



Tradeoffs

Department of Economics
University of Toronto

Spring 2006

A Special Issue on Financial Economics

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Message from the Chair

by Arthur Hosios, Chair

Over the past several decades, economics has become increasingly unified. Subjects of empirical interest that were previously mainly descriptive and diverse in character--such as labour economics, industrial organization and development economics--have become striking examples of applied economics in which methods drawn from microeconomic theory, game theory and econometrics are imaginatively used to penetrate mere appearance.

As evident from its now fashionable name of financial economics, the same trend has also been at work in the sub-discipline known as finance. Until the 1950s, finance was primarily the province of business specialists who dealt descriptively with corporate finance and stock markets. Today, it is a coherent branch of applied economics that makes perceptive use of the same tools from microeconomic theory, game theory and econometrics to understand the real workings of financial markets and institutions.

[Adapted from the Preface to *The New Palgrave Finance*, J. Eatwell, M. Milgate and P. Newman, Editors, W.W. Norton, New York, 1987.]

This special issue of *Tradeoffs* highlights financial economics, which is a relatively new and exciting "growth area" for the Department. Our portfolio is diverse and expanding. We offer courses and programs in financial economics at both the undergraduate and graduate levels; Professors Casas, Benjamin and Aivazian describe different aspects of these programs below. While our colleagues in the Rotman School of Management also offer courses and programs in finance, the emphasis on our side of St. George Street is very different. Here, we undertake positive analyses, aiming to understand the world as it is, including the operation of capital markets and the supply and pricing of capital assets. Our students are trained to understand the economic underpinnings of the investment rules taught in business courses and, hence, to understand how best to modify these rules as circumstances change.

The Department of Economics currently has a large number of faculty members undertaking empirical and theoretical research in financial economics. In this issue, Professor Greg Jump offers a brief survey of the field and Professors Katya Malinova and Andreas Park, Jim Pesando, and Alex Maynard provide insightful descriptions of the economics of portfolio theory, art as an investment, and foreign exchange markets. This issue also describes macroeconomic forecasting by the Policy and Economic Analysis Program (PEAP) at the Institute for Policy Analysis. Practitioners on Bay Street rely on short- and long-term forecasts to better understand the economic environment in which the outcomes of their decisions will be determined. Professors Peter Dungan and Tom Wilson and Dr. Steve Murphy describe forecasting at U of T and present a summary of their model's most recent short-term forecast for Canada. We hope that PEAP short-term forecasts will become a regular feature in future issues of *Tradeoffs*.

The remaining sections of this issue will bring you up to date on recent events in the Department, including a progress report by our Building Czar, Professor Don Dewees, on the renovation and expansion of our "home" at 150 St. George Street. Also included is a review by Professor John Floyd, the editor of *Tradeoffs*, of a lovely new book with a scary title, *Freakonomics*. This book

is a great read whether or not you believe, as we do, that economic analysis is uniquely able to "penetrate mere appearance".

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Undergraduate Report: A New Undergraduate Program in Financial Economics

by François Casas, Associate Chair for Undergraduate Studies

The Faculty of Arts and Science has approved a new specialist program in Financial Economics to be offered by the Department of Economics on the St. George campus and at the University of Toronto at Mississauga.

The growing popularity of finance as an academic discipline has led to the introduction of courses in this area in recent years in a large number of universities in North America and elsewhere. Although our Commerce Program, jointly offered by the Faculty of Arts and Science and the Rotman School of Management, has offered courses in finance for many years, these courses have not been available to students specializing in economics. With the recruitment of several faculty members whose research interests lie in this area, we felt that the time had come to offer a program focusing on financial economics.

The new program is unique in that it will be jointly offered on the St. George and Mississauga campuses--in any given year, courses offered on only one campus will be made available to students on both campuses. This allows us to pool our faculty resources so that students will be able to choose from a wider range of specialized courses. To ensure that enrollment in the program remains relatively small, students will need to apply after completing two years of study and will need to achieve high marks in their second-year economics courses as well as a high cumulative grade point average. We anticipate that 20-25 students will be admitted each year, evenly divided between the two campuses.

The core of the program includes two half courses in basic financial economics and corporate finance in the third year, and fourth year seminars in risk management, financial econometrics and financial market microstructure. Students will also be required to complete courses in econometrics and in advanced microeconomic and macroeconomic theory.

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Financial Economics in the Graduate Program

by Dwayne Benjamin, Associate Chair for Graduate Studies

The Master of Financial Economics (MFE) degree is the most obvious way that our students can study financial economics at the graduate level. But it is not the only way, as finance has always been an important part of graduate education at the University of Toronto in both our MA and PhD programs.

Long before the MFE was created, students graduated from our MA program with solid training in financial economics, pursuing a wide variety of careers in the financial sector and elsewhere. This is still the case--in fact, finance is more popular than ever with MA students. While the MA degree lacks some of the distinctive features of the MFE, it has important advantages for some students. First, it can be obtained more quickly, taking eight months to complete. This is a real advantage for those students (approximately one third of the MA class) wanting to pursue further graduate or professional studies, and wanting a background in financial economics. They obtain this background by taking our core courses in financial economics, and/or financial econometrics. Second, and more importantly, the MA is a highly flexible degree, and students can tailor their program to include a little or a lot of financial economics, as well as variety of complementary courses. For example, some students may want to work for the Bank of Canada and thus concentrate on monetary and macroeconomics and international finance, combined with a full slate of financial economics courses. Others, whose primary interests may lie elsewhere, may simply want to be literate in financial economics. The strength of our MA degree is its breadth as an advanced general degree in economics, and financial economics is a vital stream within that program.

It is in the PhD program where we see the nexus between teaching and research in financial economics. In addition to the availability of courses in financial economics, the distinguishing feature of the PhD is research, especially through the completion of the dissertation. Of the 26 students who have completed the PhD since 2001, six dissertations were primarily in finance and at least three others had strong elements of finance. They cover the breadth of the field, ranging from the study of theoretical and econometric models of asset markets to corporate investment. But it goes beyond that, as financial economics interacts with other sub-disciplines in economics. For example, the microeconomic study of economic development entails an understanding of capital market imperfections, and the possible policy roles played by international lending agencies. In public economics, many of the most important policy questions pertain to taxation of financial assets, ranging from the tax treatment of RRSPs and their restrictions on foreign content to the response of firms' capital structures to vagaries of the tax system. University of Toronto PhD students are thus engaged in a diverse range of research topics with linkages to financial economics, many of which are outside the domain of research conducted in business schools.

For those students who want the courses and research direction with maximum concentration in "conventional" finance, we offer the Collaborative Program in Management and Economics. This is a niche program that allows students to combine a PhD in economics with the Rotman PhD program in Finance. Although very small (one or two students per year), the program is

coming into its own, with graduates pursuing opportunities in academia (including business schools) as well as research jobs in the financial sector.

Focus by graduate students on financial economics is partly driven by self-interest. There is a buoyant job market for both MA and PhD graduates with serious training, or at least basic literacy, in finance. PhD research, however, can rarely be sustained entirely by the prospect of a job. The primary reason students are engaged in research in financial economics is the richness of the field, its pervasive links to other sub-disciplines, and the growing opportunities for collaboration with faculty working in the area.

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The Master of Financial Economics Internship Program

by Varouj Aivazian and Andreas Park

A major requirement for a first job for a university graduate is some "relevant" work experience, but where do 23- to 24-year old graduates from the MFE program get such experience? This is the function of the MFE internship program.

The Philosophy behind the MFE Internship

The internship is an integral part of the MFE program and there is more to it than ticking off a recruiter's wish list items. In the first two terms of the program, students take almost all their courses in the Department of Economics. These courses are highly rigorous and are meant to raise students' technical and analytical skills to a whole new level. During their subsequent summer internships they get the opportunity to put these skills into practice. There is strong pressure on universities to have programs where what is taught is directly "applicable" and of "practical relevance". People often mistakenly think that abstract and analytical material is automatically irrelevant for practical applications. The MFE program is founded on the tenet that analytical skills have strong long-term practical value, and during their internships students learn exactly how valuable and applicable their "purely academic" skills really are.

Internship Placement

Most MFE students obtain internships in the finance industry, for instance, as equity, sales and business analysts, and some even get jobs in securities trading. Employers range from the Bay Street giants such as CIBC and RBC, and large scale investors, such as the Ontario Teachers' Pension Plan (OTPP), to government agencies, such as the Ministry of Finance and the Bank of Canada. After their first two terms of course work, MFE students often tend to be skeptical about the practical value of their highly technical and theoretical courses---they often indicate that they would prefer more "applied" MBA-type courses. And yet, after their internships, many express surprise at how useful their economic theory and econometrics background has turned out to be. Some had to run sophisticated regressions that they would have been unable to implement

without knowledge of econometrics. Others were exposed to applications of the very asset-pricing models that they thought would be too mathematical and conceptually complex to be of any practical use. They discover that the sometimes challenging and seemingly esoteric knowledge of the classroom is applicable and useful after all.

Is the internship a success?

As educators, we hope that industry experience helps students discover their own strengths and interests so that they can make informed choices for their second-year business school courses as well as their careers. We are confident that this goal is achieved. Students return to school in the fall term highly motivated and keen to continue with their coursework, and with a deeper knowledge of many facets of the financial industry. And many internships also result in attractive job offers.

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Financial Economics--A Brief Survey

by Gregory Jump

Financial economics and finance are synonyms for the subfield of economics that deals with the workings of capital markets and the pricing of capital assets. Historically this subfield was known only as finance and through the 1950s was primarily the province of business schools. Back then, courses in finance dealt descriptively with such topics as "capital budgeting" and "the stock market". All of that changed with the publication of the Modigliani-Miller Theorem in the late 1950s and with the development of modern portfolio theory and the efficient markets hypothesis in the mid-to-late 1960s. Suddenly finance had solid microeconomic underpinnings and much of relevance to say about real world issues. Interest in the subfield by both academics and market practitioners boomed. While business schools expanded their course offerings in finance, economics departments began in the 1970s offering similar courses under the name Financial Economics. Why the new name? Simply to remind students of the economic foundations of this area of study.

Currently, financial economics deals primarily with four major sub-areas. These are (1) market efficiency, (2) asset pricing theory, (3) the pricing of derivative securities, and (4) corporate finance. I will briefly consider each in turn.

Market Efficiency

In financial economics a capital market is said to be efficient if all available information is utilized in determining the prices of assets. The basic intuition is that individual traders possess information and use it when buying and selling assets. This information is therefore reflected in the market price. If the capital market is efficient and if all investors possess identical information, economic reasoning implies that no investor can expect to earn "excess returns" by

speculating in the asset. From this it follows that because information concerning the values of current and past asset prices is available to all investors, it is not possible to formulate a mechanical trading rule that will yield, on average, higher returns than the average obtained by other investors.

To empirically test whether capital markets are efficient one must specify the nature of the information used by investors. Most of the empirical literature has focused on what is known as "semistrong-form" efficiency in which the relevant information set is all information that is publicly available. Empirical tests have by and large been supportive of semistrong-form efficiency but this does not rule out the possibility that an individual investor might benefit by acquiring private information--that is, information that other investors do not have. In the more recent literature, empirical research regarding market efficiency has tended to focus on the behavior of investors that possess differing amounts and types of information. This is a developing sub-area of research known as market microstructure.

Asset Pricing Theory

Asset pricing theory attempts to identify the fundamental economic determinants that underlie the valuation of traded securities. Economic reasoning suggests that these fundamentals should reflect the value individuals assign to future income, their attitudes towards gambles or risk, and the inter-temporal trading possibilities offered in the marketplace. There are several competing theories. The oldest and perhaps best known is the Capital Asset Pricing Model (CAPM), developed by numerous economists including **Harry Markowitz**, **Merton Miller**, and **William Sharpe**--co-recipients of the 1990 Nobel Prize in Economics for their individual contributions.

CAPM focuses on the "risk premium" associated with any individual security. The risk premium is defined as the difference between the expected rate of return on the security and the known rate of return on a risk-free security such as a short-term Government of Canada bond. A security is deemed to be risky if it commands a positive risk premium and the larger is the risk premium, the riskier is the security. In CAPM the risk of an individual security is measured by a quantity called its "beta", which is determined by the degree of positive covariation over time of its return with the return on a portfolio consisting of all risky securities in the market--the "market portfolio". If a security's return has a large covariance with the return on the market portfolio, it will have a large beta and command a large risk premium. According to CAPM, the return on the market portfolio is the single fundamental determinant of the valuation of all individual securities. Unfortunately, CAPM does not offer any description of what it is that determines the rate of return on the market portfolio.

An alternative to CAPM is the Consumption Capital Asset Pricing Model (CCAPM). In CCAPM the risk premium associated with any individual security is proportional to the covariance between the security's return and the rate of growth of future consumption expenditures. A security whose future payoffs have positive covariance with the growth rate of aggregate future consumption spending provides a poor hedge against consumption uncertainty and is deemed to be risky. Such a security will command a positive risk premium.

The Pricing of Derivative Securities

A derivative security is a man-made creation that has no intrinsic value but, instead, has payoffs that depend on (or derive from) the market performance of some underlying traded security or portfolio of securities. An example would be a call option written on a common share of Yahoo Inc. at a striking price of \$40 and an expiry date of June 30. This call option is a contract that gives the holder the right to buy a share of Yahoo from the issuer for \$40 on June 30. Exercising this option is valuable only if the market price of Yahoo exceeds \$40 on that date. Derivative securities are created and sold in order to provide hedges against various risks that exist in the marketplace. To determine whether it would be profitable to create and sell a particular derivative security, the would-be creator must know in advance the price at which the derivative will sell. Determining such prices requires little knowledge of economics but considerable knowledge of mathematics and has become the purview of financial engineers who follow a strict methodology. First, a mathematical model describing the behavior through time of the price of the underlying security is formulated. Then the underlying security is combined with risk-free debt into a portfolio that has the same payoff as the derivative security at all points in time. Finally, the absence of a trading opportunity that would generate excess profits requires that the price of the derivative security must always equal the cost of the portfolio that has the same payoff. This methodology has been widely employed in the securities industry since its origin with the publication of a landmark paper by **Myron Scholes** and **Fischer Black** in 1973. Scholes was a co-recipient of the 1997 Nobel Prize in Economics for this work. Black died earlier in the same year and could not be nominated for the prize, since it is never awarded posthumously.

Corporate Finance

Corporate finance is invariably concerned with the question of whether the financial structure of a corporation--that is, the mix of stock and bond issues by which it finances itself--can affect its market value. The original answer to this question given by **Franco Modigliani** and **Merton Miller** in 1958 is that market value is independent of financial structure. But this answer was derived in the absence of taxes and private information. Much past and current research in corporate finance has examined the how either the existence of taxes and/or private information--that is, differences in the information possessed by corporate managers and shareholders--might affect optimal capital structure. The Modigliani-Miller answer also applies in an idealized world of "complete" financial markets without bankruptcy costs. (A complete financial market is one in which there exists a different security associated with each possible source of risk--a situation not likely satisfied in the real world). An important line of research in corporate finance examines how the absence of market completeness and the existence of bankruptcy costs can affect a firm's optimal capital structure.

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An Economist's Primer on Investing

by **Katya Malinova and Andreas Park**

Have you ever asked an academic economist for her or his opinion on a hot new initial public offering of stock? And if you have, how conclusive was that opinion? When was the last time you got a stock-tip from an economics professor? How about an unbeatable investment strategy based on the latest scientific discoveries?

Indeed, most economists would make very boring investment advisors--their advice would hardly change from day to day, as they generally don't believe that day to day market timing of purchases and sales is profitable without excess risk, nor do they care which stocks are hot. To show you why economists are so phlegmatic, we give a brief overview of what we teach in financial economics courses, specifically in portfolio theory.

Risk, Return and Diversification

The two main insights of portfolio theory are the trade-off between risk and return and the benefits of portfolio diversification. The first means that in exchange for taking higher risks, investors need to be compensated with higher expected returns. Its flip side is that the riskier is the investment, the less investors are willing to pay for every dollar of promised future return.

The second insight is that holding a variety of investment products rather than a small selection may reduce the overall portfolio risk. It should be pointed out that diversification does not eliminate risk, but rather avoids unnecessary risks. Some risks are virtually impossible to avoid--when the whole economy is going down, there's nowhere to hide. Yet, buying stock of one's own company is taking an unnecessary risk--if the company goes bankrupt, one loses both the job and the portfolio.

These important insights from portfolio theory have direct implications for financial investments and their pricing. First, an investor's willingness to pay for an asset is determined by the amount of additional risk-diversification that this asset provides for one's portfolio. Second, since more diversification is better, one should buy the most varied portfolio imaginable. Such a portfolio would contain all existing financial securities and is known as "the market portfolio". Suppose that financial markets also provide a safe investment opportunity such as an inflation-indexed government bond. Then the third, and strongest, implication of portfolio theory is that when it comes to the tradeoff between risk and return, it is impossible to beat combinations of the safe investment with the market portfolio.

One might find the above arguments surprising. Doesn't an investor who buys Microsoft's stock pay for owning a share of the company? She or he does indeed but it is not the right way to think about owning a stock. A share is merely a contract, a claim on future profits. One pays for promised future payments streams. Dividends provide income that in turn helps pay for our day-to-day consumption. Generally, an investor prefers his or her consumption to be stable and is willing to pay for a secure payoff stream. While individual stocks may on occasion provide higher returns, a diversified portfolio allows more stable consumption. This is similar to

insurance--we want to make sure that we don't lose everything if things go bad. The difference in returns is precisely the insurance premium we pay for diversification.

More elaborately, an investor can reduce the overall variance of her or his portfolio by adding an "insurance asset", one that co-varies negatively with the rest, barely paying in good times and paying well in bad times. An investor should be willing to pay relatively more for such an asset. In other words, investors require a lower rate of return for such insurance assets. Conversely, an asset that co-varies strongly with the market is considered risky and a very high rate of return is therefore required to make it worth holding.

Another crucial implication of the risk-reward relation is that investors care about the return of their portfolio--not about the returns of individual stocks. Suppose that a company has a high variance in its earnings so that, by itself, it appears very risky. Yet in a well-diversified portfolio, such idiosyncratic fluctuations are "diversified" away. The lower returns to stocks that happen to do poorly will be offset by high returns to stocks that happen to do well--what matters is the average return. This is why investors do not require special compensation for stock-specific risk, but only for the stock's contribution to the overall portfolio risk--that is, to the variability of the average return.

That the risk-return relation of the market portfolio is unbeatable is precisely the investment advice that an academic economist would provide. Were the world ideal, everyone should only buy combinations of the safe asset and the market portfolio, although people should hold the two in different proportions, depending upon their willingness to bear risk. One might find an individual investment opportunity with a higher average rate of return than such a portfolio, but this higher return would come at a higher than necessary risk.

A Reality Check

How can this be all there is to say about investing when there's a multi-billion dollar industry that throws out new investment advice 24-7? Let's do a reality check and see what happens when this theoretical framework is taken to the data.

First, what is this ominous "market" portfolio? Empirical researchers typically use a broad proxy. They form a mega-index that combines several broad market indices such as the S&P 500, the Russell 5000, the FTSE-100, the TSX-60, a bond-index and so on. While no mega-index contains all financial products, such indexes are sufficiently good proxies.

The theory says that an asset's average return should be fully described by its market co-variation risk--that is, the degree to which its return varies over time directly with the return to the market portfolio. At first blush, the general direction in the data is right--the higher is an asset's or a portfolio's average return the higher is its risk. However, researchers have identified two portfolios that do outperform the market without being subject to additional market co-variation risk. The first consists of a large well-diversified selection of small-company stocks ("small caps") and the second consists of stocks of companies having high ratios of book value to market value (so-called "value" stocks). Both of these portfolios do much better than predicted by their market co-variation risks. Conversely, portfolios consisting of a wide selection of stocks of large

high quality companies that have been around a long time (blue chips) or stocks of companies with low ratios of book value to market value (so-called "growth" stocks) do rather poorly.

What does this mean? Some might perceive this higher performance of small-stock- and high book-to-market-portfolios as a risk-free (or at least low-risk) profit opportunity. Yet economists believe that this "anomaly" merely indicates that there are other non-diversifiable risks that theory has not yet captured.

How do and how should people really invest?

Indeed, theory says that financial advisors and even mutual fund management efforts are unnecessary. Yet, in reality, most families rely on financial advisors and invest in mutual funds. Why? One reason is taxes: financial advisors may suggest portfolios and strategies that are optimal given an individual customer's tax obligations. In fact, this is where the investment industry is most sophisticated. Further, investors have different preferences and financial advisors can help one determine her or his risk tolerance although, quite frankly, the industry's advice on this issue is often rather rule-of-thumb.

But let us return to the actual advice. Notwithstanding multiple data "anomalies" and various twists of the theoretical models, the main insight of the asset pricing theory remains: people should seek as much diversification as possible. That should make it easy for investment advisors. All they need do is recommend the broadest possible investment product that comes at the lowest cost. Allegedly, this would be a combination of funds based on very broad indices that range from money-markets and bonds to stock markets. Such index funds provide a large degree of diversification and have very low fees.

Needless to say, this type of advice is boring and hardly lucrative. Instead, one finds that most advisors promote mutual funds--if possible those of their own employer. The argument is, of course, that highly trained and exceptionally talented investment specialists, by stock-picking, tweak out higher returns than suggested by the dull "academic advice" above.

The problem is that they don't! The average fund underperforms the market when the risks taken are accounted for. Overall, more than 80% of fund managers miss this simple return target. Further, the performance of the fund industry often indicates that funds are often under-diversified.

There is also no evidence that the top-performers are exceptionally talented. Take the top 10 performers in any given year. Presumably, their stock-picking abilities should catapult their funds to the top of the list in subsequent years. Yet that almost never happens. In the rare cases where it does, the funds have followed mechanical textbook-like investment rules, such as concentration on high book-to-market or small-cap stocks, which could have been replicated by anyone with a finance textbook.

Our point is that most investors would be better off if they invested in passive index funds that require no or small management fees rather than spending their hard-earned money on the fees charged by heavily-managed funds. It should also be noted, in the light of our previous

discussion, that single indexes such as the Dow Jones or the S&P 500 do not always track the entire market. And funds are available that track small-cap or high book-to-market stocks--for example the Russell 2000 Value Index. There is a passive investment product that tracks almost every index.

So why doesn't everybody invest in passive index funds? There are lots of subtleties--comparing fund-performance requires more than just ranking them by annual returns. Yet research suggests that even if investors have easy access to comprehensive fund comparisons, they may still not act upon it. In a recent study, Hortacsu and Syverson (*Quarterly Journal of Economics*, 2004) have compared retail investors' investments in S&P 500 index-funds. These are passively managed funds (assets are bought in fixed proportions as they appear in Standard and Poor's 500-index) that are easily comparable in their performance and that have almost the same annual return and risk. The main difference between these funds is their annual management fees, which range from a low of 0.095% to a stunning 2.68% of the total amount invested (not profits). The lowest fee for a Canadian based index fund we could find is 0.3%. Moreover, there are several easy-to-navigate web-sites--for example, indexfunds.com--that provide comparisons of fees and performance of such funds. One would think that in the highly competitive US financial market, funds with high management fees would die out. Yet they don't! Can anyone tell us why?

Recommendations for further reading:

John Cochrane, "New Facts in Finance" and "Portfolio Advice for a Multifactor World", *Economic Perspectives*, Federal Reserve Bank of Chicago (1999), and John Campbell, "Asset Pricing at the Millennium", *Journal of Finance*, August 2000.

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Art as an Investment: What Have We Learned?

by Jim Pesando

The sharp decline in the stock markets in North America after March 2000 has, predictably, drawn attention to the potential attractiveness of alternative asset classes. Of particular interest, evidenced by the introduction and marketing of several art investment funds, is the role of art as an investment. Research on this topic has grown rapidly in recent years. The methodology of tracking repeat sales at auction of identical works of art has become the standard tool with which to estimate price indexes of art sold at auction, from which investment returns are readily calculated. The conclusions of the rapidly expanding literature on art as an investment depend, not surprisingly, on the sample period and the segment of the art market under consideration. Nonetheless, there are certain findings that appear to be robust, and which can be readily summarized.

First, art as an investment has a lower expected return, given its degree of risk, than do traditional financial assets. In 17 recent studies that have examined such diverse segments of the art market as impressionist and modern paintings, old masters, American paintings, Latin American art and modern prints, the mean annual real return on a diversified portfolio of art ranges from 0.5 percent to 9.0 percent, with a median of 2.3 percent. The single study of Canadian art, covering the period 1970 to 2000, suggests a real return of 3.1 percent. Although the systematic risk of art is less than that of a diversified portfolio of common stocks, real returns remain low relative to risk.

Second, transactions costs for buying and selling art are very high relative to traditional financial assets. At current commission rates, the "round trip" commission to buy and sell an art object at Christie's (with Sotheby's, the two largest auction houses) is 27.50 percent for a lot worth \$100,000 and 16.75 percent for a lot worth \$1 million. The clear implication is that art is only viable as a long-term investment.

Third, and contrary to the claim of most art market professionals, masterpieces do not outperform the market. All studies that have examined this question find that higher-priced works of art have yielded lower returns than do more moderately-priced works of art. Further, these results are economically significant. In an early study with modern prints (Picasso, Matisse, etc.), I found that the top 10 percent of prints by price earned a real return that is less than the average real return. To an economist, the natural predisposition would be to surmise that masterpieces should neither underperform or outperform the market as a whole, since the risk-return attributes would be capitalized into price. This masterpiece "puzzle" continues to be addressed by researchers, with attention to the question of why this result occurs. Do buyers overbid the price of masterpieces as a result of the higher flow of consumption services that are provided by owning them? Alternatively, is this result due to irrational behavior taking the form of overbidding and subsequent reversion in price towards the mean?

Finally, all of the recent studies of art, as is readily acknowledged, contain a "survivorship" bias. Artists whose works are no longer actively traded at auction are, of necessity, omitted from the analysis. The results thus reflect the investment performance of artists whose reputations--at least to date--have withstood the test of time.

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A Puzzle in the Market for Foreign Exchange

by Alex Maynard

Consider Dave and Nancy, two Canadian snow-birds who are about to purchase a fancy winter home in Florida with a closing date in one-month's time. A payment of 100 thousand U.S. dollars (USD) is required at next month's closing date. Dave and Nancy are the type of people that always balance their checkbook and like to budget everything carefully ahead of time. They are glad to have locked in a U.S. dollar price for their house but, because they don't know where the

exchange rate will be a month from now, they don't know the Canadian dollar price of the house, which is the price that really matters to them.

Frustrated, they call their broker. She suggests purchasing a forward contract. This contract would commit them to purchase 100 thousand U.S. dollars in one month's time at a rate agreed upon today. The advantage of this approach is that they would lock in a Canadian dollar price for the house today.

The price in Canadian dollars (CAD) that they would agree to pay in one month for each U.S. dollar is known as the one-month forward exchange rate. It turns out that, at 1.22 CAD/USD, this forward rate is more expensive than the current spot rate of exchange of 1.20 CAD/USD, the rate that they would pay to buy U.S. dollars today.

Is this a fair price? They call their broker to ask about the discrepancy. She explains that the forward rate is a market price that should generally reflect the market's expectations regarding the future spot price. If the forward rate is higher than today's spot price then this is because the spot rate is likely to rise--all the more reason to lock in a price today.

They purchase a forward contract, agreeing to buy 100 thousand USD at a rate of 1.22 CAD/USD in a month's time. Curious, they check the spot price a month later. Rather than going up as predicted by the forward rate, the spot price of the U.S. dollar has fallen from 1.20 a month ago to 1.18 today. The U.S. dollar weakened rather than strengthened.

Upset by their bad luck they put in another call to complain to their broker. She patiently explains that the forward rate reflects only the market's best guess of the future spot rate and not the actual spot rate itself. No one can out-guess the market, but even the market isn't right every time. It might not have been correct this particular time, but the market will get it right on average.

Still a bit skeptical, they ask their granddaughter, an aspiring economist. She decides that the only way to convince them is to show them. She collects 27 years of historical data, spanning 1973-2000, on USD/CAD spot and forward exchange rates and sets out to show her grandparents that on average the forward rate really does reflect the future spot rate, just as the broker said. To her surprise, this doesn't seem to be the case. Not only is the forward rate wrong on average, but it turns out to be a very bad predictor of the future spot rate. On average it actually mispredicts even the direction of change. When the forward rate lies above the current spot rate, the spot rate is actually more likely to fall further away from the forward rate than it is to rise up towards it. In other words, far from being unusual, her grandparents experience was quite common. Maybe this is just something special to do with Canada, she thought? So she checked other major currencies such as the Japanese Yen and British Pound but found the same thing.

This rather surprising finding has become known as the "forward premium puzzle". While intuition suggests that the forward exchange rate should be a good predictor of the future spot rate, historical experience suggests the opposite. It seems to be a perverse predictor, predicting exchange rate movements in the direction opposite to which they actually occur.

What explains this perverse behavior? To this day there is no commonly agreed upon explanation.

It is possible that the (average) discrepancy between the forward rate and the future spot rate is simply due to a risk premium. After all, shouldn't Nancy and Dave have to pay at least some premium in return for avoiding the risk of exchange rate fluctuations? Since they are not charged an explicit fee, you would expect this to be built into the forward price. However, there are difficulties with this explanation. For one thing, a high forward rate from the Canadian perspective means a low forward rate from the U.S. perspective and vice versa. So if residents of one country pay a premium it implies that residents of the other country get a discount. More importantly, economists have found that individuals have to be extremely risk averse in order to generate risk premiums that could fully explain the behavior of the forward premium. While nothing in principle rules out such high levels of risk aversion, it seems inconsistent with other aspects of human behavior in which people display substantially less risk aversion. If investors are really so risk averse when betting on foreign exchange, why are the casinos in Los Vegas packed with gamblers willing to pay a premium to engage in much riskier bets?

Surveys of currency forecasters provide an alternative measure of market expectations of future exchange rate movements. Since the forecasters are merely providing a forecast rather than taking a position in the foreign exchange market, they are unlikely to incorporate any risk premium. Yet, the average currency forecast seems to have done just as poorly as the forward rate.

This suggests that the markets may be doing an extremely poor job forecasting exchange rates--so poor in fact that they get even the direction of change wrong. Or, perhaps, it only looks like this after the fact. Maybe investors were rationally worried about serious risks to the dollar, such as fundamental shifts in monetary policy (or, more recently, a second terrorist attack) that never actually occurred. These concerns may have been reflected in the forward rate, which later looks mispriced only because the risks in question were never realized. For example, if after 30 years your house has never had a fire, the last 30 years of buying fire insurance might seem to have been a waste, despite being perfectly reasonable at the time you bought the insurance. Named after a feared devaluation of the Mexican Peso, this phenomenon is known as a "Peso effect". When a "Peso effect" is occurring, we never actually observe the risk that investors are worried about. For this reason, the validity of this explanation is impossible to either confirm or refute.

A second possibility is that markets take a while to learn how to forecast exchange rates, especially after major policy changes that effectively change the rules of the game. United States inflation rates dropped substantially in the early 1980s following a more aggressive tightening of U.S. monetary policy at the time and this marked a period during which forward rates were especially bad in predicting future exchange rate movements. Also somewhat supportive of this explanation is the fact that the forward rates for some currencies have gradually improved as predictors of future spot rates.

Obviously, this is an important area for future research--eventually we will find answers!

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A Macroeconomic Forecast for Canada

by Peter Dungan, Steve Murphy and Tom Wilson

The Policy and Economic Analysis Program (PEAP) at the Institute for Policy Analysis conducts macroeconomic forecasting and policy analysis on an ongoing basis. At the heart of the program are computer simulation models of the Canadian and Ontario economies. These models are built on the basis of macroeconomic theory using econometric methods to obtain key sensitivities and test relationships. Not surprisingly, they are thus called "macroeconometric" models.

Macroeconometric modeling has a long history at the University of Toronto. The program actually began in the late 1960s and has extended to the present with major contributions by many of our distinguished Department economists. Most notably, the program was begun and built up by Professors **John Sawyer**, **Greg Jump** and **Tom Wilson**, but many other colleagues have also contributed.

Throughout the life of the program the macroeconometric models have been used for three major purposes--for macroeconomic forecasting (both short-term and long-term), for macroeconomic policy analysis, and simply to build up and develop our understanding of how the Canadian macroeconomy works.

The economic forecasting element of the program began in the early 1970s, originally under the Institute's own banner, and then for a time, through Data Resources Inc.--a private economic consulting and forecasting firm founded by Harvard Economics Professor **Otto Eckstein**. In 1976 the short-term forecasting part of the program was discontinued in order to concentrate on further model development and on policy analysis. It was then added back to the menu of services provided by PEAP in the early 1990s and regular short-term forecasts have been produced ever since. One impetus to returning to short-term forecasting was the realization that it is very difficult to track and analyze monetary and fiscal policy without a solid and ongoing knowledge of where the economy is and where it is heading.

It is worth noting that the University of Toronto is the only Canadian university that provides this kind of ongoing economic analysis and forecasting service. (There are a number of academic institutions that do this in the U.S., including the University of Michigan, the Anderson School of Business at UCLA and the University of Maryland). In the regular surveys of Canadian forecasters conducted by the Department of Finance, the Ontario Ministry of Finance, and Consensus Economics in the UK, the University of Toronto is the only academic participant.

The ongoing development and use of macroeconometric models for policy analysis and forecasting has also given the University, the Department and the Institute a unique place in the eyes of Federal and Provincial policymakers. For example, when in 1999 Finance Minister Paul Martin decided that it would be best to use private-sector estimates of the size of the "fiscal dividend" that was then emerging after years of deficits, there were only four institutions in the

country that had the tools and experience to do the necessary work. The only academic institution was the Department of Economics at the University of Toronto.

The Policy and Economic Analysis Program produces both short-term and longer-term economic forecasts on a regular basis. Typically, short-term forecasts are developed at least four times a year, within a week or two of the release of the quarterly national accounts. Long-term projections are generally developed in January and again in June/July after the annual national accounts revisions. Forecasts are updated as needed if additional impacts or information come to light--as, for example, after the events of September 11th, 2001. The forecasts are distributed in detail to members of the program and a summary is released to the press and to the various organizations that collect surveys of forecasts.

In PEAP's experience, economic forecasting is done with the aid of the macroeconomic model, but not by the model working on its own. Our understanding of how the economy works, and of all the emerging factors that can affect it in the short-term especially, is simply insufficient for it to be possible to have a model generate a forecast "all on its own" after the relevant data have been updated and the exogenous inputs entered. ("Exogenous" variables are those, like U.S. GDP, that are not determined in the model.) For a number of years Professor **Ray Fair** at Yale, one of the pioneers in the field of macroeconomic modeling, has generated a series of "hands-off" model-based forecasts with no judgemental adjustments added. The results have been mixed--the forecasts have certainly not bested those generated by a combination of model and judgment with any regularity, but neither have they been markedly inferior. In any event, the PEAP forecasts for Canada depend both on the models, as tools forcing consistency and carrying forward historical regularities, and on judgments based on rapidly emerging current data and on knowledge of where the model has been deficient in the recent past, given that not all such deficiencies can be instantly fixed!

A brief summary of the PEAP forecast distributed on December 12, 2005 is presented in the following table and discussed below:

| FOCUS Model - Institute for Policy Analysis | | | | | | | | | | | |
|---|---------|--------|----------|--------|--------|--------|---------|-------|-------|-------|-------|
| CANADA: Base Projection - December 12, 2005 | | | | | | | | | | | |
| | History | | Forecast | | | | History | | | | |
| Summary of Projection | 2005:1 | 2005:2 | 2005:3 | 2005:4 | 2006:1 | 2006:2 | 2004 | 2005 | 2006 | 2007 | 2008 |
| Real Gross Domestic Product (%ch) | 0.5 | 0.8 | 0.9 | 0.8 | 0.9 | 0.7 | 2.9 | 2.9 | 2.8 | 2.5 | 3.0 |
| Expenditure on Personal Consumption | 1.6 | 0.8 | 0.6 | 1.2 | 1.5 | 0.9 | 3.4 | 4.1 | 3.4 | 1.8 | 2.4 |
| Expenditure by Governments | 0.7 | 1.1 | 1.0 | 1.0 | 1.1 | 1.0 | 2.9 | 3.0 | 4.2 | 4.1 | 3.9 |
| Investment Expenditure | 1.8 | 1.4 | 2.1 | 1.6 | 0.8 | 0.3 | 6.9 | 7.1 | 4.1 | 3.3 | 3.7 |
| Exports | 1.3 | -0.2 | 2.5 | 0.4 | 0.5 | 0.8 | 5.0 | 2.6 | 3.1 | 3.2 | 3.6 |
| Imports | 2.2 | -0.5 | 2.2 | 1.0 | 1.3 | 0.8 | 8.1 | 7.1 | 4.2 | 3.1 | 3.6 |
| Implicit Price Deflator for GDP (%ch) | 0.3 | 0.6 | 1.9 | 1.0 | -0.2 | -0.1 | 3.1 | 3.0 | 1.7 | 1.2 | 1.7 |
| Unemployment Rate | 7.0 | 6.8 | 6.8 | 6.5 | 6.5 | 6.7 | 7.2 | 6.7 | 6.8 | 6.9 | 6.7 |
| Employment (%ch) | 0.1 | 0.4 | 0.3 | 0.6 | 0.3 | 0.2 | 1.8 | 1.4 | 1.2 | 1.2 | 1.5 |
| 3-Month Treasury Bill Rate (%) | 2.5 | 2.5 | 2.7 | 3.3 | 3.7 | 3.9 | 2.2 | 2.7 | 3.9 | 4.4 | 4.9 |
| 10-Year Gov't of Canada Bond Rate (%) | 4.3 | 4.0 | 3.9 | 4.1 | 4.3 | 4.5 | 4.6 | 4.1 | 4.6 | 5.3 | 5.7 |
| Inflation Rate - CPI (%) | 0.3 | 0.9 | 0.9 | 0.2 | 0.4 | 0.6 | 1.8 | 2.3 | 2.0 | 1.6 | 1.8 |
| Exchange Rate (US \$/Cdn \$) | 0.815 | 0.804 | 0.832 | 0.853 | 0.860 | 0.858 | 0.768 | 0.826 | 0.856 | 0.854 | 0.864 |
| Balance on Current Account (\$ Bill) | 18.1 | 19.6 | 37.0 | 40.0 | 30.0 | 23.0 | 28.8 | 28.7 | 23.4 | 19.0 | 20.3 |
| Consolidated Government Balance (\$ Bill) | 17.9 | 18.3 | 18.3 | 24.4 | 6.8 | 1.4 | 8.7 | 19.7 | 6.4 | 8.1 | 9.2 |
| Federal Gov't Balance (NA Basis) (\$ Bill) | -15.8 | 10.5 | 3.8 | 8.7 | -0.9 | -8.9 | 8.1 | 1.8 | -0.8 | 5.0 | 6.2 |
| U.S. Real GDP Growth (%) | 0.9 | 0.8 | 1.1 | 0.6 | 0.9 | 0.7 | 4.2 | 3.6 | 3.1 | 2.8 | 3.1 |
| U.S. 3-Month Treasury Bill Rate (%) | 2.5 | 2.9 | 3.4 | 3.9 | 4.3 | 4.5 | 1.4 | 3.2 | 4.6 | 5.0 | 5.2 |
| U.S. Unemployment Rate (%) | 5.3 | 5.1 | 5.0 | 5.0 | 4.9 | 4.9 | 5.5 | 5.1 | 4.9 | 4.7 | 4.6 |
| Percentage changes are period to period | | | | | | | | | | | |

Dominating this immediate short-term outlook are several fiscal initiatives only recently implemented:

- Non-taxable "resource" rebates in Alberta are expected to total between \$1.3 to \$1.4 billion, primarily in the first quarter of 2006.
- Non-taxable Government of Canada "energy" rebates are expected to total \$565 million in the first quarter of 2006.
- Acceleration of the previously announced increases in the Federal personal tax exemption and the lowering of the lowest Federal tax rate to 15% from 16% yields impacts well in excess of \$4 billion for each of 2005 and 2006, with the 2005 tax impacts felt in the first two quarters of 2006 as tax returns are submitted and rebates sent out.

Together, these initiatives yield very large short-term movements in real disposable income. For the first quarter of 2006 we estimate that real personal disposable income will grow by 2.5% quarter over quarter. Since some of this extra income will be anticipated in in the fourth quarter of 2005, we have forecasted a high level of consumption for that quarter, and a fall in the savings rate. That is, consumers (particularly in Alberta) will anticipate that they will have rebates and extra funds available in January and February to pay off bills accumulated during the Christmas season. We think that in the first quarter of 2006 there will be some smoothing of the additional windfall income and have raised the predicted savings rate to 0.5%, but even so, personal consumption expenditure grows 1.5% quarter over quarter. As the effects of the initiatives are

sustained into the second quarter of 2006, real personal disposable income grows a further 0.9%, which is reflected in an equivalent increase in consumption. After this, however, the fiscal initiatives come to an end--except for the ongoing change in the Federal personal income tax. As a result, real personal disposable income falls by 1.2% in the third quarter of 2006 and even though we have the savings rate falling as well, consumption declines by 0.6%. In effect, this is a classic case of consumption being brought forward to the first two quarters of 2006 from the later quarters of the year. With weak consumption in the latter half of 2006, real GDP growth is also somewhat stunted--especially in the third quarter. The net result is an overall growth rate of 2.8% in 2006, but this comes at some cost to growth in 2007.

While consumption dominates the story for 2006, it should be noted that Residential Construction is projected to decline somewhat through the year due to higher mortgage rates and to the large additions put in place in the housing stock in recent years. We project continued strength in Machinery and Equipment (M&E) and Non-residential Construction. Net exports are weak in the fourth quarter of 2005 and at the beginning of 2006 for three reasons. The first is that some of the extra consumption and M&E investment that will occur in this period will clearly come out of imports. The second is that the economy has to absorb the increase in the Canadian dollar to the 85-86 cent level that has recently occurred. And the third is that we expect a rather significant correction in motor vehicle exports. As these adjustments take place--and they could well take longer and have a bigger effect--we project that net exports will return to having neutral or slightly positive impacts only by the end of 2006 and on into 2007.

The overall annual growth rate that we project for 2006, at 2.8%, is well within the Bank of Canada's current estimates of potential growth. If growth proceeds in this manner, and especially if growth is exceptionally high at the beginning of 2006, the Bank of Canada will have reason to follow a sustained program of interest-rate increases. Nonetheless, at least as we crunch the numbers, growth rates of this magnitude together with reasonable productivity growth (1.6% for 2006, in line with 1.5% that will likely occur for 2005) turn out to be insufficient to absorb the labour force that will be forthcoming--at least not without further declines in the participation rate. As a result the unemployment rate rises slowly but steadily in the forecast through 2006, stabilizing and then falling slightly thereafter in 2007 where we project a slightly lower productivity growth resulting from the weakness at the end of 2006 and slightly slower labour force growth based on purely demographic components. In our view, the unemployment rate therefore remains above the full employment rate (which we take to be about 6.2%) and real annual wage rate growth remains basically in line with productivity growth and is in no way pushing up the rate of inflation. In fact the CPI inflation rate falls below the Bank of Canada's targets in 2007 and 2008, in combination with a gradual reduction in energy prices (which is another story).

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News from Economics at the University of Toronto at Mississauga

by **Miquel Faig**, Associate Chair

The Department of Economics at the University of Toronto at Mississauga (UTM) continues to expand. The number of students enrolled in our programs has climbed by nearly 30 percent from 1,689 in October 2004 to 2,202 in November 2005. Although this tremendous increase was triggered in part by the double cohort, we do not anticipate a return to the old steady state in the near future. Indeed, the enrollment in the first-year economics course (ECO100) is as high this year as it was two years ago when the double cohort entered the University.

For the coming academic year, the Department is launching, jointly at UTM and St. George, the Financial Economics Specialist program. This program will offer undergraduate students a solid training in financial economic theory, its application, and related quantitative methods. The creation of the program is motivated by the high demand for financial economists. We expect that this program will attract to the University of Toronto top students who upon graduation will be able to pursue rewarding careers. The program will also make good use of the many professors in the Department who do research in financial economics or in closely related areas. In the coming academic year, we are introducing a new course, Economics of Information, which will be taught by **Simon Board**.

The expansion of student numbers at UTM has increased the workload of our administrative personnel and staff. To relieve some of this pressure we have hired **Karen Lam**, one of our former students, on an interim basis and **David Linden** as a permanent administrative assistant. Both will assist our administrative coordinator **Lorna Taylor**. We welcome all to the Department.

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What's Happening at the Institute for Policy Analysis?

by **Frank Mathewson**, Director

The Institute for Policy Analysis (IPA) continues as a focus for applied economic research at the University of Toronto. This past spring the Institute, together with the Rotman School of Management, sponsored a one and a half day conference on the Theory of Organizations with six papers by international authors. IPA Research Associate **Mara Lederman** presented a paper (joint with co-author **Silke Januszewski** of UC San Diego) entitled "Do Agency Costs Influence Vertical Integration? Evidence from Regional Airlines".

The Institute continues to support the Annual Summer Industrial Organization Workshop at the Sauder School, University of British Columbia. In 2005, at the 19th annual workshop, IPA

research associates **Ken Corts** and **Jo Van Biesebroeck** each presented a paper. Ken's paper was titled "Stacking the Deck: Idling and Reactivation of Capacity in Offshore Drilling" and the title of Jo's was "Scale vs. Scope: Complementarities and Technology Adoption in the Automobile Industry".

New IPA research associates in residence include **Phil Oreopoulos**, **Mark Stabile** and **Jo Van Biesebroeck**. Phil has a \$1.5 million grant from the Millennium Fund to conduct experimental research on the response of student performance to monetary rewards. Mark's research focus is in health economics where he is investigating the consequences of early childhood health on educational outcomes and early labour force attachment. He is also working on models of health care financing. Jo's interests center on the automobile industry, focusing on outsourcing relationships, productivity in Asian and North American component plants, and the impact of flexibility on productivity in final assembly.

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Gluskin Gift Enhances Our Renovation and Expansion Project

by **Don Dewees**, Chair of the Renovation Committee

The last year has been a banner year for the renovation and expansion project for the Department's home at 150 St. George St. The architects (Hariri Ponttrini), University planners, consultants, and Department representatives have held dozens of meetings to complete the design of Phase I of the project. Contractors began work at 150 St. George, including demolition of a 1927 addition behind the original 1889 house and separating that house from the 1961 Georgian addition. In October, 2005, we met a woman who lived in the house for a number of years before the University bought it and who has supplied photos and stories of its past.

On September 8, 9 and 10, all 55 faculty and a dozen staff were moved from 150 St. George St. south two blocks to our temporary quarters on the 4th and 5th floors of Sidney Smith Hall at 100 St. George St., previously occupied by the Mathematics Department. For several months prior to the move the recycling bins at 150 St. George overflowed with old teaching notes, research papers, correspondence, computer printouts, books, and working papers. By Labour Day our offices were filled with red and green plastic bins packed with the essential remaining materials from our bookshelves and file cabinets.

The movers worked with military precision to carry furniture and bins into the vans and then up on the elevators and into our new offices. Faculty and staff worked at home for two days, safely away from the battlefield. **Margaret Abouhaidar** was the commander-in-chief, identifying unlabeled boxes and deciding which furniture to take and which to leave behind. The carpet-layers and furniture installers were still finishing their work as the movers arrived. Within a week, most faculty and staff had unpacked and settled into their Sidney Smith offices. We have

found Sidney Smith to be a comfortable home for the two-year construction period. Some faculty and staff are enjoying the proximity to our classrooms and the Second Cup in the lobby.

In January, 2006, the Economics Building project received a tremendous boost with a gift of \$3.5 million from Mr. **Ira Gluskin** and Mrs. **Maxine Granovsky-Gluskin**. Our new home is now named **The Max Gluskin House** in honour of Mr. Gluskin's father, who graduated with a degree in Commerce and Finance in 1936.

We are enormously grateful to Mr. Gluskin, a 1964 Commerce and Finance graduate, and to Mrs. Granovsky-Gluskin for their generosity and commitment to improving our facilities for the benefit of our teaching and research endeavours. This is terrific news because it means that we will be able to complete the project that the late **Michael Berkowitz**, our former Chair and a friend of Mr. Gluskin, initiated and promoted so tirelessly. Phase II, which will cost a total of \$7 million, will provide sufficient space for all colleagues and graduate students in one building and substantially enhance the experience of all our students. We are also grateful to Dean **Pekka Sinervo** for his energetic support which will enable the entire project to proceed. We are now working with the architects to complete the Phase II design and construction drawings so that the two phases can be constructed together.

There are additional opportunities for donors to make a real difference to this project and to be remembered with the naming of a room or a wing. Our goal is to raise the remaining \$3.5 million. Friends of the Department who are interested in supporting this transformative project should contact our Chair, Arthur Hosios at ahosios@chass.utoronto.ca or Monica Lin of the Office of Advancement, Faculty of Arts and Science at mclin@artsci.utoronto.ca.

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Freakonomics: A Review

by John Floyd

You have probably already heard of the best-selling book *Freakonomics* by **Steven Levitt**, an economics professor at the University of Chicago who won the John Bates Clark Medal for being judged the best American economist under the age of 40, and **Stephen Dubner**, a successful free-lance writer. The book, published by HarperCollins, sets out "to explore the hidden side of everything". It is loaded with clever economic analysis and insights that will be understandable to readers with very little economics training. It is about asking the right questions and using data to answer them in a way that is not distorted by the researcher's own values and beliefs. And it is about recognizing in a simple way the complex motivations that underly human behavior. The authors use a "treasure hunt" approach rather than defining an organizing theme and the book contains loads of cute, seemingly paradoxical, unexpected, but nevertheless analytically correct interpretations. How would you answer the following questions?

Money buys votes! Right?

Wrong! Campaign contributions and votes are correlated, but which causes which? To determine whether the popular notion that "money buys votes" is true the authors refer to studies that examine many elections in which the same two candidates ran against each other. Typically, the candidate who won could cut his spending in half and only lose 1 percent of the vote while the losing candidate could only gain 1 percent of the vote by doubling his spending. Money does not buy votes, but political appeal brings both votes and campaign contributions!

Taxing an activity causes people to do less of it. Right?

Not necessarily! To discourage late pickups, some Israeli day-care centers started charging parents who were more than 10 minutes late in picking up their children. The charge resulted in roughly a doubling of the number of instances of late pick-ups! And when the charge was then removed, the higher level of lateness continued. Why did this happen? People respond to three kinds of incentives--financial, moral and social. The imposition of the charge converted a moral responsibility to pick-up your child on time into a financial incentive that was too small to be effective--\$3 per instance when the overall day-care fee was around \$380 per month. And since lateness was no longer a moral responsibility, parents felt no urge to hustle to pick up their children when the financial cost of lateness was removed.

Everyone cheats whenever they get the chance. Agree?

An economist set up a business selling bagels under an honor system where purchasers deposit their payments in a cash basket and found that, in the social environment in which the business operated, 87 percent of people did not cheat. That's good news! Plato and Adam Smith were right! People tend to be honest without judicial enforcement, indicating the presence of social and moral incentives. But why did 13 percent cheat? The ability to rationalize forgetfulness or entitlement is always present. And, of course, with more at stake, more people would cheat!

Students cheat on exams, but their teachers don't. Right?

What if teachers are being evaluated on the success of their students? Levitt and Dubner refer to papers by Levitt and Harvard professor **Brian Jacob** (see the Notes below) that cleverly analyze more than 700,000 sets of multiple-choice answers to the Iowa Test of Basic Skills by students in the Chicago Public School system. The test results were used to evaluate the performance of the teachers and schools in the Chicago system. Jacob and Levitt approach the data by asking a simple question. If I were a teacher and wanted to inflate my students' grades in a non-obvious fashion, how would I proceed? Given that the teacher could keep the students' multiple-choice answer sheets for only a short time after the test was completed, a logical way of cheating would be to change, as needed, the answers of a significant fraction of the students to a block of questions, preferably hard questions toward the end of the test. Statistical methods were developed to detect such blocks of identical answers and to determine whether these particular students a) did better on the hard questions at the end of the test than the easy questions at the beginning, and b) did much better than in the previous and the subsequent years. Cheating by teachers was detected in about five percent of classes!

Every fetus has a right to live! And every woman has a right to choose! Agree?

Without taking any stand on these polar views about abortion, Levitt and Dubner proceed, as economists should, by investigating and uncovering consequences of the *Roe vs. Wade* Supreme Court decision that made abortion legal throughout the U.S. in 1973. And they find very important and subtle implications. Of the many popular explanations of the drastic and completely unexpected fall in the U.S. crime rate after 1990, only increased rates of imprisonment, increases in the number of policemen, and the bursting of the crack bubble consequent on a big drop in the price of cocaine are found to have been statistically significant. Referring to a 2001 paper by Levitt and **John Donohue**, an economics professor at Stanford University, the authors put forward and empirically verify an explanation that no expert had thought of. The group of young men reaching their late teenage years in 1990 contained a much smaller proportion of criminals. The disadvantaged, unwanted, impoverished, poorly-parented youth that would have kept the country's crime rate at its previous high level had simply not been born! Their mothers, usually unmarried, could now afford abortions. *Roe vs. Wade* had an unintended consequence!

Needless to say, this empirical result has caused an enormous controversy (see the Notes below). But it illustrates the important contribution of quantitative economic analysis--to try to discover what is true regardless of how unpleasant that truth may turn out to be. Social policy, whatever direction it takes, must then be based on a correct understanding of its consequences. The difficult ethical and moral decisions are for the community as a whole, not economists, to make!

And more

In this review I have been able to address only a very few of the many interesting issues that Levitt and Dubner explore. Read the book and you will find out, among other things: How real estate agents and members of the Klu Klux Klan are similar. (Hint! Both hide information from the people they deal with.) That sumo wrestlers also cheat! Why crack dealers tend to live with their mothers. The secret of being a perfect parent. And whether it matters what parents name their child.

Notes: For more on abortion and crime see Donohue and Levitt's original paper, "Legalized Abortion and Crime", *Quarterly Journal of Economics*, 116:2 (2001), pp. 379-420, a criticism by James Joyce, "Did Legalized Abortion Lower Crime?" *Journal of Human Resources*, 38:1 (2003), pp. 1-37, and Donohue and Levitt's reply, "Further Evidence that Legalized Abortion Lowered Crime: A Reply to Joyce" *Journal of Human Resources*, 39:1 (2004), pp. 29-49. For the analysis of cheating by school teachers in Chicago, see Brian A. Jacob and Steven D. Levitt, "Rotten Apples: An Investigation of the Prevalence and Predictions of Teacher Cheating," *Quarterly Journal of Economics*, 118:3 (2003), pp. 843-77, and "Catching Teachers: The Results of an Unusual Experiment in Implementing Theory," *Brookings-Wharton Papers on Urban Affairs*, 2003, pp. 185-209.

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Retirements

Jon Cohen



Jon earned his Ph.D. at the University of California at Berkeley and joined the Department in 1972 after teaching for six years at Yale University. He did his undergraduate teaching for nearly a decade at the Scarborough Campus, where he served for a number of years as Assistant Chair, Economics, before becoming Director of the Graduate Program in Economic History and moving full-time to the St. George Campus. Throughout most of the 1990s he served as Dean of the School of Graduate Studies and spent a year as Chair of the Ontario Council of Graduate Studies. Since 2000 Jon has spent two years as the Department's Associate Chair, Graduate Studies. Throughout his career Jon has been extremely active in research in the field of economic history, writing two books, editing a third, and contributing nearly

thirty articles in books and professional journals. He remains active in research following retirement.

Mel Fuss



Mel did his undergraduate work in mathematics and physics at the University of Toronto, obtained his Ph.D in economics from the University of California at Berkeley and spent three years teaching at Harvard University before joining the Department in 1972. His undergraduate teaching was on the Erindale Campus until 1984 when he was appointed as Associate Chair for Undergraduate Studies. He then became Chair of the Department from 1985 through 1990. He was again Chair of the Department, this time on an acting basis, in 2000-2001. And in recent years he has performed an important role as Chair of the Hiring Committee. During all this time Mel has been extremely active in research, publishing over fifty articles in books and

professional journals, editing three books and writing a fourth. His fields of specialty are microeconomic theory, industrial organization, the economics of regulation and econometrics. He has been a Research Associate of the National Bureau of Economic Research for the past twenty years and has spent two years teaching at the Hebrew University of Jerusalem. In retirement he continues to direct the Department's efforts in hiring new colleagues while continuing his program of research.

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New Colleagues

Gustavo Bobonis



Gustavo joins us from the University of California at Berkeley where he obtained his Ph.D. He did his undergraduate work in his home country of Puerto Rico. His specialties are economic development, labour economics and economic demography. He currently teaches economic development at both the undergraduate and graduate levels.

[Photo of Gustavo](#)

Gilles Duranton



Gilles joins the Department as Associate Professor in the fields of urban economics and international trade. Originally from France, he has an M.A. from Sorbonne University, an M.Sc. from Ecole des Hautes Etudes en Sciences Sociales and a Ph.D. from the London School of Economics. He is attached to the Centre for Economic Performance at the London School of Economics and to the Centre for Economic Policy Research. He is on the editorial boards of a number of journals and has already published more than a dozen research papers.

Ekaterina Malinova



Katya hales from Russia, where she did her undergraduate degree in physics at St. Petersburg State University. She is obtaining her Ph.D in economics from the University of Michigan. Her research fields are financial economics and microeconomic theory and she teaches in both fields.

Jennifer Murdock



Jennifer joins us with an M.Phil. and Ph.D. from Yale, following a year here as a visitor. Previously she worked for two years at the U.S. Department of Justice Antitrust Division in Washington D.C. Her research fields are industrial organization, environmental economics and applied econometrics and she teaches courses in industrial organization and public policy and quantitative methods in economics.

Carlos Serrano



Carlos received his undergraduate training at Universitat Autònoma de Barcelona in his native Spain and did his Ph.D. at the University of Minnesota. He does research in industrial organization and teaches microeconomic theory and competitive strategy. He is currently studying patents and intellectual property rights.

[Photo of Carlos](#)

Heidi Shierholz



Heidi joins us in the field of labour economics, having obtained her B.A. at Grinnell College in Iowa, an M.S. at Iowa State University and her Ph.D. at the University of Michigan. She teaches labour economics and econometrics on the Mississauga campus and does her graduate teaching on the St. George Campus.

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What's Happening in the Department of Economics

Undergraduate Awards Reception

Our annual undergraduate awards reception was held on November 24, 2005 to honor the accomplishments of our best undergraduates. The ceremony was attended not only by many of our faculty and the students receiving awards, but also by colleague **Sue Howson**, Vice-Dean, and **Elaine Ishibashi**, Associate Faculty Registrar, both of the Faculty of Arts and Science, **Elizabeth Jagdeo**, Undergraduate Administrator, Political Science, and two Emeritus colleagues, Professors **Ed Safarian** and **Nanda Choudhry**, both of whom endowed prizes. Following introductory remarks by our Chair, **Arthur Hosios**, the awards were presented by **François Casas**, Associate Chair, Undergraduate Studies. Ed Safarian and Nanda Choudhry also spoke briefly and personally presented the awards they endowed. Receiving awards in person were

Yeucheng Zhang
Zhang (Vivian)
Guo

--- **Mary Keenan Awards**

Anna Gumen

--- **Stefan Stykolt Scholarship in Economic Theory and Nanda Choudhry Second Year Prize in Economics**

Soo Hyun Kim

--- **Nanda Choudry Third Year Prize in Economics**

Haixi (Marvin) Li

--- **Safarian Scholarship in Economics**

Karin Jasmina
Berlin

--- **Ramsay Scholarship in Economics**

In addition, a number of award winners were unable to attend:

Michael Robert Fawcett

--- **Mary Child Scholarship in Economics**

Sapna Mittal

--- **Paul Nathanson Scholarship in Economics**

Adrienne Di Paolo

--- **Noah Meltz Undergraduate Award in Labour Economics**

Haonan Qu --- **Lorne T. Morgan Gold Medal in Economics**

Alex Cheng --- **Banker's Scholarship in Economics**

Tianjiao Wang --- **Alexander Mackenzie Scholarship in Economics**

Needless to say, we are very proud of these students and extremely grateful to the individuals and institutions that endowed these awards.

Photos from the Awards Ceremony







Other Awards and Recognitions

Two of our distinguished retired colleagues have been honored. **Ed Safarian** has been made a Member of the Order of Canada and **Scott Eddie** has received a special Life Achievement Award from the Rákóczi Foundation.

A former student and colleague, **Malcolm Knight**, who is currently General Manager of the Bank for International Settlements, has been awarded an honorary doctorate by Trinity College Cambridge.

On May 17, 2005 the University held a reception for those who had been honoured during the past five years for excellence in teaching and research. Among those invited were six of our colleagues: **Gerry Helleiner, Sam Hollander, John Munro, Diego Puga, Joanne Roberts** and **Mark Stabile**.

This Year's Malim Harding Visitor

The annual Malim Harding Lecture was given on March 27 by **James Robinson**, Professor of Government at Harvard University. Professor Robinson, whose main research explores the effects of political institutions on economic development, chose as his topic the economic consequences of the French Revolution. Exploiting the fact that Napoleon imposed institutional changes to varying degrees in different areas of Europe, he uses these differences to analyse the longer-term economic outcomes. He concludes that the Revolution destroyed the institutional underpinnings of the power of oligarchies and elites that were opposed to economic change and that this, combined with the arrival of new economic and industrial opportunities in the second half of the 19th century, helped pave the way for future economic growth. As always, **Victor Harding** was present at the lecture, after which the group retired to Massey College to enjoy a wonderful dinner and evening of discussion.

New Additions to the Department Family

On May 19, 2005, colleague **Michelle Alexopolous** and her husband **Ted Alexopolous** brought into the world their first child, **George Theodore Alexopolous**. Then **Nada Elmasarany**, our Administrative Secretary, and her husband **Wael Elmasarany** brought into the world a daughter, **Kristen Elmasarany**, on September 12, 2005, also their first child. **Shannon Elliot** has joined us temporarily as Nada's replacement during her maternity leave. And on January 1, 2006, colleagues **Luisa Fuster** and **Andres Erosa** presented their son **Daniel Erosa Fuster** with a sister, **Maria Erosa Fuster**. We all wish them well!

Other News

We have enjoyed having Ricardo Cavalcanti, a professor at the Graduate School of Economics, Getullio Vargas Foundation in Rio de Janeiro, Brazil, join us this year to work on his research, teach a graduate course and participate in our Departmental seminars.

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[Department of Economics Welcome Page](#)

From the Editor

Communications, suggestions, and information about alumni and other matters should be addressed to:

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