Southwestern Journal of Economic Abstracts

1992

a selection of the
abstracts of the proceedings of the
southwestern economic association

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Minutes of the Annual Business Meeting
Southwestern Economics Association
March 29, 1991
San Antonio, Texas

The Annual Business Meeting of the Southwestern Economics Association was called to order by President Chuck Becker, Texas Christian University, at 5:30 p.m. on March 29, 1991. A motion to dispense with the reading of the minutes was passed.

President Becker reported to the assembly that preliminary estimates indicated over 1300 registrants at this year's Southwestern Social Science meetings. There are a total of 29 interdisciplinary and thematic sessions compared with 14 last year. With regard to the Social Science Quarterly, the journal has recently had a 13.7% acceptance rate with a 6 month turn around.

Lewis E. Hill, Texas Tech University, Chair of the Resolutions Committee, made two announcements including: (1) that Richard Leftwich, Southwestern College in Kansas, had been named the outstanding social scientist in the Southwest, by the SWSS Association and (2) a eulogy to the memory of J. Anderson Davis was presented. A motion was passed to incorporate the memorial statements with these minutes. (attached)

President Elect and Program Chair, Rose M. Rubin, University of North Texas, informed the membership that the San Antonio meeting had accepted 300 participants to the Southwestern Economics Association sessions, and filled all possible slots including 65 sessions. These included four papers in most of the sessions. Rose mentioned the high cost of having overhead projectors and screens in each room. She suggested that we consider ways to economize on this expenditure in the future. The recipient of the distinguished paper award was announced: Tom D. Stanley, Hendrix College, for his paper "Ain't Misbehaving: Capricious Consumption and Permanent Income," was the recipient.

The Treasurer's Report, presented by Charles J. Ellard, University of Texas-Pan American, indicated a current balance of $5,137.73. The Treasurer's Report was accepted as presented.

Luvonia Casperson, LSU-Shreveport, presented the report of the nominating committee. The following slate of officers was presented and approved by a vote of the membership present.

President:	Rose M. Rubin University of North Texas
President Elect and Program Chair:	Abdul Turay Radford University
Vice President:	Alexander J. Kondonassis

University of Oklahoma

Secretary-Treasurer: Charles J. Ellard
University of Texas-Pan American

Editor of the SW Journal   Ray Perryman
of Economic Abstracts: Baylor University

Abdul Turay, Radford Univeristy, chair of the Student Paper Award Committee, presented awards to three recipients of the student paper award. They were:

First Place - Lawrence Hatheway, University of Texas-Austin
Second Place - Gregory B. Barnes, Northwestern University
Third Place - Jianhud Hui, Mississippi State University

President Becker closed the meeting at 6:25 p.m.

J. Anderson Davis
1924-1991

In Memoriam

J. Anderson Davis was born June 8, 1924. He received his B.A. degree in 1949 and his M.A. degree in 1950 from Southern Methodist University. He was awarded his Ph.D. degree in 1957 from the University of Alabama. He taught Economics at Mississippi State University from 1957 until his retirement n 1986. He served as Chairman of the Department of Economics and Finance there for 14 years from 1959 to 1983. He founded the Midsouth Academy of Economics and Finance in 1973, and he was loyal supporter of this association throughout his long and distinguished career.

J. Anderson Davis was the elder statesman of heterodox economics in the South. As a contemporary renaissance man, he brought to economic scholarship a breath of vision and a depth of insight which broke the constraining limits that the orthodox theoreticians have imposed on the positive science of economics. As a dissident economist, he always used his creative skepticism to question the counterfactual assumptions which transformed positive economics from science to fantasy, and he always attempted to bring economics back into the real world. As a Christian scholar of the highest moral character, he rejected the secular utilitarianism of the classical tradition and developed theistic existentialism as his basic philosophy of economics. As an inspired and inspiring teacher, he freed economics and irrelevant triviality and brought excitement and enthusiasm into the teaching of economics. In his hands, economics ceased to be the dismal science and became a glorious intellectual adventure. We shall miss Jack Davis because no one can ever replace him intellectually in the economics profession or emotionally in the hearts of his many friends.

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.

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
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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
1991	Chuck Becker, Texas Christian 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.

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1990-   M. Ray Perryman, Baylor University
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Georgia State University

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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.　　Libarary copies are $7.50 per year.

EDITOR'S COMMENTS

by Ray Perryman

Once again, it is a pleasure to bring you this year's edition of the Southwestern Journal of Economic Abstracts. In my third year as your editor, I've become increasingly involved in world economic events that take me far from the academic arena. Still, I find that research--of my own and my colleagues--continues to inform my consulting in a valuable way.

I continue in my position as Baylor University Professor and Economist-in-Residence ; during the year I've published and presented numerous papers on the U.S. and international economic climates. I am enjoying this university affiliation that enables me to participate as an active academic, but also affords me time to conduct the business of my firm, Perryman Consultants. We now have offices in Washington, Dallas, Austin, and Houston in addition to our corporate headquarters in Waco. The year has been a busy one.

As you are aware, the publication of this issue of the journal is several months later than that of our 1991 issue. Because of missed deadlines in our submission process, we extended our acceptance date. To remain within our publication schedule next year, we ask all wishing to submit a paper to do so by September 15, 1993. Other pertinent information is enclosed with this issue.

The outstanding quality of this year's selected papers shows the increasingly high level of scholarship existing in the southwest region. You are to be commended for your hard work and academic achievements. I welcome any suggestions you have concerning the journal. The considerable resources of Perryman Consultants are available to serve the needs of the association; we can quickly implement any ideas that would enhance the reputation or quality of this publication.

Thanks to all of you who so ably helped as discussants of these papers; your excellent cooperation made this issue possible. I encourage you to continue in your support of the overall goals and objectives of the Southwestern Economics Association.

Speculative Attacks and Exchange Rate Crisis in Argentina 1979-1981

by

Walter G. Park
Department of Economics
American University

May 1989

revised: August 1991

Abstract: Exchange rate systems in Latin American countries, such as Argentina, have been frequently subjected to 'speculative attacks' which are events in which private agents discard their holdings of a currency in whose value they have lost confidence. Massive speculative attacks can often cause exchange rate systems to collapse. This paper develops a framework for predicting the breakdown of Argentina's crawling peg system in 1981. The lesson learned is that underlying inconsistencies between monetary and public debt policies led speculative attacks to occur and force the Argentinean authorities to abandon the crawling peg system.

I.   Introduction

Speculative attacks and collapsing exchange rate regimes have formed an important theoretical niche in the open macroeconomics literature.[1] Argentina's experience during 1979 to 1981 provides some empirical evidence for both applying and testing this literature. During this period, exchange rate movements were announced months in advance, as specified by a table of "daily" rates. Officially, Argentina's exchange rate system was classified as a crawling peg. The system broke down in 1981 because of massive speculative attacks - that is, agents swapping domestic currency for foreign owing to a loss of confidence in the domestic currency. The collapse of the system led to higher rates of domestic inflation.

The purpose of this paper is to analyze this particular episode in Argentina's history. Typically a fixed exchange rate system survives as long as the Central Bank has enough reserves to defend a particular parity. However, when a speculative attack against the domestic currency occurs with such force that the Central Bank exhausts its supply of reserves, the policy authorities abandon the fixed exchange rate system. The post-collapse exchange rate regime can be either a floating exchange rate system or another, but more sustainable, fixed exchange rate system.

The viability of a fixed or crawling peg system is important because policy-makers often wish to achieve price stability when they choose such a system. The possibility of collapse means that their price objectives will be less than effectively achieved, if at all. In 1978, the Argentinean government wanted drastically to reduce inflation[2] (see Table 1). A first step was to regain the confidence of the private sector. To this end, the government opted for a crawling peg system in which exchange rate changes would be announced in advance, enabling private agents to operate under a climate of greater policy certainty. Policy rules or commitments were looked upon more favorably than policy discretion.

The viability of an exchange rate system, however, requires that monetary and fiscal policies be consistent with the exchange rate regime in place. Underlying inconsistencies between monetary and fiscal policies have been cited as causing the collapse of exchange rate regimes in Mexico, Chile, France, and Italy. Similar factors were also at work in Argentina. During the early stages of the crawling peg regime, the Argentinean money supply grew rather slowly but the public sector financial deficit grew rapidly as a proportion of GDP. As Sargent-Wallace (1981) point out, an inconsistency arises because if the growth rate of public debt exceeds the growth rate of the economy, eventually the policy authorities would have to print money to finance the public debt since slow economic growth would not permit the financing of debt by further public borrowing or by raising taxes. Printing money raises seignorage revenue (that is, inflation taxes). Expectations of future inflation would impact immediately on private agents who are forward-looking. Private agents often respond to news of future inflation by engaging in speculative attacks against the domestic currency. This puts pressure on the domestic currency to depreciate in value. However, to maintain the value of the domestic exchange rate at its prespecified level, the Central Bank sells its holdings of

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foreign exchange reserves. When enough reserves are depleted, the country withdraws from the exchange rate system to prevent further drainage. Thus, the important link in the above scenario is that inconsistent monetary and fiscal policies lead speculators to lose confidence in the viability of an exchange rate regime, and their actions in turn help precipitate the collapse of a regime.

In this paper I use censored regression analysis to predict the breakdown of the crawling peg regime in Argentina. The probability of breakdown is a function of the inconsistencies reflected in the market 'fundamentals'. Essentially I use a simple model to determine what the exchange rate should be in the absence of a fixed exchange rate system (which I call the 'shadow' exchange rate) and compare that rate to the actual, prespecified rate. If the actual rate is overvalued relative to the shadow rate, speculators (who know the model) would know that the existing exchange rate system is unsustainable and realize that it is optimal to 'attack' it. The shadow rate shows signs of overvaluation when underlying policy variables show signs of long run inconsistency. The censored regression framework permits the analysis of both the actual exchange rate, which is observable, and the shadow exchange rate, which is unobservable.[3]

The plan of this paper is as follows. Section II presents the exchange rate model that is estimated. Section III describes the data and sample period. Section IV describes the estimation framework, methodology, and results. Section V reports on tests of the model (namely Wald, Specification, and Serial Correlation Tests). Section VI conducts some exercises with the results, such as reconstructing the probabilities of speculative attack and simulating the conditional and unconditional magnitudes of exchange rate changes. Section VII contains concluding remarks and suggestions for further research.

II.   Model

Before presenting the model, I shall briefly discuss how speculative attacks are to occur in the model. At each instant in time, a "shadow" floating exchange rate can be calculated, which is the exchange rate that would prevail if the crawling peg or fixed exchange rate regime were abandoned at that instant. The econometrician cannot observe the shadow rate, but can use the model's unconstrained solutions to infer it. The shadow rate by definition is only observable when the system ends - that is, when the exchange rate constraint is relaxed and the rate is allowed to float freely. Based on the fundamentals that drive the floating rate, the econometrician is able to estimate the censored shadow rate in the presence of a crawling peg or fixed exchange rate regime.

Using 'absence of arbitrage opportunity' arguments, I will argue that a speculative attack should occur the moment the shadow exchange rate coincides with the fixed rate. Let $s(t)$[4] denote the shadow exchange rate at time t and $\bar{s}$ the fixed rate. Suppose that t^* represents the date at which a speculative attack occurs. If $s(t^*) > \bar{s}$, rational agents at an earlier date $t < t^*$ would have foreseen a profitable opportunity at t^* and acted earlier to preempt competitors in purchasing Central Bank reserves. That is, they could have purchased reserves for a price of $\bar{s}$ at time $t < t^*$, resold them for a price of $s(t^*)$ at time

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t*, and earned a windfall of $(s(t^*) - \bar{s})$. If all speculators had acted this way, the attack would have taken place earlier than t*, which contradicts the assumption that the attack occurs at t*. Hence the attack should occur precisely when $s(t^*) = \bar{s}$.

In a deterministic environment, agents would know at the start of a fixed exchange rate system whether the shadow rate will ever cross the fixed rate. It is therefore assumed that agents operate in a stochastic environment, but have rational expectations.

The following model represents a small open-economy. It is essentially a monetary model in which I allow for deviations in purchasing power parity (PPP) and for a fiscal side to link money creation and government budgetary deficits. All lower case lettered variables are in logs:

$$(1) \qquad m_t - p_t = \alpha_0 - \alpha_1(E_t p_{t+1} - p_t) + e_{1t}$$

$$(2) \qquad p_t = p_t^* + s_t + e_{2t}$$

$$(3) \qquad m_t = \omega r_t + (1-\omega)d_t \qquad 0<\omega<1$$

$$(4) \qquad (M_t - M_{t-1}) + (B_t - B_{t-1}) - s_t(R_t - R_{t-1}) = \Delta_t + i_{t-1}B_{t-1}$$

where s_t is the spot exchange rate of pesos in terms of foreign currency, $m_t = \log(M_t)$ denotes the money supply, $r_t = \log(R_t)$ international reserves (denominated in foreign currency), and $d_t = \log(D_t)$ domestic credit. B_t denotes the stock of government bonds, and i_t denotes the interest rate. The domestic and foreign price levels are given by p_t and p_t^* respectively. $E_t(.)$ denotes the expectations operator given information at time t. Δ_t denotes the primary deficit (net of interest charges). It is assumed that the error terms e_{1t}, e_{2t} are i.i.d. (independently and identically distributed) with zero mean.

Equation (1) is a Cagan type of money demand function used for studying hyperinflationary periods. Alternatively, the interest rate, i_t, could have been specified in place of the inflationary expectations term, $(E_t p_{t+1} - p_t)$. However, in view of Table 1, inflationary expectations should play a significant role. Moreover, in models specifying an interest rate instead, an interest parity (U.I.P.) condition is also modeled, $i_t - i_t^* = (E_t s_{t+1} - s_t)$, which unfortunately holds only if all speculators are risk-neutral, an assumption which may not hold during periods of high inflation and risks of devaluation (the 'Peso' Problem). Equation (2) allows for deviations from PPP. Equation (3) is a money supply definition which states that the monetary base is a combination of international reserves and domestic credit. When the country goes off a fixed exchange rate standard, it is usually assumed that $\omega = 0$; that is, the monetary base is backed entirely by domestic credit. Alternatively it may be assumed that $r_t = r_{min}$ when the regime ends, where r_{min} is a threshold level below which the policy authorities give up defending a parity rule. Finally equation (4) is the flow government budget constraint.

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The constraint can be solved forward in time so that the impact of current and past deficits on future government financing needs can be evaluated.

Appendix 1 solves (4) forward in time and reaches the conclusion that domestic credit growth is linked to the growth in deficits. This specification departs form previous empirical work in which domestic credit creation is treated exogenously. Here, domestic credit creation is postulated to be some function of government deficits:

$$(5a) \quad d_t = \psi_0 + \psi_1 def_t + u_{1t}.$$

where u_{1t} is an iid error and zero mean.

The following equations describe the processes of the state variables. For now an AR(1) specification is assumed. Later in Section V these specifications are corrected for first-order autocorrelation.

$$(5b) \quad def_t = \gamma_0 + \gamma_1 def_{t-1} + u_{2t}$$

$$(5c) \quad p_t^* = \xi_0 + \xi_1 p_{t-1}^* + u_{3t}$$

where u_{2t} and u_{3t} are also iid with zero mean, and def_t is the log of the deficit, including interest payments, at time t[5].

Solutions

I first derive the shadow floating exchange rate $\bar{s}$ in the absence of a crawling peg so that its path can be estimated for periods in which a crawling peg regime is in place. Substituting equations (2), (3), and (5a) into (1) and rearranging gives:

$$(1 + \alpha_1)\, \bar{s}_t = \alpha_1 E_t\, \bar{s}_{t+1} + \omega r_{min} + (1 - \omega)\psi_0 + (1 - \omega)\psi_1 def_t - (1 + (\alpha_1 - \alpha_1 \xi_1))p_t^* - (\alpha_1 - \alpha_1 \xi_0) - (1 - \alpha_1) e_{2t} - e_{1t} + (1 - \omega) u_{1t}$$

where the reserve component of the monetary base is assumed to stay constant at the minimum threshold level, r_{min}.

Let $h_t = \omega r_{min} + (1-\omega)\psi_0 - (1+(\alpha_1 - \alpha_1 \xi_1))p_t^* - (\alpha_1 - \alpha_1 \xi_0) - (1-\alpha_1)e_{2t} - e_{1t} + (1-\omega)u_{1t}$

Thus,

$$(6) \quad \bar{s}t = \frac{1}{(1+\alpha_1)}\left[h_t + (1-\omega)\psi_1 def_t \right] + \frac{\alpha_1}{(1+\alpha_1)} E_t \bar{s}_{t+1}$$

for which the convergent forward looking solution is:

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$$(7) \quad \tilde{s}_t = \frac{1}{1+\alpha_1}\sum_{i=0}^{\infty}\left(\frac{\alpha_1}{1+\alpha_1}\right)^i E_t h_{t+1} + \left(\frac{(1-\omega)\psi_1}{1+\alpha_1}\right)\sum_{i=0}^{\infty}\left(\frac{\alpha_1}{1+\alpha_1}\right)^i E_t def_{t+1}$$

that is, the shadow exchange rate depends on expected discounted future market fundamentals.

To obtain more specific results, assume also that the other remaining fundamentals follow an AR(1) process:

$$(5d) \quad h_{t+i+1} = f_0 + f_1 h_{t+i} + e_{3t+i+1}$$

where again e_{3t+i+1} is assumed to be iid with zero mean. The empirical results of the AR(1) processes are discussed in Section V.

Substituting (5b, c, d) into (7) gives

$$(8a) \quad \tilde{s}_t = \alpha_1\left(\frac{1}{u_h}f_0 + \frac{1}{u_d}\gamma_0\right) + \frac{1}{u_d}def_t + \frac{1}{u_h}[k_1 - k_2 p_t^* + k_e] + error$$

where

$$k_1 = -(\alpha_0 - \alpha_1\xi_0) + \omega r_{min} + (1-\omega)\psi_0$$

$$k_2 = (1+\alpha_1(1-\xi_1))$$

$$k_3 = (1-\omega)\psi_1$$

$$k_e = (1-\omega)u_{1t} - e_{1t} - (1+\alpha_1)e_{2t}$$

$$u_d = (1+\alpha_1(1-\gamma_1)), \quad u_h = (1+\alpha_1(1-f_1)).$$

Another way to write (8a) more amenable for econometric purposes is:

$$(8b) \quad \tilde{s}_t = \beta_0 + \beta_1 def_t + \beta_2 p_t^* + error,$$

where

$$\beta_0 = \alpha_1\left(\frac{1}{u_h}f_0 + \frac{1}{u_d}\gamma_0\right) + \frac{1}{u_h}k_1$$

$$\beta_1 = \frac{k_3}{u_d}, \quad \beta_2 = -\frac{k_2}{u_h}, \quad error = k_e$$

and it is expected that $\beta_1 > 0$ and $\beta_2 < 0$.[6] The reasons for these signs are that (i) deficit growth works to reduce money demand and lead to a depreciating currency, while (ii) increases in foreign prices work to favor home money demand and lead to a strengthening of the home currency.

Policy Rule

Under a pre-announced crawling peg system, the policy authorities announce a series of devaluation rates δ_t, δ_{t+1}, δ_{t+2}, ... in advance. In Argentina, the idea conceived of in December 1978 was to begin the crawl at roughly 5% in January 1979 and to reach zero per cent by March 1981. Therefore the exchange rate at time t+1 is, if there is no devaluation, $s_{t+1} = s_t(1 + \delta_{t+1})$. Otherwise if a speculative attack and devaluation occur, the shadow exchange rate, $\bar{s}_{t+1}$, emerges. More compactly:

$$(9) \quad s_{t+1} = \begin{cases} \bar{s}_{t+1} & \text{if } \bar{s}_{t+1} > s_t(1 + \delta_{t+1}) \\ s_t(1 + \delta_{t+1}) & \text{otherwise} \end{cases}$$

III. Data Set and Sample Period

Four important variables in the model are domestic credit, government deficits, the foreign price level, and spot exchange rate. All data are monthly and are from the IMF's International Financial Tapes. It would have been ideal to have included real output in the money demand function, but the data sources relied on did not provide monthly measures of GDP, GNP, or of a reasonable proxy like the index of industrial output. As a proxy for foreign prices, the U.S. Consumer Price Index is used.

Specifically, d_t is the logarithm of the domestic credit of the Central Bank at the end of the month in billions of pesos. def_t is the logarithm of the public sector financial deficit, defined as the discrepancy between revenues and expenditures, including interest payments on debt, on a cash-flow basis in billions of pesos. s_t is the logarithm of the spot exchange rate at the end of the month in pesos per dollar. p_t^* is the logarithm of the U.S. consumer price index, with 1980 = 100.

In Charts 1-3 are plots among the exchange rate, domestic credit, and public sector deficits. All series have been scaled so as to be more visually comparable in the plots. The co-movement between domestic credit and the exchange rate is very close, as is (but to a lesser degree) the co-movement between domestic credit and deficits. Note the sharp increase in the deficits at the end of 1980. The actual collapse date is June 1981. Severe speculative attacks have occurred in February, April, and June of 1981. The government attempted to salvage the program in May 1981 by carrying out a previously announced rate of crawl for that month but failed to prevent the attack of June 1981.

The remainder of this section will focus on the choice of sample period - mid 1977 to mid 1982. Enough uncensored sample observations are required to estimate the shadow exchange rate. One difficulty with the Argentinean case is that governments have frequently been controlling exchange rates, instituting two-tier rates or fixing exchange rates on various occasions. In this regard, the World Currency Yearbook is helpful for selecting periods of floating, or controlled floating. The crawling peg system was in place between January 1979 to June 1981. Between July 1977 to December 1978, and between July 1981 to June 1982, the free market peso was under controlled floating. Before July 1977 and after June 1982, different kinds of exchange rate regimes were instituted. Thus I estimate the shadow exchange rate only on the basis of observations from July 1977 to December 1978 and from July 1981 to June 1982.

IV.   Estimation Framework, Methodology, and Results

Framework

The estimation technique adopted is that of censored (Tobit) regression. To that end, (9) is rewritten as follows:

$$(10) \quad y_{t+1} = s_{t+1} - s_t(1 + \delta_{t+1}) = \begin{cases} \tilde{s}_{t+1} > s_t(1 + \delta_{t+1}) & \text{if RHS} > 0 \\ 0 & \text{otherwise} \end{cases}$$

where $\tilde{s}_{t+1} = \beta_0 + \beta_1 def_{t+1} + \beta_2 p_{t+1}* + error$, and δ_{t+1} is the pre-announced rate of crawl; under controlled floating, $\delta_{t+1} = 0$. During the crawling peg era, all such δ_{t+1} were announced in advance.

A few remarks are in order. First, the constant term β_0 contains r_{min}, which is assumed to be fixed. Others such as Blanco-Garber (1986) and Cumby-van Wijnbergen (1987) estimate r_{min}, though they also treat it as fixed. In the estimated model presented here the r_{min} is absorbed in the constant term and cannot be isolated. Future work should try to identify the level.[7]

Secondly the def_t, p_t* series do seem to be well explained by AR(1) processes, as indicated in Table 2a. However, the Durbin-Watson statistics indicate some need for correction,[8] namely:

$$(5a)' \quad d_t - \rho_1 d_{t-1} = \psi_0(1 - \rho_1) + \psi_1(def_t - \rho_1 def_{t-1}) + u_{1t}'$$

$$(5b)' \quad def_t - \rho_2 def_{t-1} = \gamma_0(1 - \rho_2) + \gamma_1(def_{t-1} - \rho_2 def_{t-2}) + u_{2t}'$$

$$(5c)' \quad p_t* - \rho_3 p_{t-1}* = \xi_0(1 - \rho_3) + \xi_1(p_{t-1}* - \rho_3 p_{t-2}*) + u_{3t}'$$

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where ρ_1, ρ_2, and ρ_3 are the first-order serial correlation coefficients. The estimated results are presented in Table 2b. It is found that d_t follows an AR(1) process very well with no autocorrelation (asymptotically):

$$(5e) \qquad d_t - \upsilon_0 + \upsilon_1 d_{t-1} + u_{4t}.$$

Resubstituting (5a)'-(5c)', (5d), and (5e) into (7) gives another version of (8a) to be estimated, namely,

$$(8b)' \qquad \tilde{s}_t = \beta_0 + \beta_1 def_t + \beta_2 def_{t-1} + \beta_3 p_t* + error.[9]$$

Methodology

Let $X = [I \quad def \quad def_{-1} \quad p*]$ be a Tx4 matrix where I is a column vector of ones, and let $\beta' = [\beta_0 \quad \beta_1 \quad \beta_2 \quad \beta_3]$ be a 1x4 vector of parameters. The sample period contains 60 observations of which a certain number, N1 (=30), are censored observations, namely those between January 1979 and June 1981. N2 (=30) then is the number of observations for which the shadow exchange rate can be observed (and N1 + N2 =60).

The first part of the estimation is the Heckman-Lee Two-Stage procedure, for which the estimates are consistent but inefficient, rendering tests of significance invalid. The second part consists of using these consistent estimates as the starting values for a maximum likelihood estimation procedure.

The errors in (8b) are assumed to be normally distributed. Consequently the first stage of Heckman-Lee involves a probit estimation:

$$(11) \qquad \max_{\beta} \log L = \sum_{t=1}^{60} d_t \log \Phi \frac{(\beta' X - c)}{\sigma} + \sum_{t=1}^{60} (1 - d_t) \log \left[1 - \Phi \frac{(\beta' X - c)}{\sigma} \right]$$

where $d_t = 1$ if $t \in N2$
$\qquad = 0$ if $t \in N1$

$t = 1, \ldots 60$

(that is, $d_t = 1$ if $y_t > 0$ and $d_t = 0$ if $y_t = 0$), and $\Phi(.)$ is the standard normal cumulative distribution function, and c is a vector of $s_t(1 + \delta_{t+1})$ for $t = 1, \ldots, 60$. Note that β, σ cannot be estimated separately; the standard procedure here is to normalize σ to unity. Given an estimate of $\hat{\beta}$, one can estimate $\hat{\Phi}(.)$ and the probability density function, $\hat{\phi}(.)$. The second stage of the Heckman-Lee involves OLS on:

$$(12) \qquad E(y_t) = \hat{\Phi}(.)_t (\beta' x_t - c) + \sigma \hat{\phi}(.)_t \text{ for all 60 observations.}$$

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Finally, estimates of $\hat{\beta}$, $\hat{\sigma}$ from (12) are used as initial starting values for the Tobit MLE:

$$(13) \quad \max_{\beta, \sigma} \log L = \sum_{t=1}^{60} d_t \log\left(\frac{1}{\sigma}\phi\left(\frac{y_t - x_t\beta - c}{\sigma}\right)\right) + \sum_{t=1}^{60}(1-d_t)\log\Phi\left(\frac{c - x_t\beta}{\sigma}\right)$$

where d_t is as defined before. The first sum on the right-hand side of equation (13) refers to observations for which the shadow floating rate coincides with the actual exchange rate and the second sum refers to observations during the censored (crawling-peg) regime.

Results

The probit regression results are presented in Table 3. All signs are as expected. The $\hat{\Phi}(.)$, $\hat{\phi}(.)$ are evaluated using these estimates. The results of the last stage of Heckman-Lee are presented in Table 4. The signs are all as expected, which are reproduced here for convenience:

$$\hat{\beta}_0 = 52.5 \quad \hat{\beta}_1 = 0.65 \quad \hat{\beta}_2 = 1.45 \quad \hat{\beta}_3 = -13.13 \quad \hat{\sigma} = 1.81$$

The t-statistics are strong, though incorrect because of the heteroskedasticity inherent in the Heckman-Lee procedure.

In Table 5 are the main results of MLE using the above β's as starting values. They are reproduced here for convenience:

$$\hat{\beta}_0 = 40.2 \quad \hat{\beta}_1 = 0.672 \quad \hat{\beta}_2 = 1.08 \quad \hat{\beta}_3 = -9.8 \quad \hat{\sigma} = 0.69$$

The signs are correct and the t-statistics are decisively strong. Compared to the Heckman-Lee estimates, they are smaller in absolute magnitude, with the exception of β_1 which has only imperceptibly changed in value.

Section VII uses these results to conduct some within-sample (or ex post) experiments, such as computing one-step ahead devaluation/attack probabilities. Before proceeding there, the next section reports the results of some tests on the model.

V.   Tests of the Model

Wald Test

The objective here is to test the restriction that all coefficients except the constant term should be zero. The test statistic is compared to a chi-square distribution with 3 degrees of freedom. The result is that the null hypothesis that $\beta_1 = \beta_2 = \beta_3 = 0$ is rejected at the 5% level of significance.

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Misspecification Test

The Nelson (1981) version of the Hausman Misspecification Test is used to determine whether the model is robust to the assumption of a normally distributed cdf (and pdf). The test essentially involves comparing the maximum-likelihood estimates against the method-of-moments estimates. The method-of-moments gives consistent estimates whether or not the underlying distribution is normal, while the ML estimates are consistent only under normality. Thus under the null hypothesis of 'normality', the discrepancy between the two estimates should be small, while large under the alternative hypothesis. The test statistic is compared to a chi-square distribution with k=4 degrees of freedom, where k is the dimension of the parameter vector. I could not reject the null hypothesis that the distribution is normal at the 10% level of significance.

Serial Correlation Test

This section applies a test for first-order serial correlation developed by Lee (1984) to equation (8b), the reduced-form equation for the shadow exchange rate. Lee's test can be regarded as a generalization of the Durbin-Watson test. Since the test is originally formulated for a bivariate (or two equation) system, the test must be modified somewhat for the single equation case. Appendix 2 outlines the procedure in more detail. As an overview, the test-statistic is basically the square of the sum of functions (defined in Appendix 2) of autocorrelated disturbances divided by the sum of the square of those functions of autocorrelated disturbances. The test-statistic is asympototically chi-square distributed with (in this instance) one degree of freedom.

The results are as follows. The null hypotheses of the absence of first-order serial correlation is rejected at the 5% level of significance but is not rejected at the 1% level of significance. In other trials, when further lagged values of deficits are added (for example, def_{t-2}, def_{t-3}) to equation (8b), the serial correlation problem disappears at the 5% level of significance. Their inclusion in the reduced-form equation (8b) would be justified theoretically if changes are made to the specification of movements in the underlying fundamentals (like deficits, prices, and domestic credit creation) in equations (5a)-(5c); for example, an AR(2) process could be postulated for deficit growth. Nevertheless this paper has proceeded with the theoretical assumptions and specifications presented in Section II, as the simple (first-order or one-lagged) structure sufficed to produce some reasonable results. Robinson (1982) has noted that in the context of Tobit models, serial correlation difficulties pose problems for the efficiency of estimates (and significance tests based thereon) but not for the consistency of the ML estimates.

VI. Experiments

The following within-sample predictions are reported: (i) the one-step ahead devaluation probabilities; (ii) the exchange rate conditional on a devaluation; (iii) the unconditional exchange rate. The results are presented in Tables 6 and 7, and in Charts 4, 5, and 6.

The probability of attack is given by the cumulative distribution function, $\text{Prob}(y_t>0)=\hat{\Phi}_t((X_t\hat{\beta}-c)/\hat{\sigma})$, given information at t-1. The conditional and unconditional exchange rate equations are given respectively by:

$$E(\tilde{s}_t|y_t>0)=\hat{\beta}x_t+\hat{\sigma}\left(\hat{\phi}_t(.)/\hat{\Phi}_t(.)\right)$$

and

$$E(\tilde{s}_t)=\hat{\Phi}_t(.)\hat{\beta}_t(x_t-c)+\hat{\sigma}\hat{\phi}_t(.)+c.$$

Conditional exchange rates are what exchange rates would be if attacks were to occur, and according to Table 7 and Chart 5, the conditional rates overpredict the actual rates (as would be the case if a devaluation were expected in each period). The unconditional exchange rates have the interpretation of being the model's own predictions of the actual exchange rate series. The predictions are rather good, although there is a tendency for overprediction in the post-collapse period.

The probability of attack series indicate that there has always been some positive probability of a devaluation looming in the background. The probabilities are relatively low during the initial phases of the crawling peg. They rise, as expected, in the latter phases. During the period in which the crawling peg was not in place, the relative lack of exchange rate predictability enables the probabilities to be higher on average. Note, however, that the probabilities reach a peak in January 1981, six months earlier than the actual date of collapse. This is influenced by the fact that the government deficit itself reaches a peak in December 1980 (recall Charts 2, 3). Thus according to the model, the fundamentals predict an earlier collapse. In actuality, a series of attacks occurred in February, April, and June of 1981, involving devaluations of 10, 31, 30 per cent respectively. The source of the conflict may be due to a weakness with using "one-step" ahead probability measures, since the information available at any time is used only to compute the probability of an event one period later. A better measure would be a k-step ahead probability of devaluation (k > 1). Another weakness with the model is that it leaves out information as to why and how the Argentinean government tried to cling on to the program, through political efforts in March and May of 1981, despite market pressure.

VII. Conclusion

In summary the results support the view that a deficit growth path that is inconsistent with monetary and exchange rate stabilization leads to speculative attacks and to a collapse of an exchange rate regime. That is, rapid deficit growth in the presence of 'tight' money eventually implies future money creation in order that the public debt can be financed (or monetized). When inflationary taxes are anticipated (owing to an expected increase in future monetary expansion), private agents will reduce their money demand through the Cagan price expectations term in equation (1), and higher current prices will result to clear the money market. The increased current

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inflation will weaken the domestic currency and make it profitable to launch buying attacks against central bank reserves.

This paper employed censored regression techniques to estimate a shadow exchange rate for a crawling peg regime. The shadow rate signals whether speculative attacks against a crawling peg regime can be profitable. Overall the results support the view that public sector deficits drive movements in the shadow exchange rate, indicating that deficit growth inconsistent with the monetary and exchange rate policies in place are ultimately behind the breakdown of a crawling peg regime.

I will conclude with some suggestions for further research. First it would be desirable to extend the empirical specification of the model. For instance, a measure of the transactions demand for money, such as real output, should be included, and the minimum threshold level, r_{min}, should be identified explicitly.

A related area to investigate is the literature on target zone models of exchange rate dynamics. A two-limit Tobit framework may be used to model the upper and lower thresholds of a target zone. Both devaluations and revaluation can be considered and would be useful for studying exchange rate misalignments in the EMS where unusual movements in both strong and weak currencies can seriously affect exchange rate management.

Another modeling strategy would be to use a 'duration' framework, if enough events in the sample permit. The intuitive idea here is to study the survival rates of exchange rate regimes. Along this line a panel data study could be set up as in Hajivassiliou (1988). One purpose would be to see whether there are country-specific reasons for speculative attacks or common ones, such as a weakening demand for Latin American exports by the United States or other industrialized countries. Another purpose would be to integrate the factors that ignite debt crises, capital flight, and currency substitution, with those that incite speculative attacks. Intuition suggests that there ought to be common origins for the various factors that expose countries to serious financial and other risks.

Appendix 1: The Intertemporal Government Budget Constraint

Recall equation (4):

(A1) $(M_t - M_{t-1}) + (B_t - B_{t-1}) - s_t(R_t - R_{t-1}) = \Delta_t + i_{t-1}B_{t-1}$

Let R_t be the value of reserves denominated in domestic currency and in terms of book-value - i.e. $(\tilde{R}_t - \tilde{R}_{t-1}) = s_0(R_t - R_{t-1})$ - so as to avoid having to keep track of changes in the exchange rate.

Now,

(A2)
$$(M_t - M_{t-1}) + (B_t - B_{t-1}) - (\tilde{R}_t - \tilde{R}_{t-1}) = \Delta_t + i_{t-1}B_{t-1}$$
$$(M_{t+1} - M_t) + (B_{t+1} - B_t) - (\tilde{R}_{t+1} - \tilde{R}_t) = \Delta_{t+1} + i_t B_t$$
$$\vdots$$

and so forth.

Let $Z_t = \Delta_t + i_{t-1}B_{t-1} - (B_t - B_{t-1}) + (\tilde{R}_t - \tilde{R}_{t-1})$ be the "monetized" part of the financial deficit. Hence, $Z_t - (M_t - M_{t-1})$.

As mentioned in the text, when exchange rates are not fixed, M_t is backed by domestic credit, D_t. Thus:

(A3) $Z_t = (D_t - D_{t-1})$
$\qquad$ $Z_{t+1} = (D_{t+1} - D_t)$
$\qquad$ $\vdots$

Solving recursively,

(A4) $D_T = D_t + \sum_{i=t}^{T} Z_i$ for t<T, where T is some date in the future.

Equation (A4) indicates that at time t, agents will see that the stock of domestic credit at time T will be affected by the sum of "deficits" incurred between t and T. Current deficits must be matched by future surpluses, and vice versa, if there is to be no change in inflationary implications (ie. for given $D_T - D_t$); for example, increased indebtedness today that defers real taxes or money creation today must eventually be paid by real taxes or money creation in the future.

In order to adjust (A4) for inflation, (A3) is rewritten as:

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(A3)' $\dfrac{D_t}{P_t} - \dfrac{D_{t-1}}{P_t} = \dfrac{Z_t}{P_t}$

where P_t is the price level. This gives

$$d_t = \left(\dfrac{1}{1+\pi_t}\right)d_{t-1} + z_t$$

where $\pi_t = \dfrac{P_t}{P_{t-1}} - 1$ is the inflation rate, and $d_t = \dfrac{D_t}{P_t}$ and $z_t = \dfrac{Z_t}{P_t}$.

Solving the above recursively, gives:

(A5) $\quad \bar{d}_T = \displaystyle\prod_{j=t+1}^{T}\left(\dfrac{1}{1+\pi_t}\right)\bar{d}_t + \sum_{i=t+1}^{T}\prod_{k=1}^{T-i}\left(\dfrac{1}{1+\pi_{i+k}}\right)z_i$

i.e. the intertemporal budget constraint in <u>real</u> terms. Thus, domestic credit creation between (t, T) depends on the entire future path of government deficits. The main text specifies how Z_i, or z_i, evolves over time.

Appendix 2: Lee's Test for Serial Correlation

Assume the model is:
$$y_{1t} = x_{1t}.\beta_1 + u_{1t}$$
$$y_{2t} = x_{2t}.\beta_2 + u_{2t}.$$

$$u_{1t} = \rho_1.u_{1t-1} + e_{1t}, \quad u_{2t} = \rho_2.u_{2t-1} + e_{2t}, \text{ and}$$

Suppose
$$\Sigma = \begin{bmatrix} \sigma_1^2 & \sigma_{12} \\ \sigma_{12} & \sigma_2^2 \end{bmatrix}$$

Under the null hypothesis of no first-order serial correlation, $\rho_1 = \rho_2 = 0$.

Let
$$c_{1t} = \left(u_{1t}* - \left(\sigma_{12}/\sigma_2^2\right).u_{2t}*\right).u_{1t-1}* \quad \text{and}$$
$$c_{2t} = \left(u_{2t}* - \left(\sigma_{12}/\sigma_1^2\right).u_{1t}*\right).u_{2t-1}*,$$

where the asterisks denote the estimated sample residuals of u_{1t} and u_{2t}.

Now let $c_t = (c_{1t}, c_{2t})'$ and construct the scoring statistic

$$\Gamma = \left(\sum_{t=2}^{T} c_t'\right)\left(\sum_{t=2}^{T} c_t\, c_t'\right)^{-1}.\left(\sum_{t=2}^{T} c_t\right)$$

where under regularity conditions, this test-statistic is asymptotically distributed as chi-square and 2 degrees of freedom. Thus if this Γ exceeds $\chi^2(2)$ at some specified level of significance (say 5%), the null hypothesis is rejected.

Now if there is only one equation in the system, say $y_{1t} = x_{1t}.\beta_1 + u_{1t}$, then set $u_{2t} = 0$, and consequently $\sigma_{12} = 0$, so that $c_t = c_{1t}$ only. The rest of the test procedure can then be followed in an analogous way - with Γ being distributed as chi-square with one degree of freedom.

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Chart 1
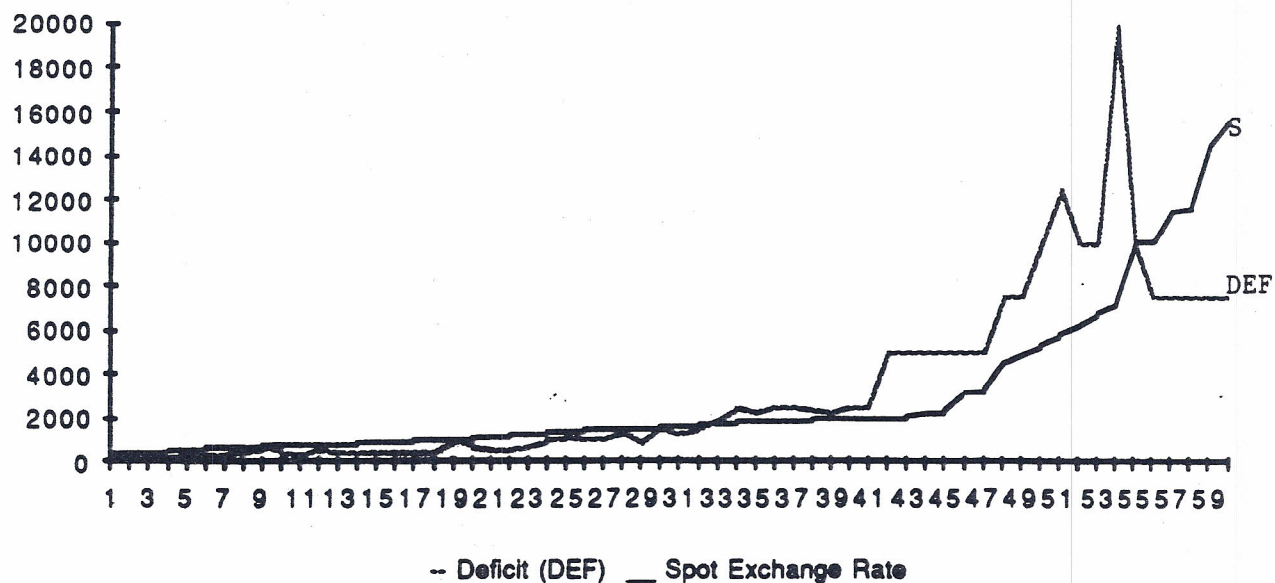
-- Domestic Credit (DC) _ Spot Exchange Rate (S)

Chart 2

-- Deficit (DEF) __ Spot Exchange Rate

Notes: Observation 1 corresponds to July 1977, ... , Observation 30 corresponds to December 1979, ... , Observation 60 corresponds to June 1982. Observations 19 to 48 correspond to the crawling peg regime: January 1979 to June 1981.

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Chart 3

-- Deficit (DEF) __ Domestic Credit (DC)

Chart 4

Probabilities of Attack.
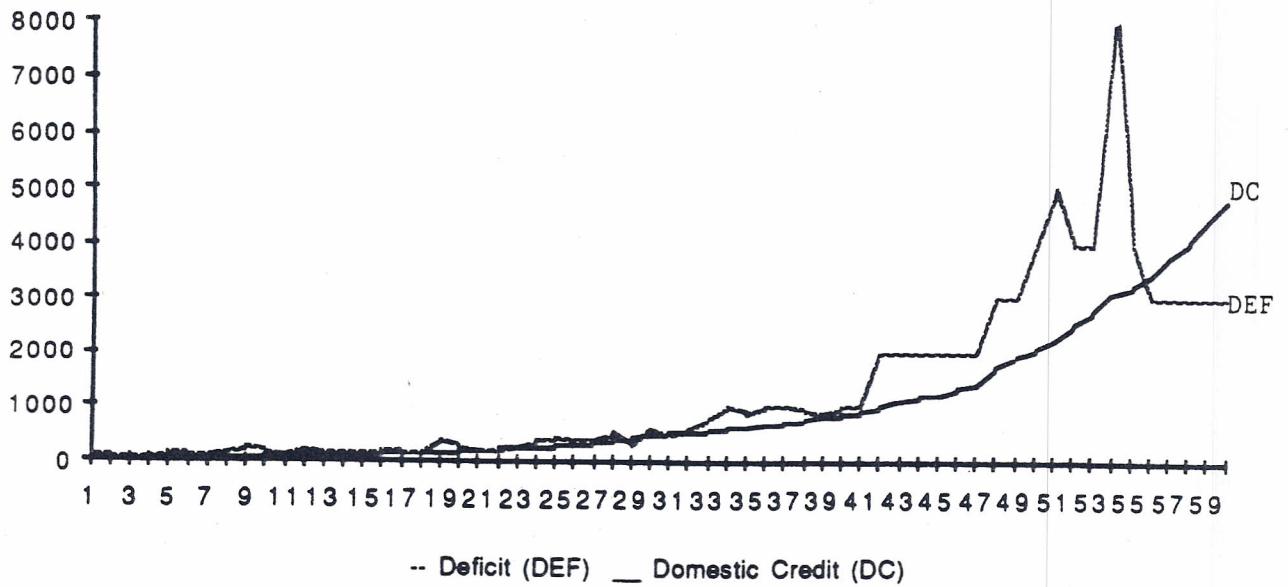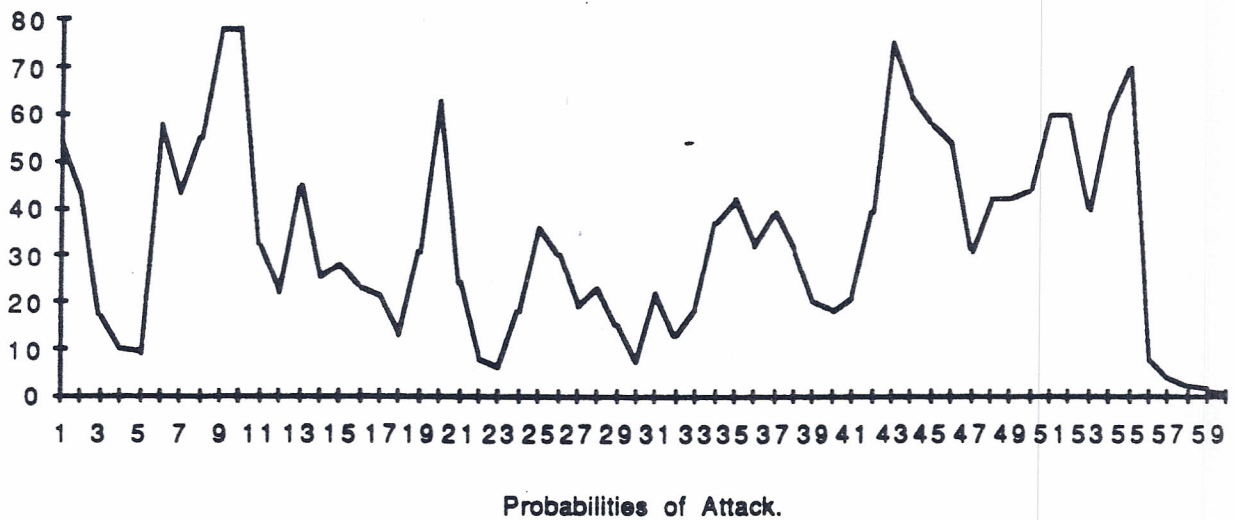
(Observation 43 corresponds to January 1981)

Notes: Observation 1 corresponds to July 1977, ... , Observation 30 corresponds to December 1979, ... , Observation 60 corresponds to June 1982. Observations 19 to 48 correspond to the crawling peg regime: January 1979 to June 1981.

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Chart 5

-- Conditional Exchange Rate (CE)
__ Actual Exchange Rate (AE)

Chart 6
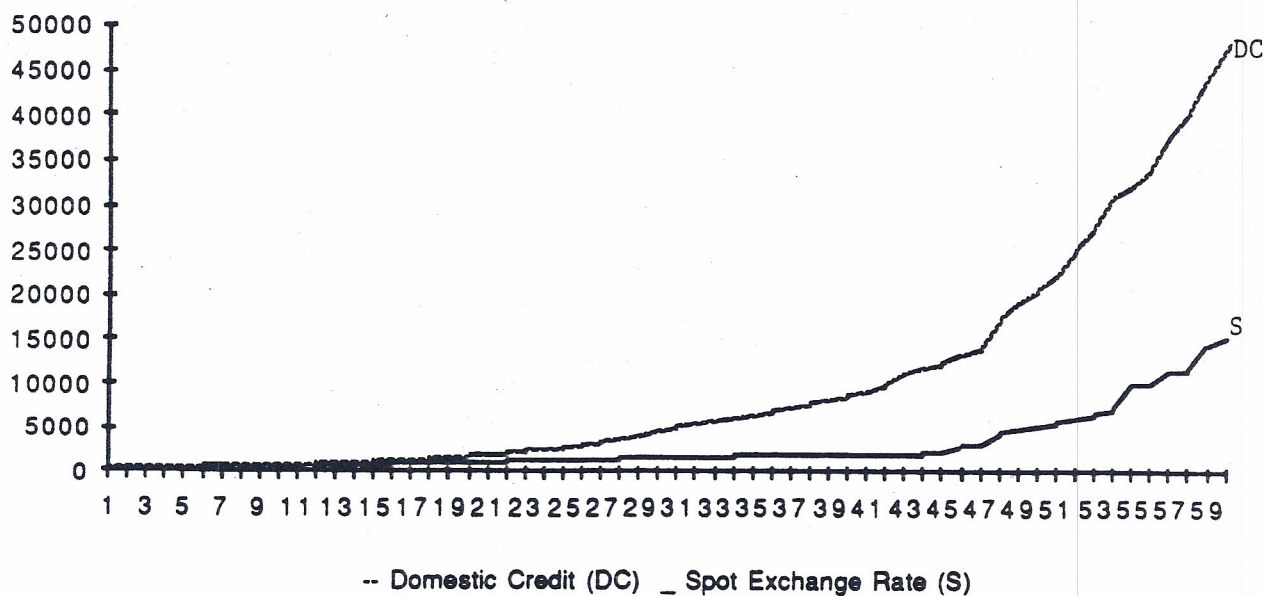

-- Unconditional Exchange Rate (UE)
__ Actual Exchange Rate (AE)
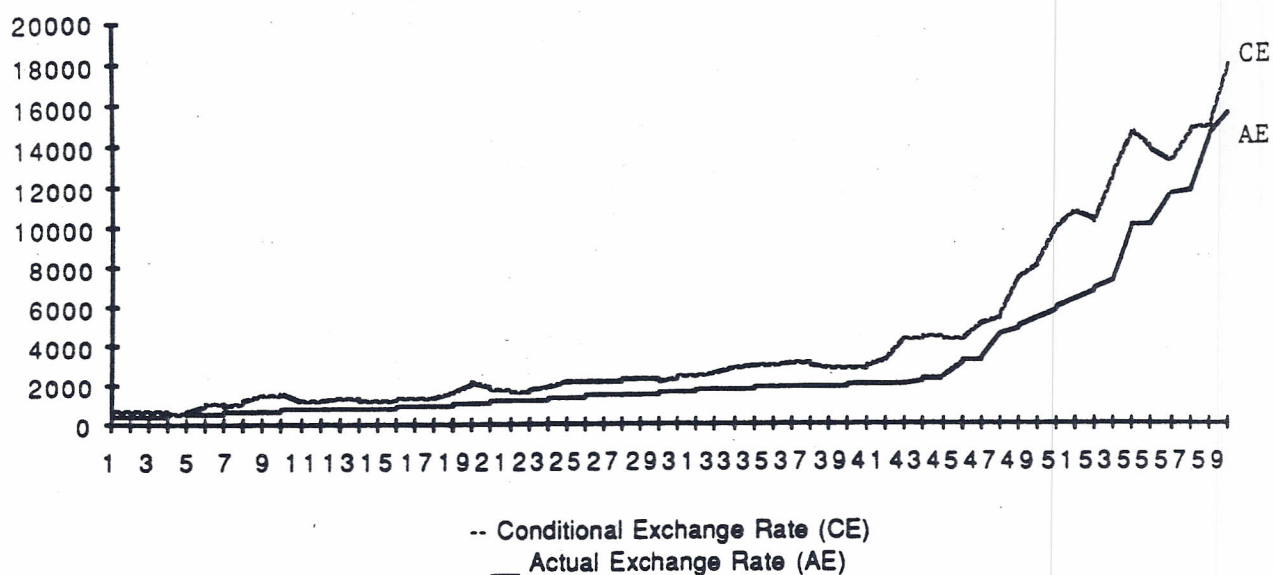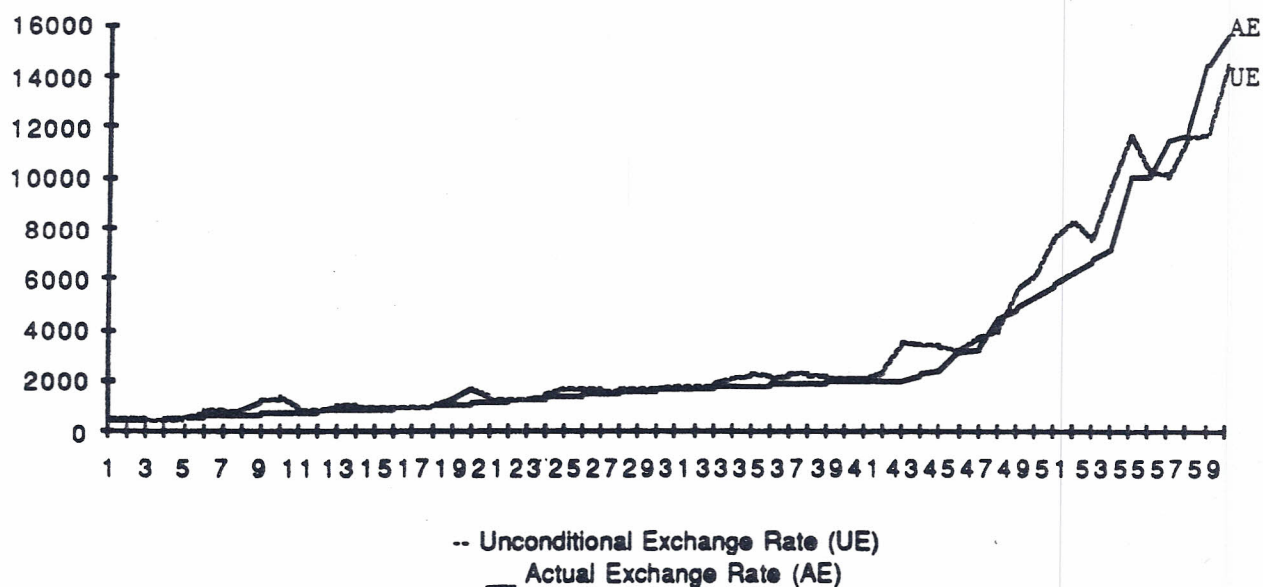
Notes: Observation 1 corresponds to July 1977, ... , Observation 30 corresponds to December 1979, ... , Observation 60 corresponds to June 1982. Observations 19 to 48 correspond to the crawling peg regime: January 1979 to June 1981.

Table 1

Selected Annual Inflation Rates

Year	U.S.A.	Argentina
1972	3.3	58.42
1973	6.23	61.2
1974	10.97	23.5
1975	9.14	182.3
1976	5.77	443.2
1977	6.51	176.1
1978	7.6	175.5
1979	11.31	159.5
1980	13.47	100.8
1981	10.35	104.5
1982	6.16	164.8
1983	3.22	343.8

Calculations based on the Consumer Price Index reported in the IMF's International Financial Statistics, various issues.

Table 2a

Regression Results for Equations 5(a)-5(d)

T-statistics are in parentheses, and degrees of freedom are 58.

(5a) $d_t = 4.02 + 1.0385 def_t$ R-squared 0.9344

       (17.04) (28.75)   Durbin-Watson 1.4944

(5b) $def_t = 0.324 + 0.9584 def_{t-1}$ R-squared 0.93

       (1.44)   (27.57)   Durbin-Watson 2.74

(5c) $p_t^* = 0.0086 + 0.999 p_{t-1}^*$ R-squared 0.9995

       (0.642)   (339.5)   Durbin-Watson 0.71

(5d) $d_t = 0.125 + 0.9962 d_{t-1}$ R-squared 0.9996

       (4.673)   (397.3)   Durbin-Watson 1.913

Table 2b

Correction for First-Order Serially Correlated Errors

T-statistic are in parentheses; degrees of freedom are 58; ρ indicates the first-order transformation coefficient.

$$(5a)' \quad (d_t = \hat{\rho}d_{t-1}) = 2.645 + 0.951(def_t - \hat{\rho}def_{t-1})$$
$$\qquad\qquad\qquad (13.5) \quad (18.4)$$

$\hat{\rho} = 0.4$

R - squared 0.8543

Durbin - Watson 1.8634

$$(5b)' \quad (def_t - \hat{\rho}def_{t-1}) = 0.284 + 0.977(def_{t-1} - \hat{\rho}def_{t-2})$$
$$\qquad\qquad\qquad\quad (1.36) \quad (41.41)$$

$\hat{\rho} = -0.37$

R – squared 0.9673

Durbin - Watson 2.174

$$(5c)' \quad (p_t* - \hat{\rho}p_{t-1}*) = 0.003 + 0.999(p_{t-1}* - \hat{\rho}p_{t-2}*)$$
$$\qquad\qquad\qquad (0.281) \quad (158.1)$$

$\hat{\rho} = 0.65$

R - squared 0.9977

Durbin - Watson 2.108

Note: For the given degrees of freedom, the 5% significance points for the Durbin-Watson statistic are $d_L = 1.55$, d_U-1.62 and $(4-d_L) = 2.45$, $(4-d_U) = 2.38$.

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Table 3

Heckman-Lee Methodology Stage 1: Probit Results

T-statistics are in parentheses.

Constant	$\beta_0 = 59.3$ (2.185)
Def_t	$\beta_1 = 0.7134$ (1.1782)
Def_{t-1}	$\beta_2 = 1.494$ (2.345)
P_t^*	$\beta_3 = -14.487$ (-2.044)

Table 4

Heckman-Lee Methodology Stage 2: OLS on all yt

T-statistics are in parentheses. Note that the standard errors in the second stage are incorrect. See Hajivassiliou (1988).

Constant	$\beta_0 = 52.5$ (9.93)
Def_t	$\beta_1 = 0.65$ (8.31)
Def_{t-1}	$\beta_2 = 1.45$ (12.41)
P_t^*	$\beta_3 = -13.12$ (-9.32)
Standard Error	$\sigma = 1.81$ (10.91)

Table 5

Maximum Likelihood Estimates

T-statistics are in parentheses.

Constant	$\beta_0 = 40.2$	(41.43)
Def_t	$\beta_1 = 0.672$	(2.56)
Def_{t-1}	$\beta_2 = 1.08$	(4.13)
p_t^*	$\beta_3 = -9.8$	(-34.9)
Standard Error	$\sigma = 0.69$	(2.646)

Table 6. Probability of Attacks

Year	M	Probability of Attack	Year	M	Probability of Attack
1977	7	54	1981	1	75
1977	8	43	1981	2	64
1977	9	17	1981	3	58
1977	10	10	1981	4	54
1977	11	9	1981	5	31
1977	12	58	1981	6	42
1978	1	43	1981	7	42
1978	2	55	1981	8	44
1978	3	78	1981	9	60
1978	4	78	1981	10	60
1978	5	32	1981	11	40
1978	6	22	1981	12	60
1978	7	45	1982	1	70
1978	8	25	1982	2	8
1978	9	28	1982	3	4
1978	10	23	1982	4	2
1978	11	21	1982	5	1
1978	12	13	1982	6	0
1979	1	31			
1979	2	63			
1979	3	24			
1979	4	8			
1979	5	6			
1979	6	18			
1979	7	36			
1979	8	30			
1979	9	19			
1979	10	23			
1979	11	15			
1979	12	7			
1980	1	22			
1980	2	13			
1980	3	19			
1980	4	37			
1980	5	42			
1980	6	32			
1980	7	39			
1980	8	31			
1980	9	20			
1980	10	18			
1980	11	21			
1980	12	39			

Table 7. Actual, Conditional, and Unconditional Exchange Rates

Year	M	Actual Exchange Rate	Conditional Exchange Rate (given an attack)	Unconditional Exchange Rate
1977	7	413.5	696.45	535.39
1977	8	437.5	686.77	514.40
1977	9	437.5	631.19	464.05
1977	10	513.5	601.85	450.34
1977	11	557.5	706.27	529.01
1977	12	597.5	1020.45	796.32
1978	1	641.5	991.28	742.48
1978	2	681.5	1144.82	880.07
1978	3	721	1525.38	1286.91
1978	4	761	1603.59	1352.89
1978	5	776.25	1190.35	877.43
1978	6	788.25	1156.32	849.80
1978	7	805.5	1326.10	999.25
1978	8	830.5	1218.04	895.16
1978	9	866.5	1272.83	935.42
1978	10	907.5	1294.66	953.37
1978	11	957.5	1342.11	986.14
1978	12	1003.5	1351.54	1001.15
1979	1	1055.5	1642.54	1210.27
1979	2	1104.5	2090.17	1646.32
1979	3	1156.5	1738.89	1276.78
1979	4	1209.5	1655.73	1241.13
1979	5	1263.5	1699.35	1285.88
1979	6	1316.5	1919.85	1411.77
1979	7	1369.5	2186.37	1618.52
1979	8	1421.5	2208.35	1618.83
1979	9	1472.5	2147.37	1579.72
1979	10	1522.5	2264.25	1664.03
1979	11	1517.5	2241.72	1654.91
1979	12	1618.5	2208.35	1654.25
1980	1	1663.5	2465.13	1815.65
1980	2	1706.5	2416.32	1782.25
1980	3	1747.5	2565.73	1881.21
1980	4	1785.5	2866.94	2125.18
1980	5	1821.5	3004.90	2243.56
1980	6	1854.5	2892.86	2139.30
1980	7	1884.5	3041.18	2274.10
1980	8	1910.5	2980.96	2191.90
1980	9	1933.5	2835.57	2088.36
1980	10	1952.5	2835.57	2086.98
1980	11	1972.5	2892.86	2136.02
1980	12	1992.5	3229.23	2405.02

Table 7. continued

		Actual Exchange Rate	Conditional Exchange Rate (given an attack)	Unconditional Exchange Rate
1981	1	2031	4315.64	3543.96
1981	2	2260	4359.01	3436.13
1981	3	2368	4315.64	3347.60
1981	4	3165	4230.18	3229.23
1981	5	3279	5115.34	3766.04
1981	6	4520	5431.66	4038.38
1981	7	4890	7405.66	5572.00
1981	8	5330	8103.08	6145.04
1981	9	5810	9897.13	7711.75
1981	10	6250	10721.43	8349.86
1981	11	6770	10198.54	7589.34
1981	12	7250	12581.72	9790.82
1982	1	10025	14617.87	11785.20
1982	2	10025	13766.59	10302.93
1982	3	11575	13226.80	10123.47
1982	4	11790	14764.78	11630.74
1982	5	14575	14913.17	11826.09
1982	6	15725	18033.74	14585.31

Endnotes

1   See for example Salant-Henderson (1978), Krugman (1979), Flood-Garber (1984), Grilli (1986), and Buiter (1987).

2   See Calvo (1986) for further details.

3   Other empirical studies of exchange regime collapses include Blanco-Garber (1986) on Mexico and Cumby-van Wijnbergen (1987) on Argentina. Both studies use different econometric methods from this paper and focus on monetary variables. This paper highlights the role of both fiscal and monetary variables.

4   Here the usual convention is followed in which $s(t)$ is the ratio of pesos to foreign currency. Thus if $s(t)$ is rising, pesos are depreciating in value, and vice versa.

5   The government financial balance throughout this period was in deficit so that there was no change in sign in the government balance which would affect the log values.

6   As it stands the model is underidentified since it is not possible to recover all the coefficients of the structural model. But for purposes of this paper the reduced form of equation (8b) should suffice. The role of the structural model has been to provide a theoretical basis for equation (8b).

7   If the methodology for finding r_{min} in Cumby-van Wijnbergen (1987) were applied here, the reduced form equation of $\bar{s}_{t+1}$ would be integrated numerically over all possible values of $r_t \varepsilon\ [r_L, r_U]$, where r_U is the current level of reserves and r_L is taken to be the gross foreign liabilities. In other words they are the supremum and infimum of reserves respectively.

8   There are difficulties with using the Durbin-Watson statistic in the presence of lagged endogenous variables, since the test statistic is biased towards 2, or towards acceptance. Ambiguities would thus result if the tests showed no serial correlation. In this paper, however, the tests indicated serial correlation. A more precise test is Durbin's large sample asymptotic test.

9   A lagged p_{t-1}^* could in principle enter (8b)', but its presence led to severe multicollinearity.

ABSTRACT
Incorporating Lags and Price Gyration in Supply Response of Fixed Enterprises

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INTRODUCTION

Fixed enterprise (agriculturally speaking) production tends to be time and capital intensive. This study focuses on using grape production as a case study in developing a model for fixed enterprises. Grape producers (as do most fixed enterprise producers) differ from other producers of agricultural commodities in terms of planning production according to market factors. Specifically, agricultural procedures are said to plan current production according to the market price received for a given commodity in the preceding production period. This strategy may not be adoptable by fixed enterprise growers due to the "fixity" of their operations. Thus, expected price may not be a "good" benchmark upon which fixed enterprise producers can base current production. The objective of this study was to investigate the implications of expected market prices on fixed enterprise production.

PROCEDURE

Time series data (1970-1989) on total U.S. grape production (in 1,000 short tons) and all prices ($1 ton) were fed into the models and then estimated using the Ordinary Least Squares (OLS) approach given that, E-N $(0, \overline{0}^2, I)$.

The multiplier effect of time lag was measured in both the short and long run. The Long-run projections reveal the pattern of decline or growth of grape supply over time. Three different economic models were used to compare this pattern.

The first, Model 1 assume that the impact of price on grape supply declines geometrically in the futures as captured in the autoregressive model. Since this assumption may be restrictive and somewhat unrealistic (katz), a second model was introduced for comparative purposes.

MODEL 1

$$B^* = B_0 L^* \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (1)$$
$$\text{S.t., } Q_t = a (1-L) t B_o P_t + L Q_{t-1} + U_t \dots\dots\dots\dots\dots\dots\dots\dots (1a)$$

Where, B_* = supply response in time K and K = 0, 1, 2, ...,n.
L = rate of decline (or growth) of output and $0 < L < 1$
Q_t = quantity supplied in period t
(1-L) = speed of output adjustment
P_t = price of grape in period t

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U_t = disturbance term.

The second model implies that grape producers may seek to produce more in the current period if they expect future prices to be higher.

MODEL 2

$$Q_t = B_0 + B_1 \ E(P_t) + U_t \dotfill (2)$$
$$\text{S.t.,} \ Q_t = g(B_0 + B_1 P_t) + (1\text{-}g) \ Q_{t\text{-}1} + U_t \dotfill (2a)$$
Where,
E = expectation operator
g = speed of output adjustment and $0 \leq g \leq 1$
(1-g) = rate of output decline (or growth)

A third model was introduced based on the assumption that expectations may not be realized due to bio-physical and economic factors that impact grape production, it was hypothesized that grape supply response to market price is cyclical.

MODEL 3

$$B_1 = b_0 + b_1 \ i + b_2 \ i^2 + \dots + b_p \ i^{p1} \dotfill (3)$$
$$\text{S.t.,} \ Q_t = a + B_0 P_t + B_1 P_{t\text{-}1} + B_2 p_{t\text{-}2} + \dots + B_{p1} P_{t\text{-}p1} + U_t \dotfill (3a)$$

$$= a + \sum_{i=0}^{j} B_1 P_{t-1} + U_t \dotfill (3b)$$

where,
i = time
p = polynomial degree
j = length of lag

RESULTS

The predictions of the models differ in that the rate of output decline (0.36) with Model 1 is equal to the speed of output adjustment (0.36) with Model 2. Also, the rate of output decline (0.64) with model 2 equals the speed of output adjustment (0.64) with model 1. This means that model 1, supply adjusts faster than the rate at which it declines in the short-run in response to a change in price whereas model 2 predicts the reverse. These reversals are normal given the reversed parameterization of the relevant explanatory variable in the autoregressive models.

LIMITATIONS OF THE STUDY

First, the efficacy of the results presented is limited by the number of observations used. Lagging quantity and price data reduced the number of observations even further. Hence, the estimates could be improved upon. With respect to the models, the exponential degree and length of lag used were assumed. An examination of the scatter plot did not suggest that the response was linear or quadratic. As such, a fifth-degree exponential function was used as an approximation of the time lag. These assumptions may not be precise or consistent with the actual lag pattern. Finally, the use of OLS violates the assumptions of regression models since stochastic quantity data were used with the autoregressive models. Thus, the data suffer from multicollinearity and serial correlation and might have rendered the estimator biased and inefficient.

ABSTRACT
Innovations in Global Capital Flows and Development

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I. The Problem

The debt crisis of the developing economies has sapped their very potential for growth during the 1980s. In contrast, the rate of growth in both the industrial and developing countries during the prior two decades and a half was without precedent. Average per capita income increased 3.4 percent per annum in the developing world. However, this smooth expansion of the world economy was sharply altered by the first oil shock in late 1973, with the transfer of wealth from oil importing countries to the far fewer oil producing countries, and a noticeable increase in world saving as well as a decline in investment demand in the industrialized economies. Thanks to the banks for recycling the increased savings from the oil exporting countries to the developing countries. Also, the availability of these financial resources offered the oil importing developing countries the opportunity to raise their investment/income ratios while lowering their savings ratios at the same time. The second oil shock in the waning part of the decade of the 1970s put an abrupt end to this favorable global financial climate. The non-oil developing countries were hit both by rising oil prices and three interrelated adverse events such as the rise in interest rates that resulted from anti-inflationary monetary policies in the industrialized countries, a recession-induced decline in the terms of trade, and an abrupt lull in foreign capital flow. These adverse developments undermined the debtor countries' credit-worthiness. Compounding these developments were government policies which were detrimental to savings. In many of these countries, interest rate controls on bank deposits and other financial instruments have been the primary obstacles to improved savings-investment performance, and greater financial deepening. Some of the heavy bank borrowers managed to maintain respectable growth rates in the face of these developments.

II. The Capital-Starved Regions

It is fashionable to explain the developing regions' inability to accumulate sufficient resources for growth in terms of external factors alone. This is too narrow a view of the problem, for some internal forces in these economies do inhibit efficient development and utilization capital resources. Indeed the financial systems in these economies are seriously fragmented. Government policies that keep interest rates far below equilibrium levels, and below inflation rates are anti-growth, and anti-development. Through much of the 1970s in particular, most developing countries kept deposit rates below the rate of inflation, thus producing negative real interest rates. As a result, intermediation became inefficient with a sub-optimal allocation of available supply of capital. As Agarwala (1983) points out, interest rate distortions and growth are negatively correlated. Developing countries with strongly negative ex-post real interest

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rates were found to average 4 percent GDP growth in the 1970s, while countries with less distorted interest rate policies averaged GDP growth of 6.1 percent. A study by Lanyi and Saracoglu (1985) provides additional support for the hypothesis that positive real show that interest rate distortion is significantly related to output growth (R^2=0.41). A review of the savings literature suggests a positive but weak influence of interest rate on household saving. With a few exceptions, domestic saving remains the dominant determinant of domestic investment. Unfortunately, not all private domestic savings are available for domestic investment if the public sector becomes the perpetual net dissaver, as is the case in many of the heavily indebted countries, or if resources move abroad in form of capital flight. Needed reforms are in order if the savings pool is to be enlarged, and capital outflows of large dimensions are to be avoided. These include the liberalization of financial markets, diversification of the economy into production and export of manufactures, and new loans to be used for development related investment purposes.

It would be safe to say that the international debt crisis that began in the early 1980s has starved the debtor countries of foreign capital. The search for new for capital transfer to these countries must be viewed against the back-drop of the change in the global financial system, where the United States has become a massive absorber of the world's savings. This means that a significant resumption of capital flows to the world's developing regions requires improvement in United States' fiscal imbalances with a corresponding redirection of the resulting savings to the developing countries. Similarly, like other flows of capital, the resumption of direct investment is likely to require prior re-establishment of credit-worthiness of the resource-starved developing countries. In principle, there are wide opportunities for capital flows to be directed to these countries via other forms of equity investment such as taking positions in the emerging stock markets, or through venture capital or via official export credit agencies which played a pivotal role in financing capital goods exports until the early 1980s.

III. Policy Choices

It has become difficult for the developing regions to attract sufficient capital in face of the international debt overhang. For the heavily indebted countries, there is a two-way connection between the resumption of a satisfactory growth rate and the resolution of the debt problem; the burden of the debt continues to stifle their development. However, as growth is achieved, the burden of debt will lessen. But the possibilities for growth are also affected by external factors such as the growth rate in the industrialized countries, the containment of protectionism, and the global interest rates. Yet within the setting of these global variables, the domestic policy choices made by each country can make a significant difference in the success of achieving its growth potential. It appears that three distinct causal strands can be observed in pro-growth policies. Growth can be achieved by greater efficiency, by additions of capital from abroad to the supply of savings, and by reducing the constraints on imports. The growth rate of exports is seen as an important variable for the attainable growth rate of the economy as a whole, with allowance for changes made of the terms of trade, world interest rates and capital imports.

Many of the middle-income highly indebted countries could very well work themselves out of the debt problems while maintaining or resuming a satisfactory growth rate, provided three conditions are met, namely they persevere in the adjustment policies, or world economic conditions remain satisfactory, or creditors play their part in the adjustment process. This requires that banks be prepared to offer new loans up to fifty percent of the interest due as long as the debtor country adheres to the adjustment program. It is possible that the debt crisis could be on its way out for those highly indebted countries that meet this condition. A different approach is required to resolve the crisis of the low-income countries with high debts. Most of these are in sub-Saharan Africa. For these countries a bold generalized approach under which a sharply curtailed debt service replaces the current annual rescheduling rounds remains the most viable option for growth resumption. In addition, some sort of debt-relief, including forgiving interest payments, is beneficial and necessary for the resumption of growth in these economies.

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ABSTRACT
Iraq on the Highway to Devastation

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Long before the Gulf War in 1991, Iraq was headed toward the disastrous living conditions that now contribute, along with the Gulf War, to the deaths of at least 500 Iraqi children each day. Because of starvation, disease and neglect, Iraq's children - who comprise one half of the country's population - are dying at an alarming rate. Unless Iraq's friends and enemies provide emergency support, the world will witness a tragedy like those that occurred in Ethiopia and Bangladesh. Iraq has no organized health-care system, and has only one doctor per 5,000 people, and most of those doctors are in the military.

Iraq was on the brink of destruction with a suffering economy caused by the country's own leadership, high debt, inflation, increase in the importation of stable products, a decline in exports, capital flight, brain drain and low productivity in agriculture and industry.

Deplorable living conditions in Iraq were caused primarily by president Saddam Hussein's deliberate cutbacks in health care, education and agriculture since he became Iraq's president in 1979. Hussein used Iraq's oil revenues to strengthen the military. Fertile farmland was turned into military bases. Hussein's emphasis on military spending wreaked havoc on the country's industrial and agricultural base as well as its oil operations. In 1984, arms imports accounted for 83% of Iraq's total imports, compared with only 17.2% in 1980.

In 1991 war with the United States and its coalition forces simply made a bad situation that much worse. In fact, a large portion of the Iraqi male population died in Iraq's wars with Iran and the United States forcing women who had never worked into the labor force. Iraq has the highest percentage of economically active women in the world. With no day care and poorly organized schools, many Iraqi children literally wander Iraq's streets. In all countries, there exists a strong relationship between the increase in the number of economically active women in the work force and the increase in education and health services, but in case of Iraq, it is different, there are more women working, and there are less education and health services.

Once an exporter of food, Iraq must now import most of its food, and supplies are extremely scarce. All of those conditions have contributed to a disastrous infant mortality rate. Iraq has one of the highest mortality rate in the area, it increased by four fold after the Gulf War.

This study shows that Iraq's power, military and economically ,was over estimated. Iraq was already devastated before the Gulf War.

ABSTRACT
The Impact of Monetary Uncertainty on Inflation in the United States

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To test the effect of volatility in interest rates and monetary growth on inflation, this study makes use of an expectations-augmented Phillips curve modified to include a variable that measures volatility in interest rates or monetary growth. Volatility is measured by the following formula:

$$z(t) = \{ x(t) - [x(t-6) + x(t-5) + x(t-4) + x(t-3)$$
$$(1) \quad + x(t-2) + x(t-1) + x(t) + x(t+1) + x(t+2)$$
$$+ x(t+3) + x(t+4) + x(t+5) \,] / 12 \}^{**2}$$

$z(t)$ is the measure of volatility. It equals the square of the difference between $x(t)$ and a 12 quarter centered moving average of $x(t)$. The three Phillips curves estimated for the study take the following form:

$$(2) \quad p(t) = a_o + a_1 \quad p(t-i) + a_2 * gap(t) + a_3 * vir(t)$$
$$(3) \quad p(t) = b_o + b_1 \quad p(t-i) + b_2 * gap(t) + b_3 * vm(t)$$
$$(4) \quad p(t) = c_o + c_1 \quad p(t-i) + c_2 * gap(t) + c_3 * vir(t)$$
$$+ c_4 * vm(t)$$

$p(t)$ = inflation rate
$p(t-1)$ = distributed lag on past inflation rate as a proxy for expected inflation
$gap(t)$ = difference between natural log of trend GNP and natural log of actual GNP
$vir(t)$ = volatility of 30 year government bond rate as calculated by equation one
$vm(t)$ = volatility of nominal M2 as calculated by equation one

Table 1 reports the results of the OLS estimation of equations two, three and four. The sample period ranges from 55:Q1 to 87:Q4. Equations three and four make use of an eight quarter distributed lag on inflation as a proxy for expected inflation. Equation two yielded best results with a four quarter distributed lag.

Table 1. Inflation Regressed Against Interest
Rate Volatility and Money Supply Volatility: 1955-1987

Variables	Equation No. 2	Equation No. 3	Equation No. 4
Dependent variable	Inflation	Inflation	Inflation
Constant	.00003 (.036)	.0003 (.539)	-.0002 (.2683)
Eight quarter distributed lag on inflation	1.00 (15.2) (coef. sum)		.9955 (15.24)
Four quarter distributed lag on inflation		.9180 (15.49) (coef. sum)	
Log trend GNP minus log GNP	-.0494 (3.13)	-.0417 (2.96)	-.0528 (3.39)
Interest rate Volatility	-11.00 (1.63)		-12.99 (1.94)
M2 Volatility		5.47 (1.90)	6.29 (2.20)

Our findings suggest that interest rate volatility has a negative effect no inflation and monetary growth volatility has a positive effect in inflation.

ABSTRACT
An Empirical Reformulation of the RID theory

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In his paper, Jeffrey Frankel formulated and tested the real interest differential theory "RID" of exchange rate determination. According to this theory, the spot rate "$e^{j/i}$" depends on the relative money supply "$M^i - M^j$", relative income level "$Y^i - Y^j$", the nominal interest differential "$I^i - I^j$", and the expected long run inflation differential "$\pi^i - \pi^j$". The hypothesized signs imply that changes in the spot exchange rate are directly related to the real interest differential between the two countries.

The RID hypothesis is reformulated in a framework which allows for international variables to exert an influence on the mark/dollar exchange rate "$e^{m/\$}$". There is justification however, in using an open model. As it is shown in the equations below, a change in Japanese money supply for example, all else equal, can impact the mark/dollar exchange rate. The impact is transmitted through the arbitrage equation that relates mark dollar and yen exchange rates. However, since there is no priori constraint that b_1 is equal to c_1, the decline in $e^{m/\yen}$ may differ from the decline in $e^{\$/\yen}$. The argument concludes that $e^{m/\$}$ may increase or decrease depending on which $e^{m/\yen}$: or $e^{\$/\yen}$ decline the most. This argument provides some justification for an open RID model. The open RID reformulation includes three countries, namely US, Germany, and Japan is as follows:

$$e^{m/\$}=a_0+a_1(M^\$-M^m)+a_2(Y^\$-Y^m)+a_3(I^\$-I^m)+a_4(\pi^\$-\pi^m)$$
$$e^{\yen/\$}=b_0+b_1(M^\$-M^\yen)+b_2(Y^\$-Y^\yen)+b_3(I^\$-I^\yen)+b_4(\pi^\$-\pi^\yen)$$
$$e^{m/\yen}=c_0+c_1(M^\yen-M^m)+c_2(Y^\yen-Y^m)+c_3(I^\yen-I^m)+c_4(\pi^\yen-\pi^m)$$
$$e^{m/\yen}=e^{m/\$} / e^{\yen/\$}$$

The last equation is an arbitrage equilibrium which reduces the number of dependent variables to be determined and hence the number of equations from three to two. Any two equations from the first three equations are seemingly unrelated. But the disturbances in these exchange rate equations are most likely correlated. In a situation like this, it would be appropriate to use a generalized least squares regression procedure called the seemingly unrelated regression model.

The empirical results obtained by the seemingly unrelated regression model are as follows:

$$e^{m/\$}=1.63-0.27(M^\$-M^m)-0.01(Y^\$-Y^m)+0.02(I^\$-I^m)-0.08(\pi^\$-\pi^m)$$
$$(3.48) \quad (-2.28) \quad\quad\quad (-1.02) \quad\quad (1.12) \quad\quad\quad (-1.77)$$
$$e^{\yen/\$}=8.52-0.96(M^\$-M^\yen)-0.06(Y^\$-Y^\yen)-0.01(I^\$-I^\yen)-0.09(\pi^\$-\pi^\yen)$$
$$(36.57) \quad (-15) \quad\quad\quad\quad (-1.75) \quad\quad (-2.21) \quad\quad\quad (-4.38)$$

In summary, the open RID model does not provide a clear support to the RID hypotheses and most probably reflects the added complexities of international feedbacks.

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ABSTRACT
The Manufacturers Hanover/Chemical Bank Merger: A Contrarian Perspective

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On December 31, 1991, a merger was affected between two of America's largest financial institutions. Much has been written in the financial press about the advantages of this particular business combination. Among those cited have been sizable projected cost savings and related economies of scale as well as increased industry dominance. This paper assumes that the good news from this merger is well known and the bad news has yet to appear; bad news which will materially change the public's perception of this merger.

In recent decades, Chemical Bank has been the target of some rather harsh criticism. Some analysts believe that it has a tendency toward complacency and sloppy management. They point to Chemical Bank's late entry into the international lending area as an example. The timing of this move may have opened their loan portfolio to substandard credits which were previously rejected by earlier entrants. Manufacturers Hanover has shown a split personality with its commercial and consumer lending areas "marching to different drummers." Its management may also be suspect for allowing its loan/deposit ratio to run as high as 131% during the 1980s. A 70% loan/deposit benchmark indicates a fully loaned, large bank according to older financial literature. This aberration may be cyclical or a signal of longer term problems.

Other ratios also show potential problems after the merger. An equity/deposits ratio has historically placed banks into 3 categories. A ratio of 15% or more is conservative, 10% is normal and 5% is considered aggressive or risky. The adjusted ratio for the combined bank is 3.2%. In looking below the surface of this ratio, additional problems loom in the non-performing real estate and foreign loan areas.

The combined bank's portfolio of highly leveraged loans and its ability (or inability) to match the duration of the bank's assets with its liabilities create a scenario less optimistic than the one portrayed in the financial media. Given this data, the adjusted return on assets may be only 2.15%. This is a pretty small rate of return to justify the destabilizing effects this merger has on people's lives unless the national interest is enhanced by the creation of a stable bank from which additional social benefits may be derived.

ABSTRACT
Output Dynamics and Monetary Policy for the United States

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Many noted economists have argued that monetary policy conducted according to a rule is superior to policy conducted by discretion. It has also been shown that conducting monetary policy evaluation in terms of open economy models produces more robust results than those produced by closed economy models, as the open economy specification allows the impact of shocks to foreign variables on domestic variables to be considered. The question of whether or not the recent conduct of monetary policy in the United States can be characterized by a rule is still an open issue.

This paper examines monetary policy since 1973 for the United States in the context of an open economy rational expectations model. Various money supply rules are embedded into an open economy structural rational expectations model that incorporates exchange rate, price and output dynamics. The model is estimated using systems of equations techniques to correct for the endogeneity of the monetary targets.

The results of the paper show that a money supply rule that stabilizes the deviations of nominal GNP around a growing trend and accommodates movements in the real exchange rate fits best for the United States. This rule cannot be rejected in favor of a number of alternative rules, nor can it be rejected in favor of a general rule in which money supply depends on all the variables in the model. The question of difference versus trend stationarity domestic and foreign GNP is also addressed in the paper.

ABSTRACT
Performance and New Problems After Agricultural Production Responsibility System in China

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Beginning in 1979, the system of production responsibility linked to output has been developed and widely adopted in rural China. The system is intended to provide material incentives and give peasants more scope in organizing and planning their own farming. The system enables peasants to take production responsibility and links their income to output. The peasants' enthusiasm for work is stimulated. The township divides its land into shares. Each household is assigned a share whose size depends on the number of able-bodied workers and persons of the household. The households are organized on a voluntary basis and make a contract with the township or village in undertaking production on a share of land or a specific production task. The contract sets a fixed output quota and defines rights and obligations. The contractors take full responsibility for the contracted land or tasks. After fulfilling the contracted amount, they keep the rest of their production for their own use or sale. In case the contracted quota is not met, there is a penalty. The period of a contract is usually one to three years. Recently, however, the period is allowed to be extended to 15 years, as long as 50 years, on grazing land or forestry, in order to encourage peasants in making improvements of their contracted land. The township guarantees that the peasants will be supplied with various inputs such as fertilizer, diesel fuel, pesticides, and plastic sheeting. Farm machineries, draft animals, large farm implements and irrigation facilities are owned by the collective. The contractors only have rights to use, not to buy, sell or transfer them. Today, under the newest policy, peasants are allowed not only to transfer or inherit their contracted land, but also to own farm machineries, draft animals and large farm implements. Furthermore, they are allowed to hire laborers. The system is warmly welcomed by the peasants throughout rural China.

The system motivated the peasants to work harder and better by material incentives. It brought a marked increase in production of crops, livestock, and sideline products. As a result, in 1990, agriculture reaped very good harvests. Grain output hit an all-time high of 440 million tons, 27.55 million tons more than the record year 1989. The output of cotton hit 4.47 million tons, up 0.68 million tons over 1989, oil-bearing crops 16 million tons, up 3 million tons over 1989. The output of meat also increased 1.76 million tons over 1989. The country's total agricultural output value in 1990 was 738.20 billion yuan (1 U.S. $ = 4.71 yuan), up by 6.90% over the previous year. In 1990, output of grain, cotton, oil crops and meat, increased 42.74%, 106.28%, 209.63%, and 192.42% over 1978, respectively. It also contributed to a dramatic increase in peasants' income. The per capita income for peasants rose from 133.57 yuan (1 U.S. $ = 2.00 yuan) in 1978 in 630 yuan in 1990, up 371.66% and 4.65% over 1978 and 1989, respectively. Higher incomes were primarily due to the growth of agricultural production. The increased income improved the peasants' standard of living and enabled

peasants to buy more clothing, furnishings, household items, bicycles, sewing machines, electric fans, radios, and watches. Now the higher income peasant households even buy washing machines, TV sets, tape recorders, and cameras. An important indicator of the improvement in peasants' living conditions is the housing boom in rural areas. In 1990 alone, new houses built in the rural areas totaled about 660 million square meters. The per capital floor space of rural households increased from 8.1 square meters in 1978 to 16.58 square meters in 1988, an increase of 104.69%. In addition, the peasants have deposited more money in the banks. The total amount of bank savings in the urban and rural areas was 703.4 billion yuan at the end of 1990, 188.7 billion yuan or 36.7 percent more than the 1989 year-end figure.

The system is a good medicine to cure slow agricultural growth, but it also creates the following new problems. Since the peasants have seen enormous changes in the Party's rural policies over the past 40 years, they always feared policy reversals. The implementation of the system has resulted in dispersing cultivated land into small plots. A survey indicated that farm families on the average cultivated about 1.515 acres of land which was divided into 8.3 plots (some of them not in the same field), each plot was less than 0.183 acres. Such small and scattered plots are inefficient for farm mechanization, irrigation, drainage, and weed and pest control. Also its farm income is too small to support a farm household. The old communes invested heavily in water conservancy. Now the households slacked off investments there, and the maintenance and management of the existing facilities have been poor. These have caused floods and droughts in rural areas. The system led to income inequalities. There are households that earn 10,000 yuan (about U.S. $3,125) or more yearly, and low income ones with per capita income of 150 yuan or less. These income inequalities will probably lead to polarization between rich and poor in rural areas. Under the system, the peasants are allowed to own the basic means of production, except land and water conservancy, and hire laborers. They are also allowed to transfer or inherit their contracted land. These new developments have changed the collective agriculture into individual family farming and is leading chinese agriculture toward capitalism.

ABSTRACT
Interest Rates, Transaction Portfolios, and the Kinked Money Demand Curve

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Monetary theories and their representative models continue to be divided over whether or not the demand for money is interest elastic. This paper suggests that this elasticity depends on whether interest rate differentials between bonds and money are high or low. The Baumol interest rate motive for conserving on money holdings is shown to disappear below some positive interest rate differential. The result is a kinked money demand curve which accommodates both viewpoints as special cases. This theoretical reconciliation is accomplished by explicit incorporation of continuous time intervals between pay periods into models of individual asset preference.

ABSTRACT
Protecting the Social Environment in an Economic Development Plan

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Many communities which set out to achieve economic development, create plans which may appear to neutral observers as incomplete or doomed to failure from the beginning. One wonders why such communities make such plans. Closer examination reveals that behind the expressed desire for increased income lies tightly-held values which oppose the changes necessary to create economic development.

In this paper we examine Costilla County, Colorado. Unemployment rates as high as 28 percent commonly occur. A combination of low income, high unemployment, low educational levels and few employment opportunities make the community an apparent candidate for change. Costilla County is in an isolated arid, Alpine valley on the Colorado-New Mexico border. The area lacks the water necessary for industry and lacks good highway/railway connections. Agricultural prospects are also strictly limited by inadequate water supplies.

County residents express their concern that the young people must leave to find economic opportunity. This runs counter to the family values of the community. The expressed desire is for "clean" economic development which would employ many people but not change the area in any significant way.

This community, however, has a cultural history which makes it difficult for the residents to accept most suggestions for change. Castillian Spanish (in addition to English) is still spoken. They continue to maintain the values of their Spanish Catholic heritage. They fiercely value the relative isolation of the area. Some even continue to practice ancient penitential rites which both the church and the local authorities attempt to control. The community changed little since it's founding in 1851.

Those persons espousing traditional Spanish values typically live in the county's rural areas. Two other groups are present. One consists of Spanish descendants who are progressive in outlook and want economic development. There are unwilling to sacrifice completely the old values. They want only limited change. The third group consists of non-Spanish persons (including Native Americans) who want economic development for its own sake. Any economic development plan must satisfy these conflicting desires and utilize the area's natural assets.

The area does have some attractions which to date have not been developed. The residents have been slow to develop them because they really do not want to share some of their cherished natural assets with outsiders. While similar areas cater to skiers, there are no ski developments in the Costilla County area despite the presence of peaks which

reach 14,000 feet. Other sporting activities such as hunting and fishing are ready for development. This requires, however, sharing game and fish with outsiders.

In addition to the natural attractions, there are nearly a dozen small Spanish missions scattered across the valley. The missions rival those in California and have tourist potential. Located on the side of a mesa at the edge of town is a stations of the cross shrine. The stations are bronze sculptures of artistic merit as well as religious significance. Tourists report that the stations shrine and accompanying view is magnificent and inspiring. In addition, some of the artifacts and rituals of the Penetentes are potential tourist attractions. The practitioners, however, feel they cannot openly display their activities to tourists.

Consultants have urged the town to develop a retreat center. The religious heritage of the area is consistent with attracting religious retreats. Lately, business retreats have been moving away from resort type areas to more remote areas similar to Costilla County which have few distractions. Create leisure retreats are also growing in consumer acceptance. Such retreats emphasize self-development and leisure activities designed to increase physical and emotional health. Advertising in appropriate publications can attract sportsmen's business which the facilities could house.

Such centers are frequently constructed in stages. The first stage provides a limited number of jobs after construction is completed. Further development and spin-off businesses should provide additional jobs. A well designed retreat center could serve several markets which would complement each other and serve to keep the center full year round. Retreat centers are only a partial "solution" to the economic development problem of Costilla County. Such centers do provide "clean development" and are not excessively damaging to other local values. The income generating potential of them is strikingly limited however.

ABSTRACT
Impact of State Budget Cuts on Local Public Good Provision

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The budget for the Commonwealth of Virginia has been austere in recent years. Reasons include unexpected reduction in income form state income taxes along reductions in military spending, low growth rates in manufacturing, reductions in employment in services as service industries begin to streamline employment and higher than expected Medicaid expenditures. The difference of expenditures over revenues is currently estimated to be $550 million for the 1992-1994 budget period. The prospects of an immediate reversal is not promising as many economic analysts predict Virginia will recover from the current recession much more slowly than other parts of the country.

In order to meet the budget shortfall the policy makers in the Commonwealth of Virginia have decided to cut state aid to localities. Approximately forty-five percent of the general fund expenditures in the Commonwealth of Virginia are allocated to aid to localities. Half of the gap in the current budget is expected to be eliminated by cuts in aid to lower levels of government. Hence the fiscal problems in Richmond have revealed themselves as fiscal problems to lower tiers of government as the impact of reductions in aid to cities and counties have been realized. This paper focuses on the impact of reductions in the aid state governments provide to localities on the demand for local public goods. Expenditure functions for three public services; police, health and welfare, and education are estimated with data from cities and counties in the Commonwealth of Virginia for the years 1984 through 1988. Parameter estimates of the expenditure functions allow for the estimation of the impact predicted budget reductions will have on the demand for the local public goods. The proposed aid reductions affect categorical (service specific) and non-categorical aid. A reduction in categorical aid may be interpreted as an increase in the tax price of service delivery because the percentage that must be paid out of local funds increases. Reductions in non-categorical aid will likely also reduce the demand for local public services via income effects. The methodology employed to investigate the potential impact of budget cuts is to estimate expenditure functions, focus on the tax price elasticities, and simulate how the budget cuts will affect the demand for local services.

With expenditures levels for the 1989-1990 fiscal year chosen as the base year, it is estimated that the budget cuts will decrease police spending by 10.6 million dollars, decrease health and welfare spending by 11.0 million dollars, and decrease education spending by 91.3 million dollars.

ABSTRACT
Inflation and Technology: A Keynes-type User Cost Analysis

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The issue of inflation has traditionally been seen as the Achilles heel of Keynesian economics. Keynes himself, however, clearly articulated an aggregate theory of prices in The General Theory and, previously, in The Treatise on Money. This Keynes, as opposed to "Keynesian", line of reasoning has been most thoroughly developed by Weintraub and, more recently, reappears in the work of Davidson. The first purpose of this paper is to re-state Keynes' theory of inflation as developed by Weintraub and Davidson. The second, and more substantive, goal of the paper is to extend this type of inflation analysis to include the user cost considerations that Keynes raised with respect to the theory of the firm. The explicit inclusion of user cost in the macroeconomic analysis of prices brings to the fore another key expectational and intertemporal aspect in Keynes' theory and highlights the role of capital stock and investment considerations in the determination of the overall price level. This allows one to directly discuss questions of capital accumulation and technological change with respect to Keynes' theory of inflation. The crucial conclusion is that both actual and expected technological change are central determinants of aggregate price changes. This brings into question the logical existence of Weintraub's "magic constant" or mark-up factor and the resulting unique role of money-wage changes in explaining inflation.

Keynes decomposed the effect of money on prices, the elasticity of prices with respect to money, into the product of the elasticity of prices with respect to demand and the elasticity of demand with respect to money. Within this "generalized statement of the Quantity Theory of Money", the classical model argues that at full employment the elasticity of prices with respect to money is unity and that at less than full employment the elasticity of prices with respect to money is zero. Keynes argued that the usual case was somewhere between these two extremes. The first type of shortcoming in the basic classical theory that Keynes recognizes is with respect to the effect of money changes on the amount of demand. In that (exogenous) money changes work through the rate of interest to influence effective demand, there is no special reason to expect effective demand to change in exact proportion to the quantity of money. The second and more essential component of the problem (for the purposes of this paper) revolves, however, around the price elasticity with respect to demand. This is determined by the interaction of aggregate supply and aggregate demand conditions that Keynes captures in his macroeconomic model. It is in this way that Keynes' inflation story follows directly from his overall macroeconomic analysis.

Keynes defined a number of different types of inflation. The first two types are *Commodity Inflation* and *Capital Inflation*. This type of inflation essentially relates to commodities already in existence and is, as such, independent of the costs involved in producing these commodities. The changes in prices of such commodities are solely

reflected in windfall profits and losses received by the commodity holders. The other, and more important, type of inflation that Keynes delineates is *Incomes Inflation* (or deflation) which refers to inflation associated with changes in the component parts of the production process. Incomes inflation refers to changes in efficiency wages -- the combination of money wages and the average productivity of labor (the unit labor costs) -- and to changes in the profit margin with respect to the supply price. Weintraub saw the markup ratio over unit labor costs as essentially an empirical constant, resulting in his emphasis on the relative movements of labor productivity and of money wages in explaining inflation. This also led to his recommendation of incomes policies aimed at controlling changes in money wage rate to be roughly in step with productivity changes.

For Keynes user cost is the depreciation of the capital stock that is due to its use. It is directly attributable to production and varies with the level of output and employment. Hence, Keynes defines *prime cost* as the sum of factor cost and user cost. User cost is different from the depreciation of equipment that is independent of use and that he calls *supplementary cost*. In that both factor cost and user cost vary with the level of output, marginal prime cost is equal to the sum of marginal factor cost and marginal user cost. The marginal prime cost is the short-period supply price in traditional Marshallian fashion.

The paper presents a two-period formalization. Within this formalization, the degree of the impact of the marginal user cost on the supply price is shown to depend upon (1) the rate of discount of future profits, (2) the expected unit output price in the second period, (3) the marginal rate of technical substitution between current labor and second period capital, (4) the first period capital stock, (5) the depreciation independent of use, (6) the amount of planned capital investment that will be available in the second period, (7) the degree to which current employment impacts the depreciation of the capital stock. Most of these elements embody a variety of expected and planned variables. As a result, the marginal user cost component of the supply price can take on a large range of values for the same marginal factor cost.

The incorporation of user cost in inflation theory is a mechanism by which fixed capital considerations enter into determining supply prices. Technological change with product innovation and the impending obsolescence of fixed capital has an impact upon the depreciation dependent and independent of use that is appropriate for firm decision making. While technical progress may reduce the labor cost per unit of output, and create a deflationary tendency, this technical progress may increase user cost and push prices higher. When there is significant uncertainty about future technical change, these user cost considerations would also be larger. As such, the supply price has an uncertainty-weighted technological progress element in it. Such considerations bring into question Weintraub's argument on the constancy of the markup factor. The result of this is that inflation policy needs to take into account the markup factor that may vary significantly due to technical change and changing and uncertain patterns therein. Such policies cannot simply concentrate on controlling wages, they also need to include putting controls on firms in that competitive pricing is more than the passing on of real factor costs.

ABSTRACT
Market Structure Analysis of the Texas Wine Industry

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Table wine consumption within the state of Texas reached a peak in 1983 before declining for the next four years. From 1988, consumption has increased, partly because table wine consumption has started to replace wine cooler sales. The increase in table wine consumption was 3 percent for 1988, 10 percent for 1989, and 4 percent for 1990. Adult per capita consumption of table wine in Texas is low compared to other states. Of all the U.S. states, Texas is ranked 30th with 1.3 gallons per adult. By contrast for 1990, consumption was 3.6 gallons per adult in California.

Texas wine producers have substantially increased wine production since the early 1980s. In 1982, only 47,000 gallons were produced. This increased in 130,000 gallons in 1983, 653,000 in 1989, and over 1 million gallons in 1991.

The number and size of Texas wineries has also changed. In 1983, there were 14 wineries with none of them producing greater than 50,000 gallons. By 1985, one large company was producing 250,000 gallons which represented 54.9 percent of the total gallons produced. The remaining 16 wineries which individually produced less than 120,000 gallons accounted for 45.1 percent of total production.

By 1991, the number of wineries in Texas had increased to 26. Of these 26 wineries, only two, Llano Estacado and Saint Genevieve produced over 120,000 gallons. However, the production from these two wineries accounted for 64.1 percent of all Texas wine produced. The remaining 24 wineries produced 427,504 gallons which accounted for 35.9 percent of the wine produced in Texas.

In the future, the percentage of production coming from the small wineries (120,000 gallons or less) is expected to continue to decline. Some of the smaller wineries will grow to medium and large wineries while the existing large wineries continue to grow.

ABSTRACT
International Labor and Capital Movements Under Free Trade

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Within a 2x2x2 model, Kemp (1966) and Jones (1967) evaluate the national income and terms of trade responses to policy-initiated international capital flow. In these studies, each sector utilizes two factors, labor and capital, where capital is the only internationally mobile factor and differences in technologies in the two countries are allowed. Under free trade in commodities, Jones (1967, p. 16-23) studies the effects of international capital flow for a policy-active country with variable terms of trade and provides policy recommendations regarding the control of such a flow in a policy-controlled flow environment.

A critical assumption made by the studies within 2x2x2 models is that capital is the only internationally mobile factor. This assumption prohibits an analysis of the Ramaswami (1968) question regarding a country's optimal policies toward international flows of labor and capital under variable terms of trade. In addition, significant adjustments must be made to the free trade results of such studies when both capital and labor are internationally mobile.

The present study extends the model utilized by Kemp and Jones to an environment where both capital and labor are internationally mobile, no restriction on commodity trade exists, and both countries incompletely specialize. The setting of the model is different from the standard Heckscher-Ohlin (H-O) model in two respects. (i) For each production, the technologies in the two countries are not identical. (ii) Both factors are mobile between the two industries within each country and internationally. Other assumptions of the H-O model are preserved, e.g. full employment and competitive markets.

Within such an environment, the impact of simultaneous policy-initiated migration and foreign investment on a policy-active country's national income and terms of trade are evaluated. The analysis concentrates on various aspects of interdependence between optimal policies toward labor and capital flows. Depending on parametric values, a large set of possible outcomes will emerge, including conditional answers to the Ramaswami question. It is demonstrated that the flow of one factor can lead to a reversal in optimal policies toward the flow of the other factor. Hence, welfare maximization requires simultaneous determination of optimal flow policies toward labor and capital. The free trade results of Jones regarding policy toward international capital flow (where labor is internationally immobile) are derived as a special case.

ABSTRACT
Agricultural Trade Relationships Between the U.S. and East Asia: Realities and Opportunities

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The paper examines agricultural trade relationships between the U.S. and East Asia (Japan, Hong Kong, South Korea, and Taiwan). An Armington model is used to estimate bilateral and multilateral trade relationships. The empirical results for Japan's markets are as follows: (a) there is no strong competitive relationship between the U.S. and the rest of the world (Canada and Australia) with respect to wheat, (b) the U.S. has no comparative advantage over Canada and Australia in wheat exports to Japan, (c) Japan's corn and soybean markets are dominated by the U.S., however, there is some competition from China and Brazil, and (d) U.S. cotton exports are facing strong competition from Australia, China, and Pakistan.

In the Hong Kong's markets, U.S. main competitors are China and Thailand. U.S. market shares are low, while the demand for its rice, corn, soybean, and cotton tend to be elastic. However, U.S. wheat exports continue to dominate that market.

For South Korea and Taiwan, the model shows continued domination by U.S. exports, with corn and soybeans accounting for about 90 percent. Despite this factor, the U.S. now faces increasing competition from the rest of the world in the cotton import markets of South Korea and Taiwan.

ABSTRACT
United Europe: Global Competition, Free Trade or Protectionism?

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The collapse of communism, current and future developments in Western and Eastern Europe present great opportunities as well as uncertainties in International Business environment. These events undoubtedly have produced New Worlds, New Directions and New Challenges. The plan to unite Western Europe in 1992 presents policy dilemma above and beyond the rather obvious political contentions between Britain and France among others. While current literature has explored many dimensions of the impending union, the policy implications and trade postures of the European Community, United States and Japan have received little or no attention. This paper examines the most probable outcomes: Global Competition (Doomsday), Free Trade-fair competition (Boomsday) and Protectionism. Whatever the eventual outcome, the policy implications of these postulated scenarios are profound for all parties involved. The elimination of bilateral negotiations for individual countries within the Community may prove disastrous especially for small and weaker EC countries. Indeed, bilateral negotiations over market access have served as the key international political mechanism restricting closure.

ABSTRACT
The Effects of Uncertain Trade Policies on the
Demand for Imports and Welfare

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Uncertainty in trade policies affects both the demand for imports and economic welfare of a representative consumer. This paper analyzes the effects of increased uncertainty about trade policies on the demand for imports and derives the welfare implications for this randomness using the model, where the utility function has two outcomes related to each other through linear budget constraint. The analysis reveals a set of restrictions on the utility function that is sufficient to conclude that the expenditure on imports decreases in response to increased uncertainty about either intervention or the tariff rate. In addition, conditions on preferences under which an increase in risk improves economic welfare is presented when government's tariff policy is introduced.

ABSTRACT
To the Debate of Phasing Market Reforms: The Case of Hungary

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Even after two years of severe economic recession, very much like in Poland, the new Hungarian government's macro policy efforts have to be focusing on stabilization rather than on the introduction of some growth-oriented policies. Compared to Poland, the more modest dimensions of the 24 month-long stagflation brought about a more manageable situation in Hungary. It caused hard policy dilemmas, however, that were very similar to those in Poland.

In the case of Hungary, it seemed almost inevitable, right at the beginning of economic transition (summer of 1989), that output and mainly industrial activity had to fall substantially before the new organizational arrangements can be put into place. There was no doubt in anybody's mind with respect to the consequences of price liberalization. Like in Poland, where most people erred was the prediction of the dimensions and scale of output fall and those of inflation. The question is whether with a more refined set of policies, a fall in industrial GDP could have been smaller, and inflation could have been brought down sooner? It must be stated that the stabilization measures taken were appropriate in the technical sense, they have produced the expected result with respect to the desired changes. The only remaining problem was the adequate amount of and timing as well as weighing between monetary and fiscal measures. Good timing can only come from experience, and can be insured if - as a technical minimum - the system of economic indicators is well developed and reliable. These latter conditions hardly existed in Hungary in 1990-91 period. To find the ideal mix of monetary and fiscal measures is, of course, another matter. As a complication of right choices, the experience of the developed market economies has shown that the matter can largely depend on taking sides with favored economic philosophies. The victory of monetarism in the western market economies is not a finished business, the Keynesian ideas came back to favor and are being aggressively promoted by the new-Keynesian school.

The new authorities in Hungary cannot be accused of not having had enough "philosophical" debates in their own circles. In our view, however, at least in the first two years of transition, success could not be insured with simply picking the "right or wrong" school of stabilization policies. In a transition economy, where both the emerging goods, factors and credit markets are still in the process of formation and have to coexist with left-over institutions of direct controls of the command economy, conventional measures of monetary policy can have only moderate or mixed results. In 1989 and 1990, when it came to sending and receiving regulatory signals quickly and effectively, fiscal authorities could still do better than banks. The channels of communication and the lines of command were still operational within many state-owned firms. Managers could better understand policy changes and fine tunings in regulation through their established partner, the national budget, and its agent, the Ministry of

Finance. Communication advantages notwithstanding, the success of antiinflation policies does depend on whether only fiscal or monetary instruments are applied. The major imbalances (external foreign debt and internal budget deficit) accumulated over the last twenty years must be addressed first: whether the burden of these imbalances will fall "as a collective responsibility" on the population in the form of real income dropping further, or on the non-communist state, which inherited the imbalances, is not a real dilemma since the state has various means to passing on the burdens.

Given the still enormous size of the public sector, the government's investments in infrastructure and the independent investment activity of state-owned enterprises, there is a very strong line of reasoning that points toward the keeping/increasing scope of government activity. Until the hardship years are over, state enterprises should be run like corporations with the same responsibilities. This should be accompanied by a reduction in taxes and nominal interest rates and by the lifting of any legal restrictions on wages in the non-government sector, but keeping lids on wages in the still dominant state-sector. The likely budget deficit would be financed by monetary expansion. The cooperation of IMF and World Bank would be probably lost if that route of recovery is selected. The alternative is the go ahead with quick privatization, risking even higher drops in output, keeping positive interest rates to induce savings. Price and exchange rate stability would in terms attract private foreign investment, provided the tax system will also show a good degree of stability. To ensure sufficient revenue to the state and investment finance to the state-owned enterprises, profits must be protected by a tax-based income-policy. This latter should be relaxed along with the progress of privatization. A third alternative, which is midway version of the former two, would be the abolishment of income policy regulations leaving the task of macroeconomic control to highly restrictive monetary and fiscal measures. The risk with this third alternative is that so long as the state-sector dominates, which it does in Hungary (more than 85 percent of industry is still state-owned), very high unemployment would still ensue, and economic growth would be left without sufficient stimuli. In the absence of restrictive income policy, or a powerful central bank it would be difficult to enforce a restrictive monetary policy. It is very likely that the Hungarian macro policy makers will have to grapple with the proper execution of this third risky option.

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ABSTRACT

Demand Relationships for Table Wine in Texas and the Influence of an Emerging Texas Wine Industry

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The Texas wine industry is growing in terms of its stature and prominence within the agriculture economy of the state. The Texas and U.S. per capita consumption patterns of table wine have differed over the past 20 years. The objective of this study was to identify factors that explained changes in wine consumption in Texas. A log linear wine consumption function was used and regression analysis was performed using the Ordinary Least Squares technique. Income and a time trend were found to be significant variables. A dummy variable was added to measure the influence of an emerging Texas wine industry. A systematic process was used to identify 1980 as the year of industry emergence within a range specified by grape growers and wine producers. The explanatory power of the model increased dramatically with the dummy variable added to the income and time trend variables. The implications of this research suggest that it is reasonable to attribute the differences in U.S. and Texas consumption trends to an emerging Texas wine industry. The emerging Texas wine industry has not only created interest in its own production, but increased the demand for all table wine.

ABSTRACT
Adam Smith on Labor Market Combinations: Market Failure and Economic Privilege

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One of the most famous statements in Adam Smith's <u>An Inquiry Into the Nature and Causes of The Wealth of Nations</u> (1776) is the comment in Book I, chapter 10 on the tendency for gatherings of "people of the same trade" to wind up generating "a conspiracy against the public." Smith's additional statement with regards to the law dealing with such conspiracies is often overlooked. Smith argued that such combinations could not be prohibited by any law "consistent with liberty and justice," but the law "ought to do nothing to facilitate such assemblies; much less to render them necessary."

The purpose of this study is to explore the reasoning behind Smith's approach to economic conspiracy, particularly with regards to the labor market. In this paper I argue that, despite his apparent recognition of asymmetric power in the labor market, yet consistent with his statement regarding conspiracies involving individuals in the same trade, Smith believed that the law should neither facilitate nor prohibit the efforts of either employers or laborers to organize into combinations. My contention is that Smith applied his concept of justice, as tied in to his notion of the 'impartial spectator,' to the issue of the position of the law toward combinations. Smith's recommended policy of neutrality towards economic combinations stems from his opposition towards exclusive privilege in general.

ABSTRACT
An ARIMA Model of U.S. Crude

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In this study we demonstrate the complexities involved when estimating short run crude petroleum production. One of the most sophisticated attempts of econometric modeling of the petroleum industry is the work of Patricia Rice (Oak Ridge Laboratories) and V. Kerry Smith in the work "An Econometric Model of the Petroleum Industry" [11]. Problems arise in obtaining satisfactory forecasts from econometric models. Accurate data on explanatory variables may be hard to obtain. Anthony E. Bopp's research entitled "A Combined Decline-Curve and Price Analysis of U.S. Crude Oil Production, 1968-78" [2] attempted to remedy this shortcoming by developing a mixed econometric and time series model.

The purpose of this study is further examination of ARIMA models for crude petroleum production. Using recently revised data for monthly domestic production of crude petroleum, our sample period is from 1973 through 1990.

The new source for crude production appears in the Historical Monthly Energy Review. The study used 216 observations. In analyzing the autocorrelations and partial autocorrelations we found that the autocorrelations did not die down rapidly. Furthermore, during this analysis we observed that seasonal functions were being displayed by spikes at the 1st, 13th, and 25th autocorrelations. Thus, a Box-Jenkins model accounting for seasonal components was deemed to be most suitable.

After transforming the data into log form and taking one seasonal difference of the converted data, the autocorrelation died down rather quickly and the partial autocorrelations cut off after two lags. Therefore, two non-seasonal autoregressive parameters were deemed to be necessary. Seasonal factors were compared next. The autocorrelation of seasonal lags died down quickly. One seasonal moving average parameter was concluded to be necessary. The results are provided below:

TYPE	ESTIMATE	ST. DEV.	t-RATIO
AR1	.5244	.0630	8.33
AR2	.4712	.0630	7.49
SMA12	.9118	.0467	19.54

The Q-statistic was found to be 24.00 at the 5% level of significance. Thus, the model was found to be adequate.

In ARIMA modeling the simplest is preferred, however there may be a trade off with forecasting say the supply of crude rather than to estimate a change in supply

brought about by real world event and policy changes. In ARIMA modeling there may be more than one appropriate model, i.e. a family of models.

It is our contention that although appropriate econometric models are difficult to construct and at times do not predict at an acceptable level, they still are the most desirable models for analyzing the impact of various policy changes. When a complete model has been developed, the impact on Y brought about by a change in any X may be measured. The gain from this approach more than offsets other models which claim to forecast well but are quite limited in accurately predicting the impact of policy changes. When a relevant variable has been omitted in the analysis, estimates may be biased and inconsistent. The reason for this conclusion stems from violations of the key assumptions concerning the disturbance term [7]. Although, an "ARIMA" model may explain history well, a model such as the "Rice and Smith" model would be a better starting point for a thorough economic analysis. As with econometric models, the ARIMA estimated parameters do not change over time. Clearly before any definitive conclusion can be reached, there should be additional research.

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ABSTRACT
Prospect for Entrepreneurship in Transitional Economics to Market Economics

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This abstract will focus on the prospects for entrepreneurship in transitional economies and market economies and on the components of entrepreneurial supply and economic development. It will use a synthesized definition and common model first developed in my doctoral dissertation (and latter discussed in and unpublished paper entitled "The Entrepreneur in Economic Development"). It will combine my definition of entrepreneur and utilize "A Common Model of Schumpeter, Hagen and McClelland's Entrepreneur in Economic Development." This paper extend the paper "The Role of Entrepreneurship in Market and Non-Market Economies."

The former U.S.S.R. has faced numerous political and economic events. A number of states of the former Soviet Union have declared their independence. Those republics are Latvia, Lithuania, Estonia, and Georgia. Most of the remaining states have formed the Commonwealth of Independent States. There has been a rise of nationalism along ethnic lines after decades of communist ideology and communist rule. Military clashes have been along ethnic lines.

Eastern European countries, the Republics and the Commonwealth of Independent States, there has been a "withdrawal of status respect"[1]. Hence, the climate is ripe for the growth of public and private entrepreneurs.

The main economic changes are free trade, economic unification of the Eastern Economic Commonwealth, and the monetary unification of East and West Germany. The independent states of the former Soviet Union, Poland, Romania, and other Eastern European countries, each trying to achieve "most favored nation" status; joining the International Monetary Fund; and the restoring of investor confidence in China after Teniheim Square and China maintaining its' "most favored nation statue;" are all other examples of the sweeping economic changes facing the world today.

What is the "Common Model?" Quite simply, it is three theories of the entrepreneur and economic development synthesized and based in the theories of Joseph A. Schumpeter, Everet E. Hagen, and David C. McClelland. The common model reconciles the ideas of the above renowned men. Specifically, it synthesizes: (1) the historical sequence of economic development with the business cycle of the economy, social change, and personality formation and (2) a personality formation theory of the entrepreneur. The basic economic paradigm is drawn from Schumpeter's model, while the models of Hagen and McClelland provide the backdrop of social change for the formation of the entrepreneurial personality.

When members of a group sense that their status is no longer respected by those whose opinions they value and respect, tension is created within them. This lack of respect for one's purposes and values in life is the central aspect of the withdrawal of status respect. Unquestionably, the withdrawal of status respect causes extreme anxiety and alienation from traditional values as well as other personality changes. A traditional society begins to break down whenever withdrawal of status appears.

Entrepreneurial activity is a response to anxiety; specifically, incessant anxiety as well as the joy of creating are the driving forces of entrepreneurial activity. The anxiety is caused by withdrawal of status respect and the demands that the mother puts on her child during the training period. Innovational activity or need achievement is related to three child-rearing variables: (1) low authoritarianism, (2) warmth within the family, and (3) high standards of excellence set by parents.

The repression that existed in Soviet-styled economies fits well in Hagen's traditional society and the withdrawal of status respect. For the past forty-five years or so of the cold war, the psychological back drop has been set for the rise in entrepreneurship. Gorbachev's reforms, the experiment with democracy, the failures of Soviet-based economies to satisfy consumer demand in pricing goods and services with no relation to cost, and year after year the central planners failed to plan their economies successfully, are additionally fanning the fires of destruction for Marxism. The pent up consumer demand will most likely cause an increased entrepreneurial response.

Entry to exploit the markets of the former Soviet Bloc countries, Economic European Community will probably be done via joint ventures. There are many virgin markets and under utilized markets that any entrepreneur could tap. Exxon, Texaco and Chevron transferring American know who to exploit the former U.S.S.R.'s oil fields.

1.   Hagen, E.E., On The Theory of Social Change, p. 185-192.
Withdrawal of status respect is the perception on the part of the member of some social group that their purpose and values are not respected by groups in the society who they respect and whose esteem they value (p. 185).
Withdrawal of status respect may occur because of displacement by force, degradation of valued symbols, insistency of status symbols, and nonacceptance in new society.

ABSTRACT
Economic Intelligences: Spying in the Market Place

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Economic intelligence "is timely and specific information about a company"[1] or a group of companies. The main information gathered is economic and financial. However, it can range from technical engineering to personnel. This information not only gives a company a better understanding of itself, but the information has "application range from long-term strategic planning to immediate tactical concerns"[2].

The primary uses of competitive intelligence are:
1. Determine a competitor's corporate strategy.
2. Define competitor R&D activity.
3. Identify target acquisition companies.
4. Explore the market environment of an acquisition.
5. Provide financial information on a privately-held corporation.
6. Provide biographical information on key executives.
7. Monitor competitor's product introductions.
8. Analyze the market for a product introduction[3].

There are many sources of information that can be applied to any number of topics for example, financial information look at the competitor's SEC filing. In addition, the sales force was listed in many articles as the major source of timely data. The government is a source of a bulk of information because of the Freedom of Information Act.

Advanced technology has helped a great deal in competitor intelligence. With a number of databases available, both internally and externally, companies can share information thus saving time and money. The flaw of electronic mail is the ease of tapping. Moreover, computers were built to give back data on demand, not to refuse data or deny a program (virus).

Small companies, privately held companies, and business units of a partner company offer a challenge to many to find information on. Leila K. Kight's theory is to find a pond where the little fish in the big pond is the big fish in the little pond. This might take some creative thinking.

Employees are another major source of information. For this reason, a company must make everyone conscious of intelligence gathering of reporting. Employees are one of the largest sources for leaks within the company. By talking shop in such 'private' places such as elevators, restaurants and airplanes, people sometimes forget that anyone around can also hear. Moreover, many trade secrets are lost for personal gain, sex, advancement, blackmail, bribery and revenge.

Reverse engineering is the purchase your competitor's product and then take it apart piece by piece for examination.

There are two major types of information companies try to keep from their competition trade secrets and patents. The Uniform Trade Secrets Act adopted on 1979 makes it a criminal offense to steal trade secrets. This gave the advantage of having a trade secret over a patent. Patents are only good for 17 years.

No matter how good a security system may seem there is always room for someone to break it. Subsequently, a company should perform periodic security analysis to detect weakness.

Actual cost suggested for competitor intelligence varied in the articles. Actual cost will depend on the needs and the size of the company.

In summation, competitor intelligence has been defined. Moreover, the reasons and uses for competitor intelligence have been given. The sources of timely data: competitors' SEC filing, the role of advanced technology, employees, reverse engineering and professionals need to be examined. Furthermore, there steps to transfer data into useful information. The kinds of information companies try to keep secret have been pointed out. Next the Freedom of Information Act 1974 Amendment importance and security systems were discussed. Consequently, cost for competitor intelligence and gains from competitor intelligence were shown.

In conclusion, economic intelligence is necessary but not sufficient condition. Economic intelligence will likely be used more as companies try to maintain and/or increase their competitor advantage. Moreover, economic intelligence can be use in forecasting supply and demand. In general, it can prove useful in decision making for the firm.

(1)   Leonard M. Fuld, "Competitor Intelligence: Can You Plug the Leak?" Security Management. August, 1989, p. 85-87.
(2)   J. Richard Combs and John Moorhead. "The Quest for Corporate Excellence Begins with Competitive Intelligence" Marketing News, May 9, 1988, p. 11-20.
(3)   Ibid.

ABSTRACT
An Examination of the Probability of Publishing in Selected Journals in Economics

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Many institutions of higher education have adopted a "publish or perish" mandate for their faculty members. Faculty members are not only expected to publish in "high quality" journals but they are also expected to be prolific. Tenure and promotion decisions are based on both the quantity and quality of a faculty member's publication record.

This study identifies the factors that influence the probability of being published in selected journals in economics. The probability of being published is measured by the acceptance rate for manuscript submitted to 36 economics journals. Acceptance rate is regressed on six variables: age, circulation, editorial affiliation, citations, type of reader and journal quality.

ABSTRACT
CNN Street Picks: Information From Another Source

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There is considerable difficulty obtaining relevant information for investment in the stock market. There are recommendations provided by financial advisors, stockbrokers, financial services, financial media, private and public periodicals. There have been no studies to determine whether obtaining advise from a different advisor each day provides a better source of information for individual investment decisions than does other sources. This paper analyses such a source; Cable News Network has a morning program which invites various persons from different financial institutions and in different capacities and asks them to make two or three picks each morning.

The "picks" were obtained from October 1987 to November 1987. The performance of these recommendations was compared to the performance of the market as a whole, brokerage firm recommendations, and individual stock trends. The "picks" were combined into a portfolio so that they could be compared with recommended portfolios of service and brokerage firms.

Stock prices declined during October 1987; at the end of a nine month period, July 1988, the Dow Jones Industrial Index had declined 16.7%, the Standard and Poor Index had declined 1.4%, the New York Stock Exchange Index had increased 3.8%, while the "picks" had declined 14.8%. However, in a three month period to January 1988, the "picks" had declined 25.7%, the Dow Jones 32.6%, Standard and Poor 29.6%, and the New York Exchange 30.3%. In the short term, the "picks" were better choices than the market in general. Also, the "picks" outperformed the recommendations of the major brokerage firms. Of the ten largest brokerage firms, only 3 performed better than the "picks." The recommendations of the brokerage firms declined 20.7% to 28.9% in the same three month period while the "picks" declined 25.7%; the "picks" did not include dividends that were paid during the period although such dividends were included in the performance of the brokerage firm recommendations. The performance of the "picks" would have been better had dividends been included.

The paper concludes that the performance of the picks on CNN Morning Report justify consideration for possible investment. Using portfolio goals and market indicators for screening, the "picks" could be individually beneficial. In a three month period, the "picks" generally performed better than the market as a whole and brokerage firm recommendations; however, for a longer period, approximately nine months, the performance was mixed. The "picks" that were more speculative were slightly more useful than the apparently safe stocks. One seeking the name of stocks to be researched for possible purchase might obtain good prospects from offerings by CNN "picks"; prudence would still suggest a careful study be made of the performance of each stock.

ABSTRACT
Domestic and Foreign Sales in the Presence of Price and Exchange Rate Uncertainty

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In the theory of the firm under uncertainty, the most widely analyzed case is that of a firm selling output in one market under a single source of uncertainty. An extension of this to the case of a firm selling in two markets (a domestic market and a foreign market) has also been analyzed but the usual assumption made here is of a riskless domestic market and a risky foreign market. In some part at least, this assumption is necessitated by the problems involved in the analysis of dual risks. This paper extends the literature by considering the problem of a firm selling in two risky markets - a domestic market that is characterized by output price uncertainty and a foreign market that is characterized by exchange rate uncertainty.

The analysis in this paper is conducted primarily through a diagrammatic framework which uses expected marginal utility contours in foreign and domestic sales space. Several properties of these contours regarding their location, shape, and relative slopes are established. In particular, whether the contours are positively or negatively sloped depends on whether domestic and foreign output are substitutes or complements. The notion of output substitutability/complementary is a crucial one and we show that whether foreign and domestic sales are substitutes or complements depends on the firm's attitude towards risk.

An interesting aspect of the diagrammatic analysis is that it enables one to distinguish between substitution and wealth effects. This distinction provides a clear economic rationale for the results. Several of the indeterminacies in the comparative statics results are attributable to the conflicting interaction of substitution and wealth effects with output substitutability/complementary effects.

The analytic technique used in this paper is useful not only because it provides an intuitive perspective on the problem of decision making under dual risks but also because it could be applied to other problems of a similar nature.

ABSTRACT
Pricing Efficiency of Soybean Futures

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This research examines pricing efficiency in the soybean futures market. It shows that futures prices before maturity and unreliable indicators of maturity futures prices. High futures prices before maturity tend to decrease, whereas low futures prices tend to increase. A trading strategy is developed to take advantage of this pricing inefficiency.

The strategy involves comparing the current soybean futures price to the long-term average price. If the current futures price is $1/bushel below the long-term average price, a buy position is taken; whereas if the current futures price is $1 above the long-term average price, a sell position is taken.

This trading strategy was simulated for the period 1974-90. The simulated trading returns are positive for trading periods of 2 to 12 months, and significant in more than half the cases. Based on the positive and significant trading returns, the hypothesis of pricing efficiency is rejected for the soybean futures market.

ABSTRACT
Advertising Intensity and Concentration Changes: A Survey

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Since the 1960s, numerous studies have empirically examined the effects of advertising on competition. Many focused on the connection between advertising intensity (measured by advertising-to-sales ratios) and the level of industry concentration, or on the connection between advertising and profit rates. However, these studies yielded conflicting results. A third group of studies (eleven in all) have examined the effects of advertising on competition by focusing upon advertising intensity and concentration change. In contrast to the above studies, all concentration change models that have used advertising intensity as an independent variable have achieved fairly consistent results: the advertising intensity coefficient was usually positive and significant and in some cases insignificant. But it was negative and significant only once, out of over one hundred regressions. This paper surveys these eleven concentration change studies, each categorized and discussed according to its source of advertising data.

The first and second generations of concentration change models to employ advertising intensity as an independent variable used Parker's advertising data set compiled at the FTC and the Department of Commerce's Input-Output tables respectively as the advertising data source. However, both data sources were plagued by problems. The third generation of concentration change models to employ advertising intensity as an independent variable used Leading National Advertisers, Inc. (LNA) as the advertising data source. LNA advertising data has two major advantages over the previous data sources. First, the LNA data more accurately reflects advertising expenditures for each industry. Second, the LNA data breaks total advertising into TV, radio, outdoor and magazine industry.

Mueller and Rogers (1980) were the first to use LNA advertising data. Total advertising intensity was also separated into electronic (TV plus radio) and printed advertising, citing evidence that large advertisers enjoy certain advantages in advertising, especially for electronic advertising. From regressions covering the 1947 to 1972 period, they found that total advertising intensity and electronic advertising intensity had a positive and significant effect on concentration change, with electronic advertising intensity having a larger and more significant coefficient. Mueller and Rogers (1984) basically updated their 1980 study through 1977, adding sub-period analysis and trying alternative model specifications. They obtained similar results to their 1980 study for advertising intensity, showing that the relationships between advertising intensity and concentration change has probably not ceased nor reversed since the 1960s.

In this dissertation, Rogers (1982) examined concentration change for the food and tobacco industries at the SIC five-digit product class level for the period 1954-1972.

He chose the five-digit level because on balance, it represents a true market better than the four-digit industry class level. For both level and changes, advertising intensity (both total and electronic) has a positive and significant effect on concentration change.

Tokle, Rogers and Adams (1990) added to the Mueller and Rogers studies by updating the data through 1982, compiling an LNA advertising set for 1982 (to be used with the 1967 data set used in the Mueller and Rogers studies), and using a nonlinear specification for advertising intensity coefficients. The total advertising intensity coefficients, for both level and change, were positive and significant when tested in linear and quadratic forms. Network television advertising intensity (both level and change) was the only media that by itself proved to be very significant. And, total advertising intensity was separated into electronic (network and spot TV plus network ratio) and printed (outdoor plus magazine) advertising in a single equation. These findings were consistent with Mueller and Rogers (1980, 1984): electronic advertising intensity (for change as well as level) were positive and significant while printed advertising intensity was not significant.

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ABSTRACT
Current Economics Faculty Evaluation Systems: An Empirical Study

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To design and operate an effective faculty evaluation system requires input from the faculty. To date, however, most empirical studies conducted on the evaluation of faculty performance have collected data from either academic deans or chairpersons or students. Little attention has been given to the faculty's views on the subject. In the belief that a successful faculty evaluation system should be developed jointly by faculty and administrators, this survey of economics faculty was conducted.

Research Objectives

This paper reports a study designed to provide information to answer the following questions:

1. To what degree are economics faculty satisfied or dissatisfied with their current evaluation systems.
2. In what important ways do the "satisfactory" faculty evaluation systems differ from the "unsatisfactory" faculty evaluation systems?
3. What changes or innovative ideas economics professors would like to see their university/college/school/department adopt for improving faculty evaluation systems?

Data Collection

A mail survey was conducted during November and December of 1991. A total of 1,484 questionnaires were mailed to the non-administrative economics professors employed at four-year universities/colleges in the U.S. The mailing list was compiled based on American Economic Association's Biographical Listing of Members. As of January 1, 1992, 379 questionnaires were returned with 355 usable, for a response rate of 24.3 percent.

Results

The respondents were asked to respond to the statement: "All considered, I am satisfied with the faculty evaluation system at my university/college", using a Likert five-point scale bounded at one end by the term "strongly disagree" and at the other end by the term "strongly agree." As shown in Table 1, 41.6 percent of the respondents indicated they were either satisfied or strongly satisfied with their current faculty evaluation systems, 25.6 percent of the respondents felt neutral, and 32.8 percent of the respondents said they were either dissatisfied or strongly dissatisfied with their evaluation systems.

The second research question of the study concerned the differences between the "satisfactory" and the "unsatisfactory" faculty evaluation systems. Five t-tests were run and five statistically significant differences were found. The satisfactory and unsatisfactory faculty evaluation systems clearly differ in terms of (1) how well the systems are designed, (2) how objective and fair the evaluators are, (3) how much

Table 1
Degree of Satisfaction/Dissatisfaction with
Current Faculty Evaluation System

Category	Number	Percentage of Total
Strongly Dissatisfied	33	9.4
Dissatisfied	82	23.4
Neutral	90	25.6
Satisfied	125	35.6
Strongly Satisfied	21	6.0
	351	100.0

knowledge the faculty members have about how their performance is evaluated, (4) whether there exists an established procedure to follow when the faculty member disagrees with the performance evaluation given to him/her, and (5) whether the faculty member is encouraged to make suggestions for improving the faculty evaluation system.

One straightforward way of improving the faculty evaluation system is to periodically ask the faculty members what changes or innovative ideas they would like to see the university/college/school/department adopt, and then work to either eliminate the weaknesses of the existing system or develop a completely new, hopefully better, system. Following is a list of examples of such desired changes or innovative ideas mentioned by the respondents in this survey:

1. "I would like to see our school develop an objective scale for the evaluation of faculty with results available to the individual professor."
2. "Explicit face-to-face review and discussion of performance criteria and procedure. Fairly arbitrary for senior people at the present time as far as I can tell."
3. "Research evaluation should not only count papers but also qualitative judgments. They should be read by faculty colleagues on the Personnel Committee and comments should specify how it amplifies, perfects or adds to the existing paradigm."
4. "Use measures of teaching performance which reflect student learning, not popularity."
5. "Encourage students to submit more detailed written comments."

Conclusion

In this survey, approximately 33 percent of the respondents are dissatisfied and 25 percent neutral regarding their current faculty evaluation systems. These large percentage numbers point out that many colleges need to, and really should, reexamine the adequacy of their economics faculty evaluation systems.

ABSTRACT
A Positive Model of the Determinants of Church Membership

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This paper combines elements of the two distinct strands within the economics literature on religiosity. The first strand consists of a very small body of work. It applies economic theory and methods to analyze the determinants of an individual's participation in religious activities. Azzi and Ehrenberg (1975) were the first to develop a formal economic model of religious participation. Their single-equation model was set within the framework of the household allocation of time theory, and includes earnings measures as exogenous variables. Very little additional research in this vein has been published. The second strand involves a larger body of research, also within a single-equation context, exploring the effects of specific religious affiliations on earnings within a human capital framework.

Our thesis is that income is not exogenous in the "religion" equations, and religion is not exogenous in the "earnings" equations. We integrate elements of these two strands in order to simultaneously estimate a five-equation system in which membership in specific religions and income levels are jointly determined. The units of observation are states, and data are available for 1952, 1971, and 1980. The "religious" endogenous variables are the proportion of a state's population which is Jewish, Fundamentalist Protestant, non-Fundamentalist Protestant, or Catholic. Wealth or permanent income is proxied by a state's median family income.

We employ a positive economic framework to construct a structural model describing the equilibrium level of religious services for the four religions mentioned above. That is, the demand for religious services is derived from a standard utility-maximizing model based on the theory of consumer choice. The supply of religious services follows a straightforward application of the theory of the firm to the church. Adding the equilibrium condition yields standard reduced-form "religion" equations. Income is expected to have a differential impact across religious groups. For the "income" equation, we use the human capital framework to evaluate the determinants of income allowing for the varying impacts of different religious affiliations. Using this specification we can test hypotheses concerning the manner in which different religions affect statewide income levels, while simultaneously permitting an income effect on the equilibrium level of religious services.

ABSTRACT
Stabilization and Recession in a Transitional Economy: The Case of Poland

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This paper deals with the first experiences of the stabilization "shock therapy" implemented in Poland in 1990 simultaneously with a set of system-transforming reforms aimed at converting the centrally planned economy into a market one. After a period of partial and unsuccessful reforms, in 1989 the Polish economy fell into hyperinflation accompanied by shortages in all markets, and the extreme flight from national currency. Owing to the radical political breakthrough, in September of 1989, the first non-communist, Solidarity-led government came to power and took on the task of working out a program of reforms. Due to the situation at the starting point, these reforms had to be preceded by strong stabilization and liberalization measures aimed at reducing the inflation rate and establishing market equilibria. An orthodox stabilization program brought about the substantial reduction in the inflation rate, and the establishment of market-clearing prices, but the economy fell into a deep and protracted recession. Though the output fall was severe, however, we consider that this cannot be interpreted only in terms of standard stabilization side effects which consist in aggregate demand contraction. We argue that a sharp recession observed in all post-socialist countries cannot be attributed exclusively to stabilization policies, but is a combined effect of three interrelated processes which began in 1989-1990. These are: (1) dismantling of the previous system and apparition of a "systemic vacuum"; (2) radical system-transforming reforms; and (3) stabilization. This seems to be confirmed by the fact that output declined in all post-socialist countries irrespective of whether the stabilization program was implemented or not. It should also be stressed that in this context, by necessity every stabilization program includes some system-transforming measures which condition its success. The need of a combined joint reform is derived from the nature of centrally planned economy inflation whose suppression is not possible without a certain critical minimum of system-transforming measures. While the stabilization program included price liberalization, wage control, tight monetary and fiscal policies, and exchange rate devaluation combined with its unification and internal convertibility, subsidies to state enterprises were drastically cut off, and prices of basic inputs and services increased substantially. In this way, soft budgetary and demand restraints have been hardened, and state enterprises have been converted into self-managed, profit-led productive units. In other terms, a resource-restricted system has suddenly been converted into a demand-restricted one. Therefore, the economy suffered from what we call "transition shock" which is a kind of supply adverse shock. We try to explain this concept at a macroeconomic level arguing that in this situation, due to an elimination of system-determined over-production, a certain fall in output was greater than could be expected from necessary "system-transforming adjustment." We think that this can be explained partly by unpredictable external adverse shocks and partly by some errors in macroeconomic policies. The former consisted in an oil price increase in 1990 and a collapse of COMECON foreign trade in 1991. The latter consisted in excessive

devaluation of national currency and too tight a wage policy. It also became clear that dominating state-owned enterprises turned out to be unable to adjust to the new economic environment. On the contrary, the private sector demonstrated extraordinary dynamism, but even so this could not compensate for the state sector's collapse.

Economic Diversification and Stability in Texas Counties
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COMMENTS

Isaac O.C. Abara
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Diversification strategies seek to reduce the variability and expected level of outcome relative to alternative activities (Sonka and Patrick). Different deterministic models that measure commodity or sector concentration have been adopted by different researchers in various fields of study. In economics, the most commonly applied measure is the Entropy Index which may be specified as

$$1) \qquad D(V_1, V_2, ...,V_n) = \sum_{i=1}^{N} V_i \ln V_i$$

where D is diversity index, N is number of sectors, V_i is the ith benchmark for measuring diversity, and Ln is natural logarithm. In fact, equation 1 is a special case of an index of the form (Hannah and Kay)

$$2) \qquad D(V_1, V_2, ... ,V_n) = \left(\sum_{i=1}^{N} V_i^a \right)^{1/1-a}$$

where a is a parameter, a>0, and a≠1. Thus, for the limit, Equation 2 becomes Equation 1 as the parameter approaches unity.

Jafri and Witten applied the entropy technique to measure the extent to which employment is spread among 11 economic sectors in 50 Texas counties. Using employment as a benchmark is limiting as employment level alone may not adequately reveal an economy's ability to respond to the impacts of external and internal stimuli. As the goal of a development strategy is less to prevent such impacts than to enhance an economy's capacity to respond (Shaffer), Profit margins could be used at least for comparative purposes. The correlation results seem to beg a clarification. First, the proportion of employment in all the sectors tend to equalize (i.e., reduced variation) as the value of diversity index increases. Equality (evenness) is reached when $D=Ln_2 11$. Thus, the relationship between diversity and employment variability (insignificant; 0.5% level) should be negative and significant while employment level and diversity (significant; 0.5% level) could be positive or negative.

In general, diversification by itself may not ensure economic stability. Opportunities for diversification may be limited by resource availability, climatic conditions, market factors, and institutional arrangements. Since there is a tradeoff between diversification and specialization, embarking on the former may result in loss of

size economies (Tauer). Stability may be realized if, among other conditions, the sectors are heterogeneous. less closely bound, require small operations and capital investment, less competitive, and utilize assets whose returns are not positively correlated (See Castle, et al., and Weston and Brigham).

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Interest Rates, Transactions Portfolios, and the Kinked Money Demand Curve

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COMMENTS

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Baumol's (1952) application of an inventory theoretic framework to the theory of money demand explained why two assets with the same risk characteristics but different rates of return would be held simultaneously for any period of time by rational individuals. Baumol developed a pure theory of the transactions demand for money in an environment without risk or uncertainty. Two assumptions were crucial for his result: the asset with the inferior rate of return was required for transactions, and asset exchanges involved a fixed "brokerage" fee. The second assumption allowed Baumol to capture a prominent stylized fact in his model: a very limited number of asset exchanges appear typical of the average household.

In his clearly exposited and carefully developed paper, Professor Chinn replaces Baumol's second assumption with an assumption of a proportional brokerage fee. There are costs and benefits to this approach. A prominent cost is that the presence of bonds in an individual transactions portfolio implies a large (indeed, infinite) number of asset exchanges in any payment period, all of which occur toward the end of the period. This appears counterfactual. On the other hand, an important component of the brokerage fees incurred in the purchase and sale of many assets is roughly proportional. Professor Chinn has drawn our attention to the widely recognized fact that the effect of proportional brokerage fees on total rate of return depends on the holding period of the asset, and he has explored the implications of this fact for money demand.

Define the "transactions portfolio" to be that component of beginning of period wealth that will be used for purchases during the payment period. Professor Chinn shows that the transactions portfolio includes bonds to the extent that the length of the payment period exceeds the minimum holding period required for the (brokerage fee inclusive) rate of return on bonds to exceed that on money.

Thus the transactions portfolio can include bonds as well as money as long as the relative rate of return on bonds is large enough. In this case, money demand is quite responsive to changes in the interest rate differential. On the other hand, if the minimum required holding period is longer than the payment period, money demand will not respond to changes in the interest differential. Professor Chinn emphasizes this result of a non-constant interest rate elasticity of money demand, which stands in distinct contrast to the Baumol model.

It seems to me that the key question is whether Professor Chinn has offered us an insight into money demand or into some other aspect of asset management. Part of the

difficulty in assessing this question arises from the increasing fuzziness in the distinction between money and other assets: asset liquidity now seems to vary along a continuum rather than discretely. Nevertheless, it is clear that if we are going to focus on proportional brokerage fees for the alternatives to money, then the relevant measure of money must be at least as broad as M2.

For households, I suspect that little or none of the allocation of wealth between M2 and other assets is based on the transactions considerations raised in this paper. In contrast, the Baumol model appears relevant both at the cash/checkable deposits margin and at the checkable deposits/other assets margin. This is just casual empiricism of course, based largely on my own experience of finding the fixed costs of asset exchanges important and the proportional costs irrelevant to my money demand, and I do not pretend to be making a serious empirical case against the model. Perhaps some effort to discuss the empirical relevance of the model would lend persuasiveness to this effort.

As a final comment, supposing that an empirical case can be made for the considerations in this model, it might also be interesting to combine fixed and proportional costs of assets transactions.