

Economic Commentaries (EC)



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Introduction

Daniel V. Gordon

Welcome to the Spring (06) issue of **EC**. In this issue, Canada's Parliament is pictured on the front page in honour of our Prime Minister, Stephen Harper. Prime Minister Harper earned his BA ('85) and MA ('91) in the Department of Economics, University of Calgary. **EC** advises the Prime Minister to keep in mind two important economic facts: economic agents respond to incentives; and there is an opportunity cost to every economic action.

In this issue, five reports are offered on economic issues and research by members of the Economics Department. Dr. Frank Atkins leads off with comments on the Prime Minister's MA thesis research carried out at the University of Calgary and he reports on the so-called "Calgary School" of economic thought.



The Right Honourable Stephen Harper

The second report is a comment by Dr. Francisco Gonzalez on the importance of property rights for investing in advanced technology practices in poor countries. He argues that technological backwardness is the price of peace.

This is followed by a comment by Dr. Elizabeth Wilman on tradable pollution permits. She compares the economic incentives and likely outcomes of an absolute cap on emissions limits compared with emissions intensity limits.

The fourth report is by Dr. John Boyce where he outlines some of his current research in the economics of oil exploration and exhaustible resources.

Our final report is a comment by Dr. Mingshan Lu and Ms. Elizabeth Savage (Ms. Savage is Associate Professor in the Centre for Health Economics Research and Evaluation in the Faculty of Business, University of Technology, Sydney, Australia). They examine the role of public vs. private health insurance in a number of countries and focus on Australia's current changes to health care.

We include in this issue of **EC** an announcement of the passing of our friend and colleague Professor Robert McRae.

Finally, we profile three recent graduates of the Graduate programme in Economics at the University of Calgary.

TABLE OF CONTENTS

Introduction	1
The Prime Minister and the 'Calgary School'	2
Poverty as the Price of Peace – Why People in Poor Countries 'Choose' Technological Backwardness	3
How Many Safety Valves?	4
Research Notes: Oil Exploration and Exhaustible Resource Use	6
Does Supplementary Private Health Insurance Coverage Reduce Pressure on the Public System?	8
Remembering Bob McRae	11
Graduate Student Profiles	12

The Prime Minister and the ‘Calgary School’

Frank Atkins



By now it is fairly common knowledge that the Prime Minister of Canada, Stephen Harper, graduated from the Department of Economics at the University of Calgary. Mr. Harper completed a BA in 1985 and an MA in 1991. I had the privilege of being Mr. Harper’s MA thesis supervisor. At the time of the development and writing of his thesis, Mr. Harper was involved politically with the Reform Party of Canada, working as an economic policy advisor on a full-time basis. Very few students at the Masters level are capable of working at a full-time profession while at the same time being able to meet the intellectual demands of completing a thesis. At this early time in his career he demonstrated that he possessed the type of abilities that have taken him to the office of the Prime Minister – he is capable of extremely hard work and extremely deep intellectual thinking.

Given Mr. Harper’s involvement with the Reform Party, it is not surprising that he chose a thesis topic which was a blend of economics and politics. Mr. Harper chose to study the interesting and challenging area of what is commonly referred to as “political business cycles”. In order to understand

this topic, consider the following apparently simple question: if an election is approaching, is there any evidence that the incumbent government will increase spending in anticipation of this election? Behind the apparent simplicity of this question, there are two challenging obstacles. First, is there sufficient theoretical basis for presuming that a government may act in this manner? This is an important question for economists, as all of our methodology is based on theories of behaviour. Second, is there any statistical evidence that can shed light on this question, and, if so, is there a statistical methodology that can be applied?

Mr. Harper had no trouble dealing with the theory question, as he has long understood the economic structure of human behaviour and motivation. However, the second question proved to be somewhat more of a challenge. It would appear on the surface that testing this hypothesis would involve a straightforward application of relatively simple statistical techniques. This topic has been discussed, and statistical testing procedures have been applied, in the published economics literature for a long time. However, most of the research that has been published pertains to the United States. There is, of course, a very practical reason for this, as the United States political system allows for regularly scheduled elections. Therefore, testing this hypothesis becomes straightforward. However, as we all know, even though in Canada a Federal government mandate may be 5 years, we go to the polls at quite irregular intervals. This makes not only for a statistical headache in trying to gather evidence on this hypothesis, there is also no clear statistical procedure to apply in using the data to test the hypothesis. Mr. Harper could have chosen to just talk about the topic and present some anecdotal evidence. However, the economist in him forced him to seek a manner in which he could bring solid statistical evidence to bear on this question. Mr. Harper proposed a rather clever statistical technique for dealing with this problem, and he was able to uncover some evidence in favour of the hypothesis. It should be emphasized that Mr. Harper’s results do not represent a definitive answer

to this question. However, these results are interesting and worthy of further research.

Given Mr. Harper's economic training at the University of Calgary, it is not surprising that, during the election campaigns of 2004 and 2006, a great deal was made of the term "Calgary School", to which he was presumably an adherent. This brings forward the important questions of what, exactly is the "Calgary School"? This term appears to have been first used after Mr. Harper was elected leader of his party, and, unfortunately, was used by many as a term of derision during the recent election campaigns. It is interesting that, to the best of my knowledge, the term "Calgary School" originated somewhere other than at the University of Calgary, and the first that many of us heard of this was during the recent election campaigns. Further, given the nature of politics, it should not be surprising that it has never been very clear to many of us in the Department of Economics what this term actually means.

Arguably, the Economics Department at the University of Calgary may be considered to be somewhat more conservative than other economics departments in Canada. However, by conservative, I mean that we are, on average, much more inclined to trust market forces than government intervention, and we have a tendency to be more fiscally conservative than some of our colleagues. These are hardly contentious ideas, as most economists have moved to the "right" over the last ten years, in the sense of questioning the extent of government involvement in economic activity, and questioning the efficacy of chronic government deficits. Perhaps this economic conservative tendency of our Department is what is meant by the term the "Calgary School". If this is correct, it is hardly an intellectual paradigm worthy of derision.

Poverty as the Price of Peace – Why People in Poor Countries 'Choose' Technological Backwardness

Francisco Gonzalez

It is relatively common in sub-Saharan Africa and other poor countries for fishermen to refuse to use a new net technology that is offered to them for free and for farmers to refuse to make the necessary investments in new farming technology. My research explains these deliberate choices of technological backwardness as a way to prevent conflict in economies that lack publicly enforced property rights. Poverty, it seems, may be the price of peace.



Why does the absence of well-functioning institutions of private property cause technological backwardness? A traditional view is that insecure property discourages innovation and investment, much like a tax. But this cannot explain why many countries are so far behind the technological frontier, even though superior technologies are readily available at seemingly negligible costs of adoption. Whether tax is imposed by government officials, rackets or other private individuals, they rarely demand 100% of one's profit, because outright expropriation kills the incentive to create

wealth. But then economic stagnation or decline, and even slow growth, are difficult to understand, unless the use of superior technologies is taxed at a higher rate. So still the question is why?

A second explanation is that interest groups with a vested interest in the status quo tend to block the adoption of superior competing technologies by others. But the issue is whether this can explain systematic technological backwardness at the level of a province, a country... or even a continent. In particular, if certain interest groups have the political power to block technology adoption, and if technological progress is so profitable, then why don't they adopt superior technologies themselves, or tax those who do so after the fact? I argue that technological backwardness may be deliberately chosen to forestall costly conflict over economic distribution in economies that lack publicly enforced property rights. The reason is that choosing to adopt a superior technology confers a strategic disadvantage in the subsequent distribution of wealth. By becoming entrepreneurs, people gain a relative advantage in the creation of wealth. But in the absence of a well-functioning system of property rights, such people must privately enforce their claims to the wealth they have created. In such a world, it pays to specialise in activities aimed at redistributing, rather than producing, resources. In other words, it pays to gain a relative advantage in appropriation of others' wealth and a relative disadvantage in the creation of wealth that can be appropriated by others.

In such a context, if you are asked about your lack of productivity, the answer is simple: choosing to be unproductive is a strategic commitment to forestall conflict. For if you were more productive than others, then the cost that you would bear in the conflict to secure some wealth for yourself would be so much higher that you would be worse off. On the flip side, often the most violent conflict is driven by the prospect of booty. One simply needs to look at the infamous diamond wars. Of course, violent conflict is horrifying and extremely costly. But it is important to understand that the absence of conflict

does not imply that the problem is absent. Rather it may simply reflect the fact that poverty is the price of peace. Solving this problem demands developing the appropriate institutions of private property. Recognising this is the first step towards fighting conflict as well as poverty.

How Many Safety Valves?

Elizabeth A. Wilman

A Canadian economist, John Dales, is credited with outlining the practical application of tradable emission permits to limit pollution cost effectively. The idea was to set an absolute cap on emissions, allocate emission permits to emitters and allow trading to minimize the cost of emissions abatement. One of the most successful applications of the cap and trade (CAT) system has been the SO₂ emission permit trading system instituted in the U.S. in 1990. Lately there has been great interest in applying emissions trading to greenhouse gases, in particular CO₂. The European Union has established a CAT system to limit CO₂ emissions from large industrial sources. As part of its plan for honouring Canada's Kyoto Commitment, the Government of Canada will establish a permit trading system for large final emitters (LFE; electricity generators, the oil and gas sector and mining and manufacturing). However, these emitters will be faced with emissions intensity limits rather than an absolute cap on their emissions. Whereas an absolute cap limits tonnes of emissions, and intensity cap limits emissions per unit of output.

Intensity limits have attracted interest because of a disadvantage of absolute limits. Emitters expect that their marginal abatement costs will be high when the program takes effect. This can happen if output and emissions increase during the time period between the specification of the cap and its implementation. Since the absolute cap specifies the allowed quantity of emissions, increased emissions will mean increased abatement. As the marginal cost of abatement typically rises with the level of

abatement, the result is higher marginal abatement costs and higher permits prices. There are ways to avoid such high prices. For example, an emissions tax sets the price rather than the quantity, and higher marginal abatement costs will be reflected in increased emissions rather than in an increased price. A hybrid system in which the CAT price is capped at an acceptable level achieves the same results.



The manner in which Canada has chosen to deal with this uncertainty is through using intensity limits rather than absolute limits. Intensity limits allow emissions to grow as output grows and avoids the high permit prices that would result with an absolute cap. When intensity is limited rather than absolute, the result is a tax on emissions accompanied by a subsidy to output. With an intensity limit, sources whose intensity is above the limit must purchase permits or credits, and sources whose emissions intensity is below the limit generate credits. The U.S. phase-out of leaded gasoline is a well known example of tradable performance standards, and one in which the incentive effect of the subsidy revealed itself. Gasoline with a lead content below the average was created by dilution in order to generate credits.

While it is possible to set an intensity target that will achieve the same emissions as an absolute

target, the intensity target will be more costly. Conversely for the same cost an intensity target will achieve less emissions reduction than an absolute target. Since the purpose of the intensity cap is to relieve upward pressure on the permit price, the result will be greater emissions.

Under Canada's LFE system companies can meet their intensity targets by internal reductions in emissions intensity, by purchasing credits from other companies that have done better than their emission intensity targets or by purchasing domestic offset credits such as those that may be created by agricultural and forestry sinks. The Government also has promised a price assurance mechanism to ensure that companies will be able to meet their regulatory obligations at a cost of no more than \$15/tonne. Both the offset credits and the \$15 price assurance mechanism are addressed toward the same goal as the use of intensity targets. They are intended to be safety valves to relieve pressure associated with rising marginal abatement costs. However, in combination with the intensity limit, they will either be ineffective, or they will exacerbate the intensity cap's tendency to increase emissions because they increase the subsidy to output.

First consider offset credits. For simplicity assume that they constitute the only outside instrument that can be sold into the LFE system. Offsets will be purchased by LFE's only if, after adjustments for risk, they are cheaper than internal reductions. If they are cheaper, they will be purchased and substituted for internal abatement. The gross emissions intensity of the purchaser will rise, and the cost of achieving the target intensity will decrease. This also results in a decrease in the cost of producing output and more output can be produced and sold. With output and gross emissions intensity increasing, gross emissions will increase. Since emission intensity net of the removals associated with offsets will not decrease, net emissions will also increase.

If the Government of Canada sells real removals to emitters for \$15, the price assurance mechanism will work in a similar fashion. If the \$15 is simply a tax and does not represent real reductions or removals, there is no distinction between gross and net emissions increases and emissions will increase more than they would with a \$15 offset price. Both offsets and the price assurance mechanism will be effective in keeping marginal abatement costs down only to the extent that they provide cheaper alternatives. If they do provide cheaper alternatives, they will cause emissions to be greater than with the intensity cap alone.

Either the offsets program or the price assurance mechanism, or both, could have been used with a CAT system to keep down marginal abatement costs and permit prices. Even if the \$15 price cap was simply a tax, and allowed emissions to increase past the cap, it would still have been a tax on emissions, and would not have included a subsidy to output. Both offsets and the price cap are substitutes for intensity limits in that they relax upward pressure on marginal abatement costs. But they do not do so by subsidizing output. So, why use an intensity limit when there are other more efficient safeguards? The only answer seems to be that price caps can be removed, and offsets may dry up, but emissions intensity targets, which are explicit about not penalizing growth, can make government commitments politically more acceptable for emitters.

purpose of explaining an empirical result. In each paper, we derive empirical implications that enable us to use data to refute the theory, and in each case, we take the model and expose it to data.



In a paper on “oil’igopolistic oil exploration,” co-authored with PhD student, Lucia Vojtassak, we provided an explanation for the empirical puzzle that countries with large oil reserves in the 1950s tended to have lower reserves growth over the period 1952-2002. There could be several explanations for this phenomenon. It could be that costs of exploration were lower in countries with smaller initial reserves. But that would beg the question of why those countries were not developed first. It could be that the countries with large initial reserves had already discovered the reserves on their lands. However, this is unlikely since oil production over this period was more than eight times initial reserves, which implies that countries were replenishing their reserves throughout this period. Furthermore, none of the top ten reserve holders in 1952 had lower reserves in 2002.

The resolution to this puzzle is given in Boyce and Vojtassak (2005), who show that large producers have lesser incentives to explore than do smaller producers. This occurs because larger producers already hold large inventories, which by itself makes them more complacent about exploration, but also means that large producers already hold a

Research Notes: Oil Exploration and Exhaustible Resource Use

John R. Boyce

My research over the past year has focused on issues related to exhaustible resource use. I have worked on oil exploration and on the effect an exhaustible resource has on economic growth. Each of these papers develops a theoretical model for the

credible threat to their competitors to produce large quantities in the future. Smaller producers have neither of these incentives. Thus, Boyce and Vojtassak find that it has been smaller producers who have done the most exploration over the last fifty years.

I have been working on a second paper on oil exploration with Linda Nøstbakken, of the Norwegian School of Economics and Business Administration. Dr. Nøstbakken is a visiting researcher in the department for the winter semester 2006. In that paper, we model the oil field exploration and development pattern observed in the United States. The oil field model we develop looks at the incentives of firms to choose between oil field exploration versus oil field development. The model is a variant on the basic Hotelling model in that there are scarcity rents accruing to land owners. However, it is also a “Hubert” model, in that each oil field is depleted over time, so that there exists a point in time where overall production tends to decline.

One of the most important empirical predictions of our model is that over time we expect the number of exploratory wells to decline and the number of development wells per field to increase. We find evidence that supports this prediction when looking at exploration and development data from the United States over the period 1955-2002.

The third paper relating to exhaustible resources of which I have written (with my colleague, Dr. Herb Emery) in the past year is a paper on the relationship between resource intensity and economic growth. There is a growing literature, primarily empirical, which finds a negative relationship between per capita income growth rates and measures of natural resource intensity. This relationship is dubbed “the curse of natural resources,” since the literature has assumed that anything that reduces growth rates has to be welfare reducing. The main explanation in the literature is one of institutional failure, which is usually

highlighted by examples from countries like Nigeria.

However, for residents of Alberta, it must be clear that exhaustible resource economies can do quite well. We take a simple Hotelling model of a competitive exhaustible resource industry in which there are no institutional or market failures, and we show that such an economy will tend to grow more slowly and (more importantly) will also be richer. The richer part is easy to understand: a resource economy has economic rents from the resource, unlike a resource-poor economy. The lower growth rate occurs because every exhaustible resource economy is on its way to becoming a resource-poor economy.

Using the insights from this model, we showed that the United States economy exhibits a resource curse, in that states with higher mining employment tended to grow more slowly, but we also found that those same states were more likely to be richer.

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Does Supplementary Private Health Insurance Coverage Reduce Pressure on the Public System?

Mingshan Lu and Elizabeth Savage



In many countries, budgetary pressures have made government look into private health insurance to reduce pressure on their public health system. The options available to increase demand for privately funded health care and the effect on demand for public services depend on the extent of health cover provided by the public system, interactions between the public and private systems, and the role of private insurance. Private insurance may cover services or individuals excluded from the public system (US, Netherlands and Germany), co-payments associated with universal public services (France), services not provided publicly (Canada and Switzerland), or duplicate private provision of services provided by the public system (UK, Australia, Ireland and New Zealand). Many countries have a mix of roles for supplementary private health insurance depending upon population subgroups or specific forms of care.

Public policy plays an important role in private insurance markets. Policies that restrict benefits, payments, provider networks, and beneficiaries for public coverage drive demand for supplementary insurance and influence the characteristics of those privately insured. For example, in countries with extensive public provision, it is not surprising to

find that the insured are relatively high income and can represent a favourable selection of the population in terms of perceived health status. Regulation of the supplemental market can encourage or discourage the purchase of private supplemental coverage. Policies offering the opportunity to opt-out of the public system also affect the private market. Subsidies to private provision can affect demand for public health care.

Whether incentives for supplementary private insurance can reduce public usage and thus reduce demand for scarce public resources is a central question for health policy. To what extent can higher levels of private cover reduce pressure on the public system? More broadly, what is the role of government intervention in health insurance markets?

In the UK, about 14% of the population has private insurance coverage. Besley et al. (1999) found that the demand for private health insurance is related to non-market barriers to public care such as waiting time. They also find that private coverage is associated with higher socio-economic status. They argued that individuals who opt out of public sector treatment free up resources for those who rely exclusively on the public system, although high-income individuals who are privately insured continue to use the National Health Service for a large array of treatments. Propper (2000) found that past use of private care is an important predictor of current use. She also found considerable movement between the public and private sectors, revealing a complex relationship between public and private sector use.

In Ireland, private insurance coverage has increased from 15% to about 40% over the last three decades despite increased access to public care, annual premium increases and reduced tax relief. Harmon and Nolan (2001) found that private cover increases utilisation by about 3%; this increases to 6% when the insurance decision is treated as endogenous.

In France, public coverage is universal but incomplete and most people (85%) have supplementary insurance to lower out-of-pocket costs. Buchmueller et al. (2004) found no evidence that sicker people purchase more cover. But, supplementary insurance is found to have a large and statistically important effect on the probability of a physician visit. In Catalonia Spain, the public NHS coexists with a developing supplementary private system. Costa-Font and Font-Vilalta (2004) found that private cover lowers the use of publicly provided primary and specialized services. Jones et al. (2004) estimated the impact of private health insurance on specialist visits in Ireland, Portugal, Italy, Spain and the UK. They found that private cover increases with income and sometimes with better self-reported health status, and that private cover increases the probability of a specialist visit.

In Australia, the Medicare system provides universal, tax-financed assistance for health care, including free treatment in a public hospital anywhere in the country. Public patients treated in public hospitals forego choice of medical provider and are treated by specialists paid by the hospital. These specialists may be private practitioners, paid on a sessional basis or salaried staff specialists who are hospital employees but they also have rights to private practice. Waiting times for treatment vary considerably depending on procedure. Private health insurance in Australia is limited to covering private treatment in either a public or private hospital with choice of provider, to a portion of the medical fees charged for private in-hospital treatment, prostheses and devices provided to private in-patients, and to ancillary services such as dental and optical care, physiotherapy, chiropractic treatment and acupuncture. Hospital and ancillary insurance may be purchased separately although a majority of the insured population has both hospital and ancillary cover. Annual premiums vary depending upon the extent of cover, the front-end deductible and the state of residence. All applicants for a policy must be accepted by the fund and, prior to 2000, the premium charged could not vary by

age, health status or any other personal characteristic.

Private health insurance coverage of the population fell steadily after the introduction of Medicare in 1984 and reached its lowest level of just over 30% in 1998. This led to a number of government initiatives designed to increase coverage and relieve pressure on the public system. In 1997 the government introduced a private insurance tax rebate and a tax surcharge, the former for low income and the latter for high income singles and families. The rebate varied with the extent of cover (hospital and/or ancillary insurance) and with family size. The tax surcharge of 1% of taxable income could be avoided by purchasing private insurance. In 1999, the rebate was replaced with a constant 30% premium rebate, available to all regardless of income. The third policy change introduced in 2000 introduced an age gradient into the premium schedule. Under the new system, after July 2000 all new enrollees aged over 30 pay a premium loading of two percent for each year of age over 30. The premium loading is capped at 70 percent. Irrespective of age, people already insured prior to the deadline were exempt from this one time increase. The 2000 reform was accompanied by extensive publicly-funded advertising under the theme "Run for Cover". As a result of the insurance incentives private insurance coverage in Australia increased from 30.1 percent in 1998 to 43 percent in 2000, a jump of over 40 percent.

In 2001-02 the private hospital sector was responsible for 28% of all hospital bed-days and 36% of admissions, the latter up from 32% in 1996-97. Since 1996-7 total hospital admissions have increased by 20%, with a 4% increase in bed-days. Private hospital utilisation has increased since the implementation of the insurance incentives, however the extent that this has displaced public hospital activity is not clear from the aggregate data because the private hospital share of acute hospital admissions had been increasing at almost double the rate of public admissions and private bed-days at

eight times the public growth rate during the ten years prior to the introduction of the insurance incentives (Hall and Savage, 2005).

Using the 2001 Australian National Health Survey, Lu and Savage (2006) examined the impact of increased insurance coverage on the hospital system, in particular on Medicare and private admissions and lengths of stay. Our results indicated that in terms of hospital use as Medicare or private patient, the newly-insured do not, at least in the short term, act like the long-term insured. Our results also suggest that increased private usage outweighs reduced public usage. The financial incentives the Australian government imposed increased private health insurance cover substantially. However, its impact on use of the public system appears to be less pronounced and varies depending upon the duration of private insurance coverage. This suggests that the net welfare benefit of the Australian government's private health insurance incentive policies, such as the 30% premium subsidy that costs about \$2.5 billion per year, is unclear and that the claims for reduced pressure on the public system may be overstated.

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‘The study of economics does not seem to require any specialized gifts of an unusually high order. Is it not, intellectually regarded, a very easy subject compared with the higher branches of philosophy or pure science? An easy subject, at which very few excel! The paradox finds its explanation, perhaps, in that the master-economist must possess a rare combination gifts. He must be mathematician, historian, statesman, philosopher—in some degree. He must understand symbols and speak in words. He must contemplate the particular in terms of the general, and touch abstract and concrete in the same flight of thought. He must study the present in the light of the past for the purposes of the future. No part of man’s nature or his institutions must lie entirely outside his regard. He must be purposeful and disinterested in a simultaneous mood; as aloof and incorruptible as an artist, yet sometimes as near the earth as a politician.’

John Maynard Keynes

Remembering Bob McRae

Chris Bruce



In Memoriam: Dr. Robert N. McRae (1948-2006)

It is with regret that the Department announces the passing of one of our longest-serving colleagues, Robert McRae, in Calgary on April 22.

Bob was a native of Vancouver, British Columbia, where he attended UBC, obtaining a B.Sc. in honours mathematics in 1970, an M.Sc. in computer science in 1972, and a Ph.D in economics in 1977. His dissertation, completed under the supervision of Dr. John Helliwell, was entitled “A Quantitative Analysis of Policies Affecting Canadian Trade in Crude Oil and Natural Gas.”

Bob joined the Economics Department at the University of Calgary in 1977. His area of specialization was energy economics, with a focus

on estimating systems of fuel consumption equations and analyzing the implications of energy policy initiatives. Also, he was co-author of one of the first PC econometric programs, SHAZAM.

His many contributions to Canadian energy analysis are best reflected in his 1989 Canadian Tax Foundation book (with John Helliwell, Mary MacGregor, and Andre Plourde) entitled “Oil and Gas in Canada: The Effects of Domestic Policies and World Events.”

Through his work on energy economics, Bob was actively involved in the Canadian Energy Research Institute, the International Association for Energy Economics, the Canadian Economics Association (where he was a member of the Executive Council from 1994 to 1997), and OLADE (the Latin American Energy Organization — Organización Latinoamericana de Energía).

Bob traveled widely making formal presentations to numerous conferences, universities, and business organizations both nationally and internationally. He was visiting scholar at MIT, University of Edinburgh, and University of British Columbia.

Bob was Head of the Economics Department from 1991-1996, during a period that was particularly crucial for the development of the department as it exists today. But he was also highly respected throughout the university for his participation in many other high-level university bodies – most importantly General Faculties Council.

He will also be remembered with the greatest respect by his students. He was an enthusiastic, knowledgeable, and sympathetic instructor, both at the graduate and undergraduate levels.

Bob is survived by his wife, Ann, and his children, Scott and Kate. They have good reason to be proud of this affable and successful man. He will be sadly missed by all who knew him.

Graduate Student Profiles



Nicole LeBlanc

Master of Arts, University of Calgary, 2006
Bachelor of Science, University of Calgary, 2002

Nicole is an Economist at the Canadian Energy Research Institute. She performs economic research surrounding different aspect of the growing oil sands industry. Nicole has presented this research at various industry conferences and courses.

Thesis Title: Flexible Functional Forms and the Demand for Assets; Supervisor: Professor Paul Serletis.
Master of Arts, Imam Sadiq University, Iran 1999

Dr. Shahmoradi is an Assistant Professor in the Faculty of Economics, University of Tehran, Iran. His research is in the area of macroeconomics.



Megan (Luyendyk) Sartore

Master of Arts, University of Calgary, 2004.
Bachelor of Arts (Hon.), University of Calgary, 2002.

Until recently Megan was a Senior Regulatory Analyst in the Regulatory Economics team at Enbridge Pipelines. Megan was responsible for rate design and analysis for major pipeline expansion projects. Megan recently left Enbridge to pursue a position at Kinder Morgan Canada, which will involve substantial regulatory and financial analysis on the Corridor, Trans Mountain, and Express-Platte pipeline systems.



Asghar Shahmoradi

Doctor of Philosophy, University of Calgary, 2006.

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