

Economics Department

Professor Karen E. Thierfelder
Chair

Faculty in the Economics Department were actively engaged in research on a broad range of subjects in 2004-2005. Though every member of the department - professors and officers of varying ranks as well as Visiting Assistant professors - were involved in productive scholarly and/or creative activities, several of these publications, presentations and research areas deserve mention in this introduction.

Professor Karen Thierfelder received the class of 1951 Civilian Faculty Research Excellence Award, which recognizes the civilian faculty member at the United States Naval Academy who has exhibited the highest quality continued scholarly achievement through research. While much of the groundwork for her research began while she was on a sabbatical during the 2001-2002 academic year with the International Food Policy Research Institute in Washington, D.C., she continued to develop her computer modeling to link trade to development issues. Policy makers use her models to gain an understanding of global trade issues and to predict the outcomes of regional trade agreements. Her software can be modified to reflect different countries and different commodities. The results can also be explained in logical, intuitive terms that can be understood at the most basic level. She presented the results of a computer model that showed how changes in the tax structure would affect rich and poor households in South Africa. The presentation, entitled "An Analysis of South Africa's Value Added Tax," was given to the World Bank in Washington, D.C as part of the PREM Africa Division seminar series. Associate Professor Suzanne McCoskey continued her association with the University of Pretoria (South Africa). She presented a course on analysis of panel data to graduate students at the University of Free State in South Africa in July 2004. The work was supported by a Mellon Grant received by the South African University. Professor William Bowman continued his research collaboration with the Naval Postgraduate School (NPS). Along with Professor Eric Fredland and Professor Roger Little, he co-directed several theses in the LEAD Master's program at the Naval Academy. Professor Rae Jean Goodman continued in her role as Director of Teaching and Learning at the Naval Academy. Among numerous activities in that role, she organized six workshops at the Academy on various aspects of effective college teaching. Professor Goodman served on the American Economic Association (AEA) Committee on Economic Education and organized a poster session on active learning techniques for the annual meetings in January 2005 in Philadelphia. One of the rising researchers in the Economics Department is Associate Professor Matthew Baker. He has continued his involvement in refereeing for peer-reviewed journals. During the past year, he refereed for the Journal of Comparative Economics and Natural Resource and Environmental Economics. In addition to the wide variety of research he investigates, he also manages an electronic discussion on Evolutionary Economics as part of the international database, Research Papers in Economics. He also continues to maintain the faculty working paper series, available on-line in Research Papers in Economics.

Within the Economics Department, students majoring in Economics also distinguished themselves. Midshipmen 1/C Thomas J. Kelly was selected for a William H.G. Fitzgerald Scholarship. He will study Economics and Social History at the University of Oxford, England, following his graduation from the Naval Academy. The Frederick L. Sawyer Prize, awarded to the best senior research paper by a graduating Economics major, was presented to Midshipman 1/C Curtis Nickel for his paper titled: "Willingness to Pay for Stem Cell Research: A Contingent Valuation Study."

Sponsored Research

Technological Progress, Population Growth, Property Rights, and the Transition to Agriculture

Researcher: Associate Professor Matthew J. Baker

Sponsor: Naval Academy Research Council (NARC)

Following the rapidly growing literature on the Neolithic revolution, a model of mankind's initial transition to agriculture in which population and technological sophistication are both endogenous variables was developed. It was assumed that total factor productivity (TFP) in both agriculture and hunting and gathering depend on natural resource endowments and a general purpose technology, but that TFP in agriculture is relatively more dependent on technological sophistication than TFP in hunting and gathering, and that agriculture requires effort be expended in land enclosure. The model described combinations of population pressure, technological sophistication, and resource endowments that were sufficient to generate a switch to agriculture and enclosure, but also admitted the possibility that no switch will occur. The steady-state relationships of the model were estimated by applying a two-state, two-equation model with endogenous regime switching using information on the incidence of agriculture, population density, technology, and environment among 186 pre-modern societies. It was found that habitat diversity, a relatively flat landscape, and exceptionally heavy rainfall are among factors contributing to total factor productivity in hunting and gathering, while soil quality, climate suitability and proximity to an ocean increase total factor productivity in agriculture. It was also estimated that roughly ten percent of TFP in agriculture can be attributed to technological sophistication, while TFP in hunting and gathering is not influenced by technology. Among other things, evidence was found that endogenous growth effects may be responsible for approximately 40% of observed technological sophistication among agricultural societies, but do not appear important among hunter-gatherers.

Court Decisions and Equity Markets: Estimating the Value of Copyright Protection

Researchers: Assistant Professor Brendan M. Cunningham

and Associate Professor Matthew J. Baker, USNA

Sponsor: Naval Academy Research Council (NARC to BEM)

A novel database on U. S. federal court decisions is used to measure the changes in the state of copyright protection in both statute and case law. Then the paper combines an index of copyright breadth derived from this database with a quarterly panel of firms in creative industries over the years 1986-1998. Using this data, the impact of changes in the breadth of copyright on the market valuation of firm equity is measured. It is assumed that equity markets will incorporate the value of copyright innovations into the price of equity. After controlling for a variety of fundamental determinants of firm-level excess returns to equity, it was found that a court case broadening copyright is associated with a statistically significant 23-45 basis points increase in a firm's excess return. The results obtain across both 4-5 year sub-samples and the size distribution of firms.

Faculty: Thy Administrator's Keeper? Theory and Evidence

Researcher: Assistant Professor Brendan M. Cunningham

Sponsor: Naval Academy Research Council (NARC)

This research investigated a stylized principal-agent model of firms in higher education. The model incorporates information asymmetries over the actions chosen by administrators, as the agents of colleges and universities. The model predicts insufficient monitoring of administrators by trustees and, consequently, shirking as a direct result of the non-profit status under which universities operate. It is shown that faculty will serve as "delegated monitors" given the proper incentives. This solution to the asymmetric information problem is most beneficial for the university when: 1) monitoring costs are lower and 2) administrators can not impose significant punishment costs on faculty. The practices of organized faculty participation in governance and tenure naturally achieve such ends. Empirical evidence from a sample of colleges and universities in the United States supports the model's key prediction that features of a faculty's employment have significant effects on a university's financial outcomes.

Revisiting AIDS as a ‘Rational Epidemic in the African Context

Researcher: Associate Professor Suzanne K. McCoskey

Sponsor: Naval Academy Research Council (NARC)

The research examined the assumptions of the ‘Rational Epidemic’ AIDS model when applied to developing countries in Africa, and concluded that the ‘Rational Epidemic’ (which presumes a model of universal choice and utility maximization) may not be applicable in a context where gender and economic empowerment play an important role in social relations.

Personality Preferences in Laboratory Economics Experiments

Researchers: Associate Professor Pamela M. Schmitt

Dr. Robert Shupp (Ball State University), Assistant Professor Kurtis J. Swope (USNA),

and Dr. John Cadigan (American University)

Sponsor: Naval Academy Research Council (NARC to PEM)

Student volunteers at the U.S. Naval Academy (USNA) participated in one of the following one-shot games: a dictator game, an ultimatum game, a trust game, or a prisoner’s dilemma game. Limited support was found for the importance of personality type for explaining subjects’ decisions. With controls for personality preferences, there was little evidence of behavioral differences between males and females. Furthermore, it was concluded that seniority breeds feelings of entitlement - seniors at USNA generally exhibited the least cooperative or other-regarding behavior.

Inflation, Interest Rates, and the Precautionary Demand for Money When Firms Face Liquidity Constraints

Researcher: Assistant Professor Katherine A. Smith

Sponsor: Naval Academy Research Council (NARC)

When firms have limited access to capital, they have an incentive to build-up retained earnings in order to self-finance rather than pay external financing fees or become liquidity constrained in the future. The plan is to develop a model where firms accumulate retained earnings by increasing investment in fixed capital and money holdings. Since money balances depreciate with the rate of inflation, how much firms invest in fixed capital versus money, depends crucially on inflation. Through its impact on demand for fixed capital, in a general equilibrium set-up, the inflation rate also alters the interest rate, consumption and consumer welfare, creating real effects. This precautionary motive for holding money leads to two important questions. First, if firms are holding money for precautionary reasons what is the optimal inflation rate? Second, in this environment how does monetary policy uncertainty (policy shocks) impact the business cycle? To answer these questions this paper will employ numerical methods to solve a decentralized dynamic general equilibrium model in which firms are able to hold cash and face external financing costs and constraints.

Personality and the Performance of Economics Majors

Researchers: Assistant Professor Kurtis J. Swope and Associate Professor Pamela M. Schmitt

Sponsor: Naval Academy Research Council (NARC to KJS)

Using the Myers-Briggs Type Indicator (MBTI) and a sample of 1011 graduates in the economics major at the U.S. Naval Academy (USNA), it was found that judging (J) types tend to have higher major GPA’s than perceiving (P) types. None of the other MBTI personality measures (extraversion (E) / introversion (I), thinking (T) / feeling (F), or sensing (S) / intuition (N)) were statistically significant. Consistent with previous studies, evidence was found that sensing/judging (SJ) types tend to perform better than the other Keirsey-Bates (1984) temperament types. Age and gender were not significant predictors of GPA once we controlled for SAT scores, but grades of male minority students in the economics major at USNA were lower than those of male non-minorities, even with the added controls.

An Analysis of South Africa's Value Added Tax

Researchers: Professor Karen E. Thierfelder, Delfin Go (World Bank), Marna Kearney (University of Pretoria), and Sherman Robinson (University of Sussex)

A value added tax (VAT) was introduced in South Africa in 1991 to replace the general sales tax (GST). Initially there were some questions on the ability of VAT to replace GST as a revenue source for the government. However, the overall performance of the VAT, as a revenue generator seems satisfactory; in 2002 the government stated that the VAT is a dependable and broad-based revenue source.

The VAT in South Africa is administered with a rebate for intermediate input use. Retail sellers pay the statutory rate times the value of output minus the VAT payments paid by the intermediate inputs used in production. In this paper, the effect South Africa's VAT has on welfare was evaluated. A computable general equilibrium (CGE) model with detailed specifications of South Africa's tax system was used. First, the effects of removing the VAT and replacing the revenue by a proportional increase in direct taxes were described. Then the effect alternative statutory rates have on the regressiveness of the VAT were considered.

Independent Research

Credible Criminal Enforcement

Researchers: Associate Professor Matthew J. Baker and Thomas J. Miceli (University of Connecticut)

Economic models of crime and punishment implicitly assume that the government can commit to the fines, sentences, and apprehension rates it has chosen. This research studies the government's problem when credibility is an issue. It was found that several of the standard predictions of the economic model of crime and punishment are robust to commitment, but that credibility may in some cases result in lower apprehension rates, and hence a higher crime rate, compared to the static version of the model.

The Customary Gender Division of Labor

Researchers: Associate Professor Matthew J. Baker and Joyce Jacobsen (Wesleyan University)

A customary gender division of labor is one in which women and men are directed towards certain tasks and/or explicitly prohibited from performing others. An explanation as to why the gender division of labor is so often enforced by custom is offered, and why customary gender divisions of labor generally involve both direction and prohibition. The model in this study considers both problems in choice of specialty and human capital acquisition. It is shown that wasteful behavior may emerge due to strategic incentives in career choice and human capital acquisition, and that both problems may be mitigated through the customary gender division of labor. It was found, however, that a gender division of labor is not Pareto-improving; one gender is made worse off. Both the distributional effects and welfare gains to a customary gender division of labor decrease as opportunities to exchange in markets increase.

An Economic Theory of Mortgage Redemption

Researchers: Associate Professor Matthew J. Baker, Thomas J. Miceli (University of Connecticut) and C. F. Sirmans

Redemption laws give mortgagors the right to redeem their property following default for a statutorily set period of time. This paper develops a theory that explains redemption periods as protecting landowners against the loss of non-transferable values associated with their land. A longer redemption period reduces the risk that this value will be lost but also increases the likelihood of default. The optimal redemption period balances these effects. Empirical analysis of cross-state data from 1920 provides evidence for these factors, in combination with political considerations, in explaining the passage of redemption laws.

Human Capital and Hold-ups in Indigenous Societies: The Role of Customs and the Market

Researcher: Associate Professor Matthew J. Baker

This research investigated the application of some simple models of contracting, bargaining, and human capital acquisition which can be employed to understand cross cultural variation in the form and nature of institutions governing land inheritance, marital residence, and the gender division of labor.

Output-sharing in Hunter-Gatherer Society and Optimal Resource Use Incentives

Researchers: Associate Professor Matthew J. Baker and Assistant Professor Kurtis J. Swope

This research evaluated major theories of sharing in Hunter-Gatherer Societies, and concludes that no existing theory of sharing explains the nature of sharing very well. A theory is developed that is based on the idea that sharing, by manipulating individual production incentives, functions as a resource management device when access to resources is unrestricted. It is shown that our theory of sharing is able to explain several aspects of sharing in hunter-gatherer societies that are not well-explained by existing theory.

Post-marital Residence in Indigenous Society

Researchers: Associate Professor Matthew J. Baker and Joyce Jacobsen (Wesleyan University)

In pre-modern societies the residence of a newly-wedded couple is often decided by custom. While researchers have analyzed factors leading to particular post-marital residence patterns, no one has explained why a society should have a customary rule in the first place. The theory brought forth in this paper stems from contracting problems created by the nature of pre-marriage human capital investments. It is argued that a fixed post-marital residence rule may solve a hold-up problem by specifying marriage terms and limiting possibilities for renegotiation; the trade-off is the rule may prohibit beneficial renegotiation of post-marital location. Alternative residence rules (or lack thereof) are compared under different degrees of location specificity of human capital and environmental uncertainty. The theoretical results are applied to Murdock's (1967) 862-society data set, augmented with climate data. There was found some predictive ability in variables related to outside options, control over the environment, and potential degree of social control.

Same Story, Different Channel? Competition and Diversity in Broadcast Television News

Researchers: Assistant Professor Brendan M. Cunningham
and Peter Alexander (Federal Communications Commission)

Consumers derive uncertain utility from media output, in particular news. Therefore, it was suggested that consumer welfare is enhanced by the existence of diversity in news output and that diversity of news output is related to market structure. Two novel databases were employed measuring broadcast news content at the local and national levels in order to quantify news diversity, and found evidence that measures of market structure among broadcast media firms were a statistically significant determinant of diversity, conditional upon a variety of demographic and economic determinants. Evidence was also presented that a broader indicator of market structure, capturing the level of competition from cable programming, displays a positive, significant, and robust relationship with diversity.

The Earnings of Tied-Migrant Males: The Case of Military Husbands

Researchers: Professor Roger D. Little and Dr. John J. Hisnanick

Prior empirical research on the earnings losses associated with being a tied-mover has largely focused on the working wives of servicemen. Over the last couple of decades, increases in the number of women serving in the armed forces has now made it feasible to study a group of male tied-movers, the husbands of servicewomen. Using data from the 2000 U.S. Census it was possible to identify a sample of such men and compare their earnings to civilian husbands of working civilian wives. Military husbands earned 70 percent of what civilian husbands did. Working civilian wives

of servicemen earned 64 percent of what the working wives of working civilian husbands did. These findings suggest that the earnings effects of being a tied-mover are, largely, gender neutral.

**HIV-AIDS and the Labour Costs of Caregiving:
Evidence from South African Household Data**

Researchers: Associate Professor Suzanne K. McCoskey and
Dr. Frederick Booysen, Department of Economics and Centre for Health Systems Research and Development,
University of the Free State, Bloemfontein, South Africa.

The research in this project considered the impact of illness and HIV-AIDS on the labour participation of family members and potential caretakers.

**U.S.-Based NGOs in the Aid Community:
Friends or Foils in the Promotion of the ‘Washington Consensus’**

Researcher: Associate Professor Suzanne K. McCoskey

NGOs have played an increasingly important role in the humanitarian aid and economic development community. From the perspective of financial donation, when compared to other players in the aid community, NGOs have two potential advantages: (1) they can be more efficient than government or multinational funding sources; (2) they can provide a specific expression for private individuals and corporations who do not find their preferences reflected in governmental donation patterns. In this paper data on NGO activity and funding to ask whether NGOs engage in a conditional aid policy and whether public funding of NGOs has an impact on their activities.

Inequality, Personality, and the Demand for ‘Fair’ Outcomes

Researchers: Associate Professor Pamela M. Schmitt,
Assistant Professor Kurtis J. Swope and Dr. John Cadigan (American University)

A modified dictator game experiment was used to investigate subjects’ preferences for fairness. Motivated by recent theoretical research on inequality aversion (see Fehr and Schmidt (1999) and Bolton and Ockenfels (2000)), subjects were presented with several choices over alternative income distributions. It was found that subjects’ exhibit a downward-sloping demand for equality that is tempered both by altruism and an increase in the experimental stakes. Furthermore, individual’s personality characteristics (as measured by the Myers Briggs Type Indicator (MBTI)) have a statistically significant impact on subject’s decisions that are consistent with the theoretical underpinnings of the test instrument. It was found that subjects with an orientation to extraversion and preference for using feeling judgment are more likely to be concerned with the other participant’s payoffs. Also, females chose to implement equal payoff outcomes more often than males when unequal outcomes were disadvantageous to them.

Personality Preferences and Pre-Commitment: Behavioral Explanations in Ultimatum Games

Researchers: Associate Professor Pamela M. Schmitt,
Dr. Robert Shupp (Ball State University), Assistant Professor Kurtis J. Swope (USNA),
and Midshipman Justin Mayer, USN (Class of 2003)

This research explored the role of personality type in explaining economic behavior. Volunteers drawn from the student body at the U.S. Naval Academy (USNA) were used to test for correlations between dominant personality characteristics, as measured by the widely used Myers-Briggs type indicator (MBTI), and behavior in single-round ultimatum bargaining experiments. Using USNA students provided a unique opportunity to avoid the uncertain framing effects of administering a personality questionnaire either pre or post-experiment because all students completed the MBTI upon entrance to the Academy. Three experimental design details were noteworthy: (1) one variant requires responders to make a *nonbinding* pre-commitment rejection level prior to seeing the offer, (2) one variant requires

responders to make a *binding* pre-commitment rejection level, and (3) one variant includes a third person (or “hostage”) who makes no decision, but whose payment depends on the proposal being accepted. The results indicated that thinking (T) types make significantly lower offers than feeling (F) types, and that extraverted (E) types pre-commit to accepting significantly lower offers than introverted (I) types. Furthermore, offers were higher when proposers know that responders make a binding pre-commitment, but are not different when a hostage is present. Responders made lower pre-commitments when they were binding and when a hostage was present.

Power, Entitlement, and Distributive Justice: Experimental Evidence

Researchers: Associate Professor Pamela M. Schmitt and Assistant Professor Kurtis J. Swope (USNA),
Dr. John Cadigan (American University) and Dr. Robert Shupp (Ball State University)

In simple double-blind dictator experiments, systematically removing subjects’ levels of power and entitlement increases their choice of an income distribution generally consistent with Rawls (1971) concept of distributive justice, although choices are less unanimous and risk-averse than hypothesized.

Mergers with Quality Differentiated Goods

Researchers: Associate Professor Pamela M. Schmitt and Associate Professor Matthew J. Baker

The impact of merger was considered on the equilibrium price and quality of products. Consumer demand for both products depended not only on own price and quality, but also on the price and quality of the other product. Cases were considered in which firms produce gross complements and gross substitutes. In both cases, merger may lower or increase both product price and quality. When firms produce complements, merger may lower price and increase quality. It was found that there are situations under which merger between firms producing substitutes increases welfare. It was also found that merger may result in higher product quality but lower social welfare, or lower product quality but higher social welfare.

Costly External Financing and Firm Financing Patterns in an Equilibrium Model of the Business Cycle

Researcher: Assistant Professor Katherine A. Smith

Can costly external financing explain aggregate financing and investment patterns over the business cycle? This paper proposes an answer to this question by examining quantitative implications of a model where liquidity constraints and transaction costs make financing choices relevant to investment decisions. By creating a wedge between the three main sources of financing (retained earnings, external equity, and debt), these financial frictions generate a firm financing hierarchy. As the economy responds to technology shocks, the form and cost of financing fluctuates. The changing cost of capital, in turn, impacts the quantity of investment and the return on capital. In this manner, the model produces an endogenous pecking order of financing instruments that explains observed aggregate financing and investment patterns. In addition, the model partially explains observed asset returns.

Margin Calls, Trading Costs, and Asset Prices in Emerging Markets: The Financial Mechanics of the ‘Sudden Stop’ Phenomenon

Researchers: Assistant Professor Katherine A. Smith and Enrique Mendoza (University of Maryland)

“Sudden Stops” experienced during emerging markets crises are characterized by large reversals of capital inflows and the current account, deep recessions, and collapses in asset prices. This paper proposes an open-economy equilibrium asset-pricing model in which financial frictions cause Sudden Stops. Margin requirements impose a collateral constraint on foreign borrowing by domestic agents and trading costs distort asset trading by foreign securities firms. At equilibrium, margin constraints may or may not bind depending on portfolio decisions and equilibrium asset prices. If margin constraints do not bind, productivity shocks cause a moderate fall in consumption

and a widening current account deficit. If debt is high relative to asset holdings, the same productivity shocks trigger margin calls forcing domestic agents to fire-sell equity to foreign traders. This sets off a Fisherian asset-price deflation and subsequent rounds of margin calls. A current account reversal and a collapse in consumption occur when equity sales cannot prevent a sharp rise in net foreign assets.

On the Role of the Hostage in Ultimatum Games

Researchers: Assistant Professor Kurtis J. Swope, Associate Professor Pamela M. Schmitt (USNA)
and Dr. Robert Shupp (Ball State University)

This research examined offers and responses in a simple ultimatum bargaining experiment that includes a third, non-decision-making subject, or hostage, whose payoff is affected by the bargaining outcome. The payoff to the hostage when the offer is accepted is separate from the primary bargaining pie and varies from one-third to the entire pie (\$5, \$10, or \$15). All parties, including the hostage, receive no payoff for a rejection. The results demonstrate that while responders may behave altruistically towards a third, non-decision-making player, they are more concerned with their payoff relative to that of the proposer. It was also found that responders are more likely to reject an offer if the offer leaves them with an inequitable payoff relative to the hostage. Finally it was discovered that once we control for personality type, as measured by the Myers-Briggs test indicator (MBTI), offers appear to be unaffected by the presence of a hostage. One explanation for the unresponsiveness of offers is that the incentive to provide higher offers to counter the increased probability of rejection is offset by the proposer's own concern for equity vis-à-vis the hostage. Though not a direct test of the Fehr and Schmidt (1999) and Bolton and Ockenfels (2000) models, the results are qualitatively consistent with their predictions (to the extent that responders are more likely to reject).

Personality Preferences and Pre-commitment: Behavioral Explanations in Ultimatum Games

Researchers: Assistant Professor Kurtis J. Swope, Associate Professor Pamela M. Schmitt (USNA),
Dr. Robert Shupp (Ball State University) and Midshipman Justin Mayer, USN (Class of 2003)

This project used responder pre-commitment and the Jungian theory of mental activity and psychological type, as measured by the widely-used Myers-Briggs Type Indicator (MBTI), to gain insight into subject behavior in a laboratory ultimatum bargaining experiment. Three experiment design details are noteworthy: (1) one design requires responders to make a *nonbinding* pre-commitment rejection level prior to seeing the offer, (2) one design requires responders to make a *binding* pre-commitment rejection level, and (3) one design includes a third person (or "hostage") who makes no decision, but whose payment depends on the proposal being accepted. In general, it was found behavior in the experiment to be consistent with hypotheses based on theoretical underpinnings of the MBTI and its descriptions of psychological type.

Modeling OECD Agricultural Programs for Trade Policy Analysis

Researchers: Professor Karen E. Thierfelder
Mary Burfisher (U.S. Department of Agriculture (USDA) and Sherman Robinson (University of Sussex)

In this project, some perspectives on how to model the agricultural programs of the members of the Organization for Economic Cooperation and Development (OECD) were offered. A multi-country computable general equilibrium (CGE) model was used, a class of applied economic model that has become an important tool for providing analysis to U.S. policy makers on critical trade issues. Agricultural programs were explicitly modeled and then looked at the incentives these programs have on behavior. For example, the model included fixed producer price floors, export subsidies that vary with changes in the relative prices of domestic and world prices, fixed household income transfers, and land set asides. This treatment differs from the "standard" representation of farm programs as ad valorem subsidy equivalents. In this paper, it was shown that the standard approach not only overstates the welfare effects of global agricultural reform, but also yields differences in magnitude and even in sign with respect to farm program costs, trade, and short-run supply response. For policy analysis, sound analysis of budget implications is arguably at least as important as welfare impacts. The findings suggested the usefulness of structural models in tracing the effects of policy shocks on supply, demand, budget costs, and welfare, when farm programs are realistically modeled.

The Impact of Switching Production to Bioenergy Crops: The Switchgrass Example

Researchers: Professor Karen E. Thierfelder,
Scott McDonald (University of Sheffield) and Sherman Robinson (University of Sussex)

This project reports the results from simulations that evaluate the general equilibrium effects of substituting switchgrass, a biomass, for crude oil in USA petroleum production. The new production process is less efficient and USA GDP declines slightly. As switchgrass production expands, USA agriculture contracts and the world price of cereals increases. The world price of crude oil falls as USA import demand declines. The net effect of the price and income changes is a general decline in economic welfare. Moreover, the declines in welfare are proportionately greater for developing countries who produce small quantities of agricultural commodities whose prices increase.

A SAM Based CGE Model Using GTAP Data

Researchers: Professor Karen E. Thierfelder,
Scott McDonald (University of Sheffield) and Sherman Robinson (University of Sussex)

This work provides a technical description of a global computable general equilibrium (CGE) model that is calibrated from a Social Accounting Matrix (SAM) representation of the Global Trade Analysis Project (GTAP) database. A distinctive feature of the model is the treatment of nominal and real exchange rates and hence the specification of multiple numeraire.

Deriving a Global Social Accounting Matrix from GTAP version 5 and 6 Data

Researchers: Professor Karen E. Thierfelder and Scott McDonald (University of Sheffield)

This project reports a method for converting version 5 of the GTAP database into a global SAM that is stored in GAMS data exchange (GDX) format. The focus of attention is on the generation of a SAM representation of the GTAP database that is fully consistent with the GTAP model, as such the resultant SAM can be readily used to calibrate a version of the GTAP model that has been coded in GAMS. This is supplemented with a brief discussion of how a variety of alternative SAM representations can be derived from the SAM representation of the GTAP global SAM and some comments on possible developments of the database that may enrich the representation of global economic transactions captured by the GTAP database.

This work is the first step in developing a global trade model that is based on GTAP data and programmed in GAMS; it will provide a more flexible model for policy analysis. It has been published as a technical paper on the Global Trade Analysis Project (GTAP) website

Measuring the Effects of New Regionalism

Researchers: Professor Karen E. Thierfelder
Mary Burfisher (U.S. Department of Agriculture (USDA) and Sherman Robinson (University of Sussex)

The objective of this investigation was to review the major elements of the economics debate on new regionalism. First, a brief overview of the characteristics of old and new regionalism was provided. Recent trends in the types of RTAs being formed were then described, focusing on delineating the elements of deep integration and the links between developed and developing countries that represent the main distinctions between new and old regionalism. The practical challenges to regional integration were also discussed, particularly the inclusion of sensitive sectors like agriculture. The use of old trade theory to evaluate new regionalism and empirical work in this tradition was then reviewed. Next, studies using new trade theory to analyze new regionalism were considered. It was concluded that progress in analyzing current and potential RTAs must move beyond the limited framework of old trade theory. Finally, some important knowledge gaps were identified, both theoretical and empirical, that should be the focus of future work.

The Effects of Domestic Agricultural Reforms and Market Access on Trade and Production in Less Developed Countries

Researchers: Professor Karen E. Thierfelder

Mary Burfisher (U.S. Department of Agriculture (USDA) and Sherman Robinson (University of Sussex)

Developing countries assert that they cannot compete in global agricultural markets with developed countries that receive domestic agricultural support. Concerns about agricultural subsidies derailed the recent round of WTO talks in Cancun, held in September 2003. In this paper, the effects of OECD were evaluated, particularly U.S., domestic support on global trade patterns. The effects of market access were also considered, noting that developing countries maintain high tariffs in agriculture. It was found that OECD domestic reforms hurt the net food importing developing countries; when developed countries remove domestic support, the world price of agricultural products increases. However, it was also found that when all countries remove tariffs in agriculture, in addition to domestic reform, developing countries' imports and exports of agriculture increase. This result suggests that market access is more important than domestic reforms for developing countries. Furthermore, market access among developing countries is an important source of the gains.

Midshipman Research Course Projects

The Effect of International Capital Flows on Economic Development in LDC's

Researcher: Midshipman 1/C Thomas J. Kelly, USN

Adviser: Assistant Professor Katherine A. Smith

Foreign direct investment, private equity investment and private bond investment are theorized to be engines of growth. These external capital flows lower the cost of capital, causing increased investment and simultaneously promoting the diffusion of technological knowledge throughout the economy. The validity of this assertion was tested to determine whether and to what extent these external capital flows augment developing economies using cross section analysis of 88 countries. It was tested whether these flows have any statistically significant impact on income, quality of life (as measured by the Human Development Index), and income inequality (as measured by the GINI coefficient). In each of the regressions it was attempted to account for absorptive capacity by interacting variables designed to measure financial development. Overall there exists a strong, positive link between foreign direct investment and development. There was found a more ambiguous relationship between portfolio flows and development.

Interactions between Federal Reserve Policy and the Stock Market

Researcher: Midshipman 1/C Ryan Osgood, USN

Adviser: Assistant Professor Brendan M. Cunningham

This project delved further into the relationship between equity markets and Federal Reserve policy. This relationship was analyzed by measuring the magnitude of the Federal Reserve's response to stock market fluctuations relative to responses to inflation and output variations. In turn, this paper then attempted to measure the reaction of the stock market to monetary policy relative to its response to variations in inflation and output.

Publications

Journal (Refereed) Manuscripts

BAKER, Matthew J., Assistant Professor, and Miceli, Thomas J., "The Old Ball Game: The Organization of 19th Century Professional Base Ball Clubs," *Journal of Sports Economics* 5(3), August 2004, pp. 115-130.

The first professional baseball clubs came in two varieties: stock clubs, which paid their players fixed wages, and player cooperatives, in which players shared the proceeds after expenses. It is argued that stock clubs were formed with players of known ability, while co-ops were formed with players of unknown ability. Although residual claimancy served to screen out players of inferior ability in co-ops, the process was imperfect due to the team production problem. Based on this argument, it is suggested that co-ops functioned as an early minor league system where untried players could seek to prove themselves and eventually move up to wage teams. Empirical analysis of data on player performance and experience in early professional base ball provides support for the theory.

BAKER, Matthew J., Assistant Professor, and Miceli, Thomas J., "Optimal Land Inheritance Rules: Theory and Cross-Cultural Evidence," *Journal of Economic Behavior and Organization*, 56(2005), pp. 77-102. (also forthcoming in *European Journal of Law and Economics*).

This paper developed a general theory of land inheritance rules. The paper distinguishes between two classes of rules: those that allow a testator discretion in disposing of his land (like a best-qualified rule), and those that constrain his choice (like primogeniture). The primary benefit of the latter is to prevent rent seeking by heirs, but the cost is that testators cannot make use of information about the relative abilities of his heirs to manage the land. The impact of scale economies in land use are also accounted for. The paper concludes by offering some empirical tests of the model using a cross-cultural sample of societies.

CUNNINGHAM, Brendan M., Assistant Professor, Alexander, P. J., and Adilov, N., "Peer-to-Peer File Sharing Communities," *Information Economics and Policy*, 16 (2), July 2004, pp. 197-213.

Peer-to-peer file sharing communities present a paradox for standard public goods theory, which predicts that free-riding should preclude the success of the community. A model is presented in which users choose their level of sharing, downloading, and listening in the presence of sharing costs and endogenous downloading costs. In this model, sharing emerges endogenously, largely as a byproduct of users' attempts to reduce own-costs.

CUNNINGHAM, Brendan M., Assistant Professor, and Alexander, P. J., "A Theory of Broadcast Media Concentration and Commercial Advertising," *Journal of Public Economic Theory*, 6 (4), October 2004, pp. 557-575.

This paper analyzes a model in which the interaction of broadcasters, advertisers, and consumers determines the level of non-advertising broadcasting produced and consumed. The main finding is that an increase in concentration in broadcast media industries may lead to a decrease in the total amount of non-advertising broadcasting. The strength of this inverse relationship depends, in part, on the behavioral response of consumers to changes in advertising intensities. The paper also presents numerical general equilibrium solutions to the model and demonstrates a positive relationship between consumer welfare and the number of firms in the broadcast industry.

CUNNINGHAM, Brendan M., Assistant Professor, and Alexander, P. J., "Diversity in Broadcast Television: An Empirical Study of Local News," *International Journal of Media Management*, 6 (3&4), December 2004, pp. 176-183.

The relation between the structure of a market and the diversity of its product offering has been extensively explored by theorists. Two measures of diversity were developed and the content of local news for 60 stations and 20 designated market areas (DMAs) in the United States were explored. Using a relative station-level diversity metric, ordinary least squares (OLS) estimates imply that relative diversity of local news content decreases as market concentration increases. This result is not, however, robust to an instrumental variables specification. Using a total market diversity metric, the Herfindahl–Hirschman Index (HHI) is significant in OLS and robust to instrumental variable estimation. Because the total market diversity metric is arguably superior to the incremental metric as a measure of overall diversity, this result is useful - it suggests that the total diversity of local news content within a DMA is sensitive to the level of concentration.

CUNNINGHAM, Brendan M., Assistant Professor, and Alexander, P. J., "Public and Private Decision Making: The Value of Diversity in Broadcast Television News," *Media Diversity and Localism: Meaning and Metrics*, Philip M. Napoli (Ed.), Laurence Earlbaum Associates, Mahwah, NJ, forthcoming.

The Federal Communications Commission (FCC) has a statutory obligation to pursue the public interest through its regulation of broadcast media. The FCC's interpretation of the public interest has led it to pursue three policy objectives: competition, localism, and diversity. This policy triad reflects both efficiency and antitrust considerations and concerns about the social, political, and cultural effects of media. Therefore, in addition to pursuing competition in broadcast markets through quasi-antitrust analysis, the FCC considers the additional elements of diversity and localism. These elements can add considerable nuance and complexity, especially in light of possible interactions between competition and media content. The nature of diversity was explored in broadcast television and a then large database of actual television news stories was examined. It was suggested that diversity in broadcast output, in particular news, may be an essential input into a healthy democratic process, although the provision of diverse news is not sufficient to guarantee the robustness of a democratic system.

FREDLAND, J. Eric, "Outsourcing Military Force: A Transactions Cost Perspective on the Role of Military Companies", *Defense and Peace Economics*, Vol. 15, no. 3, June 2004, pp 205-219.

Since the mid-1990's, the operations of private, for profit, military companies have been the subject of increased political and media scrutiny. Firms in this industry provide both combat and support functions to sovereign governments. In this paper, the current and potential future role of these companies is examined from the perspective of transactions cost economics. The transactions cost approach suggests that inevitable contractual hazards sharply limit the combat/combat support role of these companies, despite substantial potential cost saving, even for poor countries with weak governments. However, there is a growing market, even in developed countries, for private provision of training and support.

SCHMITT, Pamela M., Associate Professor, Assistant Professor Kurtis J. Swope and Robert Shupp, "Multi-Period Rent-Seeking Contests with Carryover: Theory and Experimental Evidence," *Economics of Governance*, 5 (3), 2004, 187-211.

The majority of theoretical and experimental research stemming from Tullock's (1980) model of rent-seeking considered static, single period contests. This paper contributed to a growing body of research on rent-seeking games by developing and experimentally testing a model in which a player's effort affects the probability of winning a contest in both the current and future periods. Theory predicts that rent-seeking effort will be shifted forward from later to earlier periods, with no change in overall rent-seeking expenditures relative to the static contest. Experimental results indicated a significant shift forward when "carry-over" is allowed and that the amount shifted was directly related to the carry-over rate. Finally, although experimental expenditures were greater than the Nash equilibrium predictions, overall rent-seeking effort in the carry-over contests are lower than in similar static contests.

SCHMITT, Pamela M., Associate Professor, SWOPE, Kurtis J., Assistant Professor and Shupp, Robert, "On the Role of the Hostage in Ultimatum Bargaining Games", *Journal of Socio-Economics*, forthcoming.

This paper examined behavior in a three-player ultimatum game. The payoff to the non-decision-making player (the "hostage") was separate from the bargaining pie and varied. It was found that while responders may behave altruistically towards the hostage, they were more likely to reject a given offer if it left them with a more inequitable payoff relative to the hostage. Offers appeared to be unaffected by the presence of a hostage. Though not a direct test of the Fehr and Schmidt (1999) and Bolton and Ockenfels (2000) models, the results were qualitatively consistent with their predictions.

SMITH, Katherine A., Assistant Professor and Mendoza, Enrique, "Quantitative Implications of a Debt-Deflation Theory of Sudden Stops and Asset Prices", *Journal of International Economics*, forthcoming.

"Sudden Stops" experienced during emerging markets crises are characterized by large reversals of capital inflows and the current account, deep recessions, and collapses in asset prices. This paper proposed an open-economy equilibrium asset-pricing model in which financial frictions cause Sudden Stops. Margin requirements impose a collateral constraint on foreign borrowing by domestic agents and trading costs distort asset trading by foreign securities firms. At equilibrium, margin constraints may or may not bind depending on portfolio decisions and equilibrium asset prices. If margin constraints do not bind, productivity shocks cause a moderate fall in consumption and a widening current account deficit. If debt is high relative to asset holdings, the same productivity shocks trigger margin calls forcing domestic agents to fire-sell equity to foreign traders. This sets off a Fisherian asset-price deflation and subsequent rounds of margin calls. A current account reversal and a collapse in consumption occur when equity sales cannot prevent a sharp rise in net foreign assets.

SWOPE, Kurtis J., Assistant Professor, and Eckhard, Janeba, "Taxes or Fees? The Political Economy of Providing Excludable Public Goods", *Journal of Public Economics Theory*, forthcoming.

This paper provides a positive analysis of public provision of excludable public goods financed by uniform taxes or fees. Individuals differing in preferences decide, using majority rule, the provision level and financing instrument. The decisive voter has median preferences in a tax regime, but generally has above median preferences in a fee regime. Numerical solutions indicate that populations with uniform or left-skewed distributions of preferences choose taxes while a majority coalition of high and low preference individuals prefer fees when preferences are sufficiently right-skewed. Public good provision and welfare under fees exceeds that under taxes in the latter case.

Presentations at Professional Meetings and Conferences

BAKER, Matthew J., Assistant Professor, "Technological Progress, Population Growth, Property Rights, and the Transition to Agriculture," University of Ottawa, Canada, 9 April 2005.

BAKER, Matthew J., Assistant Professor, "Technological Progress, Population Growth, Property Rights, and the Transition to Agriculture," Tilburg University, Netherlands, 19 April 2005.

BAKER, Matthew J., Assistant Professor, and Jacobsen, J., "Savings, Capital Markets, Cultural Transition, and the Treatment of the Elderly," University of Connecticut/Wesleyan University Joint Research Conference, 5 May 2005.

CUNNINGHAM, Brendan M., Assistant Professor, "Court Decisions and Equity Markets: Estimating the Value of Copyright Protection," *Society for Economic Research on Copyright Issues Annual Congress*, Turin, Italy, 8-9 July 2004.

CUNNINGHAM, Brendan M., Assistant Professor, "Court Decisions and Equity Markets: Estimating the Value of Copyright Protection," *Center for the Analysis of Property Rights and Innovation*, University of Texas – Dallas, 19 January 2005.

FREDLAND, John E., Professor, "Outsourcing Military Force," University of Pretoria - South Africa, Economics Department, 15 July 2004.

McCOSKEY, Suzanne K., Associate Professor, "U.S. - Based NGOs in the Aid Community: Friends or Foils in the Promotion of the Conditional Aid Agenda?" HWWA Conference: *The Political Economy of Aid*, Hamburg, Germany, 9 December 2004.

McCOSKEY, Suzanne K., Associate Professor, "The Economics of HIV-AIDS," U.S. State Department, Foreign Service Institute, Arlington, VA 30 March 2005.

SCHMITT, Pamela M., Associate Professor, SWOPE, Kurtis J., and Cadigan, John, "Inequality, Personality, and the Demand for Fair Outcomes", Southern Economic Association Annual Meeting, New Orleans, LA, November 2004.

SWOPE, Kurtis J., Assistant Professor, SCHMITT, Pamela M., Associate Professor, Shupp, Robert, and Cadigan, John, "Personality in Laboratory Economics Experiments," Society for the Advancement of Behavioral Economics (SABE) Annual Meeting, Philadelphia, PA., July 2004.

SWOPE, Kurtis J., Assistant Professor, SCHMITT, Pamela M., Associate Professor, Shupp, Robert, and Cadigan, John, "Personality in Laboratory Economics Experiments," Southern Economic Association Annual Meeting, New Orleans, LA, November 2004.

THIERFELDER, Karen E., Professor, Go, Delfin, and Robinson, Sherman, "An Analysis of South Africa's Value Added Tax (VAT)," World Bank Africa Division Seminar Series, Washington, D.C., 23 March 2005.

THIERFELDER, Karen E., Professor, Go, Delfin, and Robinson, Sherman, "An Analysis of South Africa's Value Added Tax (VAT)," International Monetary Fund (IMF), Washington, D.C., 26 April 2005.

THIERFELDER, Karen E., Professor, McDonald, Scott and Robinson, Sherman, "The Impact of Switching Production to Bioenergy Crops: The Switchgrass Example," 8th Annual Conference on Global Economic Analysis, Lubeck Germany, 9 June 2005.