a IUBI faculty member), tied up the TRS for 2-6 hours per day. There was no problem since there was no demand in the

summer. Such utilization would have been impossible during the teaching term. A basic knowledge of computers and computer capability is generally lacking at IUBI. The AID program could encourage IUBI to establish a computer programming course using the present IBM machine, a machine which has very limited use at present and one which, to this STA's understanding, was purchased with AID funds.

5. The five year management and economics degree programs at IUBI, while solid, are relatively inflexible (lack of electives). Individual courses concentrate on math fundamentals and economics fundamentals but lack in the range of topics covered. For example, while management students have a good understanding of matrix algebra, they had not been exposed to input-output analysis or Markov processes, techniques that are always covered in upper division courses in the United States.

In the Managerial Economics course evaluations, students were asked to list those topics that should be incorporated into new or existing courses. Six to seven major topics were cited. NOTE: These evaluations were given to the Rector and the Chairman of the Management/Economics faculty.

6. The instructors at IUBI, particularly those in my class, were a pleasure to work with. They were bright, interested in the material, and fully participated in the class. Somehow this potential must be tapped to a much greater extent than is now possible.

Final Comment

In my case there was a question of whether a 4-month tour was cost-effective as opposed to a 3-month or less tour. The answer to this question, should it arise again, is that a 4-month tour (a full semester) can be very beneficial with advanced planning. In the period August 15 - October 1, I prepared myself to be fully utilized. If such had been the case, the additional month would have been very cost-effective. As it turned out, the extra month was only marginally cost-effective.

PART III

Appendix

(1 through 12)

Appendix 1

Suggested Research Projects

26 October 1983

TO: Students enrolled in Managerial Economics
FROM: Professor Whitehurst

Below are listed some research projects that are similar to ones which would be given to graduate students at an American university. All subjects have their parallel in the United States.

It is suggested that the student select one of these topics and write a short paper based on his/her research results. If the research is finished by December 2d, I will assist the student in jointly authoring a paper for presentation at the 1984 annual meeting of the South Carolina Academy of Science. An abstract of the paper will be published in the Bulletin of the South Carolina Academy of Science.

1. Review and critique the present "Consumer Price Index" used in Portugal. Make any suggested changes if you feel they are warranted. Remember to consider the present and likely rate of inflation.
2. Develop an Input-Output matrix for a particular region in Portugal. Basic input-output analysis will be discussed in class.
3. Do a cost-benefit analysis of increasing the number of university graduates in Portugal.
4. Do a cost-benefit analysis of increasing the number of high school graduates in Portugal.
5. Do a cost-benefit analysis of improving the secondary road system in Portugal.
6. Determine the cross-elasticity of demand between 2d class rail travel and bus travel in Portugal. Based on this elasticity, make some recommendations for a government subsidy policy respecting these modes.
7. Do a cost benefit analysis of increasing the size of Portugal's merchant marine.



8. Analyze the possibility of a single manager for Portugal's railroads and buses, and ports and airline. i.e. concentrate government management of transportation in a single department. There is some parallel for this in the U.S. Department of Transportation.

9. Evaluate Portugal's laws with respect to environmental protection, i.e. regulations with respect to air and water pollution. What changes, if any, would you suggest. Keep in mind that one of Portugal's primary goals is economic growth. Note: This is a highly controversial topic in the United States as it probably is in Portugal. This does not mean, however, that the subject cannot be researched.

10. Assume a government official asked you to determine the costs and benefits of abolishing the paper 20\$00 escudo note and increasing production of the 25\$00 escudo coin. How would you go about performing this analysis? Do the analysis.

11. Forecast the demand for Portugal's energy requirements over the next 15 years. A single equation econometric model is suggested. Discuss briefly how this demand might be met.

12. Do a cost-benefit analysis of ~~adding~~ (increasing) atomic power as an energy source in Portugal.

13. Write a survey questionnaire and compile data on Portuguese university students opinion and attitude on developing atomic power generating plants in Portugal. Introduce the survey with a brief history of atomic power in the United States and Europe.

14. Identify locations in Portugal that you believe would be good industrial locations except for lack of (or poor) transportation systems.

15. List Portugal's main imports in 1982. Identify those that you believe could be produced in Portugal at a profit assuming the initial capital expenditures were provided externally.



16. List and justify at least ten categories of foreign investment that you believe could be profitable for the investor and beneficial to Portugal. Do an in-depth analysis.
17. Select a locality in Portugal and develop a community base study for the locality. References and assistance will be provided.
18. Develop a national income (simultaneous equation) model for Portugal. A simple illustrative model will be done in class.
19. Compile a bibliography of Portuguese economic data. Include a short description, source, location of material. Suggest ways in which this data might be stored and made readily accessible to researchers in Portugal.
20. Develop a series of leading, coincident, and lagging economic indicators for the Portuguese economy.

Appendix 2

Managerial Economics Glossary

MANAGERIAL ECONOMICS

Glossary

<u>Anti trust laws</u> : A series of laws passed since 1890 designed to prevent monopoly and to maintain competition in most American industries	leis que tem por objecto a defesa da concorrência ou a restrição do poder de monopólio das empresas. p. ex. Nos E.U.
<u>Autocorrelation</u> : An econometric problem characterized by the existence of a significant pattern in the successive values of the error terms in a linear regression model	problemas de correlação de erros da regressão linear
<u>Capital budget (ing)</u> : The process of planning for and evaluating capital expenditure decisions	orçamento de capital, orçamento das compras e vendas de bens de capital
<u>Capital expenditure</u> : A cash outlay designed to generate a flow of future cash benefits over a period of time extending beyond one year	despesa de capital, importância despendida na aquisição de um valor activo
<u>Capital rationing</u> : A situation that exists when a firm has more acceptable investment projects than it has funds available to invest	sistema de racionamento despesa de capital
<u>Cartel</u> : A formal agreement among firms in an oligopolistic industry. Cartel members may agree on such issues such as prices, total industry output, market shares, and division of profits	cartel, acordo entre vários produtores com o fim de alcançar ou manter o domínio total ou parcial num dado mercado; a monopolização de mercados mundiais

Cobb-Douglas production function: A particular type of mathematical model, known as a power function, that is used to represent the relationship between the inputs employed in a production process and the output obtained from the process

funcao producao, nom de inventor Cobb e Douglas

Coefficient of determination: A measure of the percentage of total variation in the dependent variable that is explained by the independent variable(s)

coeficiente de determinacao

Coefficient of variation: The ratio of the standard deviation to the expected value. A relative measure of risk

coeficiente de variacao

Complementary good(s): Two goods, A and B are complementary if they are used in conjunction with each other, for example, records and record players

bens complementares

Conglomerate merger: A combination of two or more companies that do not compete directly with each other, for example, a theater chain and a bakery

referir a conglomerate e merger

Consumer good: A good of a nonendurable nature that is purchased largely to meet current needs and generally provides benefits on a one shot basis

bem de consumo

Consumption externalities: Externalities that result when the actions taken by one consumer influence the satisfaction received by one or more other consumers. Favorable consumption externalities are called external consumption economies; Unfavorable are called external consumption diseconomies

consumo economias externas

Critical Path Method: CPM is a method for planning a complex project which consists of many separate activities some of which can take place together but some must wait for the completion of others before they can be started. The objective is to finish job in shortest possible time

metodo do caminho critico,
metodo CPM

Conglomerate: Combination of two or more companies that do not directly compete with one another

1. conglomerado; 2. sociedade proprietaria de diversas empresas de ramos diferentes

Cost: The sacrifice that is incurred whenever an exchange or transformation of resources takes place

custo. p. ex. custo de producao

Cost-benefit analysis: An analytical tool designed to assist public decision makers in their resource-allocation decisions. It requires the measurement of all benefits and costs arising from a particular program

analise beneficio-custo: tecnica de avaliacao de programas alternativos atraves da comparacao relativamente a cada um, entre o valor actual de todos os beneficios esperados e o dos custos esperados

Cost effectiveness analysis: An analytical tool designed to assist public decision makers in their resource allocation decisions when benefits cannot easily be measured in dollar terms but costs can be monetarily quantified

custo eficacia

Cost function: A mathematical model, schedule or graph that shows the cost (total or average) of producing various quantities of output

funcao custo

Cross elasticity: The ratio of the percentage change in the quantity demanded of good A to the percentage change in the price of good B, assuming that all other factors influencing demand remain unchanged

elasticidade cruzada

<u>Cross sectional data</u> : A series of observations taken on different observation units (households, states, countries) at the same point in time	seccao transversal dados
<u>Economics</u> : Study of allocating limited resources among an infinite number of demands	.. economia politica, ciencia economica; 2. regime economico, sistema economico
<u>Economist</u> : One trained in economics	economista
<u>Econometrics</u> : A collection of statistical techniques that is available for testing economic theories by means of empirically measuring relationships among economic variables	econometria
<u>Economies of scale</u> : Declining long run average costs as the level of output for the firm (or production plant) is increased	economias de escala, economias de dimensao, economias dimensionais
<u>Economic rent</u> : The additional earnings beyond the earnings that would be necessary to keep a person in a job; the difference between total revenue and total cost	renda economica

Firm: An organization that converts inputs into goods and services that it sells

firma; sociedade comercial; casa comercial; empresa

Franchise: A retailer or distributor with the authorization to sell a particular company's product

privilegio concedido por uma empresa comercial a um seu agente ou concessionario, como , por a garantia de exclusivo de vendas numa determinada area

Free market economy: An economic system wherein resources are allocated among competing uses with minimum government direction

economia de mercado, economia de livre concorrencia

Free market system: See free market economy

sistema de livre empresa, sistema liberal-capitalista

Game theory: A mathematical theory of group decision making for situations in which a conflict of interest exists between two or more of the participants

jugo teoria

Increasing cost industry: Industry in which long run average costs increase as level of output is increased

industria de custos crescentes: industria que, ao expandir-se, regista aumentos nos precos das materias-primas ou nos custos de producao, em virtude da entrada de novas empresas para a industria

Income elasticity: The ratio of the percent change in quantity demanded to the percent change in income, assuming all other factors influencing demand remain unchanged

elasticidade-rendimento da procura: variacao percentual na quantidade comprada de um bem, em resultado da variacao de 1% no rendimento

Income effect: When price of a commodity declines, the effect is that the real income of the consumer is increased

efeito rendimento: aumento ou diminuicao do rendimento real do consumidor, em resultado de uma variacao no preco de um bem, permanecendo constantes o rendimento monetario e os gastos do consumidor, bem como o preco de todos os outros bens

Indifference curve: The set of points representing various combinations of commodities that provide a consumer with the same level of satisfaction

curva de indiferencia

Isocost curve: A curve which shows all combinations of inputs having equal total costs. An isocost line exists for every possible total cost "C"

curva de isocustos

Input: A resource or factor of production, such as a raw material, labor, skill, that that is employed in a production process

insumo, entrada quantidade consumida (num processo de producao)

Joint product: Products that are inter-dependent in the production process, such as the production of gasoline and fuel oil in an oil refinery. A change in production of one produces a change in the cost or availability of the other

produtos junta

Long run: A period of time in which the quantities of all inputs are adjusted (if necessary)

periodo longo: periodo de tempo que e suficientemente longo para a empresa poder variar todos os factores de producao

24

Marginal cost: The change in total cost that results from a unit increase in output

custo marginal

Marginal rate of substitution: The maximum rate at which the consumer is willing to substitute one commodity for another while maintaining a constant level of satisfaction

taxa marginal de substituicao

Marginal revenue: Change in total revenue for selling one more unit

rendimentos marginal

Merger: A combination of two or more companies into one surviving company

Uniao de duas ou mais empresas por efeito de uma transacao tendo por resultado: (a) a absorcao de de uma empresa por outra deixando a primeira de ter existencia juridica distinta: ou (b) o desaparecimento da personalidade das empresas anteriormente existentes, com a formacao de uma nova empresa que fica com todo ou com a maior parte do activo e do passivo, bem como dos direitos e poderes das referidas empresas

Monopolistic competition: A market structure very much like pure competition with the major distinction being the existence of a differentiated product

concorrenca monopolistica, concorrenca imperfeita

25

<u>Monopoly</u> : A market structure characterized by one firm producing a highly differentiated product	monopolio
<u>Natural monopoly</u> : A product whose production process is characterized by increasing returns to scale throughout the range of outputs demanded by the market	monopolio natural
<u>Oligopolistic competition</u> : A market structure in which the number of firms is so small that the actions of any one firm are likely to have noticeable impacts on the performance of other firms in the industry	industria oligopolista
<u>Opportunity cost</u> : The value of a resource in its next best alternative use. Opportunity cost represents the return or compensation that must be foregone as the result of the decision to employ the resource in a given economic activity	custo de oportunidade, custo alternativo, custo de opcao
<u>Operations research</u> : Analyzing and evaluating a firm's operations by use of mathematical ^{techniques}	pesquisa operacional, analise operacional, investigacao operacional
<u>Optimize</u> : To maximize or minimize the value of some objective function, such as to maximize profits or minimize costs	utilizacao optima
<u>Patent</u> : A legal government grant of monopoly power that prevents others from manufacturing or selling a patented product	1. patente: 2. invencao patenteada, invencao protegida por patente; 3. privilegio de venda ou fabrico

Price elasticity: The ratio of the percentage change in quantity demanded to percentage change in price, assuming that all other factors influencing demand remain unchanged

elasticidade-preço da procura

Price leadership: A pricing strategy followed in many oligopolistic industries. One firm normally announces all new price changes. Either by an explicit or an implicit agreement, other firms in the industry regularly follow the pricing moves of the industry leader

situacao existente quando numa dada industria os precos sao fixados por um so produtor, normalmente o maior, e os outros produtores aceitam tactamente o preco assim det erminado; lideranca de precos

Producers' good: A good that is not produced for direct consumption, but rather is the raw material or capital equipment that is used to produce a consumer good (or some other producers' good)

bens de producao, bens de capital, bens de equipamento

Production: The creation of any good or service that has value to either consumers or other producers

producao

Production function: A mathematical model, schedule (table) or graph that relates the maximum quantity of output that can be produced from given amounts of various inputs

funcao producao

Present value: The value today

valor hoje

Public utilities: A group of firms in the electric power, natural gas, transportation, and communications industries, that are closely regulated by one or more government agencies. The agencies control entry into the business, set prices, establish product quality standards, and influence the total profits that may be earned by the firms

serviços públicos (p. ex. produção e distribuição de energia elétrica, abastecimento de água, serviços telefônicos e telegráficos, transportes coletivos)

Pure competition: A market structure characterized by a very large number of buyers and sellers of a homogeneous product. Entry and exit from industry is nearly costless. Information is freely available to all market participants, and there is no collusion among firms in the industry

concorrência perfeita

Returns to scale: The proportionate increase in output that results from a given proportionate increase in all inputs employed in the production process

rendimentos proporcionais

Risk: In a capital-budgeting context, the possibility that actual cash flows from a project will deviate from the forecasted cash flows

risco, possibilidade de perda

Seasonal effects: Variations in a time series during a year which tends to appear regularly from year to year

flutuações sazonais

Secular trends: Long run changes (growth or decline) in an economic time series variable

tendência secular

Short run: Period of time in which one (or more) of the resources employed in a production process is fixed or incapable of being varied

periodo curto: periodo que nao e suficientemente long para que a empresa possa fazer variar todos os factores de producao

Simulation: Simulation consists of building a model of the situation in which all values incl. the decision values are explicitly included with the exception of the probabilistic variables.

programa de simulacao; ensaio de simulacao

The values for the probabilistic variables are selected by a sampling process in such a way that the variables are used in the model in proportion to their relative frequency in the real world but are in random sequence

Substitution effect: Wherein a decline in the price of one good makes it more attractive relative to other goods, hence the rational consumer will switch part of his expenditure from relatively higher priced to relatively lower priced goods.

efeito de substituicao

System analysis: A technique wherein an economic activity is analyzed from an overall perspective rather than from a component viewpoint

analista de sistemas

Time series data: A series of observations taken on an economic variable at various past points in time

serie cronologica dados

Utility function: a function which assigns numbers to describe the amount of satisfaction associated with a particular indifference curve

funcao utilidade

Verticle merger: A combination of two or more companies that have a buyer-seller relationship with each other, such as an oil refinery and a chain of service stations

concentracao vertical (de empresas, etc.) integracao vertical

Appendix 3

Outline of Managerial Economics Course

MANAGERIAL ECONOMICS: Managerial economics is the application of micro economic principles to decision-making problems faced by both private and public enterprise managers. Much of the course material is relevant and provides an excellent foundation for other graduate level courses in business and economics. Managerial Economics is a 3 semester hour credit, graduate level course that may be applied toward fulfilling the course requirements for a Masters, MBA, or Ph.D. degree in management or economics.

The course will be taught by Professor C. Whitehurst who holds a joint appointment in the Departments of Economics and Management at Clemson University.

Subject areas include:

Managerial Economics; Scope and Methodology
 Goals and Objectives of Public and Private Organizations
 Optimization Techniques
 Econometrics
 Theory of Demand
 Business and Economic Forecasting
 Empirical Estimation of Demand
 Theory of Production
 Production and Linear Programming
 Theory of Cost
 The Learning Curve
 Empirical Determination of Production and Cost Functions
 Price and Output Determination: Competition, Monopoly, Monopolistic
 Competition and Oligopoly
 Theory of Games
 Capital Budgeting and Long Term Investment Planning
 Risk Analysis
 Cost-Benefit Analysis
 Government Regulation and Support of Private Business
 The Problem of Economic Externalities
 Public Utility Regulation
 Input-output analysis, PERT-CPM (network analysis) industrial dynamics,
 and Markov processes are also discussed and evaluated.

Course participants are encouraged to write a research paper relevant to Portugal and based on one or more of the subject areas discussed. A number of topics will be suggested. Assistance in writing research papers will be provided.

A Portuguese-English glossary of managerial economic terms will be provided.

The initial class meeting will be on 11 October at 2 PM in the Reitoria. At this time, a permanent class schedule will be arranged to accommodate all students.

Appendix 4

Outline of Proposed Conference on the Academic Education
of the Portuguese Military Officer

Suggested format for proposed seminar: A4-1

THE RECRUITING AND EDUCATION OF THE AMERICAN OFFICER CORPS: CAN LESSONS LEARNED
BENEFIT PORTUGAL'S ARMED SERVICES?

Morning

Welcome.to be arranged

Recruiting and Educating Portugal's Officer Corps in 1983Speaker to
be arranged

Current Issues in Recruiting and Educating Portugal's Officer Corps . .Rector
Morgado or other Portuguese authority

Coffee Break

United States Officer Corps Recruitment and Education . . .Professor C.H.
Whitehurst, Clemson University and I.U.B.I.

(Topics to include history, role of service academies, ROTC, the war
colleges and the National Defense University)

Current Issues in the United States. . . .Professor C.H. Whitehurst, Jr.

LUNCH

Remarks by Ministry of Defense official --optional

Afternoon

Can the American Experience Benefit Portugal? . . .Discussion by all
conference participants --Questions and Answers-- This part of
the program will be chaired byand Professor Whitehurst

Concluding Remarks. . . .Representative of host institution

Notes: In the U.S. conferences such as this are usually tape recorded.
IUBI has tapes and a tape recorder

Depending on where lunch is held and the time allotted, it might be
desirable to have a Ministry of Defense official give a short luncheon
talk

If a program is going to be distributed prior to the conference, it is
important that commitments by speakers be confirmed as soon as possible.

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Appendix 5

Lesson Plan for Managerial Economics Course

MANAGERIAL ECONOMICS

Syllabus

Fall Term
Instituto Universitario da
Beira Interior

Textbook References

Microeconomics for Managerial Decision Making by R.O. Blair and L.W. Kenny (McGraw-Hill, 1982)

Managerial Economics by K.K. Seo and B.J. Winger (Irwin, 1979)

Managerial Economics by J.R. McGuigan and R.C. Moyer (West, 1979)

Introduction to Management Science by B.W. Taylor (Brown, 1982)

Outline of Lectures

- I Logic and Language
- II Managerial Economics: Scope and Methodology
- III Goals and Objectives of Public and Private Organizations
 - Profits and profitability
 - Divergence between theory and practice
 - Goals of public firms
- IV Environment in Which Decisions Are Made
 - States of knowledge: certainty, risk, uncertainty
 - States of nature
 - Organizational theories
 - Payoff matrix
 - Incorporating manager's utility function into decision process
 - Decision criteria: Wald, Hurwicz-Alpha, Savage, Laplace (Bayes)
 - Decision trees
- V Optimizing Under Conditions of Certainty
 - Multivariate functions, constrained optimization, Lagrangerian multipliers
- VI Linear Programming
 - Graphic solutions (2 var, 3 constraints)
 - Simplex tableau, mixed constraints, the dual problem
 - Transportation/assignment problem

- VII Econometrics
- Single equation models
 - Simultaneous models (National income model based on Bank of Portugal data)
 - Review of relevant statistical concepts
- VIII Input-Output Analysis
- Transactions matrix, technological coefficient matrix, input-output coefficient matrix, Leontieff inverse
 - U.S. and Portugal examples
- IX Theory of Demand
- Review of elasticity concepts
 - Model formulations
 - Market structures
- X Business and Economic Forecasting
- Forecasting areas and techniques of forecasting
 - Time series; review in detail; decompose series
 - Static and dynamic models
 - Forecast examples using various techniques
 - Technological forecasting
 - Delphi technique
- XI Empirical Estimation of Demand
- Approaches
 - Problems in,
 - Real world examples (Portugal and United States)
- XII Network Analysis
- Shortest route, spanning tree, and maximum flow problems
 - Critical Path Method
 - Program Evaluation Review Technique
- XIII Production Theory
- Review of law of variable proportions, isoquants, elasticity concepts, returns to scale
 - Linear programming in production: Process rays
- XIV Theory of Cost
- Review of theory, short-run long run costs, break-even analysis, economies of scale
 - Deriving cost functions from production functions
 - The learning curve

XV Empirical Determination of Production and Cost Functions

Measurement problems
Cobb-Douglas function, analysis of
Estimating long run cost functions
Examples of production and cost estimation

XVI Price and Output Determination

Competition, monopoly, monopolistic competition, oligopoly
Theory of games
Effect of government subsidies; prices, output and resource allocation
Licensing, patents
Regulated prices--Averch-Johnson hypothesis
Deregulation

XVII Advertising as a Variable in the Demand Function

Purpose of advertising
Optimal advertising
Media choice, costs and options, media mixes
Private brands and franchises
Markove processes

XVIII Cost Benefit Analysis and Public Sector Management

Cost-benefit analysis
Social rate of discount
Cost effectiveness analysis

CRITIQUE OF COURSE AND FINAL EXAMINATION

Appendix 6

Memo to Rector Confirming STA's Responsibilities

*Instituto Universitário da Beira Interior*

13 October 1983

TO: Rector Morgado

FM: Whitehurst

In our conversation of October 6, 1983 you indicated to me five tasks should be given priority during my tour at IUBI.

1. Teach a graduate level course in Managerial Economics. This course has already started and meets 6 hours per week. (Tues, 3-5, Wed. 3-5, Thurs, 10-12) The students selected the hours that best fitted their schedules.
2. Write a syllabus (outline) for an undergraduate course in the same general area as the course above with the understanding it might be taught in the IUBI management curriculum at some future time. The students in my graduate course and I will do this. An outline will be completed the first week in December.
3. Prepare a seminar on Portuguese officer recruitment and education. This is now in the planning stage. The Rector has an initial outline and a tentative time frame of Nov 1 - Nov 15 has been set.
4. Prepare a seminar on regional economic development. In furtherance of this seminar I visited the industrial park at Covilha on October 7th (Empresa Publica de Parques Industrias). Good information was obtained with respect as to what type of firm/industry could benefit by a location in Covilha. On October 14th arrangements have been made to visit the industrial part at Evora to see what lessons might be learned from them. At a later date, if time permits, visits will be made to industrial parks at Braga and Guimaraes. Particular attention will be paid to the possibilities of processing fruits and vegetables for the overseas export market. All of the information obtained will be incorporated into IUBI's regional development seminar.

5. Develop and present a seminar/lecture on the benefits and cost of increasing the tonnage of Portugal's merchant marine. I plan to have my student assistant (who I pay myself) to begin to compile the basic data needed for the presentation. If I have any difficulty I will ask the Rector's help.

What needs to be done in the next few weeks is to pick a tentative week or weeks in which the regional development and merchant marine seminars might be held.

Attachment 7

Letter from Thurmond Institute

A7-1
THE
STROM THURMOND
INSTITUTE

October 18, 1983

Professor C. M. Passos Morgado, Rector
Instituto Universitario da Beira Interior
Rua Marques da Avila e Bolama
6200 Covilha, Portugal

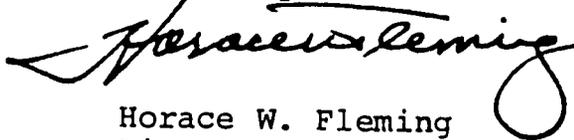
Dear Rector Morgado:

The Strom Thurmond Institute of Government and Public Affairs at Clemson University is pleased to have the opportunity to co-sponsor the seminar on "The Education of the American Officer Corps: Can Lessons Learned Benefit Portugal's Armed Services?" I am especially pleased that Professor Clint Whitehurst, who is visiting the Instituto Universitario da Beira Interior, is present to participate in this important program and to represent The Strom Thurmond Institute on this occasion. Professor Whitehurst is chairman of the Defense Studies program in the Thurmond Institute and continues to make important contributions both to the Institute program and to the literature in this field.

The education of our respective officer corps is vital to a strong national defense and to the NATO objective of protecting western civilization. I commend you, therefore, for your initiative in offering this seminar. It is my hope that this event will be the beginning of many such opportunities for cooperation in the future between the Instituto Universitario da Beira Interior and The Strom Thurmond Institute of Government and Public Affairs.

With best personal regards,

Sincerely,



Horace W. Fleming
Director

Attachment 8

Outline of Economic Development Conference

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INSTITUTO UNIVERSITÁRIO DA TERRA INTERIOR

MEMORANDO

DATA. 2 Nov 1983

DE: Whitehurst

PARA: Rector Mogardo

ASSUNTO:

REF:

Attached is the proposed seminar on economic development that we discussed. I have now visited industrial parks (Empresa Publica de Parques Industriais) in Covilha and Evora, and the Nordeste complex at Cachao. On November 4th I will discuss some unique Portuguese agricultural production problems with experts at Evora. This will conclude my familiarization with Portuguese industry and agriculture.

The seminar can be run at any time you wish

u/b



Instituto Universitário da Beira Interior

THE ROLE OF INSTITUTES AND UNIVERSITIES IN PORTUGAL'S ECONOMIC DEVELOPMENT

Introduction

The below quotes are taken from an address by Dr. Manuel Jacinto Nunes, Governor of the Bank of Portugal, to the British-Portuguese Chamber of Commerce on April 29, 1983. The title of his address was "Our Main Aim--- Rapid Economic Growth."

Given the low level of Portugal's per capita income, compared with countries of the Common Market, the country's main objective, in the medium and long term, is a rapid economic growth which brings us close to the income levels of the European Community.

. . .while internal savings remain insufficient, it will be necessary to resort to external credit to finance productive investment essential to the country's economic development

In the area of incentives for exports, the problem is one of selectivity; it is necessary to choose those sectors which should be granted significant incentives, or negatively , to eliminate traditional sectors, with secure markets, which should not enjoy any incentives

To increase employment and productivity, we all know, we must increase investment. Now this depends on the outlook for its profitability and for future demand. . .a policy of wage moderation and of reduction of costs is essential to re-launch investment, to limit the degradation of the labour market and of the growth of income.

. . .we must consider foreign investment, which could take on an important role in our development, a role which it has not had up to now.

Industrial policy must also consider the aspects of vocational training and technological research. . .the return to elementary technical education is essential for the training of specialized labor. . .In addition to technical education, special training courses should be organized and supported by the State, in preference to their duplication and necessary limitation of purpose, by private groups. . .Technological research is also indispensable for a small country, where specialization in certain sectors for which it has natural aptitude, is of particular importance to reach greater income levels

Studies by the World Bank. . .show that Portugal has considerable possibilities for expanding its agricultural production, and for improving the trade balances of these products

. . .priority actions in the agricultural sector appear to be as follows. . .adjust the distribution of agricultural benefits for the sector of the EEC price support structure. . .an additional effort at production in those areas, namely cereals, where exchange implications of the EEC's protectionist policy could be extremely harmful. . .to establish new forms for the policy of subsidies to the essential food sectors. . .the adoption of measures to develop or set up the institutions necessary for enjoying the greater advantages of the EEC arrangements for supporting farmers. . .the establishment of a conservation and refrigeration network could also play an important role in the expansion.

Dr. Nunes concluded:

We are a developing country, but poor only in the economic field, for we have a History and a Culture. If perseverance, good sense, and the recognition of the need for hard work, triumph over the immobility and irresponsibility in which we have lived, then we could have a place in Europe, which is not that of poor relation, and which will constitute for all Portuguese, a stimulus to persevere on the path of progress and development, the only one which grants peoples their majority, and ours deserves it.

The proposed seminar will explore the questions of "What role can Portugal's institutions of higher learning play in achieving the goals set forth by Dr. Nunes" and "What can be learned from the experience of American colleges and universities in fostering economic development in the United States"

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Outline of proposed one day seminar

Introduction.to be arranged

What Are Portugal's Institutes and Universities Doing Now to Foster Economic Growth? What Can They Do? What Should They Do?. . . .speaker to be arranged.

The Role of Colleges and Universities in the United States in Fostering Economic Development. . . .Professor Whitehurst, Clemson University and IUBI

- Enumeration of roles of American universities—
- Relationship Between Institutions and Government—
- The Role of Teaching and Research—
- Problem Areas—

Coffee Break

Possible Benefits For Portugal From the American Experience. . . .Professor Whitehurst

Lunch

"Marketing" Portugal's Economic Growth. . . .Professor Gunter, University of South Carolina (Spartanburg) and IUBI

Comment and Discussion by Conference Participants. . . .Professor Whitehurst and representative of Portuguese institution

Concluding Remarks.

Attachment 9

Letter from Strom Thurmond



The President Pro Tempore

UNITED STATES SENATE

October 24, 1983

Professor C.M. Passos Morgado, Rector
Instituto Universitario da Beira Interior
Rua Marques da Avila e Bolama
6200 Covilha, Portugal

Dear Rector Morgado:

Dr. Horace Fleming, Director of the Strom Thurmond Institute of Government and Public Affairs at Clemson University, has informed me of the seminar to be offered on "The Education of the American Officer Corps: Can Lessons Learned Benefit Portugal's Armed Services." This is an important subject in that it touches upon a vital concern to the defense of our respective nations and our allies in NATO -- namely, the recruitment and education of our officer corps.

As a former teacher and military officer, I can attest to the critical need for ensuring that those who lead our military and naval forces in defense of the NATO nations and western civilization be among the best educated and the most productive that we can recruit. Equally important, however, is the fact that once a young person has elected a military career, we must be certain that his education is not only militarily sound but also that it reflects the social and human values of his country and those of the western democracies the member nations of NATO are sworn to protect. These same issues are of continuing concern in the United States.

I commend your group and the sponsors of this seminar for the initiatives taken in addressing this vital subject and wish you every success with your program.

With kindest regards and best wishes,

Sincerely,

Strom Thurmond

Strom Thurmond

ST:r

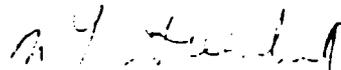
Attachment 10

Letter from M. L. Greenhut

TEXAS A&M UNIVERSITY
DEPARTMENT OF ECONOMICS
COLLEGE OF LIBERAL ARTS
COLLEGE STATION, TEXAS 77843-4228

TELEPHONE
409 845-7351

There is no more important contributor to a region's or a country's economic development than its institutions of higher education. For it is on the campus that the ideas and concepts of students, professors, relevant government officials, and the investor-entrepreneur are debated and thrashed out. From these exchanges emerge policies which for better or worse will profoundly influence a nation's economic development. In the United States the ideas of the businessman and government official are sought out by academics who teach and do research in the areas of location economics and regional economic development. I sincerely commend this type of working relationship. My best wishes to those in Portugal's universities and those individuals in and out of government with the responsibility for developing a sound economic development policy.



M. L. Greenhut
Alumni Distinguished Professor

Attachment 11

Exam Results Given to Rector



Instituto Universitário da Beira Interior

13 December 1983

TO: Rector Passo Morgado
Professor H. Behery

FM: Professor C.H. Whitehurst, Jr.

Please be advised that the below students have completed the graduate course "Managerial Economics" (Clemson University Econ/Mgt 409) with the grades indicated,

Amando Baia	1 absence	Final Exam 84 of 88	Grade "A"
Margarida			
Batista	2 absence	Final Exam 81 of 88	Grade "A"
Carolina			
Cardosa	4 absence	Final Exam 82 of 88	Grade "A"
Helder Jacome	3 absence	Final Exam 83 of 88	Grade "A"

Twenty three 2 hour class lectures were presented (46 hours) plus a take home examination (4 hours), Approximately 35 hours of homework were assigned.

Classes began on October 11 and ended with the final examination on December 9, 1983, Classes did not meet on 3 Portuguese holidays. Class was held on November 24 (Thanksgiving Day)

It has been a pleasure working with these students. Their interest and class participation equalled or exceeded that of the average American counterpart student.

cc: A. Baia
M. Batista
C. Cardosa
H. Jacome

EF

Attachment 12

Course Evaluation and Suggestions

Presented to Rector

*Instituto Universitario La Sierra Interior*

December 12, 1983

TO: Rector Morgqdo
Dr. Jose Manso

FM: Professor C. Whitehurst *Whitehurst*

Students in my course "Managerial Economics" were asked to evaluate the course in terms of including some of the topics covered in existing IUBI courses or in a new course that might be developed,

Their comments are attached for your consideration, Unfortunately the xerox copy is not clear, However. the original copies of the student recommendations are attached to the Rector's copy of this memorandum.

I will be pleased to discuss these recommendations with you. If time is not available while I am at IUBI, I will be happy to correspond on the matter from the United States,