Division of Humanities and Social Studies

COL Kenneth A. Inman, Jr., USMC
Director

Economics Department

Professor William R. Bowman
Chair

Faculty members in the Economics Department were actively engaged in research on a broad range of subjects in 2001-2002. 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.

Associate Professor Karen E. Thierfelder, who was once again the departmental nominee for the Naval Academy Research Excellence Award, continued to develop and apply computable general equilibrium models to international trade flows. Working with several different teams of researchers, she was involved in the publication of six papers, eleven conference presentations and continued work on eleven research projects in various stages of completion. Associate Professor Suzanne McCoskey, who was promoted from Assistant Professor this past year, also has a number of research projects and presentations dealing in econometrics as well as economic issues involving Sub-Saharan Africa. Many of the department's junior faculty began to focus on specific areas of research resulting in publication in some of the nation's more prestigious economic journals. Other faculty professors have utilized their extensive research to help benefit the U.S. Navy. Professor Bowman's work on various military manpower topics has had a direct impact on helping provide useful information to the Navy's Personnel Command.

Professor Francis McDonald served as the Crowe Chair for his second year.

Within the Economics Department, students majoring in Economics also distinguished themselves. The Frederick L. Sawyer Prize, awarded to the best senior research paper by a graduating Economics major, was won by Midshipman 1/C Jacob K. Fawcett for his paper "Has Medical Marijuana Led to an Increase in Illicit Drug Use?" written under the direction of Associate Professor Thomas Zak.

Sponsored Research

Rules of Engagement – An Economics Theory

Researcher: Assistant Professor Matthew J. Baker
Sponsor: Naval Academy Research Council (NARC)

The object of this paper is to apply a model of bargaining and the breakdown of bargaining to the study of the forces leading to conflict. The paper seeks to explain when and why parties can set up specific types of rules to govern bargaining and conflict. The research is essentially an application of the vast literature on settlement and litigation in law and economics and is currently being expanded and developed into a project on Punitive Damages, with two noted scholars in Law and Economics.

The Impact of Faculty on Academe

Researcher: Assistant Professor Brendan J. Cunningham
Sponsor: Naval Academy Research Council (NARC)

The higher education industry is a particularly unique sector in the American economy. Of note is the prevalence of two distinguishing features amongst suppliers of tertiary education. First, colleges and universities are primarily structured as non-profit enterprises. Second, under relatively loose conditions a subset of the employees of these firms are guaranteed lifetime employment: after successfully completing their probationary period, faculty are granted tenure. Recent research suggests that the simultaneous occurrence of they two features may not be coincidental. Additionally, this research postulates that tenure may critically affect the efficiency with which institutions of higher education operate.

The Long and Short of It: Price and Quality Dynamics in Airline Markets

Researcher: Assistant Professor Pamela M. Schmitt
Sponsor: Naval Academy Research Council (NARC)

This paper considers the short-run and long-run effects of competition on prices and quality in city-pair airline markets. Short-run competition is examined through entry and exit decisions in the market, and long-run competition is examined through the number of firms in the market. The empirical evidence indicates a pro-competitive short-run effect on price, the percentage of flights canceled, and the percentage of flights arriving. The pro-competitive effect is only sustained in the long-run for the percentage of flights canceled. In the long-run price increases with increases in competition, suggesting efficiency gains.

Do Non-Profit Organizations Exhibit Economies of Scale?

Researcher: Assistant Professor Kurtis J. Swope
Sponsor: Naval Academy Research Council (NARC)

This research investigates if non-profit organizations (NPOs) exhibit economies of scale. That is, does the average cost of production of NPOs decrease as the scale of their output increases? To answer this question we must: (i) define what the relevant output and costs of a non-profit organization are, and (ii) determine based on NPO financial reports whether these costs decrease on average as the scale of the activities of an NPO increases.

Genetically Modified Food, Global Trade Patterns, and Developing Countries

Researchers: Chantal Nielsen (Danish Institute of Agricultural and Research Economics),
Associate Professor Karen E. Thierfelder,
and Sherman Robinson (International Food Policy Research Institute)
Sponsor: International Food Policy Research Institute (IFPRI)

This paper analyzed price, production, and trade consequences of changing consumer preferences regarding the use of genetically modified organisms (GMOs) in food production. The analytical framework used was an empirical global general equilibrium model, in which the entire food processing chain—from primary crops through livestock feed to processed products - was segregated into genetically modified (GM) and non-GM lines of production. This model was used to analyze the implications of widespread use of genetically engineered crops in some regions whilst consumers in Western Europe and High-income Asia adopted a critical attitude toward GM foods. Two different representations on consumer preference changes were illustrated: (1) a change in price sensitivity: i.e. consumers demand is less sensitive to a decline in the price of GM foods relative to non-GM varieties, and (2) a structural demand shift: for a given price ratio consumers simply demand less of the GM variety relative to the non-GM variety.

This analysis found that developing countries adjusted their trade patterns in response to preference changes in important trading partner countries. Non-GM varieties were diverted to GM-critical regions while GM varieties were sold to countries in which consumers are not sensitive to GM content. Furthermore, the development of segregated GM and non-GM food created a potential niche market for producers if the non-GM characteristics can in fact be preserved and verified throughout the marketing system at reasonable costs.

This paper has been published as an IFPRI, Trade and Macroeconomics discussion paper. Entitled, "Leveraging Trade and Global Market Integration," it was presented at the World Bank, July 23-24, 2001. It will be published as a chapter in a book in the World Bank's "Directions in Development Series."

Trade and Tradability: Exports, Imports, and Factor Markets in the Salter-Swan Model

Researchers: Associate Professor Karen E. Thierfelder
and Sherman Robinson (International Food Policy Research Institute)
Sponsor: International Food Policy Research Institute (IFPRI)

The Salter-Swan model was extended to include both factor markets and semi-traded goods. In this extended model, changes in relative factor prices depend on changes in world commodity prices, factor endowments, and the trade balance. In contrast, only changes in world commodity prices can affect factor prices in the neoclassical trade model. The inclusion of semi-traded goods weakens the magnification effect in both the Stolper-Samuelson and Rybczynski theorems. When imports and domestic goods are poor substitutes, a characteristic of some commodities in developing countries, the sign of the Stolper-Samuelson theorem is reversed.

Trade and Tradability: The Effects of an FTAA on Agricultural Trade in the Western Hemisphere

Researchers: Mary E. Burfisher (U.S. Department of Agriculture, USDA),
Sherman Robinson (International Food Policy Research Institute)
and Associate Professor Karen E. Thierfelder
Sponsor: International Food Policy Research Institute (IFPRI)

Trade liberalization in an FTAA will have relatively small effects on agricultural trade in the Western Hemisphere. If the FTAA achieves the full elimination of tariffs, annual agricultural trade among FTAA participants will increase by about $3 billion. U.S. annual agricultural exports to and imports from the Hemisphere will both increase by about $1 billion. The relatively small impacts of an FTAA reflect that much of the agricultural trade in the region has already been liberalized by unilateral and sub-regional trade reforms implemented over the past decade, including NAFTA and the Common Market of the South (MERCOSUR). The main benefits to the Hemisphere of advancing to an FTAA will be to lock in existing preferences, to help accelerate economic growth in the region based on open market economies, and to integrate the large number of sub-regional pacts into a single Hemispheric trading system. The benefits to FTAA members from further reform in the World Trade Organization (WTO) are potentially much larger than their gains from full tariff elimination in the FTAA – suggesting that there can be significant benefits for its members if the FTAA serves as a building block for multilateral reforms.

An Analysis of the Skilled-Unskilled Wage Gap Using a General Equilibrium Trade Model

Researchers: Associate Professor Karen E. Thierfelder
and Sherman Robinson (International Food Policy Research Institute)
Sponsor: International Food Policy Research Institute (IFPRI)

In this paper a general equilibrium trade model was presented with non-traded goods which are imperfect substitutes with traded goods. This theoretical model underlied a large class of single- and multi-country, applied, computable general equilibrium (CGE) trade models. Using a simple theoretical framework with one country, two activities, two factors, and three commodities, a model was presented that could capture many of the differences between the approaches of trade and labor economists. Jones' (1974) model was extended to include the links between product markets and factor markets in a model with "semi-tradables." The model also includes the balance of trade and the real exchange rate, which supports analysis of how changes in the trade balance affect factor markets. In contrast to the factor content approach, the paper showed that increases in the trade deficit should reduce the gap between skilled and unskilled wages in a developed country such as the U.S.

After describing the links between trade and wages in our theoretical model, a CGE trade model calibrated to the U.S. economy in 1982 was then used to analyze the links between changes in relative wages and changes in trade, technology, factor supplies and the trade balance. The model was used for two applications. First, the importance of trade was shown in affecting relative wages by simulating the counterfactual: what would U.S. wages be in the absence of trade with developing countries? Second, the model was used to decompose the impact on relative wages on changes in international prices, factor supplies, and the trade balance observed in the 1980s.

The Global Impacts of Farm Policy Reforms in Organization for Economic Cooperation and Development Countries

Researchers: Mary E. Burfisher (U.S. Department of Agriculture, USDA),
Sherman Robinson (International Food Policy Research Institute)
and Associate Professor Karen E. Thierfelder
Sponsor: International Food Policy Research Institute (IFPRI)

Multilateral negotiations on agricultural trade liberalization will require World Trade Organization (WTO) members, including Organization for Economic Cooperation and Development (OECD) countries, to improve market access and to reduce domestic support and export subsidies. In this paper, the effects of agricultural policy reform by three OECD members who are major economies in world agricultural trade–the United States, the European Union (EU), and Japan were analyzed. A multi-country computable general equilibrium (CGE) model with detailed treatment of the agricultural trade and domestic policies in OECD countries was used. Our framework took into account the differences in production impacts among traditional, commodity-linked production subsidies and other types of domestic subsidies that recently have become more important in countries' farm support programs. We captured the operational features of farm support programs, allowing some domestic subsidies to insulate producers from market price changes while treating other payments as fixed, lump sum subsidies. When domestic policies insulate producers from market price signals, they dampen production responses to market access reforms in the domestic economy and to reforms in both partner countries. We found that this linkage leads to dramatic reductions in a country's farm program costs when another country eliminates its support unilaterally. Given the links among domestic support programs in OECD countries, we also found that multilateral reform leads to smaller output adjustments than unilateral reform.

Agricultural Policy Reforms in Developed Countries, Global Trade, and Developing Countries

Researchers: Mary E. Burfisher (U.S. Department of Agriculture, USDA),
Sherman Robinson (International Food Policy Research Institute)
and Associate Professor Karen E. Thierfelder
Sponsor: International Food Policy Research Institute (IFPRI)

Developing countries object to the high tariff barriers they face in developed markets and the extensive use of domestic support to agriculture in developed countries. These issues - market access and domestic support - are currently being negotiated at the World Trade Organization (WTO). In this paper we evaluated the effects of agricultural policy reforms in developed countries on global trade patterns. A multi-country computable general equilibrium (CGE) model with 16 countries/regions and 18 sectors was used. Since we were interested in agricultural reforms, we have detailed farm and food processing sectors. The rest of the sectors in the economy were included in two aggregate categories, services and manufacturing. We used a cluster analysis of food security to aggregate developing countries into two regions, the food insecure countries and the other, food exporting, developing countries. Each group reacted quite differently to changes in the world price of agricultural products. In the model we specified domestic agricultural policies in the Organization for Cooperation and Development (OECD) countries, using producer subsidy equivalent (PSE) data for policies in 2000. We modeled policy instruments as endogenous where applicable. For example, we represented the U.S. loan deficiency payments, Japan's deficiency payments for rice, and the EU's intervention price as a fixed producer price with endogenous farm program expenditure payments. Producers who participated in these programs are insulated from changes in market prices. We found that unilateral reform is more painful that multilateral reform in the OECD countries. This suggested that developing countries should pursue their goals of domestic reforms in a global setting, rather than through regional agreements. When OECD countries remove domestic support and eliminate agricultural tariffs, the world price of agricultural products increases. This hurts food insecure developing countries, but helps developing countries that export agriculture.

A Survey of Models that Describe Trade in Genetically Modified (GM) Crops

Researchers: Mary E. Burfisher (U.S. Department of Agriculture, USDA),
Sherman Robinson (International Food Policy Research Institute)
and Associate Professor Karen E. Thierfelder
Sponsor: International Food Policy Research Institute (IFPRI)

New advances in biotechnology have enhanced production of maize, soybeans, rice and cotton. Consumer reactions to the new technology have been mixed. Both the supply shock, from an increase in productivity or a reduction in input use, and the demand shock, which is determined by the consumer response to consuming genetically modified (GM) food, affect production, trade, and prices of GM foods. In this paper, we surveyed models that analyze the market effects of GM technology. The results depended on a number of important issues such as the cost of market segmentation and labeling, the nature of the productivity shock to producers of GM products, and the extent of the consumer's adverse reaction to GM products. One robust result from the work with global trade models was that world markets can adjust to the various scenarios, without generating extreme price differentials between GM and non-GM commodities or extreme changes in the pattern of world production and trade. Through market linkages, the benefits of the new technology tend to be spread widely, with adopters generally gaining more than non-adopters. In particular, developing countries will benefit if they can adopt the new technologies, and get mixed results if they are non-adopters.

Trade Liberalization and Regional Integration: The Search for Large Numbers

Researchers: Mary E. Burfisher (U.S. Department of Agriculture, USDA),
Sherman Robinson (International Food Policy Research Institute)
and Associate Professor Karen E. Thierfelder
Sponsor: International Food Policy Research Institute (IFPRI)

The debate over the impact of regional trade agreements (RTAs) on world welfare hinges upon (1) whether they are net trade creating or diverting and (2) whether they impede multilateral trade liberalization. Theoretical models are ambiguous on these issues. We summarized the insights from the vast body of empirical literature on multi-country computable general equilibrium (CGE) models which analyze RTAs. The empirical models overwhelmingly showed that aggregate trade creation dominates trade diversion. Indeed, in many cases, there was no absolute aggregate trade diversion from an RTA. The models also indicated that welfare for all members - both current and potential - increases when RTAs expand. There were even bigger welfare gains when models incorporated aspects of "new trade theory" such as increasing returns, imperfect competition, technology transfers, trade externalities, and dynamic effects such as links between trade liberalization, total factor productivity growth, and capital stock accumulation. We broadened the search for large numbers by suggesting an additional gain from RTAs. We conjecture that increases in intra-sectoral trade arise from the fact that an RTA provides an expanded secure market, and permits firms to pursue economies of fine specialization. This Smithian specialization in production is another source of efficiency gains.

Macroeconomic Shocks and Income Distribution in Mexico in the 1990s

Researchers: David Coady, Carolina Diaz-Bonilla, Samuel Morley, and Sherman Robinson
(International Food Policy Research Institute)
and Associate Professor Karen E. Thierfelder
Sponsor: International Food Policy Research Institute (IFPRI)

In the late 1990s, Mexico experienced severe macroeconomic shocks such as a devaluation, changes in foreign investment, and changes in migration. Its exports, particularly to the US, expanded dramatically during that period. We described the effects of macroeconomic shocks and export growth on income distribution using a computable general equilibrium (CGE) model of Mexico and data from the ENIGH Household Survey. We focused on the role of the informal labor market in the economy's adjustment. The informal labor market is a source of unskilled labor for the formal sector, allowing the formal sector to expand at fixed wages. When the economy contracts, the informal sector absorbs labor, reducing the number of workers who would otherwise be unemployed. Labor in the informal sector is less productive than labor in the formal sector and the commodities produced are imperfect substitutes in consumption of formal sector goods. The CGE model described the changes in demand for labor in the informal sector in response to the observed export growth or other macroeconomic shocks. The household survey data was then used to simulate the implications for income distribution.

Independent Research

An Equilibrium Conflict Model of Land Tenure in Hunter-Gatherer Societies

Researcher: Assistant Professor Matthew J. Baker

This paper is the second chapter of a dissertation and is a game-theoretical study of the conditions under which exclusive and exhaustive land ownership might emerge. The theory is applied in understanding the structure of land ownership among a variety of different hunter-gatherer societies.

Optimal Land Inheritance Rules

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

This paper describes the forces leading to different types of land inheritance rules (such as primogeniture), and describes the impact the onset of a market in land has on the efficacy of the rule. A cross-cultural sample of 862 different societies was used to assess the accuracy of the model. The paper is in the process of undergoing revisions requested by referees and the editor at the Journal of Economic Behavior and Organization.

The Old Ball Game: Organization of 19th Century Professional Baseball Clubs

Researchers: Assistant Professor Matthew J. Baker,
Thomas Miceli (University of Connecticut),
and Bill Ryczek (Colebrook Financial Company, Middletown, CT)

The paper is an economic explanation of the structure of baseball teams circa 1872. The issue of interest is that half of the teams at the time functioned as player-owned teams and compensated players using share contracts (stock clubs), while the other half functioned with non-playing owners who paid players a fixed wage. The paper explains why the stock club quickly replaced the share club as the dominant organizational form.

The Customary Sexual Division of Labor

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

This research studies the relationship between marriage, the land market, and the incentives parties to marriage have to specialize and learn specific tasks. The paper is a game-theoretical study of the conditions under which exclusive and exhaustive land ownership might emerge. This is done by developing and applying a theory in understanding the structure of land ownership among a variety of different hunter-gatherer societies.

Post-marital Residence in Indigenous Society

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

This research studies theoretically and empirically the economics of post-marital family location.The model is essentially one in which the planning advantages of a residence rule must be offset by the need for adaptation. The model is applied in explaining observed patterns in post-marital residence customs across societies.

Taylor Rules: What Happened to Private Banks?

Researchers: Assistant Professor Brendan J. Cunningham
and Anton Granik (Columbia University)

Positive research into Taylor Rules indicates that in the recent past the central bank in the United States may have been informally behaved in accordance with variants of Taylor's original rule. We note; however, that efforts to empirically fit these variants to past policy must account for a hitherto unacknowledged factor in the conduct of monetary policy: the soundness of the banking sector. Our results suggest that proxies for banker sector solvency are, amongst other variables, a reliable predictor of the path of monetary policy over the 1981-1994 period. Hence, if the conduct of monetary policy is formally bound to a rule which fails to take into account this factor then that adoption will represent a significant departure from recent management of monetary policy.

Peer-to-Peer File Sharing Communities

Researchers: Assistant Professor Brendan J. Cunningham,
Peter Alexander (Federal Communications Commission)
and Nodir Adilov (Cornell University)

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. We present a model in which users choose their level of sharing, downloading, and listening in the presence of sharing costs and endogenous downloading costs. In our model, sharing merges endogenously, largely as a byproduct of users' attempts to reduce own-costs.

A Theory of Broadcast Media Concentration and Commercial Advertising

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

This paper presents a positive model of broadcasters, advertisers, and consumers. We assume the advertising market is characterized by imperfect competition and demonstrate that increasing concentration in broadcast media industries may induce a reduction in the total amount of non-advertising broadcasting, which may have further implications for consumer welfare. We find that the extent of this reduction in non-advertising content is contingent, in part, on the behavioral response of viewers to an increase in the level of advertising. If the consumers' response to an increase in the level of advertising is strong, it is plausible that the fraction of broadcasting devoted to advertising may increase.

Outsourcing Military Force: An Economic Perspective On The Role Of Private Military Companies

Researcher: Professor Eric J. Fredland

In the 1990s, private companies have undertaken tasks that, in modern times, have been performed by national military forces. These tasks include training and support functions, and in some cases, actual combat. This research applied economic theory, particularly that relating to the economics of information, to examine the current and future role of these companies. The first work has resulted in a paper presented to the American Association of Behavioral and Social Sciences in February 2002.

Jigsaw Method in Macroeconomics: Scholarship of Teaching and Learning

Researcher: Professor Rae Jean B. Goodman

Within the context of cooperative learning groups, we showed how the jigsaw method is used for students to learn consumption, investment, and money demand theories. The results of a small study showed that students perform better on exam questions than those taught by lecture and that the students involved with using the jigsaw method preferred that approach to a traditional "chalk and talk" approach. The jigsaw procedure (Johnson, Johnson, Smith; Bartlett) is an alternative to student reading and faculty lecturing on a topic and provides the students with an opportunity to teach and learn material from peers. The procedure is to assign the same topics to all cooperative learning groups; to divide the material into unique parts, like a jigsaw puzzle, so that each member of the group has a “piece of the puzzle.” Each member studies the specific topic assigned, decides how to teach that material to the group, and then teaches the topic. Each student learns all of the topics with the teaching and assistance of the other group members.

The jigsaw procedure incorporates the essential elements of cooperative learning: positive interdependence, individual and group accountability, face-to-face interaction, teamwork skills and group processing. The results of using this method to teach consumption, investment and money demand theories are:

1. The class time allocated for the material is less than when presented by the professor in lecture format.
2. Students perform better on examination questions than when the material was presented in the lecture format.
3. Student response to the technique and the learning experience is positive.

The Impact of Misdiagnosing a Structural Break on Standard Unit Root Tests: Monte Carlo Results for Small Sample Size and Power

Researchers: E. Pretorius (University of Pretoria) and Associate Professor Suzanne K. McCoskey

As discussed by Perron (1989), a common problem when testing for unit roots is the presence of a structural break that has not been accounted for in the testing procedure. In such cases, unit root tests are biased to non-rejection of the null hypothesis of non-stationarity or in turn, biased toward rejection of the null hypothesis of stationarity. These results have been discussed using asymptotic theory and large samples in papers by Leybourne and Newbold (2000), Montanes and Reyes (1998), and Lee, Huang and Shin (1997.) In this paper we investigate the impact of ignoring structural breaks on sample sizes of more interest to empirical economists and show the results on power and size for both tests of the null of non-stationarity (ADF and Phillips-Perron) and null of stationarity (KPSS.) The paper was also able to give some guidelines on break placement which can cause the rapid flipping of rejection probabilities as discussed in Leybourne and Newbold (2000.) Finally, an example was provided from South Africa to show the danger of misdiagnosis and the resulting misspecifications that can occur.

On the Interaction of Gender and Growth in Sub-Saharan Africa (SSA)

Researchers: Associate Professor Suzanne K. McCoskey
and R. Koekemoer (University of Pretoria)

In recent years there has been an interest in the impact of gender and gender inequalities not only on micro-economic (intrahousehold) decision-making but also on macroeconomic variables such as economic development, growth and urbanization. This has been of special interest in the context of developing countries. In this paper, the interaction of gender and economic growth was examined using a panel data, simultaneous equations model for Sub-Saharan Africa (SSA). The results showed that growth can have an impact on both absolute and relative gender gains. In addition, gender gains can impact growth. Evidence is also given on the impact of the SAP on women in Africa.

Response Surfaces in Non-Stationary Panel Data Tests

Researcher: Associate Professor Suzanne K. McCoskey

Response surfaces are a technique to allow researchers to adjust asymptotic critical values for small sample applications. Response surfaces have been discussed and estimated in the pure time series case. In this area of research, the paper examined how to extend the estimation of response surfaces to panel data tests. In particular considering how the cross-section, time series and relative time series dimensions can be used to for appropriate adjustment factors.

A Vertically Differentiated Duopoly with Marginal Cost Differentials

Researcher: Assistant Professor Pamela M. Schmitt

A vertically differentiated duopoly model analyzes the impact of marginal cost differentials on price and quality. Firms play a two-stage game, first simultaneously choosing quality and then simultaneously choosing price. When the firm producing the high quality good faces an increase in its marginal cost, both firms increase price and upgrade quality. When the firm producing the low quality good faces an increase in its marginal cost, both firms decrease price and downgrade quality.

Fairness in Ultimatum Games with Asymmetric Payoffs, Outside Options, and Incomplete Information

Researcher: Assistant Professor Pamela M. Schmitt

This study investigated the effects of information states, outside options, and asymmetric payoffs on the decisions of both Proposers and Responders. When there was complete information offers were rejected more often than when there was incomplete information, regardless of chip values and which player had an outside option. When the Responder had the outside option dollar offers were higher and were rejected less often than when the Proposer had the outside option. When there was complete information and when the Proposer had the higher payoff conversion rate, dollar offers were lower and were rejected more often than when the Responder had the higher payoff conversion rate. These results suggest that Proposer fairness was a result of strategically making offers that would not be rejected, rather than out of altruism.

Airline Strike Effects on Price and Quality

Researcher: Assistant Professor Pamela M. Schmitt

Using city-pair airline data for 110 United States markets from January 1991 to May 1999, this paper examined the impact of a labor strike on the market. Specifically, this paper examined the impact of a strike on price and quality levels for firms in the industry, both during and after the strike. The results are analyzed in two ways; first all city-pair markets are examined, and then only city-pair markets in which the carrier that was on strike competed are examined. Quality was proxied in three ways: (1) the number of flights per day, (2) the percentage of flights canceled, and (3) the percentage of flights arriving late. The results suggested that a strike often increases price, thus hurting consumers in both all city-pair markets and in markets with the carrier on strike. In addition, the results suggested that a strike changes quality, but the direction of the change depends on which measure of quality is examined. In addition, quality changes more significantly in all city-pair markets rather than just in markets with a carrier involved in a strike.

Clinical Pathways and the Costs of Stroke Care

Researchers: Genevieve Schmitt (University of Maryland Medical Systems),
Assistant Professor Matthew J. Baker, Assistant Professor Pamela M. Schmitt,
and Marcella Wozniak (University of Maryland Medical Systems)

Clinical pathways are developed to provide quality care and reduce hospital charges. University of Maryland (UMMS) instituted an ischemic stroke pathway in 1996. This study analyzes the impact the pathway had on length of stay (LOS) and hospital charges. As part of a NIH-funded study, demographic and clinical data were collected from patients admitted with cerebral infarction between 1993 and 1996. All patients had ischemic stroke as determined by physician review. The LOS and charges were obtained from the hospital computer database. The LOS, discharge destination, total and itemized charges were analyzed using two-tailed t-tests within a multiple linear regression model. For patients with an ischemic stroke, the average LOS in 1993 was 12.8 days compared to 9.3 days in 1996 ($p<0.01$). The total, routine, pharmacy, and therapy charges were significantly lower in 1996 compared to 1993. However, discharge destination, X-ray, lab, supplemental, and operating charges did not significantly change. In both years, cardioembolic strokes were associated with increased LOS. These preliminary analyses show a significant decrease in the LOS for patients after the implementation of a clinical pathway. The charge decreases were not uniform among all charge categories. Patient outcomes as measured by discharge destination did not worsen.

In additional multiple variable analyses, we plan to examine the impact of temporal trends and the effect of clinical characteristics (e.g. Barthel Index) on LOS and charges.

Taxes or Fees? The Political Economy of Providing Excludable Public Goods

Researchers: Assistant Professor Kurtis J. Swope
and Eckhard Janeba (University of Colorado)

This paper provided 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. A theoretical model indicated that the median preference individual is the decisive voter in a tax regime, while an individual with preferences above the median generally determines the fee in a fee regime. Numerical solutions indicated 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 were sufficiently right-skewed. Public good provision under fees exceeds that under taxes in the latter case.

An Experimental Investigation of Excludable Public Goods

Researcher: Assistant Professor Kurtis J. Swope

This paper extended the research on incentive compatible institutions for the provision of public goods. Excluding non-contributors transformed the linear *n*-player pure public goods game to an *n*-player coordination game with multiple, Pareto-rankable Nash equilibria. Exclusion increased contributions to a public good in most cases. However, it was found that an increase in contributions may not be sufficient to increase social welfare because there was a welfare cost to excluding non-contributors when the public good was non-rival. Furthermore, exclusion can decrease both contributions and welfare in environments in which individuals fail to coordinate their contributions. The results were sensitive to the minimum contribution requirement and to the relative returns from the public and private alternatives.

Free Trade Agreements and the SADC Economies

Researchers: Jeffrey Lewis (World Bank),
Sherman Robinson (International Food Policy Research Institute)
and Assistant Professor Karen E. Thierfelder

Countries in Southern Africa have engaged in a variety of trade liberalization initiatives. For example, South Africa and the European Union (EU) negotiated a free trade agreement (FTA) in 1999. The EU unilaterally opened its markets to the least developing countries, which includes some of the countries in the region, in 2001 under its "Everything But Arms" (EBA) initiative. Although not formally established, countries in the region have discussed a SADC FTA. In this paper, we used a multi-country, computable general equilibrium model to analyze the impact of trade liberalization on countries, sectors, and factors. To focus on trade flows among countries in Southern Africa, the model included seven countries in the region (South Africa, Botswana, Malawi, Mozambique, Tanzania, Zambia, and Zimbabwe), the rest of SADC, the rest of Sub-Saharan Africa, and five other aggregate regions (the EU, High-income Asia, Low-income Asia, North America, and the rest of the world). First, we analyzed the FTA between South Africa and the EU. Then, we considered how the rest of Southern Africa might respond: (1) by enforcing a SADC FTA: (2) by exploiting the advantages of unilateral access to the EU in addition to a SADC FTA; and (3) by entering an FTA with the EU and other SADC countries. We found that trade creation dominates trade diversion for the region under all FTA arrangements. Some SADC countries are slightly hurt by the FTA between the EU and South Africa while others slightly gain. Overall, the agreement was not a beggar thy neighbor policy. Unilateral access to the EU is more beneficial, in terms of real GDP and real absorption, for SADC countries than a SADC FTA. However, reciprocal reforms, under and EU-SADC FTA dominate unilateral access to the EU because they require more structural adjustment. Finally, we find that South Africa is not large enough to serve as a growth pole for the region. Access to EU markets provides substantially bigger gains for the other SADC countries than access to South Africa.

Developing Countries and the Gains from Regionalism: Links Between Trade and Farm Policy Reform in Mexico

Researchers: Mary E. Burfisher (U.S. Department of Agriculture, USDA),
Sherman Robinson (International Food Policy Research Institute)
and Associate Professor Karen E. Thierfelder

We used a multi-country computable general equilibrium (CGE) model with agricultural policy details to simulate the effects of the North America Free Trade Agreement (NAFTA). We found that Mexico gains from NAFTA only when it also removes domestic distortions in agriculture. In that case, agriculture can generate allocative efficiency gains large enough to offset the terms of trade losses that arise because Mexico has higher initial tariffs than its NAFTA partners. When an RTA forces a developing country to reform its domestic distortions that are linked to trade restrictions, it becomes a building block toward multilateralism.

Research Course Projects

Analyzing Customer Racial Discrimination in the Professional Sports Card Market: The Case of League Majority versus Minority

Researcher: Midshipman 1/C Tyler Forrest, USN
Adviser: Assistant Professor Pamela M. Schmitt

Previous research by Nardinelli and Simon (1990) and Anderson and La Croix (1991) examined the relationship between the race of a professional baseball player and the corresponding value of that player’s baseball card. Using 1970 players’ cards and 1989 price data, Nardinelli and Simon found that customer racial discrimination decreased a nonwhite baseball player’s card value by approximately ten percent with respect to a comparable white player’s card. Anderson and La Croix (1991) extended Nardinelli and Simon’s research using 1977 players’ cards because there is no supply difference in the amount of baseball cards produced per player. The results of Anderson and La Croix’s paper reinforced the conclusion of Nardinelli and Simon; customer discrimination does exist against black hitters and pitchers. This research extended the previous works, but answers a slightly different question: Is card value affected by the race of the player or is it an issue of league minority? Using disaggregated player performance data from 1977 this question is explored with both baseball and basketball cards. The inclusion of basketball allows determination of whether racial minority or league minority determines card value. In baseball less than 30% of players are racial minorities, however, in basketball over 70% of players are racial minorities. It was found that customer discrimination does exist against racial minorities in both baseball and basketball leagues.

Product Differentiation in the Minneapolis Retail Gasoline Industry

Researcher: Midshipman 1/C Melanie Stock, USN
Adviser: Assistant Professor Pamela M. Schmitt

Firms differentiate their products in order to gain market power. Product differentiation occurs either through physical location choice or quality variations.Theoretical models of spatial differentiation present two conflicting views. Firms either seek to locate with minimum differentiation in order to steal business from competitors or maximum differentiation in order to reduce price competition. Theoretical models of quality differentiation show maximum differentiation. In addition, the high quality producer incurs a higher cost and therefore sells its product at a higher price than the lower quality producer. Using daily price data for 64 retail gas stations in Minneapolis, the effect of spatial and quality differentiation was empirically investigated. Spatial differentiation was measured in driving miles between gas stations. Quality differentiation was measured by a binary variable when gas stations offer additional services, such as pay at the pump, car washes, a service station, and food markets. Gas stations will locate with minimum differentiation and reduce price competition by offering different quality factors. Results indicated that the closest competitor minimally differentiates, while the second closest seeks maximum differentiation. Quality factors for the gas station are significant and help differentiate close competitors.

Publications

Journal (Refereed) Manuscripts

Anderson, Kym, Nielsen, Chantal Pohl; Robinson, Sherman and THIERFELDER, Karen E., Associate Professor, "Estimating the Global Economic Effects of GMOs," *The Future of Food, Biotechnology Markets and Policies in an International Setting*, (Phillip Pardey, ed.), Washington DC: International Food Policy Research Institute, pp. 49-74 (2001).

> The new agricultural boitechnologies that are generating transgenic or genetically modified organism (GMOs) are attracting an exceptionally large degree of opposition to their production and trade. Opponents have raised both environmental and food safety concerns over the development of transgenic or genetically modified crops. The vast majority of opponents at least want to have labels on products that may contain GMOs, while the most extreme of them (particularly in western Europe) want to see GM crops totally excluded from production and consumption in their country. This extreme view contrasts with the more relaxed attitude towards the use of the new biotechnologies in pharmaceuticals, and swamps discussions of the current and prospective positive attributes to GM crops. Also associated with that negative view is the idea that we should not try to measure the economic and other effects of GMOs because too much uncertainty surrounds the technology. We beg to differ with the latter sentiment: without attempts to quantify the economic effects of GMOs, opinion formation and policymaking would be even less well informed because it would have to depend on even more guesswork. To illustrate the usefulness of quantitative models for informing GMO debates, this chapter draws on recent studies in which we use two existing empirical models of the global economy to examine the possible effects of widespread use of genetically modified (GM) crop varieties in some (non-European) countries in light of different policy or consumer preference response.

BAKER, Matthew J., Assistant Professor, Bradley, Betsy and Gallo, William, "Factors Associated with Home Versus Institutional Death Among Connecticut Cancer Patients," *Journal of the American Geriatrics Society*, Volume 49, Number 6, pp.831-832 (2001).

> This paper analyzed the determinants of death site for patients in the Connecticut Tumor Registry. By fitting a series of logistic models to the data, many significant factors were found that aided in explanation of place of death, including income, race, sex, and location. The results suggested that development of effective, low-cost means of providing terminal care such as hospices may provide significant benefits.

BAKER, Matthew J., Assistant Professor, Miceli, Thomas, Sirmans, C. F., and Turnbull, Geoffrey, "Optimal Title Search," *Journal of Legal Studies*, Volume 31(1), pp.139-158 (2002).

> This paper developed a theory of land title record search based on optimal sequential search theory and applied this theory in an econometric study of the economic forces and variations in patterns across states in title search procedure.

BAKER, Matthew J., Assistant Professor, Miceli, Thomas, Sirmans, C. F., and Turnbull, Geoffrey, "Property Rights by Squatting: Adverse Possession Statutes and Land Ownership Risk," *Land Economics*, Volume 77, Number 3, pp. 360- 370 (2001).

> This paper studied the economic costs and benefits leading to the adoption of squatter's rights (adverse possession) laws in U. S. states, and also studied variations in these laws. The theoretical model of adverse possession was applied in studying state patterns in adverse possession law at the turn of the century (1900's).

Burfisher, Mary E.; Robinson, Sherman and THIERFELDER, Karen E., Associate Professor, “The Impact of NAFTA on the United States,” *Journal of Economic Perspectives*, Vol. 15, no.1, pp. 125-144 (2001).

In this paper, we compare arguments made during the NAFTA debate with recent empirical work showing the effects of NAFTA on the U.S. We look at changes in aggregate and bilateral trade among the NAFTA countries, and three contentious sectors in the debate: agriculture, autos, and textiles. We conclude that the consensus view at the time of the debate was correct. We also comment on issues that are likely to be important in future policy debates over global trade reform and regional trade agreements: (1) the role of bilateral trade balances; (2) employment effects and adjustment costs; (3) the role of trade creation and trade diversion; and (4) interactions between domestic policies and trade policies. Given the collapse of the WTO meetings in November 1999, regional trade agreements may well become more important and policy makers can learn from the NAFTA debate.

CUNNINGHAM, Brendan J., Assistant Professor and Cochi-Ficano, Carlena K., “The Determinants of Donative Revenue Flows from Alumni of Higher Education: and Empirical Inquiry,” *The Journal of Human Resources*, 37(3), pp. 540-569 (2002).

Institutions of higher education are increasingly relying upon alumni giving and endowment earnings as sources of funding. This paper utilized a new database on average alumni donations at the institutional level and institutional characteristics to explore the role that lagged institutional characteristics and policy have on subsequent donations to the institution. Our results confirmed the non-contemporaneous effects of variations in the average scholastic achievement of matriculated students (a proxy for both student quality and student socio-economic status) on subsequent donative revenue flows and indirectly address some of the open questions left by previous theoretical inquiries.

Devarajan, Shantayanan, THIERFELDER, Karen E., Associate Professor, and Suthiwart-Narueput, Sethaput, “The Marginal Cost of Funds in Developing Countries,” *Policy Evaluations with Computable General Equilibrium Models,* (Amedoe Fossati and Wolfgang Wiegard, eds.), New York: Routledge Press, pp. 39-55 (2002).

The notion that raising a dollar of taxes could cost society more than a dollar is one of the most powerful ideas in economics. The reasoning is simple. By causing agents to alter their behavior, as a result of the tax - consumers buy less for example - the tax lowers welfare by more than it collects in revenue. The difference, often referred to as ‘deadweight loss,’ leads to the marginal cost of raising a dollar of public funds being higher than a dollar. The power of this idea derives from its implications. One is that the higher the marginal cost of funds (MCF) is, the fewer public goods will be provided. Another is that, if the MCF across different tax instruments varies greatly, directions for revenue-neutral tax reform are readily apparent. In this chapter, we provide estimates of MCF for three developing countries - Cameroon, Bangladesh, and Indonesia.

Nielsen, Chantal Pohl, Robinson, Sherman and THIERFELDER, Karen E., Associate Professor, “Genetic Engineering and Trade: Panacea or Dilemma for Developing Countries,” *World Development*, Vol. 29, no 8., pp. 1307-1324 (2001).

Advocates of the use of genetic engineering techniques in agriculture contend that this new biotechnology promises increased productivity, better use of natural resources and more nutritious foods. Opponents are concerned about potentially adverse implications for the environment and food safety. In response to consumer reactions against genetically modified (GM) foods, in some countries crop production is being segregated into GM and non-GM varieties. This analysis finds that world markets for maize and soybeans adjust well to these changes and also that developing countries will divert their trade patterns in response to preference changes in important trading partner countries.

SCHMITT, Pamela M., Assistant Professor, “The Impact of a Marginal Cost Increase on Price and Quality: Theory and Evidence from Airline Market Strikes,” *Australian Economic Papers*, Volume 41, Issue 3, pp.282-304 (2002).

This paper examined the impact of a marginal cost increase for one firm on price and quality in a duopoly market. The results were derived theoretically and then tested empirically. The marginal cost increase was interpreted as an increase in the wage one firm paid its workers. The predictions were tested with two United States airline strikes during the 1990's. Quality was proxied in three ways: (1) the number of flights per day, (2) the percentage of flights canceled, and (3) the percentage of flights arriving late. The results showed that the strike coefficients for the effects on quality were most consistent with theoretical predictions when quality was measured as the number of flights per day. These results are encouraging because of the three measures of quality, it seems that number of flights per day is the measure of quality that is most controllable by the firm. The strike coefficients for the direct effect on price are most consistent with theoretical predictions when quality rankings are determined by the percentage of flights canceled. The strike coefficients for the total effect on price are most consistent with theoretical predictions when quality rankings are determined by the percentage of flights arriving late.

Discussion Papers, Technical Reports, and Working Papers

Lewis, Jeffrey D., Robinson, Sherman and THIERFELDER, Karen E., Associate Professor, "Free Trade Agreements and the SADC Economies," *Africa Region Working Paper Series # 27*, Washington D.C.: The World Bank, pp. 1-48 (2002).

Countries in Southern Africa have engaged in a variety of trade liberalization initiatives. For example, South Africa and the European Union (EU) negotiated a free trade agreement (FTA) in 1999. The EU unilaterally opened its markets to the least developing countries, which includes some of the countries in the region, in 2001 under its "Everything But Arms" (EBA) initiative. Although not formally established, countries in the region have discussed a SADC FTA. In this paper, we use a multi-country, computable general equilibrium model to analyze the impact of trade liberalization on countries, sectors, and factors. To focus on trade flows among countries in Southern Africa, the model includes seven countries in the region (South Africa, Botswana, Malawi, Mozambique, Tanzania, Zambia, and Zimbabwe), the rest of SADC, the rest of Sub-Saharan Africa, and five other aggregate regions (the EU, High-income Asia, Low-income Asia, North America, and the rest of the world). First, we analyze the FTA between South Africa and the EU. Then, we consider how the rest of Southern Africa might respond: (1) by enforcing a SADC FTA: (2) by exploiting the advantages of unilateral access to the EU in addition to a SADC FTA; and (3) by entering an FTA with the EU and other SADC countries. We find that trade creation dominates trade diversion for the region under all FTA arrangements. Some SADC countries are slightly hurt by the FTA between the EU and South Africa while others slightly gain. Overall, the agreement is not a beggar thy neighbor policy. Unilateral access to the EU is more beneficial, in terms of real GDP and real absorption, for SADC countries than a SADC FTA. However, reciprocal reforms, under and EU-SADC FTA dominate unilateral access to the EU because they require more structural adjustment. Finally, we find that South Africa is not large enough to serve as a growth pole for the region. Access to EU markets provides substantially bigger gains for the other SADC countries than access to South Africa.

Nielsen, Chantal Pohl, Robinson, Sherman and THIERFELDER, Karen E., Associate Professor, "Genetically Modified Food, Global Trade Patterns, and Developing Countries," *International Food Policy Research Institute (IFPRI), Trade and Macroeconomics Division, Discussion Paper # 77*, Washington D.C.: IFPRI, pp. 1-51 (2001).

This paper analyzes price, production, and trade consequences of changing consumer preferences regarding the use of genetically modified organisms (GMOs) in food production. The analytical framework used is an empirical global general equilibrium model, in which the entire food processing chain—from primary crops through livestock feed to processed products—is segregated into genetically modified (GM) and non-GM lines of production. This model is used to analyze the implications of widespread use of genetically engineered crops in some regions whilst consumers in Western Europe and High-income Asia adopt a critical attitude toward GM foods. Two different representations on consumer preference changes are illustrated: (1) a change in price sensitivity: i.e. consumers demand is less sensitive to a decline in the price of GM foods relative to non-GM varieties, and (2) a structural demand shift: for a given price ratio consumers simply demand less of the GM variety relative to the non-GM variety.

This analysis finds that developing countries adjust their trade patterns in response to preference changes in important trading partner countries. Non-GM varieties are diverted to GM-critical regions while GM varieties are sold to countries in which consumers are not sensitive to GM content.

Presentations

FREDLAND, Eric J., Professor, “Outsourcing Military Force: An Economic Perspective On The Role Of Private Military Companies,” Annual Meeting of the American Association of Behaviorial and Social Sciences, Las Vegas, NV, February 2002.

GOODMAN, Rae Jean B., Professor, “Using the Jigsaw Method to Teach Macroeconomics,” Lilly Conference on College Teaching, Oxford, OH, 16 November 2002.

GOODMAN, Rae Jean B., Professor, “The Jigsaw Method in Macroeconomics: Scholarship of Teaching and Learning,” Economics Department Seminar, Davidson College, Davidson, NC, March 2002.

McCOSKEY, Suzanne K., Assistant Professor, and Koekemoer, R., “On the Interaction of Gender and Growth in Sub-Saharan Africa,” Sixth Annual Conference on Econometric Modeling for Africa, University of Pretoria, Pretoria, South Africa, 5-7 July 2001.

McCOSKEY, Suzanne K., Assistant Professor, “On the Use of Asymptotic-Based Econometric Test Statistics in Small Sample Applications,” Syracuse University, Econometrics Group, 19 April 2002.

THIERFELDER, Karen E., Associate Professor, Lewis, Jeffrey D., and Robinson, Sherman, “Free Trade Agreements and the SADC Economies,” Fourth Annual Conference on Global Economic Analysis, Center for Global Economic Analysis, Purdue University, West Lafayette, IN, 27-29 June 2001.

THIERFELDER, Karen E., Associate Professor, Nielsen, Chantal Pohl, and Robinson, Sherman, “Genetically Modified Foods, Trade and Developing Countries,” World Bank conference, “Leveraging Trade and Global Market Integration for Poverty Reduction,” World Bank Headquarters, Washington D.C., 23-24 July 2001.

THIERFELDER, Karen E., Associate Professor, Burfisher, Mary E., and Robinson, Sherman, “The Effects of the Free Trade Agreement of the Americas (FTAA) on Mercosur Countries,” Conference on Impacts of Trade Liberalization Agreements on Latin America and the Caribbean, Inter-American Development Bank, Washington D.C., 6 November 2001.

THIERFELDER, Karen E., Associate Professor, Burfisher, Mary E., and Robinson, Sherman, “The Global Impacts of Farm Policy Reforms in OECD Countries,” Danish Institute for Agricultural and Fisheries Economics (SJFI), Copenhagen, Denmark, 10 December 2001.

THIERFELDER, Karen E., Associate Professor, Lewis, Jeffrey D., and Robinson, Sherman, “Free Trade Agreements and the SADC Economies, Southern Africa Division Seminar Series, World Bank Headquarters, Washington, D.C., 17 December 2001.

THIERFELDER, Karen E., Associate Professor, Burfisher, Mary E., and Robinson, Sherman, “Farm Program Reforms in OECD Countries,” Allied Social Science Association Meetings, Agricultural Policy Reforms in the WTO Session, Atlanta, GA, January 2002.

THIERFELDER, Karen E., Associate Professor and Robinson, Sherman, “Trade and Tradability: Exports, Imports, and Factor Markets in the Salter-Swan Model,” Economics Department Seminar Series, U.S. Naval Academy, Annapolis, MD, 5 February 2002.

THIERFELDER, Karen E., Associate Professor and Robinson, Sherman, “An Analysis of the Skilled-Unskilled Wage Gap Using a General Equilibrium Trade Model,” 5th Annual Conference for the Study of Globalization and Regionalization: Globalization, Growth and Income (In)Equality, University of Warwick, Coventry, England, 15-17 March 2002.

THIERFELDER, Karen E., Associate Professor, “The Effects of NAFTA on the U.S. Economy,” Baldwin-Wallace College, Buckhorn Endowed Chair in Economics Distinguished Lecturer Series, Berea, OH, 27 March 2002.

THIERFELDER, Karen E., Associate Professor, Burfisher, Mary E., and Robinson, Sherman, “Agricultural Policy Reforms in Developed Countries, Global Trade, and Developing Countries,” Development Economics Study Group Annual Meeting, University of Nottingham, Nottingham, UK, 18 April 2002.

THIERFELDER, Karen E., Associate Professor, Lofgren, Hans, and Robinson, Sherman, “A Standard General Equilibrium Approach to National and Global Poverty Analysis,” Policy Seminar Series, International Food Policy Research Institute (IFPRI) and Washington CGE Model Users Group, IFPRI, Washington D.C., 9 May 2002.

THIERFELDER, Karen E., Associate Professor, “Trade and Labor Market Issues,” Workshop on Poverty, Trade and Tools for Development Sponsored by International Food Policy Research Institute (IFPRI), Washington D.C., 3 June 2002.