# SOUTHWESTERN JOURNAL OF ECONOMIC ABSTRACTS

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A Comparison of Selected Feeder Cattle Marketing Strategies Using Options on Futures, Futures, and Cash Markets

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# 1990-1991 Officers

# Southwestern Economic Association of the Southwestern Social Science Association

# President

Chuck Becker Texas Christian University

# **President-Elect and Program Chair**

Rose Rubin University of North Texas

# Vice President

Abdul M. Turay Mississippi State University

## **Treasurer/Secretary**

Charles J. Ellard University of Texas-Pan American

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M. Ray Perryman Baylor University

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#### Minutes of the Annual Business Meeting Southwestern Economics Association

### March 31, 1990 Fort Worth, Texas

The annual business meeting of the Southwestern Economics Association was called to order by President Luvonia Casperson, LSU-Shreveport, at 5:30 p.m. on March 31, 1990. A motion to dispense with the reading of the minutes was passed.

The treasurer's report, presented by Charles J. Ellard, University of Texas-Pan American, indicated a current balance of \$4,326.38. The Treasurer's report was accepted as presented.

President Elect and Program Chair, Chuck Becker, Texas Christian University, informed the membership that the Fort Worth Economics program included 60 sessions not counting the interdisciplinary sessions. Becker acknowledged the assistance of the program committee in putting together the program for 1990. Special thanks went to Lewis Hill, Texas Tech University, and David Gay, University of Arkansas. This year's program had added emphasis in the area of agricultural economics, a strong showing by institutional economics, an excellent group of student papers, and an interesting panel on economics and the law. Preliminary attendance indicated 932 pre-registrants for the South Western Social Science meeting with 130 of those in economics. Added to this were 363 on the spot registrants of which 57 were in economics. Thus economics registrants totaled 187 according to preliminary estimates.

Becker announced the winner of the distinguished paper completion; he is Yu Hsing, Southern Western Louisiana University, for his paper, "Unemployment and the GNP Gap: Okun's Law Revisited." Becker said he would like to see more entries in next years competition. Chairman Becker recognized the assistance of his committee members in selecting the winning paper.

Rose M. Rubin, University of North Texas, Chair for the student paper programs expressed appreciation to all who cooperated to make the student program a success. This year, she reported, we tried to involve undergraduate students in the process; however, we did not get many applicants; there was a problem in students making an enduring commitment.

Ray Perryman, Baylor University, Editor of the Journal, reviewed his involvement with the SWEA Abstract Journal. He announced that April 30, 1990 was the deadline for submitting abstracts for papers presented at the Fort Worth meeting. He asked the membership to think about advancing the quality of the journal to include refereed papers and other ways to expand. The members might think about ownership of a publishing company to handle the journal. He said he and his committee are open to suggestions to build the journal to one that will be recognized. Please send suggestions to him or other members of the committee Kirker Stephens, University of Oklahoma; Hussain Ali Jafri, Tarlton State University; Robert L. Lorentz, University of Tennessee; Martin and Luvonia Casperson, LSU-Shreveport.

Lewis Hill, Texas Tech University, reported that no distinguished service citation is being given this year, but if any member knows of a worthy recipient to please give him the information. A motion was made, seconded and passed to recognize our friend and colleague Allen Gruchy who died about a year ago. Under Old Business a discussion occurred regarding ways to improve the distinguished paper award. A motion was made, seconded and passed that a committee be established to have papers completed by October 15 of the year prior to the meeting which can be included in the journal. For the purpose of cotinuity the procedures for the upcoming year will continue until the report is made and new procedures adopted. A committee was appointed consisting of David Gay, University of Arkansas; Joe Davis, Trinity University and Zena Seldon, University of Wisconsin-LaCrosse.

The nominating committee chaired by Lewis Hill, Texas Tech University presented the following slate of officers. There being no nominations from the floor, the slate was unanimously accepted.

President:	Chuck Becker, Texas Christian University
President Elect and Program Chair:	Rose Rubin, University of North Texas
Vice Chairman:	Abdul Turay, Mississippi State University
Secretary/Treasurer:	Charles J. Ellard, UT-Pan American

Editor, Southwestern Journal of Economic Abstracts: Ray Perryman, Baylor University

The meeting was promptly turned over to Chuck Becker. He expressed profound appreciation to Luvonia Casperson for carrying the organization through the successful Fort Worth meetings and expressed the goal of presenting a top quality program next year in San Antonio. The meeting adjourned at 6:10 p.m.

#### Southwestern Economics Association Constitution and By-Laws

#### Article I. Name

This Association shall be known as the Southwestern Economics Association.

#### Article II. Purpose

The purpose of the Association is to promote economic theory and analysis within, but not limited to, the southwestern states through the encouragement of research, discussion, conference, and the publication of dissemination of research.

#### Article III. Membership

Any person interested in the purpose of the Association shall be eligible for membership by joining the Southwestern Social Science Association as set forth in SSSA By-Laws, Article I.

#### Article IV. Officers and Executive Committee

- Section 1. The Officers of the Association shall consist of a President, President-Elect, Vice-President, Secretary-Treasurer, and Editor of the SWEA Journal.
- Section 2. Each officer of the Association shall hold office for one year and thereafter until a successor takes office. The officers of the Association, shall be elected at the annual meeting.
- Section 3. The Executive Committee shall consist of the President, President-Elect, Vice-President, Secretary-Treasurer, the Editor, and the last two Past-Presidents.

#### Article VII. Meetings

- Section 1. The annual meeting of the Association shall be held at the annual meeting of the Southwestern Social Science Association.
- Section 2. For the purpose of conducting any business a quorum shall consist of those members who are present at the annual business meeting of the Association, and a majority of the Executive Council shall be deemed to be a quorum for its meeting.

#### Article VIII. Amendment

The Constitution and By-Laws may be amended by a two-thirds vote of the members by a mail ballot provided the proposal shall have been approved by a 2/3 vote at the annual business meeting, after at least three months notice prior to the consideration at the annual business meeting.

#### **By-Laws**

#### Article I. Membership and Dues

- Section I. The membership requirements and dues in the SWEA are those set by the SSSA.
- Section 2. Participants in the annual meeting, except for guests of the Association, as determined by the SWEA Program Chair, must pay the SSSA registration fee.

#### Article II. Duties of Officers and Executive Committee

- Section 1. The President shall preside at all business meetings of the Association and shall also preside at the Executive Committee. The President shall appoint all committees except the nominating committee. The President, along with the immediate Past-President, shall represent the SWEA on the Executive Council of the SSSA.
- Section 2. The President-Elect shall serve as the SWEA Program Chair and publicize and organize the program for the annual meeting.
- Section 3. The Vice President shall preside at any business meeting of the Association or if its Executive Committee in the absence of the President and shall chair the SWEA Student Paper Awards Committee and shall succeed to the office of President in case of vacancy.
- Section 4. The Secretary-Treasurer shall record and preserve the minutes of all business meetings of the Association and the Executive Committee and shall deposit in an Association account all fees collected for the SWEA and allocations from the SSSA to pay all properly incurred Association expenses, keep a complete and accurate record of all financial transactions and submit those financial records for audit at a time designated by the President or the Executive Committee.
- Section 5. The Editor shall be responsible for all details incident to the publication of the journal of the SWEA but shall be guided by overall publication policies, established by the SWEA.
- Section 6. The Executive Committee shall be empowered to act on behalf of the Association during the period intervening between annual meetings, to approve the proposed budget of the SWEA and to conduct other business.

#### Article III. Committees

- Section 1. The standing committees of the Association shall be:
  - (a) Student Paper Competition
  - (b) Nominating
  - (c) Resolutions
  - (d) Plenary Session
  - (e) Budget and Financial Policies
  - (f) Publications

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Section 2. The Nominating Committee shall consist of the three most recent Past Presidents. Other standing committees of the Association shall be composed of at least three members.



A STREET



#### Past Presidents

## Southwestern Economics Association\*

1948	Morris M. Blair, Oklahoma State University
1949	Jim Reese, Oklahoma University
1950	R. B. Melton, North Texas State University
1951	Alfred Chalk, Texas A&M University
1952	Carey Thompson, University of Texas-Austin
1953	Clay Cockran, Oklahoma University
1954	Frederic Meyers, University of Texas-Austin
1955	John P. Owen, Houston University
1956	Wendell Gordon, University of Texas-Austin
1957	Joe E. Brown, Texas A&M University
1958	Maurice Erickson, Southwest Texas University
1959	John B. Giles, Rice University
1960	Sydney C. Reagan, Southern Methodist University
1961	John N. Fry, Houston University
1962	Billy Hinton, Baylor University
1963	L. H. Merzbach, Southwestern University
1964	John L. Wortham, Texas Christian University
1965	Stephen L. McDonald, University of Texas-Austin
1966	Kendall Cochran, North Texas State University
1967	Joel W. Sailors, Houston University
1968	Richard W. Poole, Oklahoma State University
1969	Gaston Rimlinger, Rice University
1970	Thomas Beard, Louisiana State University
1971	Paul Brinker, Oklahoma University
1972	Carter Murphy, Southern Methodist University
1973	Jared Hazelton, University of Texas-Austin
1974	Ralph T. Green, Federal Reserve Bank, Dallas
1975	Frank Steindle, Oklahoma State University
1976	Robert Rouse, Texas Tech University
1977	Gloria Shatto, Georgia Tech University
1978	James Hibdon, Oklahoma State University
1979	William C. Adams, Eastern Texas State University
1980	Rufus Waters, Oklahoma State University
1981	Clint Johnson, Central Arkansas University
1982	David Gay, Arkansas University
1983	Charles Maurice, Texas A&M University
1984	Joe Davis, Trinity University
1985	Richard Leftwich, Oklahoma State University
1986	Kathie Gilbert, Mississippi State University
1987	Ray Perryman, Baylor University
1988	Lewis Hill, Texas Technological University
1989	J. Kirker Stephens, University of Oklahoma
1990	Luvonia Casperson, Louisiana State University

\*Compiled from the Social Science Quarterly and its predecessor, 1948-1985. Prior to 1966, this office carried the title of Economic Section Chair, Southwestern Social Science Association.

A STATISTICS

## Editors

# of the

## Southwestern Journal of Economic Abstracts

1990-<br/>1979-1989M. Ray Perryman, Baylor University<br/>W. Robert Brazelton, University of Missouri-Kansas City

#### SOUTHWESTERN JOURNAL OF ECONOMIC ABSTRACTS

#### Submission Form for ABSTRACTS and Comments

#### **REMISSION** (send with abstracts)

- 1. ABSTRACTS of Papers presented at the SWEA meeting--\$12.00 per page, two page maximum, single spaced
- 2. Abstracts of COMMENTS presented at the SWEA meeting--\$12.00 per page, one page maximum, single spaced

#### PREPARATION

1. Use caps for the word "ABSTRACT" in preparing your title for an abstract of a Paper. Follow with the underlined title of the paper, a space, the author's name(s), and the author's affiliation(s). As this example shows, all of the title information is centered:

#### ABSTRACT The Economic Impact of Russian Reforms

Paige Schieffelin Baylor University

Begin with the underlined title of the original paper in preparing your title for a "COMMENTS" submission. Then list the author's name(s), author's affiliation(s), and a space. Follow with "COMMENTS" in caps, the author's name(s), and the author's affiliation(s). Center all title information:

<u>The Economic Impact of Russian Reforms</u> Paige Schieffelin Baylor University

#### COMMENTS Benjamin Grant Georgia State University

- 2. Continue your text on the same page as the title. Single space, attaching multiple pages with paper clips.
- 3. Begin each abstract with a brief introduction, not exceeding one paragraph.
- 4. Place any footnotes at the end of each abstract.
- 5. Indent the first line of each paragraph. Wordprocessed text should contain a space between paragraphs; typeset copy should contain no space.
- 6. Prepare two copies to be mailed with your remission. Acceptance deadline is April 30.

#### **PUBLICATION INFORMATION**

- 1. One free copy of the journal is mailed to each author.
- 2. Additional individual copies are available at \$5.00 each.
- 3. Library copies are \$7.50 per year.

Address inquiries or abstracts (with remission) to:

M. Ray Perryman, Editor Southwestern Journal of Economic Abstracts P.O. Box 6028 Waco, TX 76706

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## **EDITOR'S COMMENT**

It is a pleasure to provide you with this year's edition of the Southwestern Journal of Economic Abstracts. This edition marks my second as Editor. During the interim, I have made several changes in my professional situation which have served to bring me more into the consulting arena and somewhat less into my academic activities. I think the transition is no completed, however, and I anticipate working aggressively toward many additional improvements in the Journal in the future. I now hold a title as the University Professor and Economist-in-Residence at Baylor University. Additionally, I am President of Perryman Consultants, a research and analysis firm with approximately 40 employees. My newly restructured relationship with Baylor allows me the time to pursue the many time consuming endeavors associated with the firm, while maintaining an active academic life.

The quality of the papers at last year's conference was outstanding, and I think the abstracts reflect the tremendous scholarship which exists within our region. I welcome suggestions from all of you on ways to improve the Journal and other ideas you might have regarding the publication programs of the association. Our organization (Perryman Consultants) has considerable resources, and we can move very quickly toward implementing the wishes of the association with regard to the Journal. I greatly appreciate the excellent cooperation of the author's discussants in providing the materials that made this issue possible. I hope that all of you will continue to actively participate and support the overall goals and objectives of the Southwestern Economics Association.

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## DISTINGUISHED PAPER Let's Get Serious About Caprice

#### T. D. Stanley Hendrix College

Might it be possible to suggest that, just as in the case of the history of physics, once stochastic concepts are admitted into the field, one progressively discovers that the damage to deterministic world view is not so easily localized? And that, just perhaps, the more that we find out, the more meaningless the paradigm of constrained optimization becomes? -- Mirowski (1989, p. 235)

### 1. Issues at Stake

It is often asserted that economic science is predictive. Our textbooks are full of such claims. Predictive success, in fact, is given the central role in what serves as the conventional methodology of orthodox economics--Friedman's 'methodology of positive economics'. According to this popular view, theories rise or fall based upon their records of predictive success [(Friedman, 1953), (Boland, 1979) and (Stanley, 1985)]. And certainly, the majority of economists would agree with the view expressed by Christ (1951) that, "The ultimate test of an econometric model... comes with checking its predictions." (Armstrong, 1984, p. 19) With such importance placed upon prediction, why do economic models predict so poorly?

Specifically, who do naive time series methods typically outperform theoretically well supported, macroeconomic forecasting models? After decades of distinguished development, what explains the meager record of successful econometric accomplishments? In spite of the folklore that dismisses this 'econometric puzzle' and chooses instead to believe the unsubstantiated myth that econometric methods produce accurate short term forecasts, strong empirical evidence and the current practice of econometrics clearly demonstrate the superiority of simple atheoretical, time series techniques [(Armstrong, 1984), (Makridakis and Hiban, 1984), (Cooper, 1972), (Naylor *et al.*, 1972)].

The current 'hot topics' of 'unit roots' and 'cointegration' push these issues center stage. As a result, macroeconomists and econometricians find themselves in the awkward position of embracing *ad hoc* statistical models that have no orthodox theoretical foundation (Rose, 1986). It is a central purpose of this essay to show how the simple behavioral dynamics of inertia and caprice can explain this 'econometric puzzle'.

In contrast to the 'Newtonian' conception of economic science, the focus of this essay is upon the inherently stochastic nature of economic behavior. This stochastic behavior--termed 'caprice' following Dostoevsky--cannot be conveniently tacked on to the end of deterministic systems of equations and assumed to be randomly and independently distributed, as conventional econometric practice often does. Rather, the evolution of economic systems and the process of human learning involve dynamic components of inertia and caprice (or, habit and innovation, if you prefer). 'Caprice' is part of our fundamental economic nature, and it leads to a more dynamic conception of economic theory. This approach follows in the tradition of behavioral economics by not forcing economic behavior into the straight-jacket of neoclassical maximization. Why should economists *constrain* man to *maximize*? It is my thesis that inertia and caprice define a useful framework in which to study the dynamic aspects of 'behavioral economic man' as observed in economic time series data.

# 2. Dostoevsky's Uncertainty Principle

It is not claimed that the case for this proposition is watertight: only that those who deny it need to be prepared to explain why they should not be classified along with those who count angels on the end of pins. Binmore (1987, p. 209)

In Notes from Underground, Dostoevsky makes a clear, prophetic statement of

the fundamental limits to economic knowledge.

...(N)ew economic relations will be established, all ready-made and worked out to mathematical exactitude, so that every possible question will vanish in the twinkle of an eye, simply because every possible answer to it will be provided. Then the 'Palace of Crystal' will be built. Then... In fact, those will be the halcyon days. Of course there is no guaranteeing (this is my comment) that it will not be, for instance, frightfully dull then (for what will one have to do when everything will be calculated and tabulated), but on the other hand everything will be extraordinarily rational...I, for instance, would not be in the least surprised if all of a sudden, a propos of nothing, in the midst of general prosperity a gentleman with an ignoble, or rather with a reactionary and ironical, countenance were to arise and, putting his arms akimbo, say to us all: "I say, gentleman, hadn't we better kick over the whole show and scatter rationalism to the winds, simply to send these logarithms to the devil, and to enable us to live at our own sweet foolish will!" That again would not matter, but what is annoying is that he would be sure to find followers--such is the nature of man. And all of that for the most foolish of reasons, which, one would think, was hardly worth mentioning: that is, that man everywhere at all times, whoever he may be, has preferred to act as he chose and not in the least as his reason and advantage dictated. And one may choose what is contrary to one's own interest, and sometimes one positively ought (that is my idea). One's own free unfettered choice, one's own caprice...is that very 'most advantageous advantage' which we have overlooked, which comes under no classification and against which all systems and theories are continually being shattered to atoms. Dostoevsky (1864, pp. 70-71) (last emphasis added)

Amazing!--especially when one considers that Dostoevsky originally wrote this passage in 1864. During the ascendancy of Ricardian economics and J.S. Mill's liberal political economy, before Marx's *Capital* and the marginalist revolution, Dostoevsky understood the consequences of Newtonian determinism when applied to economics.

Dostoevsky's observations represent the closest economic analogue to Heisenberg's Uncertainty Principle. In brief, Heisenberg's Uncertainty Principle is the well corroborated quantum mechanical theory that we cannot know both the position and the momentum of an electron beyond the level of accuracy that corresponds to Planck's constant. Although Heisenberg's Uncertainty Principle (HUP) clearly speaks to the fundamental stochastic nature of even our 'hardest' science, namely physics, it does not necessarily imply that reality must be subjective, that science cannot be objective, or many of the other things that have been ascribed to it. As Mirowski (1989) observes, "Heisenberg's 'Uncertainty Principle' was thought to support all sorts of outlandish philosophical positions, from solipsism to the necessity of the existence of free will." (p. 219) In economics, there is no direct reason to suppose that agents should behave as if they were 'electrons'. Thus, HUP does not directly apply to economics or, contrary to popular myth, to any of the social sciences, but it did play an important role in the development of econometrics (Mirowski, 1989). However, as seen above, an analogous economic 'Uncertainty Principle' has long existed. It has merely gone unnoticed.

Like Heisenberg's Uncertainty Principle, Dostoevsky speaks of the fundamental limits to what we can know. If someone were to discover the seemingly deterministic laws that govern economic affairs, that knowledge would itself create uncertainty since its possessor may consciously *choose* not to obey these laws. Whoever knows the precise economic equations might be able to turn this special knowledge to profit, and thereby change the underlying circumstances upon which the equations were based. Even if we ignore this potential feedback, Dostoevsky claims that human nature will cause at least one person to do the unpredicted--for the pure joy of truly independent choice.

And how do these wiseacres know that man wants a normal, a virtuous choice? What has made them conceive that man must want a rationally advantageous choice? What man wants is simply **independent** choice, whatever independence may cost and wherever it may lead. And choice, of course, the devil only knows what choice. Dostoevsky (1864, pp. 71-72)

Certainly, neoclassical economists share a belief in the primacy of independent choices for economic agents. In fact, methodological individualism is often considered a central part of the orthodox economic paradigm. Ironically, however, there is a tension between the preference for freedom of choice and a need to know individuals' preferences (or, at least, the consequences of those preferences) which leads to this fundamental uncertainty in economics.

Somewhat more formally, we may express Dostoevsky's uncertainty principle by first defining a *free economy* as one in which everyone is completely free to choose. That is, in a *free economy* economic agents can choose any feasible alternative they wish within, of course, the limits defined by income, technology, resource availability, etc.

**Dostoevsky's Uncertainty Theorem:** A free economy contains an irreducible amount of uncertainty that corresponds to the economic power of one economic agent,  $\varepsilon$ .

**Proof:** Suppose not. That is, suppose that the economy is knowable to a degree greater than that which can be influenced by one individual. Or, let  $\kappa$  represent our ignorance in fully knowing the economy, and suppose  $\kappa < \varepsilon$ . If this were true, then someone (perhaps even an economist) would know the conditions of the economy to a greater degree than he/she could affect. But since the knower is also an economic agent who is completely free to choose in a *free economy*, this very knowledge might possibly cause the knower to change the economy--or not. Such knowledge creates its own uncertainty--an uncertainty greater than  $\varepsilon$ . Therefore, the only way to maintain a knowable economy is to prohibit 'perverse' actions by the knowers, and that would mark the end of the *free economy*.<sup>1</sup> Q.E.D.

A thesis of this essay is that caprice is a consequence of intelligence. Intelligence involves hierarchy and recursion [(Hofstadter, 1979) (Stanley, 1886b)]. Intelligent agents have the ability to reflect upon their own choices and abilities. This ability leads to 'meta-preferences'--preferences among preference relations--or what Sen (1979) calls 'meta-ranking'.<sup>2</sup> At the meta-preference level, one dimension of the agent's utility function is the degree to which choices are free and agents are autonomous. Thus, choice for intelligent agents will be uncertain, for they will always have the option of not obeying their own simple preference relation-that is, to change their minds. Such freedom of choice at the meta-level undermines the whole notion of determinism, creating uncertainty and innovation at all operational levels. One might uncharitably view the behavioral vs. the orthodox conception of economic man as an intelligent satisficer vs. a stupid maximizer.

## 3. The Econometric Puzzle

The central problem with conventional econometrics is that it is often reduced to *ad hoc* empiricism. Stochastic economic behavior is treated completely separately and independently from the economic theory. It is as if there are two distinct worlds. One is a world of abstract, deductive, deterministic theory; the other is a world of realistic, inductive, stochastic disturbances required to test economic theories. Aside from *ad hoc* empiricism, conventional econometric practice is associated with many other routine problems, ranging from the biases associated with specification errors and specification searches to the near impotence of econometrics in the testing of economic theory. Such a neat separation of deterministic theory from stochastic econometric errors always allows defenders of a theory to blame the statistical model for any unfortunate empirical embarrassment. This stochastic quarantine serves to inoculate economic theory from empirical falsification.

An important symptom of the problem of traditional econometric practice is its poor predictive performance as compared to very simple times series models. For example, naive models such as:

$$Y_t = \beta_0 + \beta_1 Y_{t-1} + \varepsilon_t \tag{1}$$

often predict more accurately than sophisticated econometric models associated with well accepted theories. The inadequacy of the conventional econometric approach has been widely discussed in the literature--see, for example, Makridakis and Hibon (1984) and Armstrong (1984) for reviews. Since the 1980's, "it has become increasingly necessary to introduce  $Y_{t-1}$  in some *ad hoc* way to generate any kind of 'meaningful' result" (Foster,

1987, p. 242)<sup>3</sup>. As a consequence of these limitations, the practice of econometrics is itself changing. Times series analysis--autoregressive, integrated, moving averages (ARIMA) or Box-Jenkins techniques and vector autoregressive models--have become part of the standard econometric repertoire. However, the use of these techniques has led to new problems of their own.

Making matters worse, it has recently come to the attention of econometricians that most economic data sets have 'unit roots' (Nelson and Plosser, 1982). A 'unit root' occurs when the first order autoregression coefficient is one, e.g.,  $\beta_1 = 1$  in equation (1). The limiting distributions of these random walks do not possess finite moments, invalidating everything that we were taught about statistical inferences (Hendry, 1986). One problem, as shown by Granger and Newbold (1974), is that 'spurious regressions' will often be found when two variables are in fact unrelated, but nonstationary. This phenomena serves only to confirm the concern expressed by Leamer and Leonard (1983).

> Empirical results reported in economic journals are selected from a large set of estimated models. Journals, through their editorial policies, engage in some selection, which in turn stimulates extensive model searching and prescreening by prospective authors. Since this process is well known to professional readers, the reported results are widely regarded to overstate the precision of the estimates, and probably to distort them as well. As a consequence, statistical analysis are either discounted or completely ignored. (p. 306)

One must wonder just how many of the 'significant results' reported in the journals are nothing more than just such 'spurious regressions' or other statistical artifacts? (Stanley, 1989)

One currently 'hot topic', 'cointegrated variables', offers some hope for the traditional econometric approach [(Hendry, 1986), (Granger, 1986), (Hall, 1986), (Stock 1988)].<sup>4</sup> Two variables are said to be 'cointegrated' if they are integrated to the same degree. Integration, in turn, refers to the number of times a series must be differenced (i.e.,  $Y_t - Y_{t-1}$ ) in order to achieve stationarity--i.e., constant mean and covariance structure. Now, if two cointegrated variables,  $X_t & Y_t$ , are regressed,

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$$Y_t = \beta_0 + \beta_1 X_t + \varepsilon_t \quad , \tag{2}$$

the ordinary least squares estimates (OLS) of  $\beta_0$  and  $\beta_1$  become 'super consistent', converging faster to the true parameter values than conventionally expected (Stock, 1988). This, of course, is the good news. The bad news is that these same estimators are biased in small samples and, thus, in all actual applications. Cointegration has been found in a number of economic variables [(Granger, 1986), (Hall, 1986)], and it can help in those areas rich in data. Nevertheless, in practice, considerable problems will remain. First, it appears that the rate of convergence for cointegrated variables estimation is not as rapid as theory would lead us to believe (Banerjee et al., 1986). Secondly, important small sample biases will remain. In fact, the famous 'consumption puzzle' (between short and long run marginal propensities to consume (MPC's) or between the APC and MPC) and Friedman's permanent income hypothesis can be thoroughly explained by this small sample bias of the cointegrated variables, consumption and income (Stock, 1988).

Even if the idea of cointegrated variables were to succeed in restoring many of the past econometric results, what has already been learned of the time series properties of economic variables poses a significant puzzle for empirical economics. For instance, GNP's regular time series pattern is described as paradoxical by Rose (1986). "However, the fact that GNP (and many other macroeconomic time-series) likely does have a unit root even though there is no theoretical reason to expect it, surely constitutes an intriguing paradox for macroeconomists" (Rose, 1986, p. 139). Rose identifies four specific empirical 'paradoxes' of GNP, its unit root being the first. Second is GNP's low order of the autoregressivity--AR(1) or AR(2). If GNP is truly a dynamic process affected by past values of money, interest, prices, etc., then a more complex time series structure would be expected. The simplicity of GNP's time series model is even more striking when compared to the greater complexity of its components--investment, consumption, and government expenditures. Lastly, Rose notices that both the quarterly

GNP and the annual GNP series can be described by the same ARIMA (1,1,0) model-why? The unexplained simplicity that Rose finds in the GNP series may be found in many other economic time series as well. Conventional econometrics or macroeconomics explains none of these empirical regularities and appears inconsistent with many. This then defines the 'econometric puzzle'.

Why do most economic times series exhibit simple, nonstationary regularities? How are these time series properties generated? How may they be explained? Regardless, it is becoming clear that the traditional econometric approach does not work. One might even speculate on whether a Kuhnian crisis is currently underway in econometrics. According to Kuhn's view of science, a paradigm is in 'crisis' when the ruling approach repeatedly fails to explain some empirical anomaly (Kuhn, 1962). Eventually, crisis leads to the overthrow of the ruling paradigm, and a new scientific tradition begins. Clearly, there are all the ingredients for a crisis within econometrics. The extent to which this crisis is recognized and resolved will say a great deal about how 'scientific' econometricians perceive their discipline. If not conventional econometrics, what does work?

## 4. Towards an Econometrics of Caprice

The only difference between a caprice and a lifelong passion is that the caprice lasts a little longer. Oscar Wilde

Change, error, and the stochastic behavior of the economic system are the more important aspects to model correctly. Because the error terms are the source of all the derived statistical properties, expedient econometric practice attends closely to how these errors are interrelated through time and throughout the system. Treating stochastic economic behavior in an *ad hoc* and instrumental manner is the cause of the econometric puzzle. Hence, our remedy is to fix on the stochastic and changing elements of the economic landscape. Caprice, in this context, represents the only interesting force in the economy, and it should be modelled explicitly. If we are to predict or explain economic phenomena, we must first understand how caprice ripples through the economy. Toward this end, the following basic times series model of economic caprice is offered.

First, time series phenomena may be defined to be the function of two basic factors, inertia and caprice.

$$Y_t = f(Y_{t-1}, C_t)$$
(3)

Where:

 $Y_t$  is the economic phenomenon of interest.  $Y_{t-1}$  is the previous value of Y.  $C_t$  is everything else that may cause  $Y_t$  to change--the 'caprice'.

In the absence of socio-economic forces for change, inertia will keep the economy moving at the same rate. One should be careful to avoid tautologically defining  $C_t$  as  $(Y_t - Y_{t-1})$  or dY/dt. Although modelling the change in Y is certainly my intention, I do not wish to insulate this model from the light of many criticism through tautological misdirection. (Leontief, 1937). Operationalizing this definition gives,<sup>5</sup>

$$Y_{t} = \beta_{0} + \beta_{1} Y_{t-1} + C_{t} \quad . \tag{4}$$

Normally,  $\beta_1$  will be equal or close to one and  $\beta_0$  will be zero since  $C_t$  is meant to capture any change. Equation (4) is a linear relation which allows for time trends and stationary, as well as nonstationary, autoregressive progresses.

The real trick, of course, is to correctly model the caprice. In general, caprice can be usefully modelled as,

$$C_t = X_t \beta + \rho C_{t-1} + \varepsilon_t , \qquad (5)$$

Where:

 $X_t$  is a 1xk vector of explanatory variables.  $\beta$  is a kx1 vector of regression coefficients.  $\epsilon_t$  is the truly random, irreducibly stochastic part of this phenomenon.  $\rho$  is the autoregression coefficient for caprice. Together, these two equations form the basic model of caprice. Their elaboration and estimation are somewhat whimsically called 'caprice-o-metrics'. The term  $\rho C_{t-1}$ , above, allows caprice to be 'trendy' as well. The dynamics of social change and innovation also contain inertia. When combined with (4), equation (5) becomes

$$Y_{t} = \beta_{0} + \beta_{1} Y_{t-1} + X_{t}\beta + \rho C_{t-1} + \varepsilon_{t}.$$
 (6)

By substituting  $C_{t-1} = Y_{t-1} - \beta_0 - \beta_1 Y_{t-2}$  from (4), we obtain

$$\begin{split} \mathbf{Y}_t &= \beta_0 \left( 1 - \rho \right) + \left( \beta_1 + \rho \right) \mathbf{Y}_{t-1} - \rho \beta_1 \mathbf{Y}_{t-2} + \mathbf{X}_t \beta + \varepsilon_t \\ \mathbf{Y}_t &= \alpha_0 + \alpha_1 \mathbf{Y}_{t-1} + \alpha_2 \mathbf{Y}_{t-2} + \mathbf{X}_t \beta + \varepsilon_t \quad . \end{split} \tag{7}$$

Equation (7) clearly expresses the dependence of  $Y_t$  on its past values ( $Y_{t-1}$  and  $Y_{t-2}$ ) and the current values of the explanatory variables. This equation is a standard regression equation where all the usual assumptions should hold. Notice further that there is nothing in this model that precludes traditional econometric analysis. The explanatory variables  $X_t$  can be derived from orthodox economic theory, or any other theory, in the usual manner. The only problem is that the presence of lagged values of the dependent variable causes the conventional estimators to be biased (Malinvaud, 1966), but this is not usually seen as a very serious problem (Theil, 1971). In any case, such lagged dependent variables are routinely used in applied econometrics, and the bias can be corrected by various times series methods.

What is truly interesting is how well this basic model of caprice explains both the 'econometric puzzle' and Rose's paradoxes. To illustrate the remarkable consistency of this behavioral approach with the times series properties of GNP, the model is first simplified- $\beta_1 = 1$ , and  $\beta = 0$ .

$$Y_{t} = \beta_{0} (1 - \rho) + (1 + \rho) Y_{t-1} - \rho Y_{t-2} + \varepsilon_{t}$$
(8)

This is an autoregressive model of order two, AR (2), the same form that provides the basis of Rose's paradoxes. "One of the few undisputed facts in macroeconomics is that

output is hump shaped...nearly equivalently, output is well characterized by the following AR (2):

$$Y_{t} = 1.34 Y_{t-1} -0.42 Y_{t-2} + \varepsilon_{t}''$$
(9)  
(16.4) (-5.21)

Blanchard (1981), quoted by Rose (1986, p. 137).  $Y_t$  is the detrended logarithm of real quarterly GNP, and t-statitics are in parenthesis. Not only does our behavioral model have the correct form, but also the linear restriction implied by (8) --  $\alpha_1 = (1 - \alpha_2)$  where  $\alpha_1$  and  $\alpha_2$  are the true autoregression coefficients--is confirmed by these empirical estimates. The reported results are clearly consistent with the linear restriction derived from our basic model.<sup>6</sup> Thus, the empirical GNP times series provides a rather strong corroboration of our basic model of economic caprice.

Other aspects of the empirical data further support this basic caprice-o-metric model. For instance, Rose reports that GNP may also be well modelled as an integrated, first order, autoregressive model, ARIMA (1,1,0). And, again the specification of the model defined by (4) and (5) implies this time series property. To verify, drop the  $X_t\beta$  term, assume that  $\beta_1 = 1$ , and collect the remaining terms to find,

$$\Delta Y_t = \beta_0 (1 - \rho) + \rho \Delta_{t-1} + \varepsilon_t$$
(10)  
Where:  $\Delta Y_t = Y_t - Y_{t-1}$ 

The above is, by definition, ARIMA (1,1,0) with autoregression coefficient,  $\rho$ .

An interesting extension to this basic model is to allow for 'friction' or inertial decay. If the force of habit (or, inertia) decays at a constant rate,  $(1 - \beta_1)$ , equation (4) would become,

$$Y_{t} = \beta_{0} Y^{\beta 1}_{t-1} C_{t}$$
  
or  
$$In Y_{t} = In \beta_{0} + \beta_{1} In Y_{t-1} + In C_{t}$$
(11)

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If, then, caprice experiences the same type of exponential decay, a simple version of equation (5) becomes

$$C_t = C_{\rho t-1} \varepsilon_t$$
 or  $InC_t = \rho In C_{t-1} + In \varepsilon_t$ . (12)

Combining these two equations yields exactly the same relationships previous discussedequations (7) & (8)-except all variables are now natural logarithms. So what is the difference? Recall that it is the logarithm of GNP that possesses those stable time series properties. This behavioral approach need not be forced into such a logarithmic specification, it comes quite naturally from the basic idea of inertia and its likely decay. Orthodox macroeconomics, on the other hand, often employs logarithmic regressions, usually without any justification, or sometimes with a 'wink and a nod' towards disequilibrium or expectational adjustments.

Let us not leave out the principal piece to the 'econometric puzzle', i.e., the existence of 'unit roots' in economic data. Is our model of caprice consistent with the great frequency that unit roots are found in economic times series? Here too, the answer is a resounding--yes! This is readily seen in the most basic representation of inertia and caprice, equation (4). When  $\beta$ 1 is one, which is its anticipated value, it is the unit root. In the AR(2) representation, the first order autoregression coefficient is ( $\beta_1 + \rho$ ). Given the frequent positive autocorrelations found in economic data and the socioeconomics of trends and fads, it is almost certain that  $\rho$  is positive, and, therefore, the first order autoregression coefficient is likely to be at least one, even in the presence of some inertial decay. Thus, unit roots and nonstationarity are the likely consequences of the behavioral dynamics of caprice. For GNP, Rose and others have shown that the evidence--evidence that has already been shown to be completely consistent with our basic model of caprice-is consistent with the existence of a 'unit root' (Stock and Watson, 1986). Unlike traditional theory, we have good reason to expect these 'puzzling' unit roots. Habit and trendy innovations die hard. Together, their effects can be quite explosive.

Thus, this simple model of behavioral dynamics solves the 'econometric puzzle'. Though it would be all too easy to continue this discussion of the rich time series properties associated with the basic model of caprice,<sup>7</sup> other issues require exposition.

# 5. Habitually Irrational Expectations

However attractive (to economists) capital market efficiency is on methodological grounds, it is extraordinarily difficult to formulate nontrival and falsifiable implications of capital market efficiency that are not in fact falsified. --LeRoy (1989, p. 30)

Further support for caprice-o-metrics comes from the very large empirical literature on 'rational expectations' and its financial equivalent, the 'efficient market hypothesis'. Although neoclassical economists have attached a great deal of significance and devoted considerable research efforts to these theories, there is an emerging consensus that rational expectations are not supported by the evidence--see, for example, the recent literature surveys Lovell (1986), LeRoy (1989) and Camerer (1989). "Tests of the volatility of stock prices, and indirect tests for autocorrelation in price changes, generally show that stock prices are not rational forecasts of perfect foresight prices" (Camerer, 1989, p. 30). "Fama's (1970) survey marked a high point for capital market efficiency; most of the evidence accumulated in the nearly 20 years since then has been contradictory rather than supportive." (LeRoy, 1989, p. 1595)

As an alternative to these discredited views of economic information, Shiller (1984) and others have suggested that fads and fashion can explain the observed behavior of financial markets. "Isn't it plausible that those who are so enlightened as to be readers of BPEA (or the JBE, for that matter) might find themselves caught up in capricious fashion changes?" observes Shiller (1984, p. 460) (parentheses added). The empirical evidence also seems to bolster the existence of fads over more 'rational' explanations of stock market phenomena. "So fads, not rational bubbles, probably account for any excess volatility in stock prices" (Camerer, 1989, p. 25). Yet such fads and 'irrational' behavior are clear examples of caprice as discussed in the previous section. In this literature, 'fad' 16

is mathematically specified just as caprice is in equation (5), and it causes parallel time series dynamics (Camerer, 1989, p. 16). Thus, caprice-o-metrics fares quite well, better indeed than rational economic man, in one of the most extensively studied empirical economic literatures.

Why then does rational expectations engender such strong beliefs from neoclassical economists? It seems, as Lovell suggests, that it is the laissez faire policy implications which causes the supporters of rational expectations to hold so tightly onto their beliefs (1986, p. 110, n. 1).<sup>8</sup> Rational expectations represents a 'defensive stratagem' (Popper, 1959) which protects orthodox, neoclassical economics from obvious criticisms caused by its former requirement of 'perfect information'. It gives the appearance of dealing with less than perfect information without getting into the considerable difficulties that arise from modelling genuine learning. Perhaps more importantly, rational expectations retains the desired implications of efficiency and nonintervention. Understanding the pivotal role rational expectation plays in the 'new classical' economics explains why orthodox economists have been so reluctant to address its contradictory empirical evidence or even its logical difficulties--recall Section 2. "Understandably, economists have focused their attention on the elements that can be discarded with the least damage to their research programs... Regrettably, it appears as if it is the assumptions of rationality and rational expectations that require reformation." (LeRoy, 1989, pp. 1615-16)

Let us anticipate a potential source of concern. Is this basic model of caprice really different or better than the traditional approach when buttressed by some expectation or equilibrium adjustment mechanism--such as partial adjustment or adaptive expectations? Admittedly, the approach taken here is similar to Galbraith's (1988) partial adjustment mechanism. Yet, such partial adjustments models, like caprice, are not consistent with the conventional neoclassical approach. The problem with many of these alternative adjustment models is that they are not often integrated with economic theory.

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Typically, they are tacked on, *ad hoc*, to explain empirical anomalies. Current practice allows the applied econometrician to pick and choose any convenient auxiliary hypothesis without ever really committing to asingle one or owning up to its empirical refutation. The advantage of caprice-o-metrics is that dynamic adjustments play a central role in the explanation. This approach provides a mechanism of incorporating an adaptive mechanism with real learning in economic models. If caprice-o-metrics were to do nothing more than revitalize adaptive economic models, its development would be worthwhile.

# 6. The Natural Inheritance of Caprice

In short, I shall contend that the empirical element in economic theory--the only part which is concerned not merely with implications but with causes and effects and which leads therefore to conclusions which, at any rate in principle, are capable of verification--consists of propositions about the acquisition of knowledge. Hayek (1937, p. 33)

Neoclassical economists, will no doubt, regard this model of behavioral dynamics as *ad hoc*. They will wonder from what theory is it derived? Is it consistent with maximization? From the orthodox perspective, if it is not derived from an optimization model, it is, by definition, *ad hoc*.

Maximization, however, is not the *sine qua non* of theory. Rational economic man has his own problems. Nor, must an adequate economic model be Newtonian deterministic. Ironically, our basic model of caprice may be considered an application of Newtonian *dynamics*. Recall from elementary science that Newton's first law states that bodies at rest tend to remain at rest and bodies in motion tend to stay in motion. This laws of inertia implies that velocity (which is analogous to flow that accounts for any outside forces (including the force of friction). Sound familiar? In any case, it is not from these considerations that caprice-o-metrics is derived.

Caprice has evolutionary value. It provides a mechanism of behavioral variation for our higher order social evolution. Evolution teaches us that biological characteristics are inherited from one generation to the next with 'blind' variations that lead, once in a great while, to improvements and are retained (Campbell, 1987). Caprice, therefore, may actually provide long run economic growth and a means for advancing human societies.

The evolutionary approach has had a long and variegated history in economics-from Malthusian population dynamics, to Marshalls biological analogies and Veblen's evolutionary science and from American institutionalism and Schumpeter's "Theory of Economic Development" to Nelson and Winter's evolutionary theory and the orthodox defense of maximization by Alchian, Friedman, and others. The evolutionary paradigm does have something to offer economics, if not applied defensively.<sup>9</sup> For instance, it can free economic theory from its sterile, static and deterministic chains--that is, from the zeitgeist of its outmoded and misunderstood physics (Mirowski, 1988).

The roots of the approach offered here lie deeper than these past attempts to use the evolution metaphor in economics Evolution has also been advanced as the model of scientific discovery and the growth of knowledge and learning, in general [Popper (1972), (Campbell, 1974)]. (G. Radnitzky and W. W. Bartley, 1987)]. Virtually no contemporary philosopher of science believes that science grows in a continuous linear fashion. Coming the closest to this ideal is Kuhn's view of 'normal science'. But for Kuhn, the slow exploration of a received paradigm is punctuated by revolutions which cause a radical rewriting of the history of science.<sup>10</sup> Is this not evolutionary, as well as revolutionary?

Science does not grow by the slow accumulation of facts, as is commonly believed. It is rather these exceptions to the rule of facts that prove the most progressive. Popper, Campbell and other evolutionary epistemologists remind us that all forms of learning involve trial and error. Many alternatives are offered (sometimes unconsciously). Those which do not withstand empirical tests will be eliminated. The schema often used by Popper is:

 $P_1 -> TT -> EE -> P_2$ 

(Popper, 1972). Where  $P_1$  is the problem, or issue, with which we begin. TT is a tentative solution or theory for the issue in question. It remains quite tentative, never 'proven', no matter how compelling the evidence may seem. EE, error elimination, is the most important step in the process. In science EE is primarily empirical. The advance of our knowledge depends crucially on how well or poorly we carry out this step. Finally, there is  $P_2$ , the new problem-situation which results from the unanticipated surprises and remaining puzzles that always follow the preceding two steps. "From the amoeba to Einstein, the growth of knowledge is always the same: we try to solve our problems, and to obtain, by a process of elimination, something approaching adequacy in our tentative solutions" (Popper, 1972, p. 261). This is an evolutionary process where perfection is not accessible to mortal economic man. Neither the wondrous varieties of life nor our scientific knowledge will ever reach some complete or final form. They simply evolve through random variation and selection retention. In science, at least, we have some control over the selection mechanism.

The basic model of caprice is designed to reflect the irreducibly evolutionary nature of economic behavior. Clearly, the current generation as well as current behavior is related to past generations; thus, there will be inertia in observed traits and behaviors. Next, random variation and selective retention will provide the stochastic dimension. However, even this stochastic behavior will involve some pattern. The types of variations that were successful in the most recent past will tend to remain successful in the near future, implying positive autocorrelation (i.e.,  $\rho > 0$ ). The basic model of caprice allows for both autocorrelation and any other explanation of the selection mechanism--recall equation (5).

Caprice-o-metrics can, indeed, capture the evolution of nature, but can it decipher the caprice of man? Admittedly, this approach represents a tentative first step towards an evolutionary theory of economic behavior. Nonetheless, as I have already demonstrated, it is capable of explaining a number of observed economic phenomena. Consistent, though of course, more complicated models are used in biology (Hartl, 1980). For example, Sir Francis Galton's theory of inheritance is similar to the basic model of caprice and can be adapted to the task of deriving other common types of economic time series.

Galton discovered 'regression', which he termed 'regression toward mediocrity' when investigating the seeds of sweet peas, and he later applied it to the height of human offspring (Galton, 1889). Galton's 'law of universal regression' states that the greater the deviation of the parents' heights from average, the more the children will 'regress' back toward average. Galton expressed his law as a simple regression relation, and he estimated the regression coefficient to be 2/3 (Galton, 1889). Unfortunately, Galton's regression is but the statistical artifact that arises due to errors-in-variables bias (Stanley, 1989). Heights, themselves, are not inherited, but rather the genetic predisposition to obtain a certain height--called 'genotype'. The 'true' regression relationship that lies behind Galton's theory of genetic inheritance can be expressed as:

$$\theta_t = \beta_0 + \beta_1 \,\theta_{t-1} \tag{13}$$

Where

 $\theta_t$  is the genetic predisposition (or genotype) of the t-th generation.  $\theta_{t-1}$  is the genetic predisposition of the (t-1) th generation (their parents).

Like our previous model of caprice,  $\beta_1$  will often be equal to one and  $\beta_0$  zero, if, in this case, the species has reached a selection limit and is not experiencing random drift (Hartl, 1980). Genotype, however, is not directly observable. Instead, the observed characteristic, 'phenotype', contains random variation associated with environmental factors, or

$$Y_t = \theta_t + \varepsilon_t$$
 (14)

Combining (13) and (14), we find that the observed characteristics will be ARIMA (1,0,1) or ARIMA (1,1,2).  $Y_t = \beta_0 + \beta_1 Y_{t-1} + \epsilon_t - \beta_1 \epsilon_{t-1}$ or (15)  $(Y_t - Y_{t-1}) = \beta_1 (Y_{t-1} - Y_{t-2}) + \epsilon_t - (1 + \beta_1) \epsilon_{t-1} + \beta_1 \epsilon_{t-2}$ 

If, on the other hand, environmental variation is negligible and random genetic variation is important, this model becomes AR(1):

$$Y_{t} = \beta_{0} + \beta_{1} Y_{t-1} + C_{t}$$
(16)

The above result may also be derived when the environmental errors,  $\varepsilon_t$ , are autocorrelated and if the autocorrelation and the autoregression coefficients are equal (i.e.,  $\beta_1 = \rho$ ). Now, if selection is operating in a particular direction, the previous equation (5) will hold--returning us back to the basic model of caprice.

The time structures of caprice illustrated here are not unique. Different variations are certainly conceivable, especially those having lags on the order of a year or more. The appropriate lag structure is really an empirical issue and would be expected to vary for different economic processes. Caprice-o-metrics is simply a framework in which to study the dynamic behavior of economic time series. Its advantage lies in its focus on the fundamental forces of inertia and innovation and its ability to explain many of the puzzling features found in economic data.

7. Conclusion

It would be the final error of reason--the point at which it succumbs to its own hubris and passes over into its demoniacal opposite, unreason-to deny that the Furies exits, or to strive to manipulate them out of existence. - Barrett (1958, p. 279)

Given the poor record of empirical economic success, given the surprising ways in which error distributions riddle applied economics, given, indeed, those puzzling economic time series patterns, isn't it time to get serious about caprice? Contrary to the 22 example often et by economists, researchers need not acquire those characteristics which they study. Economists need not constrain economic man to be a 'rational' maximizer, even though *homo oeconomicus* may be their alter ego. Being more 'liberal' in our conception of man is not sign of lax moral constitution. Will people act more 'irrationally' if economics recognizes their inalienable caprice? *The purpose of economic science is not to instruct economic man, but to study him.* 

In this essay, I show how caprice represents a fundamental and irreducible characteristic of economic phenomena. Economic indeterminacy is the logical consequence of a truly free and open economy. Caprice has socio-economic survival value. It provides a mechanism for social and economic variation and evolution that genetic variation is no longer able to supply. And, a simple behavioral model of caprice explains a considerable number of the empirically puzzling aspects of economic times series. Unlike the orthodox approach, the interaction of inertia and caprice give a natural explanation to the common types of time series often found in economics, their 'unit roots' and their logarithmic forms. Habit and innovation explicitly imply the autoregression and autocorrelation routinely found in econometric applications.

Equally important is the heuristic value of this framework for economic time series. It explicitly focuses upon those influences that affect the *change* in the dependent economic variables (not their levels) and upon those error terms that generate all the system's statistical properties. These are the factors that dominate econometric results not the relative prices that orthodoxy would lead us to believe. Econometrics is already moving in this direction; caprice-o-metrics merely gives some reason for doing so.

To anticipate a likely concern of orthodox economists, they will, no doubt, wonder whether the simple econometric equations used here are really very different from their more conventional counterparts. Are not the same type of times series models found throughout the empirical literature? Of course, but the lags and time series structures used in the applied econometric literature are generally *ad hoc* -- not based on

conventional economic theory. Not only does caprice-o-metrics provide a theoretical framework for such econometric models, it is *more general* than orthodox theory. In fact, orthodox empirical economics may be considered a special case of caprice-o-metrics. By specifying  $\beta X_t$  in (5) (or systems of such influences) through auxiliary behavioral hypotheses, caprice-o-metrics can model any time series economic phenomenon. Since orthodox economists have historically attributed great significance to a theory's generality, the perspective offered here cannot be effectively criticized on these grounds.

Orthodox economics assumes that man is rationally stupid--full of facts, perhaps, but incapable of genuine learning. True innovation and invention, however, does not come from human Turing machines. It flows from capricious individuals who would not make the great sacrifices required if their decisions were based upon rational calculation of their own, individual, self interest. The wish to be different, to create something new and unique is not 'rational'; but it does have great, long run economic value.

Man is not a computer. Nor can man survive by rational calculation alone. Behavioral economic man is an intelligent panoply of hierarchy and recursion, of inertia and caprice. Behavioral economic man is an intelligent satisficer--capable of genuine learning, of innovation, and caprice. Symbolically, *Dostoevsky's Uncertainty Theorem* may expressed as:

A --> B

Where:

 $A = free \ economy$  $B = \sim Knowable \ beyond \ e$ 

For the proof, it is argued that,

~B--> ~A

but since

1

 $(\sim B \to \sim A) < \to (A \to B)$ 

A AR

Q.E.D.

Similar phenomena have been generally found in macroeconomic systems (Bacharach, 1989) and in orthodox game theory (Binmore, 1987 & 1988).

- 2 'Meta' is a powerful concept. It can also be applied to improve the replicability of econometric results and to analyze the empirical economic literature (Stanley and Jarrell, 1989).
- 3 Foster (1987) uses the term,  $X_{t-1}$ , rather than  $Y_{t-1}$ , but, in context, they have the same meaning.
- 4 Its 'hotness' is evidenced by its presence as a session at the 1989 ASSA meeting in Atlanta. However judging by these discussions, the assessment of its potential has somewhat cooled.
- 5 This simple linear model of caprice and inertia can explain many of the properties found in economic time series. It is not, however, meant to be an exhaustive expression of how the stochastic and dynamic elements of economic behavior should be modelled. Nor do I wish to confine Dostoevsky's uncertainty principle to this simple, reductive form. Rather, this model is but the first, linear approximation. A more complete characterization of economic caprice would include nonlinear dynamic systems and the chaos which they induce, as well as more complex patterns of stochastic propensities.

6 I did not recalculate Blanchard's analysis to formally test the hypothesis that  $\alpha_1 = 1 \cdot \alpha_2$ . However, one can test the more restrictive hypotheses that  $\alpha_1 = 1.42 \& \alpha_2 = -0.34$ . These hypotheses take the other estimated coefficient as a parameter thereby ignoring the risk of estimating this unknown parameter-making the standard error of the test statistic smaller. Thus, these hypothesis tests are more likely to be rejected, disconfirming the model presented here. In this instance, however, the calculated t's are not even close to the rejection region (t=-.98 and t=-.99).

Much more could be discussed about the rich time series properties of this basic model of caprice and its theoretical and philosophical foundations that can be contained in these brief comments. Especially intriguing is how to resolve Rose's last two paradoxes. That GNP is less complicated than its components is not difficult to understand when one realizes that GNP or its growth is the target variable of monetary and fiscal policies. To the extent that these policies are effective, there should be less variability in GNP's times series. Or, even those who do not believe in interventionist policy must admit that the aggregate, GNP, confronts fundamental constraints--physical, political, social, and environmental-to its sudden growth or rapid diminution more directly than its components. Rose's most puzzling paradox is that both the annual GNP and the quarterly GNP series can be described by the exact same ARIMA (1,1,0) model. This too seems consistent with basic behavioral dynamics. When seasonality is considered, equation (5) may be expressed as,  $C_t = \rho C_{t-4} + \varepsilon_t$ , for quarterly data. The equation (4) can be used to derive ARIMA (1,1,?) models with autoregression coefficient,  $\rho$ , for both quarterly and annual series. Their error terms, however, have complex intertemporal patterns,

 $e_{t} = \varepsilon_{t} + 2\varepsilon_{t-1} + 3\varepsilon_{t-2} + 4\varepsilon_{t-3} + 3\varepsilon_{t-4} + 2\varepsilon_{t-5} + \varepsilon_{t-6}$ 

for the annual series and

$$e_{t} = \varepsilon_{t} + \rho(\varepsilon_{t-4} - \varepsilon_{t-1}) + \rho^{2} (\varepsilon_{t-8} - \varepsilon_{t-5}) + \dots$$
  
for the quarterly series.

These errors are not generated by a simple MA process, yet their effects are likely to 'wash out' upon empirical estimation. Also, the similarities across scale (of time) is suggestive of fractals. A complete theory of economic caprice would undoubtedly include the new mathematics of chaos, but explicating that connection would entail another paper.

- 8 LeRoy (1989) illustrates the tenacity of the metaphysical commitment to the free market. Although he presents rather strong evidence against the efficient market, LeRoy clings firmly to his noninterventionalist beliefs (1989, pp. 1616-17).
- 9 With regard to the use of evolution to defend the orthodox theory of the firm, a few words of clarification must be stated To suppose that firms behave as if they are maximizing because if they were not maximizing then they would not survive is, *at best*, circular reasoning. As succinctly summarized by Blaug (1980): "(T)he problem with the Alchian thesis is the same as the problem of reading meaning into 'the survival of the fittest' in Darwinian theory: to survive, it is only necessary to be better adapted to the environment than one's rivals, and we can no more establish from natural selection that surviving species are perfect than we can establish from economic selection that surviving firms are profit maximizers." (p. 119) Behavioral theories of the firm--for example, satisficing, bounded rationality, or X-efficiency--permit firms to survive and prosper without maximizing. Etzioni (1987) also questions the logical and empirical basis of recent "strenuous efforts to shore up the beleaguered neoclassical paradigm," by using the evolution of 'rules of thumb' (p. 496).
- 10 Kuhn (1962) argues that different scientific paradigms are incommensurable. What may have been considered an important advance previously may be seen, after a successful revolution, as irrelevant.

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## ABSTRACT The Problem of Application in Economics: Administrators and Coaches

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One of the cornerstones of Economic Education is that in inservice programs the teachers represent not only our students but also the means by which we reach our ultimate goal (the K-12 student). A large body of knowledge has been developed from many sources to help with this task. Some work has been done on almost every phase of helping the teacher accomplish this work.

At Lamar the center piece of our program is an inservice course called the Institute in Economics. This is a graduate level 3 hour credit course which assumes no economic background. The Institute has been offered for 15 years and many interesting insights have come to light during that time. One important point is that there is little which has been done to help administrators and coaches who take the course develop projects by which they can interact and teach economics in their environment.

This paper explores the different types of administrators and coaches relative to their involvement with students and the process by which we were able to help them teach or demonstrate economic ideas to their students. Examples of each type of administrator and coach are given and the approach was used to develop a suitable project reviewed.

#### ABSTRACT The Fisher Equation Revisited

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An extended Fisher equation incorporating variables for the business cycle, inflation rate differences between capital and consumer goods sectors, and free banking reserves can be written as:

(1)  $i(t) = a + b * \Sigma p(t-j) + c* \Sigma pcc(t-j) + d*gap(t) + e*res(t)$ 

where:

i(t) =	nominal interest rate at time T
p(t-j) =	eight quarter distributed lag on past inflation rates
gap(t) =	log of trend GNP minus log of actual GNP
pcc(t-j) =	eight quarter distributed lag on difference between
	capital good and consumer good inflation
res(t) =	free reserves (excess reserves minus borrowed
	reserves) held by commercial banks

The version of the Fisher equation estimated in this study converts equation 1 to a variable parameter equation where the sum of the "b" parameters take the following form:

bi = (bio + ci\*pcc)  $\Sigma$ bi = b  $\Sigma$ ci = c

The "b" parameters become a function of the difference between capital good and consumer good inflation. Put differently, the difference between capital good and consumer good inflation influences the response of nominal interest rates to expected inflation rather than nominal interest rates directly. The eight quarter distributed lag on past inflation rates serves as a proxy for the expected rate of inflation. The gap(t) variable should account for changes in the real interest rate linked to cyclical fluctuations. The variable pcc(t) measures the growth of capital good prices minus the growth of consumer good prices. The res(t) variable measures the ability of commercial banks to

expand credit. The i(t) variable is the nominal interest rate on municipal bonds. This variable is used to get around calculated after-tax interest rates. If expectations are rational, after-tax interest rates should adjust one-to-one to changes in inflation. The data to estimate this equation is available in <u>Business Conditions Digest</u> and the <u>Survey of Current Business</u>.

The results from estimating equation 1 is reported in Table 1. Results from three distinct sample periods are reported: 55Q4-87Q4; 55Q4-71Q4; 72Q1-87Q4. The OLS estimators are unbiased and consistent, but the t-statistics are unreliable in the presence of autocorrelation. The Cochran-Orcutt (C-O) procedure improves the accuracy of the t-statistics and the estimates are consistent. For the 55-87 sample period, the sum of the "b" coefficients for both methods of estimation substantially exceeds one. These results are interesting since estimates of the bivariate Fisher equation produces estimates less than one. These results hold for the 55-71 sample period. For the 72-87 sample period, the sum of the "b" coefficients is substantially less than one and is not statistically significant. Other tests suggested the variable parameter specification accounts for the low "b" coefficient for the latter sample period. The variable parameter specification did not significantly affect the "b" coefficient sum over the full sample period and the first half of the sample period.

The sum of the "c" coefficients, which represents the effect of the difference between capital good and consumer good inflation, displays a negative value for each estimation procedure and sample period.

The gap variable displays a negative sign, as hypothesized, over the full sample period. The negative sign indicates procyclical nominal interest rate behavior. The gap variable displays a positive sign over the shorter sample periods. This change in signs may reflect a problem of multicollinearity between the gap variable and the free reserves variable. The gap variable t-statistics over the 72-87 sample period are extremely small. The sum of the "b" coefficients over this sample period was also small, indicating that neither the business cycle nor inflationary expectations exerted a strong influence on interest rates over the latter sample period.

The free reserves variable displays the hypothesized negative sign for all sample periods and estimation procedures.

### ABSTRACT Devaluation Effects of Foreign Debts of the LDC's. Evidence of the 80s.

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Many less developed countries have experienced great difficulties with their foreign debts within the last two decades. There are two main reasons namely: During the 70's, most of these countries allowed their economies to overheat through unconstrained excessive demand. The second is the oil price hikes of the late seventies coupled with significantly weaker terms of trade and poorer export performances. Results of these developments were a persistent balance of payment disequilibrium and chronic economic stagnation at home. Some analysts attributed these export performances to overvalued exchange rates.

<u>THEORETICAL FRAMEWORK</u> Economic theory postulates a relationship between a country's trade with the rest of the world and the exchange rate of its currency. If a country devaluates, its goods will be relatively cheaper as exports to the world while imports from others will be relatively more expensive. This price impacts of lower demand for import and higher supply of export will create a balance of trade favorable to the currency devaluing country.

<u>EMPIRICAL METHOD</u> To test the hypothesis that devaluations in the LDC's affect their foreign debts we let  $(D_{jt})$ ,  $(X_{jt})^1$  represent the nominal foreign debt and the nominal exchange rate of country j at time t respectively for j = 1, 2, 3, ... n. Assume a vector of form I<sub>t</sub> represents a universal set of information that are available at time t for t  $\leq T$ . Let I<sub>t</sub> be a closed set with elements D<sub>t</sub>, X<sub>t</sub> i.e. I<sub>t</sub> = [D<sub>t</sub>, X<sub>t</sub>]. Granger (1969) defined four types of causality. This study was, however, concerned with two of them, the lagged and the circular causalities.

Granger tests are solely and sensitively dependent on the choice of lag length of n, m in this case. It was necessary to determine the minimum final prediction error

criteria, min(FPE), as suggested by Hsiao (1981) by autoregressively estimating the foreign debt  $D_t$ , with its own lag,  $D_{t-1}$  as suggested by Fakler and McMillin (1984) using equation (1) below.

 $D_{jt} + \alpha_o + \Sigma_{i=1}^n \alpha_i D_{t-1} + \varepsilon_t \dots (1)$ 

where  $\alpha_0$  is a constant,  $\varepsilon_t$  is a well behaved normally distributed error and  $\Sigma \alpha_i$  are the coefficients of lagged values of foreign debt, D<sub>t</sub>.

The study adopted the approach of Almon (1965) and the method of two stage least square (2SLS) in estimating equation 2 below.

 $D_{jt} = \alpha_{o} + \Sigma_{i=1}^{n} \alpha_{i} D_{t-1} + \Sigma_{t=1}^{m} \beta_{i} X_{jt-1} + \delta_{t} \dots (2)$ 

where  $\alpha$  is the constant term,  $\Sigma \alpha_i$  are the coefficients of lagged values of foreign debt,  $D_{jt}$ ,  $\Sigma \beta_i$  are the coefficients of lagged impact of devaluation on foreign debt,  $\delta t$  is a vector of white noise with characteristics  $E(\delta_i) = 0$ , Cov  $(\delta_i, \delta_s) = 0 \forall t = 4$  s.

<u>EMPIRICAL RESULTS</u> The results lead us to reject the "circular feedback" hypothesis in five of the seven countries studied. These results lead us to conclude that there is evidence of "circular" impact of past foreign debt causing current foreign debt. The same results lead to reject the "lagged causality" null hypothesis and to conclude that past devaluations cause changes in the foreign debts in six of the seven countries.

#### End notes

1.  $D_t$ ,  $X_t$ , are nonstationary time series. To make these data stationary, a necessary condition for Granger (1969) causality, it is necessary that these data be differenced.

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#### ABSTRACT Soviet and Chinese Agricultural Reforms: A Comparison

# Ching Y. Chao Jackson State University

The Soviet Union and the People's Republic of China are two major communist countries, both countries have faced serious agricultural problems of food shortages, inefficient farm production and growing state budgetary subsidies. The agricultural reform is the only choice left to them in today's multipolar agricultural world. The reformers plan to decollectivize and to spur growth through privatization and material incentives.

Agriculture is the most dramatically troubled section of the Soviet economy. The country has experienced severe shortages of food and has to import more than 30 million tons of grain annually. Mikhail Gorbachev acknowledges the failure of Stalin's collectivization in agriculture and wants to encourage more private farming. To accomplish this the State promotes leasehold farming, land reform, individual farms, agricultural price reform, and private plot production. The leasehold farming was attempting to provide incentive to peasants to increase farm production and to reduce food subsidies. The peasant household, individuals or small groups of individuals can sign a contract to lease land and other assets from state and collective farms, government agency or individual firm. The lease period is allowed between 5-50 years and grants the lessee's family the right to inherit the lease. The leasehold farming is within the existing state or collective farm, it is not an independent unit. For many decades, land in the Soviet Union has been under the exclusive ownership of the State. A new land law spells the end of the State monopoly on land. Land will now be on the property of the people living on it. Each Soviet citizen will have the right to a plot of land. The law allows land to be inherited but forbids its sale. A process of creating individual farms varies greatly by region. In Georgia, entire collective farms in mountainous regions have been

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disbanded in 1990, creating 16,000 small family farms of 0.75 to 1.24 acres each. In the other regions, a process of creating two types of shares in the state and collective farms as an intermediate step toward individual farms. One type of share represents land and the other capital assets. Those who owned the shares could trade them in for land and capital to be used in farming. The planned reforms of agricultural prices were intended to improve the centrally administrated pricing system and not to replace it with a system of prices negotiated in the market. A major revision of prices, both wholesale and retail, is planned to be implemented by 1991. The price revision represents roughly a one-third increase in average procurement prices. The retail food prices have been raised from 100% to 350% on April 2, 1991 in order to reduce the huge budget deficit. The collective farmers and state farm workers are entitled to individual private plots not exceeding 1.25 acres. These plots are given to them by their state or collective farms for private use as kitchen-garden. Under recent agricultural perestroika (restructuring), the limitation on the size of the traditional household plots and the number of livestock have been relaxed, and holders of such plots will be given all possible help. It is now legal for household plot farmers to own horses and other working livestock. The plots represented only 3% of the country's total sown area, but contributed about one-quarter (24%) of the value of Soviet farm output in 1988.

The major agricultural reforms of the past decade have brought tremendous changes in China's agriculture. These reforms were production responsibility system, abandonment of commune system, agricultural price reform and the development of rural industry. Beginning in 1979 the system of production responsibility linked to output has been developed and widely adopted in the rural China. The system enables peasants to take production responsibility and to link their income to output. The groups, households, individuals, or a single household or person are organized on a voluntary basis to make a contract in undertaking production on a share of land or a specific production task with the township (village). After fulfilling the contracted amount, they

keep the rest of the production for their own use or sale. this is an incentive to greater production and better management. Today, under the newest policy, peasants are not only allowed to transfer or inherit their contracted land, but also to own farm machinery, draft animals and large farm implements; the contract period is allowed to be extended to 15 years and as long as 50 years. The people's commune is somewhat similar to that of local government at the township level and has integrated government administration with economic activities since 1958. One of the major weaknesses of the commune system was that it did not provide adequate incentives for farms and per capita output grew slowly. The government had completed the separation of political and economic authority from the commune in February 1985. After the separation, the township governments are revived to handle local administrative functions. An all-township integrated cooperative which is made up of three local specialized cooperatives, has been established. The three cooperatives undertake activities in industry, agriculture and commerce. In China the government has monopolized on purchase of agricultural products, production quotas, and price control for agricultural products over the last 30 years. Because of the bumper harvest, the peasants now find it difficult to sell their grain and cotton to the government, while the production of some other agricultural and sideline products neither reflect their true value nor the relationship between supply and demand. In these respects, China launched a price reform. The basic measures of the reform are to abolish State monopoly of purchase and supply, decontrol non-staple food and sideline product prices, and raise State retail food prices and railway rates. China's economic planners have encouraged township and village industries to process and use local raw materials. This policy removed surplus rural labor and boosted farm household income. In 1989, there were more than 18 million rural enterprises which were owned by township, village and individual. They turned out 840.3 billion yuan (1 U.S. \$ = 3.77yuan) in output value, an amount equal to the nation's 1979 GNP. The total output value of rural industries from 1981 to 1989 increased at an annual rate of 28.6 percent. During 39

the past 10 years, peasants across the country gained one-fourth of their net income from rural industries, and the proportion rose to 50 percent in the recent four years.

The Soviet leasehold farming is not quite the family farm in the West. The leaseholders do not own the means of production, they simply take care of the livestock, crops or orchards, and their payments are determined by how much they produce. They are fully dependent on the big farms to obtain inputs and services and are not an independent unit. Whereas in China, under the household production responsibility system, a peasant or a peasant household leases a piece of land to operate and manage it independently and is responsible for his own profit or loss. After paying the contracted amount as rent, he keeps the surplus for home consumption or sale in the free markets. The Chinese peasant households are increasingly regarding the land as theirs and using it in the way they would if they owned it. The Chinese reforms viewed that the systems have changed the collective agriculture into individual farming which is similar to America's family farming. China has engaged agricultural price reform since 1985. It has been carried out with moderate success. In the Soviet Union, a major revision of agricultural prices is planned to be implemented in 1991. The revisions are endangering the Soviet budget deficit. The contribution on private plots to Soviet food supplies is becoming more critical in this time of perestroika. Can the U.S.S.R. learn from the Chinese agriculture reforms?

### ABSTRACT <u>A Spatial Equilibrium Model for the U.S. Fresh Summer Onion Industry</u>

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Onions are an important U. S. vegetable. Production is widespread in many regions with a combined acreage of about 123,000 acres in 1985. Farmer receipts averaged \$4,070 per acre, representing a farm value of more than \$409 million. Two major seasonal crops can be classified according to planting and harvesting dates. These crops are denoted as spring and summer onions according to the calendar time of maximum harvest activity. Texas participates heavily in the fresh summer market along with California, New Mexico and several eastern states. However, more than 80 percent of production is concentrated west of the Mississippi, while only 35 percent of the population resides there. Thus the market requires extensive shipments of onions from producing to consuming regions.

The main objective of the study was to analyze the competitive position of fresh onion producers in Texas and other producing regions and to develop models that maximize net social welfare, given some changes in the parameters of the U.S. summer fresh onion industry in the spatially separated supply and demand regions, and to develop a procedure for assessing the relative impact of systematic perturbations of the parameters on net social welfare.

Producers employed included use of the quadratic spatial equilibrium model developed by Takayama and Judge transformed into a linear programming model with objective function:

max (a - Bd)'d - (c + Es)'s - T'x subject to the constraint matrix:

The price and quantity data set for 12 demand regions was compiled from weekly data received from the USDA, covering a six month period for the years 1979-1985. Prices were adjusted for inflation with the CPI using 1979 = 100. Quantity data were compiled as actual monthly unloads, in carlots, at each consuming region. Seven supply regions were modeled using fixed supplies, and the quantity supplied consisted of carload shipments from origins to consuming cities for each region. Transportation rate data were obtained from the Fruit and Vegetable Truck Rate and Cost Summary, 1983-1985, published by USDA. Mileage data were compiled from a standard road atlas. OLS regression was employed to estimate a linear mileage-dependent transportation equation.

The actual performance of the market with the ideal one estimated from the spatial equilibrium model was compared and according to the Theil U statistic, the Averaged Signed Error and the Absolute Deviation, there was some aggregation bias present in the model results. Also, we know that changes in some of the parameters of the industry such as consumption, market shares, costs and supply possibilities will affect the equilibrium conditions. Therefore, parametric sensitivity analysis was considered, but only for perturbations of the data and parameters of the quadratic spatial equilibrium model in the neighborhood of the specified set of the parameters. Several problems were considered, each associated with a systematic change in the right-hand side and objective function coefficient initial values. The analysis was done using the Rim Multiparametric Programming algorithm developed by Gal. Parametric solutions were obtained by varying the objective function and right-hand side constraints by 5, 10, 20 and 30 percent simultaneously. The parameters perturbed included the intercepts of the 12 demand equations, their slope coefficients, the quantities supplied from each supply region, and the transportation costs from each supply region to consuming center. Results of the sensitivity analysis indicated that the model was not very sensitive to changes in transportation rates, but was greatly affected by the specification of the demand equations and by the quantities supplied. Only small changes in amounts supplied caused

significant shifts in optimal shipment patterns and chosen supply points. Texas, in particular, competes with California and New Mexico and ships onions to consuming centers according to the amount of production forthcoming from the other supply regions.

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There is a general agreement that tort damage limitations or "cap" legislation grew out of "insurance crises" during the mid-1970's and the mid-1980's. Increasing insurance rates and/or insurance unavailability for health care providers offering highrisk medical services was one facet of each crisis. Insurance companies insisting that the setting of future rates was virtually impossible because of large and erratic tort damage awards was the other. One controversial answer to both these facets of the tort-insurance crisis was damage cap legislation. Some of those cap laws have now been reviewed for their constitutionality. This study examines the case law arising out of challenges to those cap laws and analyzes both the legal and economic implications of that litigation.

Challenges to cap laws are based on constitutional guarantees of equal protection, due process, and the right to a jury trial. State cap laws have been approved regularly by federal courts on equal protection and due process grounds, less regularly by state courts. These outcomes are explained by the fact that the federal court test applied to economic and social legislation almost always has been the "rational basis" test, i.e., the least intense scrutiny. State courts often have used a higher level of scrutiny to invalidate caps. Thus, the standard of scrutiny employed by courts is dispositive of the constitutional question. Challenges to caps in both federal and state courts based on the right to a jury trial have been successful more often than not. The reason is the implicit "intense scrutiny" applied in most courts to any interference with what is generally regarded as a fundamental civic right.

Cap proponents insist that the most serious inflation of verdicts is attributable to noneconomic damages such as pain and suffering and punitive damage awards. Economic damages are limited by proven earning capacity of the victim or by actual, outof-pocket medical payments. The award inflation problem arises because noneconomic damages typically are "unlimited" by any need for evidentiary proof. Noneconomic damage caps therefore provide limits that juries won't impose for a variety of reasons.

The total effects of validated cap laws are still unknown. Some reallocations in use of damage awards are predictable, however. If a cap is unheld on total damages the plaintiff may not recover all out-of-pocket expenses. The reason is that, as attorney fees are paid out of the award, a total damage cap may eat into the amount available for outof-pocket, economic-medical expenses. Capping noneconomic damages, in this view, forces plaintiffs to use economic damage awards to pay litigation expenses. Since statutory limitations on both economic and noneconomic damages potentially bar a victim from recovering even the amount of medical expenses, courts have scrutinized those total caps more carefully than they have noneconomic damage limitations alone.

Opponents of caps insist that in addition to providing fair compensation to victims the tort system deters potential tortfeasors. The higher the award, the greater the deterrence of socially undesirable events such as medical malpractice. A validated damage cap arguably diminishes or destroys the deterrence effect of a damage award. There is, however, an important question of whether the plaintiff alone or in part should benefit from a deterrence judgment benefiting society at large. The deterrent, if it is working at all, instead may limit experimentation on risky but potentially beneficial medical procedures and treatments.

On the specific issue that prompted damage cap legislation: have caps accomplished premium rate reduction and thereby justified courts' findings of a sufficient constitutional basis for upholding those laws? There is little hard data to assess the effect of caps in resolving the tort-insurance crisis. Indeed, the most disturbing result of court challenges to damage cap laws to date may be the revelation of this uncertain connection between cap laws and the legislative objective sought. Since it is precisely that connection which is the focus of the scrutiny levels applied to these laws, that effect is

also the most critical in terms of constitutional justification. In the retrospective view of courts, there is no convincing evidence that cap laws have accomplished insurance availability at reasonable rates for high risk providers.

The effects of damage caps on insurance rates and availability continue to be an important determinant of medical resource availability and economic allocation of critical services. Caps are an imperfect vehicle to guarantee insurance availability at reasonable rates. They are likely to continue in use, however, because they are ostensibly a direct means of controlling the principal cause identified by legislatures for periodic "insurance crises": large medical malpractice damage recoveries.

# ABSTRACT Helmuth's Trading Strategy for Live Cattle Futures

# Emmett Elam and Chaw Wayoopagtr Texas Tech University

This research re-examined a trading technique for live cattle futures developed in 1981 by John Helmuth (J. of Futures Markets, 1981, pp. 347-58). The technique involves selling live cattle futures when the future price equals or exceeds the Corn Belt cattle feeders' breakeven price (as reported by USDA) plus an Iowa-Southern Minnesota basis adjustment. During 1983-90, the Helmuth trading technique (HTT) signaled 41 trades. Thirty-seven of these trades were profitable, and four trades showed losses. Because the four losing trades had large losses, the overall mean gross return for the 41 trades was -\$67.95 per contract.

The four losses from the HTT during 1983-90 were due to a strong seasonal rise in cattle prices from January through March. When sales were restricted in the February and April futures contracts during January through March, all four losing trades were eliminated. The restricted HTT signaled 33 profitable trades during 1983-90. The mean gross profit on these 33 trades was \$154.79 per contract, which was significantly greater than zero. The fact that significant profits were earned with the HTT indicates that pricing was not efficient in the live cattle futures market during 1983-90.

### ABSTRACT Formulation Problem in Multi-Inequality Hypothesis Testing

# Fathali K. Firoozi University of Texas at San Antonio

Consider the generalized stochastic linear model:  $y = x\beta + \varepsilon$  where y and x are the (Tx1) vector and (Txk) matrix of observations respectively,  $\beta$  is the (kx1) vector of parameters, and  $\varepsilon$  is the (Tx1) vector of disturbances with mean zero and a (T x T) positive definite covariance matrix  $\Sigma$ . The generalized form of  $\Sigma$  includes the cases of hetroscedasticity, autocorrelation and simultaneous equations. The underlying theory of the system usually provides the researcher with a set of a priori information regarding the parameter vector  $\beta$ . The constrained estimation methods incorporate the prior information into the estimation process to assure that the sample estimates of  $\beta$  will satisfy the pre-specified constraints. The fundamental question is concerned with the validity and implications of such constrained estimates. An explanation is required for the magnitude and significance of the difference between the constrained and unconstrained parameter estimates.

Suppose there is a statistically significant difference between the two estimates and assume that the sample data is a random representation of the underlying system. Then, two possible implications of the difference are (a) the sample information is not compatible with the theoretical constraints, (b) there is a specification error in modeling the system.

Many theoretical systems provide the researcher with a set of a priori inequality constraints on the parameters of the model. Suppose such constraints can be written in compact linear form as  $R\beta \ge r$  where R and r are given (mxk) matrix and (mx1) vector respectively. Three formulations of the null and alternative hypotheses for simultaneous testing of such constraints have been utilized in the literature (i) Following a traditional approach, the inequality constraint  $R\beta \ge r$  is tested as one-tailed form of the two-sided formulation defined above for the equality testing  $H_0$ :  $R\beta = r$ ,  $H_1$ :  $R\beta \neq r$ . A procedure is given by Theil (1971). (ii) A one-sided formulation for testing the inequality constraint may be defined by  $H_0$ :  $R\beta = r$ ,  $H_1$ :  $R\beta \ge r$ . Such a formulation is utilized in studies by Gourieroux, et al. (1982) and Farebrother (1986), Kodde and Palm (1986). (iii) A one-sided formulation may be defined by  $H_0$ :  $R\beta \ge r$ ,  $H_1$ :  $\beta \in R^k$ . This approach is utilized by Kodde and Palm (1986) and Wolak (1989).

The studies listed under (ii) indicate that, for the purpose of testing the inequality  $R\beta \ge r$ , the tests specifically developed for the one-sided formulation (ii) have substantially higher power than the tests developed for the two-sided formulation (i). Theoretical complications prevent a general and conclusive power comparison between the tests developed for the two formulations (ii) and (iii).

This study utilizes the vector space approach to develop a geometrical criterion by which the three formulations for testing multi-inequality constraints can be evaluated in terms of a likelihood ratio procedure and its relation to the inequality testing objective. The developments involve an alternative derivation of a test procedure for each of the three formulations with an emphasis on relation to the procedures given in the literature so that the results can be extended accordingly. The literature on the three formulations for inequality testing is put in perspective. The results show that the two formulations (i) and (ii) are not appropriate for testing inequalities. Formulation (iii) provides the favorable approach to the testing problem. The results serve as an alternative when a conclusive power study of a three formulations is not feasible.

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### ABSTRACT Time Preferences, Allocations, and External Debt

# Fathali K. Firoozi University of Texas at San Antonio

The fundamental question regarding the highly indebted countries (HICs) is concerned with conditions that led to failure of growth programs in such economies. The compatibility between certain internal characteristics of a borrowing economy and the conditions imposed by the lending community are studied in this paper.

Early stages of development are marked by a variety of new socio-cultural trends which are seen by both creditors and planners as complementary to restructuring the economy's path. The process is reinforced by the open market-oriented growth which is promoted by the official adjustment programs. Such factors inevitably bring about a substantial shift in preferences and consumption behavior. Curbing the resulting surge in consumption has been a major difficulty in LDCs at early stages of development. In many instances, governments in such countries are forced to transfer external funds from intended projects to public spending to avoid social unrest and political destabilization. The failure of the growth policies to control consumption in (HICs) is also indicated by an IMF (1989) study. During the period 1982-1987, the consumption-output ratio not only failed to decline in proportion to the investment-output ratio, but it actually rose in HICs, which is a contributing factor to the current debt overhang in such countries. Other factors mentioned in the literature as contributors to the debt crisis are (i) falling international prices of LDCs exports, (ii) trade deficit, protectionist and deflationary policies in industrialized countries leading to export depression and high interest rates in LDCs, (iii) deterioration in economic and political environment in LDCs leading to capital flight.

The international financial institutions (IFIs), mainly the IMF and World Bank, have the primary role to oversee the international financial stability and the world economic balance and exert a significant influence over the borrowing economies' growth policies. This includes commitments on part of the borrowing countries to implement specific reforms that involve investment decisions, public spending and trade policies, and institutional restructuring, as in the World Bank's structural adjustment lending. During the 1960s and 1970s, a substantial number of commercial banks in industrialized countries became the main lenders to LDCs, a process that was intensified as major banks tried to recycle the OPEC surpluses. Meanwhile, conditions attached to the loans became more severe [World Bank (1985, 1986)]. As part of the conditions for sound debt management strategy attached to the loans by lenders and the requirements of the programs sponsored by IFIs, borrowing countries were required to bend deeper toward export-oriented growth. It has been the World Bank (1960)'s point of view that prospects for total export earnings of investment projects are of major importance in determining credit worthiness of the borrowing countries. Commercial banks gave highest priority to quick-yielding export-oriented projects [Friedman (1977)]. A main element of the World Bank structural adjustment lending is to shift resources toward the tradeable sectors and consumption away from exportable goods with restrictive trade policies against import of consumer goods. Clearly, such conditions require a subsequent process of sectoral and intertemporal resource allocation substantially biased toward traded goods in the borrowing economies.

The long-term implications of the bias in resource allocation toward traded-goods sector are studied during a period of transition in preferences and consumption behavior at early stages of development in borrowing economies. An outcome of the bias against nontraded-goods sector during such periods will be an accelerating accumulation of external debt with subsequent negative impact on growth and debt servicing capability of the economy. It is shown that the existence of nontraded-goods sector in a small open economy dampens the impact of a shift in consumers' subjective preferences toward current consumption on the time paths of consumption, prices, trade balance, and

external debt. The results indicate that, in addition to debt relief to HICs, the growth programs in LDCs may need further analysis to incorporate the implications of the bias in resource allocation with changing consumption behavior and expectations of higher living standards.

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\_\_\_\_\_, 1986, Development and Debt Service, xiii.
#### ABSTRACT Part-time Employment of College Students--A Pilot Study

# Jo-Anne Gibson, Phyllis A. King, and P. Pete Chong Southeastern Louisiana University

A review of the literature shows studies have been conducted to determine the relationship between employment while in college and academic achievements of students (1), but little research has been done regarding part-time work of college students and job attitudes.

The purposes of this study were to determine (a) if the part-time work experiences of college students have led to the same negative job attitudes that Greenberger and Steinberg (2) found among high school students who have worked part time and (b) if the part-time work experiences of college students have provided some types of skills to those who have worked part time.

The study was limited to a survey of 414 students, consisting of both business and non-business majors, enrolled in 14 classes during Fall 1990 at Southeastern Louisiana University (SLU) in Hammond, Louisiana. This paper is limited to the findings and analyses of responses to statements regarding work attitudes and the workplace.

Of the 414 students who completed the questionnaire, (1) 185 are males and 229 are females; (2) 344 are under the age of 26 and 70 are older; (3) reflecting the racial makeup of SLU, 385 are white, 23 are black, and 6 are of other races; (4) although 269 (65.0%) of the students are majoring in some area in the College of Business, the survey included 57 from the College of Arts and Sciences, 61 from the College of Education, 11 from the College of Nursing, and 16 seeking degrees in other fields; (5) of the 413 respondents who marked their GPA, 15 have less than 2.0, 270 have 2.0-2.9, 105 have 3.0-3.5, and 23 have 3.6-4.0, (6) of the 398 students who had held part-time jobs (only 16 had never held a part-time job), over half had held 3-9 part time jobs in their lifetime; (7) 38 of the students reported working only 1-10 hours per week while in school, but the

majority worked 11-30 hours, and 57 usually worked over 30 hours; (8) females tended to have less job experience than males; and (9) 76.0 percent of the students worked part time because of financial necessity, with blacks stating this more strongly that whites or others.

To determine whether college students have positive or negative attitudes toward work and the workplace, respondents were asked to indicate their levels of agreement with 20 statements. The responses were evaluated on a Likert scale with 5 levels of agreement consisting of "strongly agree" (value of 1), "agree," "neutral," "disagree," and "strongly disagree" (value of 5).

The data were analyzed, using one-way analysis of variance, to determine if the mean responses for the demographic groups were the same. The F-statistic for comparison of the means of the groups was considered significant at the .01 and .05 levels.

By their responses to eight statements concerning work and the workplace, the students exhibited strong positive attitudes in six of the statements and neutral attitudes in two of the statements. From the responses, it can be said the respondents think work gives them a feeling of self respect and is not boring. Further, the students do not think people are crazy to work harder at their jobs than they have to. They do not feel it is all right for a lowly-paid employee to take little things from work. Additionally, the respondents feel companies do care about their employees and will treat the employee fairly if that employee gives his or her best efforts on the job. In most cases, more positive work attitudes are expressed by those students who have worked part time than by those who have not worked part time. In responses to several of the statements, age, sex, GPA, major, and part-time work experiences did appear to influence the responses of the students. Race did not seem to play a significant role in the responses about work attitudes, but blacks did feel less confident than whites about being able to get a part-time job.

The 398 students who have worked part time indicate by their responses that their part-time jobs were good learning experiences for them. It appears that, although some of the work consisted of repetitive tasks, most of the college students felt their work was meaningful and satisfying. Further, they felt their part-time work experiences taught them job skills as well as "people" skills.

Although a large majority of the students strongly agreed they did not want to be part-time employees after graduating from college, those students who had worked part time felt they had learned job and management skills from their part-time jobs. Further, they felt they had been allowed many opportunities to make decisions on the job. Also, the students felt confident they could get part-time employment anytime.

Certainly the respondents do not exhibit a cynical attitude toward work and the workplace. The authors conclude these particular college respondents do exhibit good work attitudes.

Because no conclusion about the general population of college students can be drawn from this sample of 414 students at one college, the authors recommend the study be broadened to include more college students from other regions of the country.

<sup>(1)</sup> Ehrenberg, Ronald G., and Sherman, Daniel R., "Employment While in College, Academic Achievement, and Post-College Outcomes," <u>The Journal of Human</u> <u>Resources</u>, Vol. 22, No. 1, (Winter 1987):1-23.

<sup>(2)</sup> Greenberger, Ellen, and Steinberg, Laurence, <u>When Teenagers Work</u>, New York: Basic Books, Inc., Publishers, 1986.

# ABSTRACT Government Size and Economic Growth in Developing Countries: A Political Economy Framework

# James S. Guseh The University of Texas at Dallas

# I. Introduction

The study investigates whether growth in government size accelerates or retards economic growth. Although the relationship between government and the economy is an important subject in any political economy, direct empirical investigations of the issue have reported contradictory results. The diversity of results, combined with the fundamental importance of the subject, calls not only for further research but also the use of alternative methodologies. To this effect, this study proposes an alternative theoretical framework based on the conventional neoclassical production function and tests it using a fixed effect model on developing countries for the period 1960-85. To extend the perspective of prior work, the study also assesses the differential impact of government on growth among different types of political and economic systems. The results, it is hoped, will provide further insights on the role of government in economic growth, as well as information on optimal development strategies.

# **II.** Empirical Results and Conclusions

Allowing for many factors, growth in government is associated with a slowdown in economic growth in developing countries. Moreover, the impact differs among political and economic institutions. Countries with socialist and nondemocratic institutions realize a decline in growth at a rate that is three times the rate realized by countries with both market and democratic institutions. The study also finds that an optimum political economic system for economic growth in developing countries appears to be one with a mixed economic system and democratic institutions. Since a decline in economic growth puts society on a lower welfare frontier, socialists and nonfree societies can be expected to be on a much lower frontier as a result of growth in government. Thus, the results of the study attest to the current quest in Eastern Europe for political and economic liberties, and the benefits that are likely to be achieved. The results also attest to the drive toward privatization of state-owned enterprises in many developing countries.

In light of what we have discovered, it appears that an appropriate policy prescription for economic growth and development should include a reduction in government size to some moderate level and the promotion of economic and political liberties.

## ABSTRACT

# The Effects of International Debt on the Economic Development of Small Countries

# John S. Kaminarides Arkansas State University Edward Nissan Southern Mississippi State University

The purpose of this paper is to determine the effects of international debt on the economic growth of small countries. In this study a small country is defined as any country with less than five million population. Fifty-one countries were identified as small and were grouped by level of income. Low-income (9 countries; 1988 debt of \$10.3 billion); lower-middle-income (18 countries; \$39.5 billion); upper-middle-income (12 countries; \$22.8 billion); high-income (12 countries; \$98.5 billion). The 1988 international debt of the fifty-one small countries was \$171.2 million or 13 percent of the total debt of the developing countries.

Data on fourteen economic indicators for the fifty-one small countries were subgrouped by income to assess their general economic performance. The fourteen variables were denoted by  $X_1$  = External debt per capita (US \$);  $X_2$  = Ratio of external debt to GNP;  $X_3$  = Ratio of external debt to exports;  $X_4$  = GNP per capita (US\$);  $X_5$  = Exports per capita (US\$);  $X_6$  = Imports per capita (US\$);  $X_7$  = Balance of trade per capita (US\$);  $X_8$  = Ratio of gross fixed capital formation to GNP;  $X_9$  = Ratio of private consumption to GDP;  $X_{10}$  = Ratio of government consumption to GDP;  $X_{11}$  = Ratio of investment to GDP;  $X_{14}$  = Unemployment rate (percent).

The fourteen variables were analyzed by computing the correlation coefficient between all pairs of the variables and by using an analysis of variance for testing differences among means of different income group countries followed by a multiple comparison procedure.

Correlation coefficients measure the extent to which a pair of variables are associated with each other. The information in Table 1 indicates for instance, negative 59

and statistically significant association between the variable  $X_1$ , (external debt per capita), and  $X_3$  (ratio of external debt to exports),  $X_9$  (ratio of private consumption to GDP),  $X_{12}$  (ratio of consumption to GDP), and  $X_{14}$  (unemployment rate). Positive and significant associations of  $X_1$  are with the variables  $X_4$  (GNP per capita),  $X_5$  (exports per capita),  $X_6$  (imports per capita), and  $X_7$  (balance of trade).

The overall findings of Table 1 support the general belief that debt and by implication debt service might restrict economic growth by negatively relating to consumption, exports, and unemployment while at the same time countries with relatively high per capita income can incur larger debt and thus be able to promote exports and imports.

The results of the analysis of variance for equality of means of the four groups of small countries are given in Table 2. The high F-probability values for variables  $X_7$ ,  $X_8$ ,  $X_{10}$ ,  $X_{11}$  and  $X_{13}$  imply the acceptance of the null hypothesis of equality of means. That is, the test could not distinguish statistically significant differences among the means. For the remaining variables with low F-probability values, the conclusion is the significant differences exist for at least one group of nations.

In short, international debt affects several economic indicators of low income small countries significantly differently than those of high income countries. The small countries with relatively higher income could afford to incur larger debt to promote their growth through exports, imports, consumption and investment, than the low income small countries.



#### ABSTRACT

# An Analysis of Aspects of Agglomeration Economies and Their Effect On Industry Location (Employing a Flexible Functional Form)

# Mark P. Karscig Central Missouri State University

In recent years there have been significant increases in both the theoretical and empirical analysis of two major economic areas. The first of these fields is the concept of economic growth and the sources, causes, and limited associated with that growth. Such things as technological increases, the exploitation of economies of scale, and relatively inexpensive material resource prices have all been cited as contributing factors to the rapid, post World War II economic growth observed in the United States. There have been many studies attempting to estimate and identify the scale economies associated with various industries and regions, but the remaining questions and unexplored avenues are still great in number. Likewise, technological progress, although long regarded as one of the important causes of economic growth, drew little attention from economists until recently. This is due to the fact that it has generally been considered as an exogenous variable one beyond the scope of empirical economic inquiry.

Increased attention by economic researchers has also been given to the analysis of the concentration of industry in geographic space. Richardson (1973) has given us theories concerning economic growth in a spatial context. These theories have been developed on the belief that the concentration of industry implies certain advantages (as well as disadvantages) that may well shape the course of economic growth and change. The basis for this phenomenon has often been attributed to the concept of agglomeration economies. However the actual structure of these phenomena are still not very well understood. Several authors have attempted to list some of the advantages associated with the spatial concentration of industry [Hoover (1948), Isard (1956), Richardson (1978)].

Within the context of the above issues, the main purpose of this research is to modify and extend earlier empirical works which have sought to estimate industry productivity and/or technical change in a location theory setting. A flexible functional form (the Generalized Box-Cox production function -GBC) is used to isolate parameters, for selected two-digit, standard industrial classification (SIC) industries. These parameters, once estimated, are then presented in order to determine what effects they may have had in contribution to the overall growth and productivity in the selected industries over the period 1948-1973. The final part of this research suggests an application to the aforementioned regional economic area of agglomeration economies. One important aspect of these economies, as outlined by Isard (1956), is the concept of localization economies (i.e. those economies of scale attributed to a specific industry). The scale economies estimated in this research provide such industry-specific information. Specifically, a location quotient approach is employed to combine the information regarding productivity (as contained in the GBC parameters) with a measure of industry concentration. Correlation coefficients are then examined in order to address questions regarding relationships between the productivity of certain industries (or nonproductivity) and the spatial concentration of those industries.

ABSTRACT Employee Involvement Programs: A Survey of Pulp and Paper Industry Unions

# Jill Kriesky and Edwin Brown University of Alabama at Birmingham

By now virtually every pulp and paper producer in the United States is aware of the benefits of employee involvement (EI) touted in the popular and academic presses. While adoption is widespread, not all companies, or even all plants within a company, institute EI plans. We explore the differences between plants with and without EI through the analysis of survey data.

#### Hypotheses

Few academic studies examine the objective conditions that motivate employers or unions to initiate EI programs; even fewer attempt quantitative measurement of those conditions. The following hypotheses emerge from this literature. First, plants experiencing production and industrial relations difficulties self-select into EI programs. Ratings of both employer-union relations and economic performances of firms instituting participatory plans should be lower than those that have none. Second, because tension between EI and adversarial bargaining is greatest when contract negotiations are acrimonious, one would expect locals with cooperative programs to report fewer concessionary contracts. Third, since EI attempts to cultivate better communications and cooperative attitudes, it is more likely to appear in larger firms where the bureaucracy hinders such interaction. Finally, we consider the assumption widely-held by EI proponents that changing the manner in which a plant's industrial relations are conducted will reduce labor costs and increase productivity and product quality thereby improving its economic performance.

# Survey Design and Results

With the cooperation of the United Paperworkers International Union we surveyed 303 of 1045 local unions to learn about the use and development of EI programs. Respondents answered questions on the size, growth, and security of their locals; characteristics of the most recently-negotiated contract and the plant's economic future; and the current status of industrial relations.

On two of the three measures of industrial relations, statistically significant differences exist in the mean responses from locals undertaking EI and those that did not. As expected, more constructive and cooperative relations exist where EI was not implemented by management. Comparison of the mean size of locals indicated that those with EI are significantly larger (331.3 vs. 179.5) suggesting that plants with more bureaucratic structures are more likely to seek enhanced communications through EI.

Survey responses on indirect and direct measures of economic performance-change in the size of local unions, their continued existence, and the economic future of the plants--are, statistically speaking, the same for EI and non-EI firms contrary to our prediction. The impressive growth and widespread technological change in the pulp and paper industry may explain the lack of differentiation.

More puzzling is the finding that the last contracts negotiated in plants where EI is in place contain more concessions than where there are no programs. The pulp and paper industry enjoyed sales and profit growth in recent years while negotiating concessions--a situation that is likely to harden adversarial positions. Several alternative explanations exist. The contract respondents evaluated was the most recent one, not necessarily the contract under which the company implemented EI. Some unions may have viewed the concessions, many centered on health care costs, as somewhat beyond management's control. In many cases, management convinces workers that they will gain input and control over their jobs with EI so that they may choose to adopt it despite concessions. Finally, EI itself may have been a concession.

Correlation analysis among the economic and industrial relations variables produce significant coefficients in the expected direction for virtually every combination. When calculated separately for respondents experienced in EI and those who are not, different results emerge. Respondents without EI strongly associate size and security of their locals with a promising economic future. Other strong correlations are those between good industrial relations and union growth and security. The results are consistent with traditional beliefs that a healthy economy keeps workers employed and insures the local's existence and that management can and will attempt to reduce the size and security of the local through adversarial relations. On the other hand, the strongest correlations for the respondents with EI associate a positive economic outlook with agreeable industrial relations. This suggests that where companies experiment with EI, local union officers accept the theorists and managements' view that good industrial relations can lead to a more productive workplace and economic security.

Use of improved variables--especially direct economic measures of costs, output, and product quality before and after EI, and descriptions of the contracts negotiated immediately before EI began--are needed to substantiate the results of this study. Yet even improved data is unlikely to show that EI results only from poor economic conditions and industrial relations. Our qualitative research suggests that relative union and management power in collective bargaining, technological changes, reorganization of the work process, and persuasive predictions about both future competition and EI's effectiveness in combating it, are key factors affecting a local union's willingness to enter programs. While a departure from the theory considered here, it may well produce a fuller explanation of why EI can succeed in particular locations.

# ABSTRACT The Effect of Economics Instruction on Economic Reasoning: A Comparison of Verbal, Imaginal, and Integrated **Teaching-Learning Strategies**

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The study described in this paper applied brain research and a model of generative teaching and learning to economic education. The purpose of the study was to determine the effect of verbal-only, imagery-only, and integrated (verbal-to-imaginal) strategies on fifth graders' economic reasoning (use or non-use of cost-benefit analysis) in personal decision-making situations. Experiment 1 involved 69 fifth-graders with no pretreatment imagery training, and experiment 2 involved 66 fifth-graders with pretreatment imagery training.

In both experiments, fifth-graders were randomly assigned to three treatment conditions: instruction on cost-benefit analysis using (1) a verbal-only strategy, (2) an imagery-only strategy, and (3) an integrated (verbal-to-imaginal) strategy.

At pretest, posttest, and delayed posttest (six weeks after instruction), students were asked to respond in writing to a hypothetical decision-making situation not seen during instruction. Each response was scored by two expert judges in terms of a threelevel hierarchy of economic reasoning.

With respect to experiment 1, a one-way ANOVA revealed no statistically significant differences between means at pretest. All groups showed gains in economic reasoning after instruction, and maintenance of economic reasoning was high across all groups at delayed posttest. At posttest and delayed posttest, the mean economic reasoning score of the integrated (verbal-to-imaginal) strategy group was greater than the mean economic reasoning score of the verbal-only strategy group. In addition, the mean economic reasoning score of the verbal-only strategy group exceeded the mean economic reasoning score of the imagery-only strategy group. A set of planned comparisons  $\frac{67}{57}$ 

showed no statistically significant differences between means at posttest or delayed posttest.

The results of experiment 2 paralleled those of experiment 1, with one exception. Some groups in experiment 1 showed slight decreases in economic reasoning at delayed posttest, while groups in experiment 2 experienced no difficulty in maintaining economic reasoning after a six-week time delay.

The results of both experiments support generative learning theory but suggest that teacher elaborations and student generations of all kinds (verbal-only, imagery-only, and integrated--verbal-to-imaginal) are powerful enhancers and maintainers of fifthgraders' economic reasoning.

### ABSTRACT <u>The Whos, Wheres, Whats, Whys, and Hows of Getting Started In the Global</u> Market: A Guide to the Small Businessman Interested in International Marketing

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# INTRODUCTION

American business today takes place in a fiercely competitive world. Competition is no longer national, but international. New communication technologies have driven the world toward a converging commonality: the emergence of global markets. To exist, the American company must learn to operate and compete in this global market if it expects to achieve long-term success. Exporting is becoming the "wave of the future." Many businesses have already started riding this wave. But, this could not have come about without the help of government and private agencies. These agencies not only have the experience in dealing with these countries, but they can provide essential information needed to businesses that want to get started in exporting. Many governmental and private offices are available to give businesses helpful information, as well as assistance.

#### PURPOSE

This paper is being written to help those American beginners-in-international trade to get started. Many of these companies have reached a plateau in their sales growth in the U.S. Domestic markets are becoming saturated. To remain competitive in today's world, businesses must develop new markets without regard to geographic boundaries. More nations are becoming industrialized and are seeking larger marketplaces. Therefore, U.S. businesses will need more help to face this increased competition in the U.S. and around the world. American businesses must adapt to these

changing circumstances, those that do not will at best survive temporarily. Those that adapt to the international marketplace will not only find benefits in exporting, but will also add jobs to the American workforce. Statistics reveal that for every one billion dollars of exports, 25 to 40 thousand jobs are generated. Since 54% of the jobs in the U.S. are from small businesses which only account for 10% of exports, an increase in international trade by small businesses could be expected to dramatically increase the number of jobs available to U.S. workers.

This paper seeks to list many of the requirements, both from the legal and from the business standpoint, to get underway in international trade without breaking any of the rules or making serious mistakes. A secondary purpose is to provide sources of guidance from International Agencies and the U.S. Government to these beginners-ininternational trade.

# METHODOLOGY

The paper attempts to gather and assimilate data and informational sources from the existing literature and knowledge to facilitate the process of entering mult-national markets.

#### INTENTION

It is hoped that his paper will ease the way of all entrepreneurial beginners-ininternational trade to get their businesses started.

# ABSTRACT An Empirical Study of Factors That May Contribute to the Success or Failure of Selected Small Retailers

**Robert L. Lorentz** The University of Tennessee at Martin

Raja R. A. Issa University of Southern Mississippi

# INTRODUCTION

The legislative system of the United States made it easier for the American ideal of free competition to emerge through the Small Business Act of 1963. This legislation provided for governmental counseling and assistance.

This piece of legislation provided both economical and social aid for one of our most precious resources, the small retailer. Currently, the small retailers find themselves besieged with high mortality and substandard profits. The loss of small retailers has detrimental effects on the economy. Many small retail establishments fail at the rate of more than 1,000 per day. Failure of 40 to 50 percent can be expected for these small business establishments. This merits concern.

The analysis of factors directly affecting the "success" and/or failure of small retail establishments is the basis of this study.

#### ABSTRACT Western Stabilization-Policy Recipes and Realities: Hungary

### Istvan Magas Texas Tech University

This paper reviews the stabilization policy options of Hungary by conflicting the actual Hungarian fiscal and monetary scene with the theoretical or text-book options of macroeconomic management. The main observation from events of the last two years is that the right chemistry of the ideal macro-policy mix cannot be "blindly" adopted from the west. Nonetheless, it is argued, that the mechanics of fiscal intervention and monetary control obey basically the same laws in centrally-planned economy [CPE] and market environments. However, since these mechanisms are as yet not fully understood in Eastern Europe, it will be inevitable to "blindly" experiment with totally or partially new policies and instruments during the transition. A fully dovetailed program for transition cannot be designed, actions of macro policy intervention have to be custommade and country specific. Reform blue prints, so far, have only inadequately sought to come to grips with the interrelated technical and socio-political features of the transition.

To fight inflation in an economy of transition, is it fiscal or monetary policy that should dominate? It must be clear that whichever policy is used, it is to be applied in well-defined phases. Well-tested policies such as gradual but substantial climbs in interest rates, that do well in developed market economies, have shown mixed or opposite results in a transition economy such as the Hungarian. Climbing interest rates in fact seemed to have backfired: in the Hungarian quasi-monetary setting (where monetary and fiscal measures send contradictory signals, with the fiscal signals dominating) climbs in interest rates have fueled not dampened inflation. They have simply because firms, acting in a largely noncompetitive environment, had easily passed on the increasing cost of borrowing money. They were not pressured to cut costs. For a different reason, however, but higher interest rates didn't seem to dampen the purchasing or borrowing appetite of the consumer either. In a shortage economy, with uncertainties of transition ahead, the average consumer does not respond to inflation by savings more. On the contrary, it spends more and borrows more, anticipating even higher rates of inflation. If there is general distrust building up against the national currency, overspending and heavy borrowing is a perfectly rational choice on the part of the consumer, as well on the part of investors. This behavior seemed to have been typical with scenarios of runaway inflation, regardless whether the economy is market or planned. The cases of Chile, Israel, Spain, Greece, in the mid-1980s, those of Brazil, Ireland, Poland, or Yugoslavia more recently, equally fit this picture.

Tight money supply seemed an obvious policy response even in the chaotic Hungarian monetary scene, with questions remaining about the right proportions only. Yet, the limits of tight money supply in easing inflationary pressures were visible: early on, firms, especially the large state monopolies, could go on operating almost uninterrupted even in the absence of money, they did barter, or queued at their accountclearing banks to get paid, and filled orders hoping that their business partners would sooner or later get financing. Financial authorities, the Central Bank in particular, were held postage by employment consequences of a shut down. Until clear and, more importantly, enforceable bankruptcy laws are enacted, this practice is hard to prevent.

For the CPEs historically, fiscal instruments have been the natural policy instruments of macroeconomic management. In Hungary, fiscal authorities could still do better than banks, at least in 1989 and 1990. The channels of communications and the lines of command management were still operative and did seem to be intact within many large state-owned firms. Top and middle-level managers could better understand policy changes through their established partner, the national budget, and its agent, the Ministry of Finance than through other channels. The success of anti-inflationary regimes, however, does depend on whether fiscal networks operate and the monetary channels do not. By now, it is widely recognized that the inflationary pressures of the former CPEs

do not originate in the overspending and overborrowing of the general public (that is the consumer), but in the fiscal irresponsibility of the state. (In Hungary, the national budget has approximately 60% of the GNP flow through its books.) Yet, it took even the IMF a couple of years to realize that the phenomenon of overconsumption and underproduction in the CPEs is to be viewed through different lenses than in market economies. In the former, the big spender has been the communist state and not the average consumer. During 1988-1990, prices were gradually being freed up from state control, but subsidies to state-owned firms were not being reduced simultaneously, and liberal wage policies were still in force. The net result has been that every producer could increase prices (as a response to increasing costs of inputs) soon, wages have been also pushed higher because of a generally felt price explosion. The wage-price spiral continued unabated, the inflationary pressure cook has been firmly closed, forces of cost-push and demand-pull inflation were simultaneously activated.

The radical modification of the exchange rates (devaluation) is strongly recommended by the IMF. Attempts in Hungary toward full convertibility of the national currency have not been well-directed and concerted. Two consecutive leaps of depreciation of the forint against the dollar, and its appreciation against the ruble, came late and were in disharmony with other measures. Inevitable as it may be, ill-timed devaluations added yet another powerful source of inflation: since there were many unregulated loss-producing state monopolies: any price-hikes generated on the import side have been passed on, undisturbed, to consumers. Currency depreciation cannot satisfactorily work until a real competitive environment is established, and monopolies are abolished, broken up, or rightly regulated.

## ABSTRACT External Debt and Transition: Hungary

#### Istvan Magas Texas Tech University

Hungary has the highest per capita debt burden (about \$2,100) in Eastern Europe. The transformation of the centrally-planned economy into a modern and open market economy has to be accomplished while paying a staggering debt service. The new rightwing coalition government has pledged to honor all the international debt obligations that had been made by the former communist regime. Even to sustain the level of foreign indebtedness is an extremely tough assignment.

As far as the viability of sustaining the external debt is concerned the following argument can be made.

Let us define the external debt-GNP ratio as:

[1] 
$$z = Z/G$$
;

It follows from equation [1] that the rate of change in the ratio is equal to the rate of change of Z minus the rate of change of G, or

[2] z/z = (Z/Z) - (G/G);

The change in the nominal net external debt is equal to the negative of the current account balance, which can be thought of as equal to the negative of the trade balance (TB) plus interest paid on the net external debt (rZ), where r denotes the nominal rate of interest. That is,

 $[3] \qquad \qquad Z = -TB + rZ ;$ 

Substituting equation [3] into [2], one obtains,

[4] 
$$z/z = [r - (G/G] = (TB/Z)$$

Thus, the rate of change in the debt-GNP ratio can be viewed as the sum of the difference between the rate of interest on the debt and the rate of growth of the economy plus the growth in debt represented by the trade deficit as a proportion of the stock of debt. Assuming that the interest rate-growth rate differential is small (under most circumstances it is approximately zero) implies that the rate of change of the debt-GNP ratio is roughly equal to the trade deficit as a percent of the stock of debt:

[5]  $z/z \simeq -(TB / Z);$ (-) if (+, +)

Interpretation of equation [6] is simple: the debt-GNP ratio will continue to rise indefinitely as long as the economy is running a deficit on merchandise trade. At a constant debt-GNP ratio, call it z\*, equation [2] implies that the change in debt as percent of GNP:

[6] 
$$Z/G = z^* (G/G)$$
;

Recognizing that Z is the negative of the current account balance, equation [6] can be rewritten as:

[7] 
$$-CAB/G = z^*(G / G)$$

Equation [7] can be used to calculate the sustainable current account deficit for a specified (constant) level of the debt-GNP ratio and an assumed rate of growth of nominal GNP.

If we assume a conservative z=2/3 debt to GNP ratio, and likewise a prudent 20 percent rate of growth of nominal GNP (we say prudent since inflation will very likely be in double digit range for the next couple of transition years) that means  $1/5 \times 2/3 = 2/15$  or about 13 percent. So the current account deficit should be no more than 13 percent of nominal GNP just to contain the level of indebtedness. In 1990, Hungary did manage to remain in this zone of under 13 percent because it could produce a positive trade balance of about \$.5 bill., so the CAB/G ratio was around 10 percent (\$3.5 bill. - \$.5 bill. over \$30 bill.). The danger is that with the collapse of former CMEA<sup>1</sup> markets, mainly the

Soviet Union, to achieve sizable trade surpluses on a continuous basis seems an extremely tough assignment. The need for a substantial debt relief - as in the case of Poland - cannot be ruled out. As of the spring of 1991, Hungary took a lot of pride in not having had to reschedule its debt.

<sup>&</sup>lt;sup>1</sup>CMEA, Council or Mutual Economic Assistance, the official name of the East-European trading block. The organization has been unceremoniously but fully dismantled in January of 1991. Since then all transactions are conducted in U.S. \$.

# ABSTRACT <u>The Impact of Selected Economic and Sociological Variables Arson Fires: 1991</u> <u>Update</u>

Joe H. Murrey, Jr. University of Mississippi R. Keith Tudor Kennesaw State College Kenneth W. Hollman Middle Tennessee State University

In view of recent improvements in U.S. fire loss experience, the authors decided to update a previously-acquired and analyzed data base by 8 more years of data and a number of selected new variables, covering the period 1960-1989.

Most of the earlier reported studies dealt with "arson-for-profit" fires and primarily economics-related motives. Since "arson-for-profit" fires account for only an estimated 5-14% of the total, some recent studies have tended to employ sociological variables, such as lack of education, poverty level, broken homes, ghetto environment, population density, and other proxies for conditions potentially breeding criminal activity. A number of published and unpublished studies have suggested such factors as underlying the motivation for fires set by vandalism (the leading cause), terrorism, cover for a crime, revenge, "wino fire," etc.

It was hypothesized that one or more economic and one or more sociological variables would be significantly related to measures of arson. The three dependent variables were incendiary fires as (1) percentage of all fires, (2) percentage of all structural fires, and (3) dollar losses as percentage of total fire dollar losses. A .5 correlation with at least one of the dependent variables was required on the Pearson test for each of the original 122 independent variables. The surviving 73 variables were subjected to stepwise regression using the SPSS<sup>x</sup> procedure. The dependent variables were adjusted for inflation, increasing insurance coverage, and increasing value of structures. The Durbin Watson test for autocorrelation was applied to each resulting model.

The three resulting models produced seven economic variables which were significantly related to measures of arson, and two arguably sociological variables. One of the sociological variables was a proxy for crime and the other a proxy for broken homes. Each of the nine variables was significantly related to one or more arson measures. Findings are of value to those in the insurance, regulatory, and law enforcement fields.

# ABSTRACT An Analysis of Outshopping Patterns in Mississippi: A Case Study

#### Albert E. Myles and Albert J. Allen Mississippi State University

Outshopping is the practice of purchasing goods and services outside of the local community. Most towns have a vague notion of the out-of-town shopping done by residents, but have not studied or measured how frequently outshopping occurs or why it is done. Because outshopping is a complex process made difficult by community specific and area/regional influences, local officials and retailers have tended to turn a deaf ear to this problem. However, outshopping can have a significant impact of the economy.

A static model of a community's economy can be compared to a rain barrel with holes in it. In this comparison, money flows into and out of the rain barrel, but nothing happens in the barrel itself. The water level in the barrel rises and falls depending upon the volume (dollars) flowing into and leaking out of the container. The waterline represents the prosperity of the community (Darling).

When more dollars flow out of the rain barrel than into it, the local economy is not prosperous. This occurs as a result of outshopping. There are basically five ways in which outshopping can occur: (1) through local firms, (2) local households, (3) local employees, (4) investment in ventures that don't payoff, and (5) investments in ventures outside of the local businesses.

This study addressed how money flows out of a local community through the purchase of goods and services by local households. In particular, trade patterns were studied in an effort to understand where, why, and how often local residents shopped in nearby towns. This process allowed the authors to identify those sectors in need of economic stimulation and provided local retailers with information to develop effective strategies to counteract and/or capitalize on outshopping patterns.

To accomplish the objectives of this study a mail survey was conducted in the town of Raymond, Mississippi involving over 600 households. The town has a population of 2,600 people (Bureau of the Census, 1988). Survey respondents were asked to name the town where they obtained the majority of their goods and services involving 17 retail sectors. Data obtained from these sectors included information on shopping locations, shopping frequencies, goods and services purchased, and the amount of money spent.

The survey also contained information concerning the household's demographic composition (number of household members..by age and gender), member's educational level, work history and occupation, the respondent's length of residence in the area, and the respondent's future expectation. This information was used to develop a profile of outshoppers in the area and could be used by merchants to target customers by geographic and demographic characteristics.

To perform these analyses the statistical package for the Social Sciences (SPSS) was used. Specifically, frequencies and crosstabs were employed to conduct the empirical investigation.

The results show that survey respondents perceive the goods and services in Raymond, Mississippi to be sufficient in only two areas (gasoline and service stations and banking and finance) when compared to other locations in the study. A total of \$573,700 was spent by survey respondents: \$427,602 outside of Raymond and \$146,098 inside of Raymond, suggesting that respondents spent \$2.93 outside of the local economy compared to one dollar inside of the economy. Finally, the results show that if all the residents of Raymond spent at the same rate as did the survey respondents the city could loose about \$9 million annually.

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#### ABSTRACT <u>A Non-Quantitative Approach to Investment Risk</u>

# Allyn B. Needham, Ameritrust Texas N.A. Charles M. Becker, Texas Christian University Harry Drummond, Mutual Fund Portfolios

Beginning in the 1950's, investors in increasing numbers have turned to asset allocation and modern portfolio theory as a means of achieving an optimum ratio of risk to reward on their investments. A vast literature of statistical analysis attempts to capture the elusive nature of risk. But other literature exists to assist investors in limiting risk exposure. This non-quantitative approach is important because too often nonprofessional investors lack the time, software and training to calculate and interpret the numerical results of modern portfolio theory. This report attempts to provide a beginning place for non-professional investors by discussing risk types in a way that might allow investors to deal successfully with the risk universe facing them.

#### ABSTRACT Invisible Hand, Visible Hand, and Invisible Foot: Adam Smith and the Common Law on Labor Market Regulation

# Edd S. Noell Westmont College

This study utilizes Adam Smith's concept of the invisible hand and two related metaphors as an organizing theme around which different approaches to the proper ends of economics are compared. The central focus is on Smith's description of the ends of political economy and its relationship to his approach to labor market regulation. By way of contrast, the paper considers some examples of approaches to this same issue taken from the English common law tradition and from modern economic theorists.

The invisible hand is a familiar economic metaphor for the beneficial social results that arise as the unintended consequences of individual self-interested actions. As a moral philosopher, Smith highlighted not only greater output but also character-formation as a product of the workings of the invisible hand. Smith alluded to the concept of the visible hand as well. He spoke of the principle of legislative control of economic activity aimed at fulfilling an 'ideal plan of government.' Guild regulations and mandatory apprenticeship laws provided salient examples of the visible hand at work which Smith critiqued. The invisible foot is used extensively in modern economics. This is the notion that the pursuit of the public good by legislative and regulatory action often winds up promoting the self-interest of individuals and/or groups in the private sector. What invariably results is a redestribution of income in the direction of the group gaining regulatory favor.

The English common law, as represented by such figures as Sir Edward Coke and William Blackstone, affirmed the role of the visible hand of regulation as expressed in the Statute of Artificers. These jurists endorsed the 'police powers' function of the state in promoting industriousness and other aspects of virtuous character through the statutory apprenticeship laws. Smith also emphasized the significance of character-formation, but thought that guild regulations in fact had a deleterious effect on the worker's character. Exclusive privileges granted to organized craftsmen also served to raise the price and reduce the quality of products. In modern terms, this outcome was a product of the operations of the invisible foot. Instead of guild regulations, Smith appealed to the competitive market as the fundamental institution which provided a device for channeling pride, vanity, and the desire for self-approval into socially useful purposes. Smith declared that the discipline of consumer choice would better promote character development. The particular virtues which Smith and the classical economists sought to promote were independence and self-reliance.

Modern economic theorists such as George Stigler and Richard Posner rely upon the fact-value distinction to exclude character-formation considerations. Both Stigler and Posner uphold the norm of efficiency as the sole criterion by which to evaluate economic activity. The paper concludes by contrasting the modern approach to the other two approaches. It suggests that a re-examination of the works of Smith and the common law jurists would be helpful in the task of reformulating a modern political economy that would not preclude any discussion of character-formation.

## ABSTRACT The Southwest and the Global Economy

## M. Ray Perryman Baylor University

The economy of the Southwest possesses many links to the world business and political situation. The area has substantial export interests, particularly related to equipment, production, and agriculture. The region is also a significant producer of oil and gas, a sector which finds its health and wealth being critically tied to political and economic situations in the Middle East, Latin America, the Soviet Bloc, and elsewhere throughout the world.

One major and critical aspect of the future of the Southwestern region lies in the Free Trade Agreement with Mexico. In a recent study, the author found that the current economic impact of trade with Mexico on the economy of Texas is enormous. More than \$10 billion of goods are produced in the state each year for direct sale to Mexico, and the overall economic impact of this activity approaches 300,000 jobs (more than 4.0% of the state workforce). A trade agreement which brings down barriers to the exchange of goods and services between the United States and Mexico will have substantial positive consequences from the Southwest. Over 70% of all goods and services shipped into Mexico from the United States pass through Southwestern ports. Moreover, sectoral simulations of the General Equilibrium Trade Model developed by the author indicate that certain key goods and services, such as telecommunications equipment and electronic components, can bring a substantial stimulus to the economics of both regions.

In summary, the world is rapidly becoming a much smaller place. Technology in communications, electronics, and transportation has dramatically increased our accessibility to one another and our interrelatedness. It is within this context that the future of the Southwestern economy must be defined.

## ABSTRACT An Empirical Analysis of Major African Wars and Coup d'Etats: Effects on Economic Development

# Kojo A. Quartey Talladega College

# INTRODUCTION

A variety of factors have been propounded as causing underdevelopment in Africa. These factors range from the colonial legacy, arms sales, cultural practices, Marxism, capitalism, wars, population growth and political instability due to coup d'etats.

Of all the aforementioned factors, certainly two of the more important ones are the effects of wars and the political instability caused by recurrent coup d'etats. While wars in developed nations more often than not bring economic prosperity, in the Third World they only increase the dependence of warring nations on their former colonial masters. War has a tendency to devastate the land (upon which most Africans rely for subsistence), reduce productivity and destroy infrastructure. The effects of coup d'etats tend to be much more endemic: they impede economic progress by affecting the nation's creditworthiness and foreign exchange by upsetting economic progress.

## **OBJECTIVES**

Generally, the purpose of this paper is to analyze the effects of wars and coup d'etats on developing economies. More specifically, the objectives are:

- To empirically analyze the effects of wars on various African nations by comparing nations which have experienced war with those which have not.
- 2. To compare the nations which have experienced coups with those which have not.
- To determine empirically, the possible effects of wars and coups on the various sectors of the economy.

# METHODOLOGY

Cross-sectional as well as time series data are used to meet the three specific objectives. The specific countries to be analyzed were chosen based on the number of wars/successful coup d'etats.

The war nations analyzed in this study are: Ethiopia, Chad, Angola, Mozambique, and the Sudan. In all cases war has devastated the land and reduced economic productivity as well as human capital.

Coups are no different in destabilizing a nation's economy. In Africa, there are numerous examples of coup nations -- these include Ghana, Nigeria, Togo, Sudan and Liberia, to name but a few. Since the first coup occurred in Togo in 1963, there have been no less than 75 Sub-Saharan African leaders overthrown by coups.

A comparison of nations which have experience wars and/or coups with those which have not is done by considering variables such as per capita GNP growth from 1965 to 1986, increase in tourism (1985-87), and direct investments (1985-89). Results indicate that those nations which have experienced neither wars nor coups have fared better than those which have.

# CONCLUSION

War in major areas of Africa unlike war in the developing nations do not cause prosperity, they cause economic hardships. More often than not, these wars and coups are over land, ethnic rights and other such matters. Coup d'etats are an indication of political instability. The wars simply make Africans more dependent on imports of arms, which do nothing to alleviate the mass under-development. Wars, be they internal (civil) or with other nations serve to transfer funds to major arms suppliers.

Wars also tend to cause economic hardships by devastating the land on which most of Africa depends. It reduces or curtails productivity by involving otherwise productive individuals in nonproductive activities. In many instances it may bring the

economic machine to a grinding halt. It also stifles exports. Wars eventually lead to a decrease in the growth of a nation. War causes famine, creating refugees. These refugees may flow into other nations, creating economic hardships in these nations. In Africa, wars have devastated many nations. A comparison of the real GDPs of war or coup-prone nations and the nonwar or noncoup nations indicates that the latter group has fared better than those at war. While many factors have caused Africa's economic problems, two of the more important factors are the negative catalytic effects of war and coup d'etats. Continuous wars and coups will only lead to further underdevelopment on the African continent.

#### ABSTRACT <u>Causes, Consequences and Implications of Underdevelopment in the Third World:</u> Focus on Sub-Saharan Africa

# Kojo A. Quartey Talladega College

# INTRODUCTION

Autonomous nations are in a sense like profit making entities. Consequently, the goal of nations should not be different from those of economic firms -- the maximization of profits or some utility function of profits.

Nations invariably attempt to compete globally and in so-doing strive to maintain a balance of payments surplus. The mercantilist ideas of the 18th century have not completely dissipated. Nations do attempt to export as much as possible and import only what is needed. The idea is to achieve favorable balance of trade and payments -- in the march toward achieving the domestic goals of full employment, price stability and economic growth.

While a great many developed nations have been immensely successful in achieving these goals, the developing nations have failed miserably. Perhaps the most striking examples of failure may be found in Sub-Saharan Africa. None of the Sub-Saharan African nations has been successful in meeting any of the three broad macroeconomic goals. The key, as propagated by many African scholars lies in increased reliance on the developing nations: increased foreign investments and exports. Consequently, an improvement or attainment of international goals should eventually translate to the achievement of domestic goals.

Why are these nations in this dilemma? What are the consequences and implications of these problems? If nations are indeed like economic entities, then will some of the developing nations not be forced into "bankruptcy"? How long can these nations survive on foreign aid, handouts, bailouts and credit?
Much has been written on the causes of underdevelopment in Third World Nations. While many scholars may diverge on their opinions of the causes, most, if not all, do agree, however, that the problems of the Third World may be ascribed to a plethora of variables, not just one.

Scholars have approached the topic of development from several angles. Some scholars believe colonialism is responsible for underdevelopment, others disagree. Others blame it on foreign aid, Western Capitalism, population growth, domestic policies and a variety of other reasons ranging from arms sales to Marxist policies and other factors such as war. Whatever the courses of underdevelopment, this paper takes the view that underdevelopment is caused by a variety of factors.

## **METHODOLOGY**

Various sources such as the World Bank, International Monetary Fund, and the United Nations Statistical data were used for comparative purposes. The quantifiable causes are used in quantitative terms to determine their effects on development. A regression equation is applied, using the broad measure of GNP growth per capita as a dependent variable and various hypothesized causes of underdevelopment as dependent variables.

Some of the more important factors postulated as causing underdevelopment in the Third World include: war, Marxism-Leninism, Western capitalism, political instability, super power arms sales, foreign aid, population growth and mismangement by reign in governments.

Mean and standard deviation analysis of various social indicators such as life expectancy, education, population growth, external debt, and GNP growth indicate that in comparison to other parts of the world, Sub-Saharan Africa is at the bottom of the heap.

Regression of the postulated variables, using real GNP per capita growth (1965-86) as the dependent variable indicates that all variables have the right sign, and two

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variables -- increase in labor force in agriculture and increase in primary school enrollment are significant at .05 level of significance.

The R squared is .5541 and multiple R is .7377. While the entire model accounts for a considerable amount of variation in the dependent variable, most of the individual variables are not significant.

## CONCLUSION

Factors which affect or have caused underdevelopment are many. Oft-times it is difficult, at best to obtain the necessary data to indicate the exact causes.

The implications are simple. Sub-Saharan Africa will not develop economically until steps are taken to alleviate some of the causes postulated in this study. Population growth, wars, political instability, poor political systems, the colonial legacy, and poor management.

If autonomous nations are indeed like business entities, the Sub-Saharan African nations to a large extent are not economically viable and may indeed "fail." Failure amounts essentially to reliance on other nations and being mired in the vicious cycle of underdevelopment.

#### ABSTRACT Estimation of Functional Forms For A Recreation Demand Model

Scott N. Ralston Salisbury State University Stephen C. Morse Texas Tech University

Historically, linear models have been used as the functional form of the contingent valuation model. However, quadratic models, semi-log models, and double-log models have been considered. The fundamental problem with the selection of a functional form for a contingent valuation model is that no a priori information exists to guide the researcher in making a choice. This study applied the Box-Cox methodology to a contingent valuation data set to determine the most appropriate functional form for the model.

Six functional forms of the contingent valuation model were estimated: 1) the linear model, 2) the double-log model, 3) the semi-log model, 4) the reciprocal model, 5) the log-reciprocal model, and 6) the flexible Box-Cox model. The values of and were restricted for the first five models and were unrestricted for the flexible Box-Cox model. A likelihood ratio is used to test the null hypothesis that no significant differences exist between the unrestricted model and the five restricted ones. The results of the test of significance reveal the appropriate functional form that supports the theoretical model. The tests indicated that the semi-log and reciprocal forms should be rejected at the .05 level of significance.

#### ABSTRACT

#### <u>A Comparison of Journal Acceptance Rates Between Disciplines, or Are The</u> <u>Publishing Criteria the Same Across Disciplines</u>

## Scott N. Ralston and Edward J. Frampton Salisbury State University Stephen C. Morse Texas Tech University

The Criterion for assessing a faculty members publication record is no longer simply the number of articles published. Increasingly, importance is attached to the number of articles published in "quality" journals. There is no dispute that differences in quality between journals exists, however, there are differences in perceptions concerning which journals are "top tier" and which are not.

This study proposed a new objective measure of journal quality. This classification scheme is based on the degree of difficulty associated with publishing in a particular journal. The level of difficulty is measured by the overall acceptance rates for manuscripts submitted. Also, correlation analysis is performed between the rankings of this study and the rankings of previously published studies.

Additionally, statistical tests were done to determine if a significant difference existed between the level of difficulty in publishing in one business discipline vs. another. The disciplines tested were: economics, accounting, management, marketing and finance.

#### ABSTRACT <u>The Evolution of Farm Programs and their Theoretical Impacts on Food Prices,</u> <u>Exports, and Price Stability</u>

## James W. Richardson, Edward G. Smith, Ronald D. Knutson, and Daniel R. Sechrist Texas A&M University

Although farm programs have been in place for more than 55 years, economists frequently present the impacts of farm policy tools on prices, exports, and price stability incorrectly. Part of the problem may be that economists are not aware of the composition of current agricultural policy has evolved over time. The purpose of this paper was to briefly review the evolution of farm programs to provide a detailed description of three types of farm policy tools and to develop graphical models showing their impacts on prices, exports, and price stability.

The roots of farm policy lie in the price support and production control programs of the 1930s. Major changes in policy began to occur in the 1960s with the advent of direct farmer payments. The effect of these policy changes was to separate farm price support from farm income support. This separation became particularly apparent in the 1985 farm bill when loan rates (support prices) were substantially lowered as a means of making U.S. commodities more competitive internationally. In addition, target prices began to be reduced.

The 1990 farm bill continues the trend in policy developed in the 1985 bill. That is, it maintains low loan rates and further reduced the level of income support by eliminating deficiency payments on 15 percent of farmers' acreage base. In return for the reduced deficiency payments, farmers were given the flexibility to plant other program crops on the 15 percent flex acres. Thus, the effective target price was reduced about 15 percent. In addition, the 1990 farm bill places major new emphasis on water quality and agricultural sustainability. These environmental initiatives extend the relatively modest conservation compliance (soil erosion) provisions of the 1985 farm bill. The three types of farm policy tools described are: price supports, income supports, and supply controls. Price supports (loan rates) have been used to establish minimum prices and provide a stock management tool since the 1930s. Price supports are designed to stabilize prices between the loan rate and a release price; thus preventing wide swings in prices in the face of stochastic supplies and export demands. Past experiences have shown that price supports act as supply incentives regardless of the level relevant to competitive equilibrium prices. Large government stocks accumulate when price supports are set at higher than market clearing levels.

Income supports administered through deficiency payments have been used since the early 1970s. For the program crops, deficiency payments are paid to farmers to make up the difference between a price determined to achieve a politically acceptable income level (target price) and the higher of the average market price and the loan rate. ^Xxrget prices were initially set by Congress to reflect average cost of production but have recently been set based on politics. Excess production and high government costs have resulted from setting target prices higher than competitive equilibrium prices. Market prices have been depressed to the loan rate in years when high target prices resulted in excess production. Target prices have acted as an implicit export subsidy to the extent that they have increased supplies and reduced market prices.

Three types of supply control policy tools analytically discussed in the paper are: acreage reduction program (set aside or ARP), long-term land retirement (Conservation Reserve Program or CRP), and marketing quota. The ARP consists of an acreage set aside and/or acreage diversion that is voluntary. The ARP, however, requires that participating farmers idle a percentage of their acreage to be eligible for other farm program benefits such as price and income support payments. The program calls for idling cropland for one year and thus it provides a mechanism for policymakers to fine tune supply on a year-to-year basis. The ARP program results in higher crop prices, reduced utilization (domestic and export), and reduced government costs for price and income supports.

The Conservation Reserve Program is a long-term land retirement initiative that removes cropland from production of farm program crops for multiple years (usually 10). A similar program was used in the 1950s and 1960s to remove excess resources in agriculture. Because of the concentration of signup acreages in particular regions, the CRP was blamed for stifling the growth of numerous rural communities. To minimize the impact on rural communities, the present CRP has a maximum percentage of acres in each county (25 percent) that can be enrolled. The CRP reduces supplies for commodities produced on marginally productive lands and thus increases prices and reduces utilization.

A marketing quota is a mandatory supply control mechanism to determine the quantity of a commodity that can be marketed. The national quota, set by the Secretary of Agriculture, is based on expected domestic and export demands and is usually set below normal production levels. Each producer is given a portion of the national quota based on past production. The program allows the Secretary of Agriculture to manage quantities marketed. This farm policy tool raises crop prices and reduces utilization.

Impacts of these five farm policy tools on price variability were evaluated using graphical models. The models were developed assuming that production in the United States and the rest of the world is stochastic due to the random forces of weather. Probability distributions for U.S. supply and export demands were used to show how the policy tools would affect the probability distribution for prices (price instability). Price probability distributions, augmented by farm policy tools, show that price and income supports tend to reduce price variability and supply controls increase price variability.

#### ABSTRACT Gender Influence in Marital Goals and the Economic Results of Goal Driven Actions

## Patricia Sanderson, Ph.D. Mississippi State University Troy Caver, D.Sc. Systems Management and Development Corporation

In addition to the private economic costs encountered by many children living in single-parent homes, costs are encountered by the nation in the form of increased welfare costs (Aid to Dependent Children), lowered educational achievement and labor productivity, and higher social, criminal, and drug-related costs. This paper goes beyond the symptoms of the problem and asks the question, "Why do single-parent homes exist?"

Two categories of single-parent homes are identified, the unwed mother and the divorced mother. An increasing number of children are being born to unwed mothers. The percentage of children in the U.S. born to single mothers increased from 5.3% in 1960 to 23.4% in 1986; many of these are teenage mothers. During this same time period, divorces in the U.S. increased to 50% of all first marriages. Today, 25% of the children in the U.S. live in fatherless homes, with 50% of these children living below the official poverty line. Only 33% of the children in fatherless homes receive any financial support from their father.

Statistics indicate that the absence of the father in the home is the most significant factor explaining the poverty of children and the economic costs to society. This study asks the questions, "Why is the father absent from the home?" and "Why do fathers fail to provide financial support for their children?" A three stage model is developed to address these questions.

The model is based upon the assumptions that the agendas of the two parents are different, are gender driven and are not clearly communicated to one another. As the relationship moves through the three stages, if communication breaks down between the parents, the children created in the relationship become victims. Studies show that the

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bonding of the fathers to their children is weakened if regular contact is not maintained. Intense hostility between the mother and the father lead to polarization of the child to one parent and further damages the bonding of the child to the other parent. The povertization of children is intensified if a parent uses the economic weapon of child support payments to bargain for visitation rights with the children. Other social costs such as child and spouse abuse arise as bonding is severed.

The solution is the clear communication of each partner's agenda and the creation of an environment which can preserve the bonding of both the father and the mother to their children. A questionnaire is developed to facilitate that communication.

#### ABSTRACT

## Rural Banking in the Stabilization Policies of Debt Ridden Developing Economies

## Ayuba J. Sarki Hampton University

In developed economies, policy-makers often use monetary and fiscal policies as countercyclical instruments in recessionary and inflationary periods. This study shows that an alternative policy instrument was necessary in order to thwart the impedance of effective monetary and fiscal policies in developing indebted low income countries (DILICs) due to their higher marginal propensity import (MPI).

A regression analysis of sixteen DILICs was used to establish their marginal propensity to import. For this study, an across-section [1] data was drawn from 16 DILICs that had certain characteristics. Their average per capita income was \$717.7. Their debt/export ratio was between 3.27 and 19.12. Some of them would take four to twenty years of their exports to pay off the current level of their external debts. Their total export revenue were considerably inadequate to service even the interest rate of the external debts.

The study found that the DILICs had low marginal propensity to consume domestic goods; (MPC-MPM), i.e. (0.52645-0.286207 = 0.24 [2]. The low domestic MPC in these countries meant that the DILICs had a higher marginal propensity to save (MPS)--0.76. However, the 0.76 did not represent the true MPS of the DILICs as these countries usually exhibited very low or negative levels of savings [3]. Therefore, 0.76 represented their marginal propensity to dissave (MPD).

Under a stable fixed exchange system, the expected income multiplier for the DILICs would be about 1.3. But as their currencies depreciated over time, the slope of the MPC for the domestic goods moved toward zero. Depending on the extent of DILICs' currency depreciation the slope of the MPC (the domestic MPC of 0.24) continued to fall downwards until it turned negative. As the slope turned negative, the

marginal propensity to save similarly became negative. Under this environment, any fiscal or monetary policy would certainly be futile.

Most of the external debts of the DILICs were due to excessive imports of consumer goods, especially food. Dissaving in the DILICs contained two major components: (a) the domestic component, and (b) the foreign component. The domestic component came from both the public and private sectors, and the foreign component came mainly from the external debt of the DILICs. The establishment of rural banks was seen as the only feasible alternative policy that would provide farmers with the banking facilities necessary to develop agriculture [4]. Since farms in the DILICs were small patches and their cultivation methods very simple, sufficient financing provided by the rural banks would increase agricultural productivity. As the DILICs produced more farm products the size of the foreign component of the dissaving would diminish. As this diminished the slope of the marginal propensity to consume would stop sliding downwards, thus making fiscal and monetary policies useful in the long run. The ultimate objective of establishing rural banks would be to reduce the size of the DILICs' marginal propensity to import.

- 1. For the appropriateness of the use of cross-section data, see Robert S. Pndyck & Daniel L. Rubinfield, <u>Econometric Models & Economic Forecasts</u> (McGraw Hill, 1991), pp. 223-229.
- 2. In high income countries, especially in the United States, the long run MPC is roughly 0.9. Since MPI is about 0.1, the domestic MPC is still high. The currencies of the developed economies are considerably more stable than the "free-falling currencies" of the low income countries.
- This view has been expressed by some Development Economists. See Professor A. O. Ekechi, <u>Economic Implications of Nigeria's External Deficits</u> (Business Times, December 4, 1989), page 8.
- 4. Agriculture is one sector that has continued to grow. But farming in these countries remains unaided by the financial sector. Land tenure has also contributed to the slow growth in large farms. See The World Bank, <u>Sub-Saharan Africa: From Crisis to Sustainable Growth</u>, (The World Bank, 1989), pp. 3-62.

#### ADSTRACT A Shift-Share Analysis of Grain Exports from Mississippi Ports Relative to Ports in the Gulf of Mexico

Bonar Sihite, Albert J. Allen, Joselito Estrada, and Albert E. Myles Mississippi State University

The objective of this study was to assess the role of Mississippi export ports in the Gulf of Mexico grain exports for the period 1981-87 and for specified intervals within this time frame. To accomplish the objective of this study, the shift-share analysis technique was used. Shift-share analysis is a technique which analyzes shift in industrial growth across regions. This method breaks down a change in market share to its basic components. Data for this study were obtained from the United States Department of Commerce, Bureau of Census on the following grains: rice, corn, wheat, and soybeans.

Results from this study show that grain exports from Mississippi ports relative to the ports along the Gulf of Mexico decreased by almost 36 million bushels in time period 1981-87. The total effect was separated into four components of change. The regional growth effect showed that if Mississippi had grown at the same rate as that of the Gulf region, total grain exports from Mississippi would have decreased by 5.3 million bushels. The total decrease was larger than the value of 5.3 million bushels due to the competitive mix effect. Due to that effect, Mississippi grain exports declined by 30.5 million bushels during the 1981-87 time period. This result implies that the rate of decline in Mississippi was far below that of the Gulf region.

The results from this study can serve as a guide for policy makers, exporters, and users of ports. In addition, knowing the changes in the quantity of exports among the Gulf Coast ports and how well the exports in Mississippi did provide insight in assessing the opportunity for developing a competitive advantage or in redesigning strategies for improving competitive disadvantages of the export ports in the state.

### ABSTRACT <u>Career Aspirations and Performance in Economic Education at the College Level:</u> <u>A Preliminary Study</u>

## Evelyn Smith West Texas State University

Frequently espoused reasons for attending college include the goals of "obtaining an education," "getting a degree," and "making more money." In as much as college is attended solely for the purpose of obtaining education, it may be an end in and of itself. However, when the purpose of attending college is to obtain a degree, the endeavor is more commonly viewed as a means to an end. This reflects the common view that college education is perceived as an investment by the individual. If education is viewed by the individual in such a manner, then it seems likely that there should be some relationship between the individual's career aspirations and the level of personal commitment to learning. This relationship should be reflected in differential commitments between individuals and in so much as commitment and performance are related, it should be reflected in differential performance between individuals. Thus career aspirations should be positively correlated with academic performance. However, if the student perceives that the purpose of education is not an investment in knowledge but rather merely a screening device used by business then, the "degree" will be purchased at the minimum price possible. In this case, one would expect a generally lower level of performance by most students and a weaker correlation between career aspirations and performance.

Questionnaires completed by 285 students attending economics classes at West Texas State University indicated that 113 students were attending college to "get a degree," 105 were attending to "make more money," and only 67 indicated that they were attending to learn something or to "get an education." From comparing these three groups, the following conclusions may be drawn on a preliminary basis:

- 1. College students are most likely not attending college to learn specific information that will help them in their careers because it appears that they don't have career goals that are definite enough to know what information is required by future jobs. Thus it appears that the signaling model may be more appropriate to discussing higher education than the human capital model.
- 2. There appears to be a consistent positive relationship between career goals and academic performance, despite the fact that career goals are generally poorly articulated.
- 3. Students while relatively uninformed about careers and job markets, do seem to be motivated by career goals at least to the point of making the required grade.

## ABSTRACT <u>A Simultaneous Approach to Advertising, Concentration, and Profitability</u>

## Robert Tokle Idaho State University

This paper examines advertising intensity, concentration, and price-cost margins (profitability) as dependent variables in a simultaneous equation model for U.S. manufacturing for the years 1967 and 1982. Two past articles, Strickland and Weiss (1976) and Martin (1979), used a similar model for 1963 and 1967 data respectively.

This study adds to those prior investigations by updating and modifying the Strickland and Weiss model (Martin extended the Strickland and Weiss model). First, two new independent variables are included in the concentration equation (dummy variables for both research intensive and regional industries). This enables the model to meet the rank condition for identification, a problem with the Strickland and Weiss model, but corrected by Martin with the inclusion of the regional dummy plus other independent variables. Second, the model is updated to 1982 and compares 1967 and 1982. This comparison is of interest because the most powerful medium of advertising, television, was still in a relatively early stage of development in 1967. Third, and most important, the advertising data used in this study was compiled from Leading National Advertisers Inc. for each industry, leading to a much more accurate advertising data set than used in the previous studies.

The 1967 and the 1982 regression results were very similar, except in the concentration equation, where advertising intensity has a positive and significant effect in 1982, but not 1967. Overall, this paper supports some of the major conclusion of Strickland and Weiss. First, like Strickland and Weiss, it finds that advertising intensity increases with concentration, though a linear specification). Second, Strickland and Weiss found advertising intensity to have a positive effect on concentration for 1963. This paper reports the same for 1982, but not 1967. Third, Strickland and Weiss found

that the joint effect of concentration and minimum-efficient-scale positively influences significantly increases price-cost margins, but minimum efficient scale puzzlingly reduced price-cost margins.

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Strickland, Allyn D. and Leonard W. Weis. "Advertising, Concentration, and Price-Cost Margins." Journal of Political Economy, October 1976, pp. 1109-1121.

## ABSTRACT The Federal Reserve Is Also Responsible for Grade Inflation

## David Townsend Sam Houston State University

In this paper the writer attempts to contribute to two academic debates which are generally considered to be distinct and unrelated: one in economics and the other in education. The economic debate is the contemporary cost-benefit assessment of monetary policy which produces chronic annual inflation rates in the 4-10 percent range vs. monetary policy which achieves price level stability (zero inflation). The education debate, which was a lively issue from the mid 1970s to the mid 1980s, concerns the cause(s) of grade inflation in American higher education after the mid 1960s.

U.S. experience with price level changes--inflation and deflation--from 1800 to 1990 is described before a summary of the mainstream case against chronic inflation is presented. This background section of the paper concludes with a review of grade inflation analysis in education literature.

A collegiate model of professional-admistrative behavior in a setting of price level stability or gradual deflation is developed and used to explain grading decisions and professor-administrator relationships in the pre grade inflation era.

This behavior model is then modified by placing the collegiate actors in a contemporary setting of compounded annual inflation rates in the 4-10 percent range. It is argued here that the changed structure of incentives in this inflation modified model caused the grade inflation phenomenon of the last quarter century, produced a new confrontational-adversarial relationship between professors and academic administrators, and generated a proliferation of unimportant and unread journal articles.

### ABSTRACT <u>Notes on the Application of the Balancing Equation to Test the Quality of</u> Population Data for Political Subdivisions: Case of Czech Crownlands and Galicja

## Bronislaw S. Wojtun Le Moyne-Owen College

The main objective of the Notes is to examine the reliability of statistical information on population and population movement for political subdivisions of Imperial Austria. Two Austrian Provinces were selected for the purpose of investigation, namely Galicja (South Poland) and Czech Crownlands (Kingdom of Bohemia). The technique used to appraise the usefulness of the demographic data on these two provinces is the Balancing Equation.

No piece of evidence was found that would allow a researcher to seriously question the overall consistency of the census figures with vital and migration data in both provinces of Imperial Austria: Czech Crownlands and Galicja extending thru the interwar period. In the years between 1827 and 1930/31 the unexplained residual errors were small and the exceptional cases are adequately explained. The Balancing Equation proved to be a very useful technique in assessing the overall quality of data for political subdivisions. The datums presented are available to the interested researchers.

The decomposition of population change into its components or the opposite the synthesis of components to estimate the total population change is one of the basic methods of demography. This process can be expressed in terms of the basic equation P1 - Po = B - D + I - 0 + e where,

P1 is the population at the end of the period, Po is the population on the beginning of the period, B is births, D is deaths, I is in-migration, 0 is out-migration and e can be called the residual error or the error of closure.

The above equation, which is called the Balancing Equation or Inflow-Out-flow Relationship or the Component Equation has many forms and many uses. It must be applied to fixed territory and there must be no measurement errors. When errors appear,

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on the basis of additional knowledge about the accuracy of the various elements of the equation, one may be able to decide whether  $\underline{e}$  can be attributed as a measurement error almost wholly to a particular term of the equation.

The application of the Balancing Equation proved successful to attest the reliability of the data. Two equations were constructed one for the Czech Crownlands and the other for Galicja and the following procedures were uniformly applied to both provinces:

- (a) Intercensal increases were determined by subtracting the successive census totals from 1827 to 1910 in both imperial Austrian provinces. The censuses were taken on January 1, 1827, 1830, 1834, 1837, 1840, 1843, 1846 and 1850. The censuses were taken on October 31 in 1857 and 1869 and on December 31, 1880, 1890, 1900, and 1910. In the Republic of Poland the censuses were taken on September 30, 1921 and December 9, 1931. In Czechoslovakia censuses were taken on February 15, 1921 and December 1, 1930. The data used were taken from the particular publications of the central statistical offices of Imperial Austria, Czechoslovakia and Poland.
- (b) Territorial adjustments in case of these two Imperial Austrian provinces were minor and do not require a special treatment. The Republic of Cracow was incorporated into Austria in 1846 and later became a part of Galicja. Estimated population amounted to 138,000. The Silesian province was partitioned between Poland and Czechoslovakia in July of 1920. But, there is no mention of the size of population involved.
- (c) The component of the population change which is attributed to the natural increase was determined by deducting deaths from livebirths in each intercensal period. Adjustments for the fraction of the year were performed as needed so that natural increase reflected the natural increase pertinent to each intercensal period.

- The net migration was computed as a residual by deducting from the natural (d) increase the actual intercensal increase (vide supra). This method of calculating the migration is referred to as the residual method and finds a wide-spread acceptance.
- (e) The unexplained migration residual was computed by adding the known immigration both recorded and estimated to the migration determined by the residual method and by deducting both the recorded and the estimated emigration. The end result was the unexplained migration element. In turn, the absolute unexplained migration was converted into a percentage of the total population at the last census.

Comparison of the successive census totals with the intercensal population growth in Czech Crownlands and Galicja revealed a pattern of demographic change observed in Imperial Austria as a whole. In the Czech Crownlands the unexplained migration displayed a series of negative figures or outmigration between 1869 and 1930. It is a historical fact that emigration from Czech Crownlands started relatively early after the emancipation of peasants proclamation and continued into the first decade of the Czechoslovak Republic. the emigration was primarily directed overseas.

Unexplained migration in the period of time between 1827 and 1859 represents an insignificant figure (a fraction of 1%), except in the years of rapidly spreading cholera epidemics which occurred in 1830s, 1840s and 1850s. It would be an acceptable explanation of what to assume, that in cholera years the reporting of vital statistical events was inadequate.

The province of Galicja, which was incorporated in its entirety into the Republic of Poland in 1919, displayed similar pattern in unexplained migration as the Czech Crownlands. However, the emigration from the province of Galicja began more than decade later than that from the Czech Crownlands. This migration was chiefly directed 109

toward the United States of America. The unexplained migrations were small and reflected some unrecorded migration of internal nature with the Austro-Hungrian Empire. The unexplained migration between censuses in 1827 and 1850 in nominal and merits no further investigation. The census of 1857 was preceded by a period of high death rates due to epidemics of asiatic cholera, which made reporting of vital statistical events difficult. Also, the Republic of Cracow was included in the stream of statistical reporting augmenting somewhat the figures. The largest error of 3.3% is reported in the census of 1869. It is reasonable to assume that improved census taking method were applied in 1869, that subsequently made possible a more accurate enumeration of Galicja's population. There is no evidence of any sizable migratory movement.

# ABSTRACT A Sequential Model of Stocker Cattle Marketing Strategies in the Southern Plaines

## Ping Zhang, Eduardo Segarra, and Don Ethridge Texas Tech University

Purchasing cattle in the Spring and selling in the Fall is a typical marketing (buying/selling) strategy used by stocker cattle producers in the Southern Plains of Texas. This strategy is dictated by producers' efforts to achieve optimal feeding efficiency in that the holding period coincides with the period when range grass achieves its greatest biomass and its greatest nutrient value such that weight gains are greatest and least expensive. The consequent periodicity of buying and selling activity results in price patterns wherein the highest cattle prices occur in the Spring months when most cattle are purchased with the lowest prices occurring in the Fall when they are sold.

A number of studies have investigated optimal cattle marketing strategies including either production or marketing risk. A few studies have incorporated both production and marketing risk in combination in a static framework. This study attempts to improve on the dynamic sequential decision aspects of previous studies in that both production and marketing risks are considered, along with the sequential nature of the production activity. The objective of the study was to determine if stocker cattle ranchers could improve profitability by including non-traditional strategies in stocker cattle ranch operations, given the uncertainties associated with bottle cattle prices and forage production, and taking into consideration the sequential nature of the stocker cattle production/marketing decision-making process.

A discrete stochastic sequential programming (DSSP) model which maximizes net ranch income from a subset of production/marketing strategies was developed to incorporate those risks associated with cattle prices and forage yields. A ranch site consisting of 75 acres of weeping lovegrass in the Southern Plains was selected as the analyzed unit. A set of enterprise budgets (representing enterprise alternatives) for stocker heifers was constructed for the site. Production stages of the stocker cattle production process were then defined based on regional climatic patterns. Possible outcomes (states of nature), and the associated probabilities from combined cattle price and forage yield risk in each production period were then identified. A DSSP model was formulated to determine optimal strategies under the assumption that ranchers will attempt to maximize expected net returns.

The results of the study indicated that the inclusion of non-traditional strategies in the stocker cattle operation could increase expected net returns by 77 percent and reduce the variance of net returns as measured by standard errors of the mean by 22 percent. The study concludes that deviations from traditional stocker cattle production and marketing strategies can, in certain circumstances, increase stocker cattle profits and substantially reduce risk. The study was restricted to heifer enterprises, but similar results could be expected with other cattle enterprises. It should be apparent, however, that as the number of producers altering production/marketing strategies to take advantage of favorable price movements increases, seasonal price patterns will change and the advantage of non-traditional strategies will diminish. The authors conclude that the analytical procedure used in the study could be improved by incorporating the rancher's utility function and risk preference profile into the DSSP model.

## <u>U.S. - Taiwan Trade in the 80's and Beyond</u> Paul K. Gau and Caroline Gau Alcorn State University

#### COMMENTS

## Robert Collinge University of Texas at San Antonio

Issues of Bilateral Trade Imbalances between the United States and each of the "rim of Asia" countries have received considerable political scrutiny of late. The paper under review takes a look at one of these countries, Taiwan, with the intent of reviewing its progress toward lowering trade surpluses with the U.S. This leads to a recap of Taiwanese policy changes in the last two years, as well as to a recap of relative exchange rate changes. It is indicated that progress has been made, but that total elimination of the trade surplus may be too much to ask for.

This paper does well in bringing together recent trade developments in Taiwan. It is written in an accessible way, and could be helpful to U.S. policy-makers considering bilateral U.S. Taiwanese trade policy. In my estimation, the paper could be strengthened considerably in this regard with revisions along the following three lines:

- 1. The relatively large bilateral trade deficit the U.S. has with Taiwan is taken at face value to be bad. Why? There are those who argue we should not concern ourselves with bilateral imbalances, as it all comes out "in the wash," such as through investment flows or through trade with other countries. Others view the trading of lower dollar-valued exports for higher dollar-valued imports indicates that the trade deficit is getting the U.S. an exceptionally good deal. To be helpful in a policy-making context, this paper should lay out the controversy over the goal of lower bilateral imbalances.
- 2. There is a discussion of relative population sizes of the two countries on page three. As far as I know, this is of no relevance. Of course, a small country will 113

consume a higher per capita percentage of a large country's goods, just as an individual or city consumes a high fraction of "imported" goods from the rest of the country, while the rest of the country consumes a minuscule percentage of its total consumption from that individual or city. That says something about the way percentages are computed, but not about trade imbalances.

3.

On page 6, it is mentioned that the Taiwanese government relaxed "capital outflow controls" so as to cut down on their trade surplus with the U.S. In fact, the effect of greater outflows of capital from Taiwan would be to strengthen the U.S. dollar and increase Taiwan's trade surplus. The paper should review the interrelationship between capital flows and trade flows.

## Part-time Employment of College Students -- A Pilot Study Jo-Anne Gibson, Phyllis King, and P. Pete Chong Southeastern Louisiana University

## COMMENTS Jill Kriesky University of Alabama at Birmingham

Survey research of adolescents' attitudes towards work indicates that teenagers find their tasks in part-time, fast-food jobs boring. The more they work, the more jaded and cynical they become. Gibson, et al. seek to determine both whether college students develop these same negative attitudes and whether they gain job skills from their parttime work experience. Their survey of 414 Southeastern Louisiana University students reveals that unlike their high school counterparts, the respondents overwhelmingly report positive attitudes towards their part-time jobs. They also believe that their part-time work is meaningful and satisfying and offers them on-the-job decisionmaking opportunities.

This fascinating study evoked observations, questions, and recommendations for future research. Charting the survey responses by the age, sex, education, and workstatus breakdowns Gibson, et al. report, two concluding observations beyond those mentioned by the authors emerge. First, older students (over 26 years old) see less meaning, skill, and decisionmaking power in part-time work than younger ones suggesting that long-time employment in these jobs may not be satisfying. For part-time employers this could mean growing workforce unrest or high turnover. Second, female respondents are more positive about their current part-time work and less opposed to it after graduation than males. One interpretation is that women are more accepting of parttime positions because they anticipate spousal financial support -- an alarming finding given today's growth of single-parent households headed by women.

The Gibson, et al. report also raises several questions, some which other survey items addressed and some which could be asked in a future survey. Specifically, what

types of jobs do the students hold? Are they campus work-study jobs where the supervisor might be a useful contact in securing full-time employment after graduation? Are there benefits (eg. vacations, health insurance, flexibility) associated with their jobs? Are these workers close enough to graduation that the end to part-time work is in sight?

Finally, this study raises the need for additional research. College respondents, most of whom expect their permanent jobs to be challenging, full-time positions, probably have very different attitudes from either part-time workers with no chance of obtaining college education or those who are college-educated but cannot find full-time work. I encourage the authors to pursue comparative studies with these groups to shed light on the character of the workforce employers will face if they pursue their current course of expanding part-time jobs at the expense of full-time positions.

## Location Criteria of Foreign Siting and Acquisitions: A Comparison of Wisconsin and Arkansas Ralph O. Gunderson and J. Scott McDonald University of Wisconsin-Oshkosh Clint Johnson University of Central Arkansas

## COMMENTS Albert E. Myles Mississippi State University

The authors are to be commended for their paper and the selection of this research area. There is a real need to know what factors are important to industry location decisions. Being a rural development specialist, I am frequently asked questions relative to this topic. I will personally benefit from the authors work in this area.

Because the paper was well written, I have only a few comments for the authors. They should not be considered critical but merely suggestions for improving upon an already good paper. Therefore, the following comments should enhance the paper's chances of being published in the future.

- The authors make reference to changing cost relationships and political factors involved in soliciting foreign firms. It would be helpful to identify some of those factors, since they do impact industrial development.
- 2. The authors cited a study conducted by Lewis Mandell in which he found that personal factors were very important in siting new plants. The inclusion of those factors in the paper would greatly benefit local officials as they plan for economic development.
- 3. One of several conclusions drawn by the authors is that there was little difference between foreign merger and acquisition firms and foreign startups in Arkansas and Wisconsin, mainly because of Arkansas' "Giveaway" approach to economic/industrial development. One could conclude from this statement that Wisconsin and other states should not consider other economic factors as being important to industry location decisions.

4. The authors treatments of the Mann-Whitney Test is relatively weak and, therefore, it is suggested that an expansion of the discussion and the interpretation of this test be included in the paper. Also, the authors are encouraged to clearly state their hypothesis for the Mann-Whitney Test and how it will be used.

Finally, even in the present form, the authors' research findings make clear the factors important to industry location decisions. Those truly interested in economic development could use this information to seek a cure for the problems they now face.

## <u>National Policy and Direct Foreign Investment: The Case of Mexico</u> Steven L. Cobb and David J. Molina University of North Texas

## COMMENTS

## Kojo A. Quartey

### **Talladega** College

This is an interesting and insightful paper that sheds light on a little-know relationship between the United States and its neighbor to the south. The authors are to be commended for their efforts. It is interesting to note that Mexico, as a Less Developed Country (LDC), differs considerably from other LCDs primarily because it enjoys advantages that they do not. One of these advantages is its proximity to the U.S., a consequence of which is the facility of transfer of funds by workers in the U.S. to Mexico. The tourist trade is another advantage facilitated by proximity to the U.S. This proximity factors also facilitates direct foreign investment which is the subject of this paper -- provision of employment for Mexican immigrants returning from the U.S.

The descriptive overview of the Maquila industry is well done. The paper also shows in tabular form, direct foreign investment in Mexico from 1960 through 1989. Another insightful part of the paper involves the information provided on number of Maquila plants, employment growth and value, added from 1975 to 1990. In addition to the above, employment and industry composition in the border region and interior is well documented -- this is the strength of the paper.

It would prove beneficial if the authors were more consistent in the use of the terms "Maquiladora" and "Maquila." What is the difference? Some mention of the wages paid by these industries would shed some more light on its usefulness. Are the wages competitive with the United States? If not, then what incentive do Mexicans have for employment in that industry? This paper could also benefit from some discussion of the spillover effects of the Maquiladora industry in the U.S. How has this affected

employment and the economy of the U.S.? Since approximately 95% of all imports are from the U.S., there must be some impact. A more important point would concern impact of this industry on the Mexican economy. Perhaps some quantitative econometric model could be developed to illustrate this.

A final point involves the implication of the study for all parties involved. The lesson to be learned here is simply that it behooves developed nations to aid the developing nations because in the final analysis they may benefit from the positive spillover effects.

## <u>A Comparison of Selected Feeder Cattle Marketing Strategies Using Options on</u> <u>Futures, Futures, and Cash Markets</u> Warren Couvillion and Deborah Hagerman Mississippi State University

#### COMMENTS

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Research of this nature is extremely important because it is research designed to benefit a particular group of decision makers. How farmers and ranchers choose to market their livestock will invariably affect their profits. It behooves them to select a strategy or combination of strategies that would aid them in maximizing profits. Since a majority of these farmers and ranchers are not educated enough to successfully analyze the costs and benefits of the various marketing strategies, the authors provide invaluable information. The focus is on price variation which is the difference between shutting down or remaining in business.

The paper's strengths are that it provides the reader with information on the use of the "options" computer program used to derive the study results. It also discusses the results of the various strategies and provides a descriptive comparison.

This paper could benefit from inclusion of a listing of the various strategies and rankings in tabular form. While the options program appears to provide results, it appears that the strategy rankings are simply based on the mean returns. Is the options program any different from or superior to other quantitative techniques such as meanvariance analysis and stochastic dominance? Stochastic dominance with respect to a function would perhaps be another technique to consider since it takes the decision makers risk attitude into consideration. Certainly the decision maker's risk attitude is of paramount importance since not all farmers/ranchers exhibit the same risk attitude. Finally, the study concluded that no one method is superior to all others at all times. The bottom line then is, if this study were done for a particular farmer, what would be the best strategy? Perhaps other techniques could provide this answer.