# Canadian STUDENT REVIEW



**SUMMER 2017** 

QUARTERLY STUDENT MAGAZINE

# **Automating Our Future**



What's Inside

The Rational
Optimist: How
Prosperity Evolves

Canada's Air Quality Since 1970: An Environmental Success Story Economic Freedom Has Been Key to Advancement of Women Worldwide



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Our mission is to improve the quality of life for Canadians, their families and future generations by studying, measuring and broadly communicating the effects of government policies, entrepreneurship and choice on their well-being.

### **WELCOME!**



Dear Readers,

Summer is here—congratulations on finishing your final evaluations and exams!

From simple advances in camping gear to the state of our air quality in Canada, this issue of the *Canadian Student Review* takes a look at how things are getting better.

In this issue we revisit a discussion from 2003 regarding the significance of the Canada-US trade relationship, we examine how economic freedom has been integral to the advancement of women worldwide and present a snapshot of the impact future automation may have on the workforce. This issue also includes a recent infographic, a video from Senior Fellow Donald Boudreaux, and an exciting summer read by *New York Times* best-selling author, Matt Ridley.

Whether you're taking time for yourself, starting a new job, or still in school, we wish you all the best, and look forward to connecting you with exciting opportunities in the fall!

**Ryan Hill**Editor, *Canadian Student Review* 



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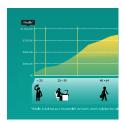
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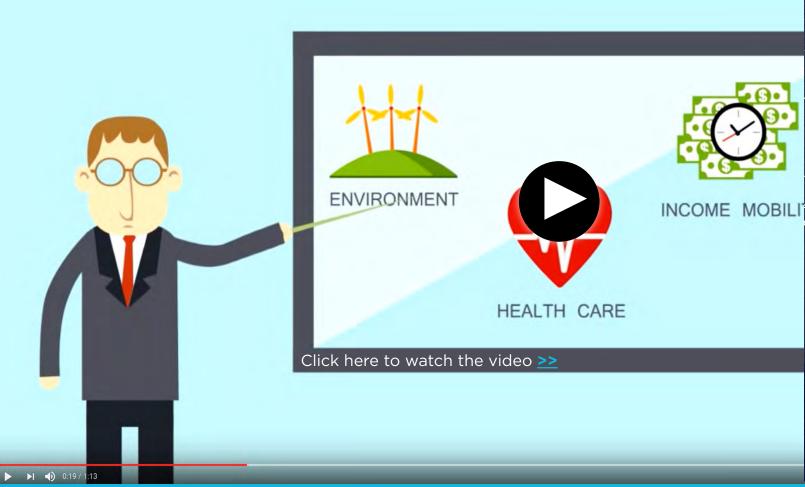
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# Upcoming POST-SECONDARY STUDENT SEMINARS

The line-up for our student seminar series, Explore Public Policy Issues, will be announced this fall! Take part in one of the Fraser Institute's FREE one-day student seminars and participate in engaging discussions about the most critical issues of the day. You'll meet leading policy experts, hear thought-provoking ideas in lively discussion groups, and come away feeling informed and inspired. Participants come from a variety of academic and political backgrounds and the wide range of opinions encourages students to think critically about important policy issues such as the economy, health care, and the environment.

### All students are welcome and lunch is provided.

To stay up to date, like us on Facebook >>



# The Risks and Rewards of Automation

by Brennan Sorge



t has long been the case that technological change has played an important role in shaping economic development. This role has often been varied, impacting the economy in different ways and to differing degrees. Today, new technologies promise to take an important, and significantly expanded, role in our economy. The impact will be broad, ranging from self driving vehicles and automated checkouts to the innumerable potential applications of advancing computer technology. Although these technologies are very different from each other, they all share one characteristic: they generally result in automation, which I define simply as the use of machines to perform tasks that have traditionally been done by people.

workers, and the economic wellbeing of society. Others see it as a means of economic progress, allowing workers to move to newer, better jobs, and allowing the whole economy to grow more productive as a whole.

In 1800, agricultural workers represented 59% of the workforce, while by 2012, agriculture only accounted for 2.9%—a dramatic change to the overall composition of the workforce.

However, even though the technologies under discussion are new, automation itself is not. Technological advances in the agriculture industry provide an excellent

historical example of

automation. As
new technologies
developed, agriculture
became more productive, feeding
a growing population while
simultaneously reducing the number
of agricultural workers. Although
this process took a long time,
its results were drastic. In 1800,

agricultural workers represented 59% of the workforce, while by 2012, agriculture only accounted for 2.9% —a dramatic change to the overall composition of the workforce.<sup>1</sup> At first glance, this suggests that the

Claims vary greatly as to what the result of automation may be, or whether it is desirable. Some see it as a risk that should be prevented, a

threat to the jobs

and wages of

concerns raised about automation are correct, and that automation will inevitably result in greatly increased unemployment. On further analysis, this view is shown to be mistaken. While it is true that advances in agriculture displaced much of the workforce, mass unemployment was not the result. Instead, workers previously employed in agriculture moved into new jobs in other areas of the economy. Ultimately, this displacement was a positive development, as it freed up workers to be employed in new, emerging industries and contributed to growth in industries all across the economy.

However, today's automation will likely be different in some important ways from the changes that took place in the agricultural industry.

risk of being automated, and, unlike the 200 years it took for a similar level of change in agriculture, Oxford offers a timeframe for this change of a few decades.<sup>2</sup> This finding is similar to that of a 2016 World Bank report which offers a wider view of technological changes and some of their effects on our societies. Like the Oxford Report, the World Bank report considers vast portions of the workforce to be at risk for replacement.<sup>3</sup> However, the World Bank also points to the large increases in productivity that accompany these technological advancements.

Automation has the power to significantly decrease the cost of living, and that is of great benefit.

Increasing productivity is the primary advantage of automation. In terms of productivity, machines are ideal workers.

The primary difference is "timeframe compression." The massive displacement caused by automation in agriculture happened over about 200 years. An Oxford study suggests that 47% of jobs in America are at high

They don't need pay or benefits, and they are able to work without rest. Despite the large levels of displacement predicted in the workforce, automation will allow us to produce many more goods, and at a much lower price. Given lower production costs, along with rapidly expanding supply, consumers will see prices drop. Automation has the power to significantly decrease the cost of living, and that is of great benefit.

important economic concerns in a long time. It's also a question that has yet to be fully answered. **c** 

Breni Ecc stu Un Ce an an

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and policy on the economy,
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interests in further study of both
economics and law.

Modern automation will undoubtedly happen at a much faster pace, but with similar large increases in productivity.

There are important questions we should ask when evaluating modern automation. Will it look like previous technological advances (as in agriculture), or will it look quite different? The answer is likely found somewhere in the middle. Modern automation will undoubtedly happen at a much faster pace, but with similarly large increases in productivity. The other questions include: how do we respond, what policies can government offer, and what actions can individuals take in order to adapt to the changes automation will bring. Or more simply, what should be done to manage this radical change? If some of the current estimates on the effects of automation are correct, than this is one of the most

#### **ENDNOTES**

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# CANADA'S CURRENT AGRICULTURAL SUPPLY MANAGEMENT SYSTEM— NOT WORTH FIGHTING FOR

by Steven Globerman

n one of his continuing stream of complaints and threats to dissolve NAFTA, President Trump recently took aim at Canada's dairy industry stating that the US. can't let Ottawa "take advantage" of the trade relationship, and that what Canada has done to US dairy farm workers is a disgrace.

Canadian farmers sell milk below their costs of production, thereby curtailing US sales of milk in both Canada and other US export markets.

As is typical, Trump's hyperbolic complaints, in this case targeting Canada's dairy supply management system, are short on details. While the focus of his concern is the broad set of supply management policies surrounding Canada's dairy industry, including extremely high tariffs, the apparent impetus for his recent

outburst is the rage expressed by US dairy farmers about Canada's decision to reclassify ultra-filtered milk, a protein liquid concentrate used to make cheese more efficiently, as a dairy import. This reclassification makes the product potentially subject to the high tariffs that Canada imposes on imported dairy products to protect Canadian dairy farmers against more efficient foreign suppliers.

While US farmers are apparently continuing to sell ultra-filtered milk in Canada duty-free, in February 2017, a number of US dairy industry trade associations called on President Trump to discuss Canadian pricing policies for milk during the president's forthcoming meeting with Prime Minister Trudeau. Their complaint is that farmers in Ontario, under the auspices of the provincial marketing board, dramatically cut the prices of ultra-filtered milk followed by farmers in other parts of Canada. US farm interests complain that Canadian

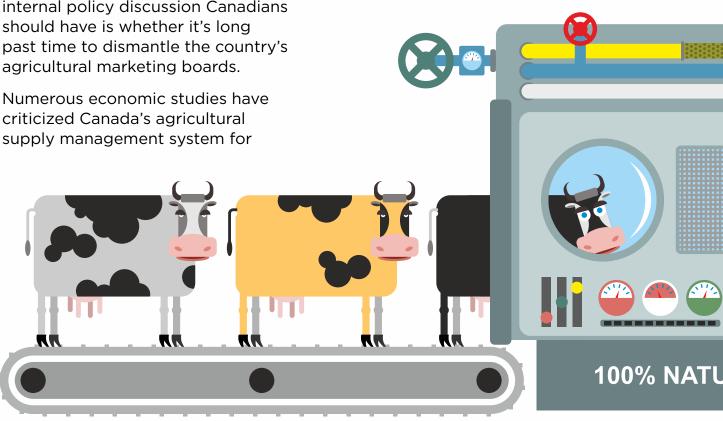
farmers sell this milk below their costs of production, thereby curtailing US sales of milk in both Canada and other US export markets.

Numerous economic studies have criticized Canada's agricultural supply management system for substantially increasing the prices of food products.

Unsurprisingly, Canadian government officials have denied that Canadian milk marketing boards violated any NAFTA rules regarding agricultural trade. Some argue that US farmers are the cause of declining milk prices through their overproduction. Whether or not these claims are valid might become the focus of a trade dispute panel if NAFTA holds together long enough. However, the broader and more fundamental internal policy discussion Canadians should have is whether it's long past time to dismantle the country's agricultural marketing boards.

criticized Canada's agricultural supply management system for substantially increasing the prices of food products, particularly dairy products, which are paid by all Canadians to benefit a relatively small number of Canadian farmers who enjoy above-average income and wealth levels, in any case. The policy implication is that it would be cheaper for Canadians as taxpayers to buy out the production quotas held by Canadian dairy farmers—that are the basis for determining who will produce what quantities of output and which necessitate protective tariffs—rather than paying abovecompetitive prices for dairy products in perpetuity.

The argument that supply management is necessary to assure farmers predictable and economically adequate income levels is specious. For example, insurance providers



could offer policies that compensate farmers for the difference between actual market prices and "breakeven" prices when the former falls below the latter. Indeed, the US government backstops a Margin Protection Program for Dairy, which is an insurance program in which US dairy producers enroll and from which they receive payments when the difference between the price of milk and the cost of feed falls below a level of coverage selected and paid for by the dairy farmer.

Canadian dairy industry representatives will likely make patriotic appeals for Ottawa to defend national sovereignty against the demands of a very unpopular American president;

**IRAL MILK** 

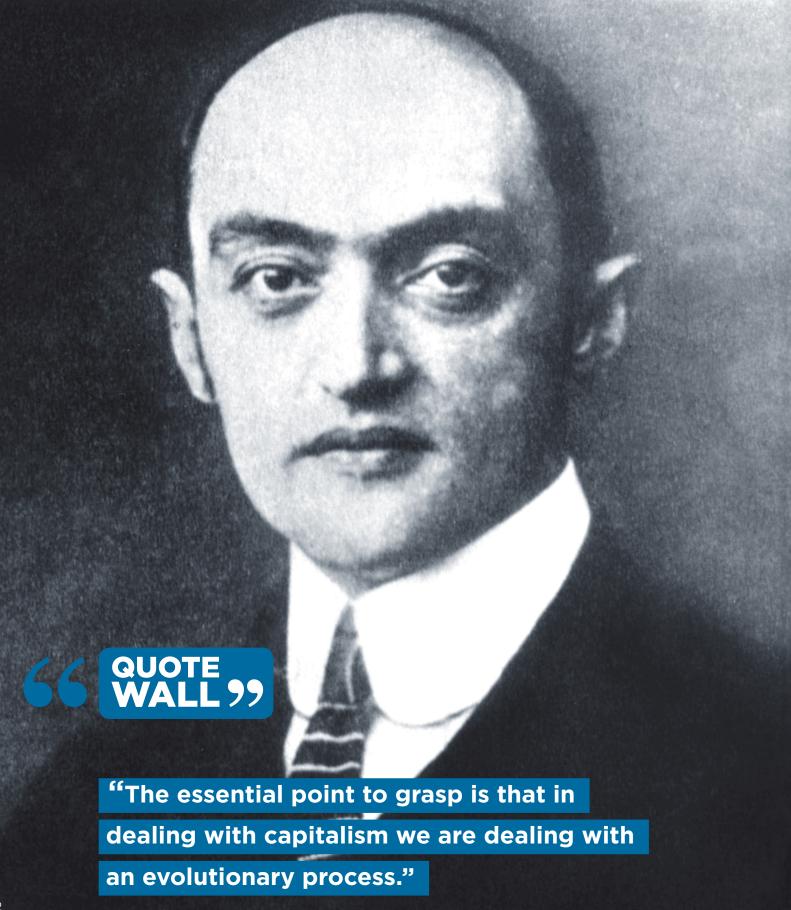
however, Canadian consumers have long put their financial welfare before their loyalty to Canadian-bred cows by shopping for dairy products south of the border. Indeed, a major US retailer, Costco, found it necessary to build a much larger store in Bellingham, Washington—some 90 kilometres south of Vancouver—to serve Canadians flocking to buy cheaper US milk and cheese. The congestion created by Canadian shoppers was driving away local customers when Costco was operating in its smaller premises.

There may certainly be principles and institutions for which the Canadian government should fight to preserve in any NAFTA renegotiation process, but the country's agricultural supply management system, in its current form, is not one of them.

Read the article here 

Steven Globerman is the Kaiser Professor of International Business and Director of the Center for International Business at Western Washington University, and Senior Fellow at the Fraser Institute.

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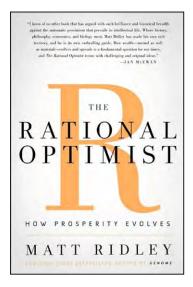


-Josef Schumpeter (1883-1950)



# THE RATIONAL OPTIMIST: HOW PROSPERITY EVOLVES

### by Matt Ridley



ver 10,000 years ago there were fewer than 10 million people on the planet. Today there are more than 6 billion, 99% of whom are better fed, better sheltered, better entertained, and better protected against disease than their Stone Age ancestors. The availability of almost everything a person could want or need has been rising, albeit erratically, for 10,000 years and has rapidly accelerated over the last 200 years: calories; vitamins; clean water; machines; privacy; the means to travel faster than we can run, and the ability to communicate over longer distances than we can shout.

Yet, bizarrely, however much things improve from the way they were before, people still cling to the belief that the future will be nothing but disastrous. In this original, optimistic book, Matt Ridley puts forward his surprisingly simple answer to how humans progress, arguing that we progress when we trade and we only really trade productively when we trust each other. *The Rational Optimist* will do for economics what *Genome* did for genomics and will show that the answer to our problems, imagined or real, is to keep on doing what we've been doing for 10,000 years—to keep on changing.  $\bigcirc$ 

To learn more about *The Rational Optimist*, and to get your own copy of the book, click here >>

# Fraser Forum

THE FRASER

# CAMPING AND THE OPEN MARKET

### by Johnathan Fortier

ast week, as I slogged through the pain of a two kilometre portage (2,380 metres to be exact) with a huge pack and 16-foot canoe, I spotted fresh bear tracks in the mud.

It was pouring with rain, and we were a little apprehensive that the bear might not hear us coming in the storm, so we sang loudly while we wished we had remembered the bells.

The tracks veered away after a while, and we picked up our pace, dreaming of the campfire and a warm meal. When trying to stay safe, dry, warm and well-fed, the mind doesn't tend to wander very much; there are sufficient challenges from hour to hour. There are tents and tarps to put up, firewood to collect, fires to manage, water to purify, meals to make, dishes to wash and mosquitoes to battle. Not only does all this happen in varieties of challenging weather, but there are always limited resources with which to get things

done. In a way, this is why camping is relaxing—there just isn't time to think (and worry) about the paperwork back on the office desk.

On the drive home, however, I found myself speculating about how the free market plays such an important role in all forms of recreation, and camping offers one great case study. One could argue that the popularity of recreation (from skiing to canoeing, camping to sailing) depends on significant leisure time and disposable income. Leisure used to mean sitting on the front porch and talking to passersby. If you were lucky you might have a cold drink, or your feet in a bucket of cool water.

Now, at least in North America, the sedentary nature of work for many seems to compel us to find activity in our leisure time. Fortunately, our advanced market economy creates the wealth necessary to allow us this time, and provides us with the disposable income to pursue many of our (sometimes expensive) interests.



For much of human evolution we have lived in primitive shelters and gathered around fires for warmth and cooked food. When we go camping in the wild, we are essentially returning to that state, sleeping on the ground, battling the elements and eating things that smell like wood smoke. The similarities end there, however, for we sleep on portable mattress pads, survive the elements in our Gore-Tex rain suits and eat dehydrated fettuccine Alfredo instead of freshly killed mammoth.

It's somewhat ironic that we go camping to escape the luxuries that modern markets provide, and then enjoy the lightweight highperformance camping gear that the extended market makes possible.

To fully appreciate how creatively the market has responded to the interest in camping, one need only think back 10 years to what gear was available. There were no hand pump water filtration systems, no prima loft insulated jackets, no 35-pound carbon fusion canoes, and certainly no GoPro cameras to capture the experience for your home-produced film.

You can now go to any number of retailers (online or in person) and shop for precisely this stove or that sleeping bag that suits your particular trip. Thanks to the free market, whether you're headed to Grouse Mountain for a day hike or planning a month-long paddle in the Northwest Territories, there's gear to match. (Portable electric bear fence anyone?)

Read the blog post here >>>



Johnathan Fortier is a Senior
Fellow at the Fraser Institute
and earned his MPhil and his
doctorate at the University of
Oxford where he worked on
the idea of liberty and personal
responsibility as they find
expression in English literature.

# STUDENT LEADERS COLLOQUIUM

ver the 2016-2017 academic year, 125 outstanding students were identified at our Explore Public Policy Issues student seminars and invited to apply for our Student Leaders Colloquium.

16 participants were then selected based on their potential to be future leaders. In addition to those who were actively involved in campus, local, provincial, and federal politics, we chose students pursuing careers in journalism, law, entrepreneurship, commerce, and medicine, just to name a few. Through this program, these future decision makers and opinion leaders learned about the benefits of markets and liberty, while working alongside our Institute policy staff.

For more information on the program, visit our website: >>>

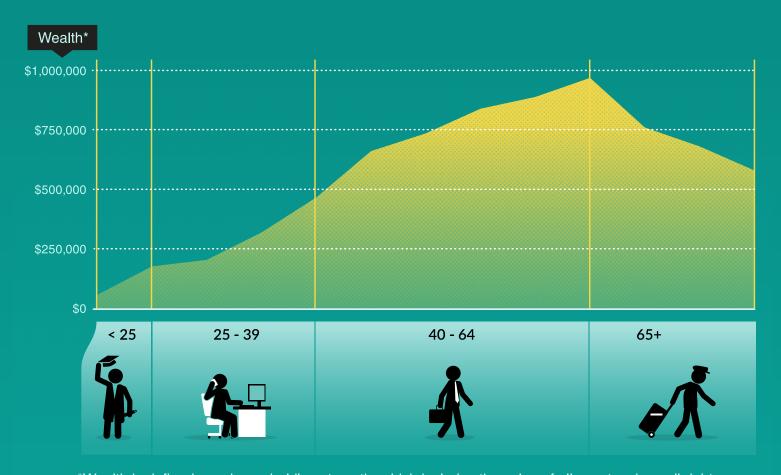




# UNDERSTANDING WEALTH INEQUALITY IN CANADA

For most Canadians, wealth accumulation is a steady, lifelong process and is the dominant explanation for observed differences in wealth.

Read more >>>



<sup>\*</sup>Wealth is defined as a household's net worth, which includes the value of all assets minus all debts.



# THE UNSEEN WALL: THE FRASER INSTITUTE'S 2003 TRADE SURVEY

### Free Trade Confronts the New Protectionism

by Fred McMahon, Matthew Curtis, and Adeola O. Adegoke

ver the past two years, The Fraser Institute has surveved Canadian companies about the incidence of nontariff and non-quota trade barriers that companies operating in Canada face when exporting to the United States. The survey reveals largely unseen problems affecting Canadian exporters and may also be a harbinger of more problems to come. The type of trade barriers examined here are used on both sides of the border but this study gives a Canadian perspective on cross-border issues by surveying only Canadian exporters. The survey focuses on three broad categories:

- · discriminatory regulations,
- cumbersome border inspections, and
- domestic content requirements.

Valued at about \$700 billion a year, trade between Canada and the United States forms the largest bilateral trading relationship in the world.

Valued at about \$700 billion a year, trade between Canada and the United States forms the largest bilateral trading relationship in the world. Goods exports alone equal



a third of Canada's GDP (gross domestic product). Even more remarkably, Canada's US trade surplus in goods almost equals 10% of Canada's GDP.

These staggering statistics underline the importance of maintaining a healthy relationship between the two countries. Many thousands of Canadians could be thrown out of work if, for instance, security concerns led to tighter border controls, or a renewed bout of US protectionism boosted buy-America sentiment, or even a reaction to anti-Americanism in Canada caused the United States to increase its use of the type of trade barriers examined here.

In this world of just-in-time delivery, a simple change in border regulations or the attitudes of customs officials could inflict severe damage on the Canadian economy. Administrative measures alone—without any legislative action from Congress—could destroy tens of thousands of

jobs in Canada. As a trading nation, Canada's prosperity and its relatively high standard of living are dependent upon market access beyond its national borders.

As a trading nation, Canada's prosperity and its relatively high standard of living are dependent upon market access beyond its national borders.

As this survey of Canadian exporting firms will show, the majority of respondents believe not only that relations between Canada and the United States have worsened but also that this worsening of relations has damaged their ability to sell into the US market.

A deterioration in trading relations between Canada and the United States would be devastating for Canada's economy. In 2002, Statistics Canada reported that 83.7% of Canadian exports were bound for the United States and that Canada's trade surplus with the United States stood at whopping \$92 billion (Statistics Canada, 2003). Curiously, many of those most opposed to free trade with the United States have argued that the United States would never dare hamper crossborder trade because the United States is too dependent on Canadian trade. This appears to be incorrect, as exports to the United States accounted for 38% of Canada's GDP while exports from the United States

to Canada accounted for 3% of American GDP.

By examining trade barriers that could easily become more prevalent, this study provides Canadian policy makers with important information. Given that both Canada and the United States use such barriers but that it is Canada that is accumulating trade surpluses, the best way to ward off future growth of such barriers on the US side of the border is to work cooperatively with the United States on its legitimate concerns rather than deride them as some Canadian Parliamentarians seem inclined to do.

As well, rather than leaving trade issues on the back burner, the Canadian government should seek to develop a more comprehensive trade agreement with the United States and move more aggressively on the security file to prevent lengthy inspections on low-risk goods and travelers at border crossings.

In 2002, Statistics Canada reported that 83.7% of Canadian exports were bound for the United States.

# ECONOMIC GROWTH THROUGH FREE TRADE

Free trade is an important determinant of prosperity and economic growth. Trade barriers limit the free flow of goods, services, and investment across national borders and shield inefficient



industries from foreign competition. Through free trade, countries can boost productivity from increased competition and allow a rational allocation of resources to occur throughout the economy (Law and Mihlar 1998).

A study that examined data from developing nations over the period from 1970 to 1990 found that those with open trade policies registered economic growth at an average rate of 4.5% annually, compared to only 1% among those with closed borders (Sachs and Warner, 1995). Also, studies conducted on the causality between exports and economic growth (Tao and Zestos 1999; Dutt and Ghosh 1996; Ghartey 1993) point strongly towards export growth as a significant factor or determinant of the GDP growth countries have experienced in the past.

The Great Depression highlighted the danger that economic protectionism posed to the health of the global economy. High tariffs were imposed on imports and trading nations such as Canada and the United

States suffered greatly. To avoid the calamity of punishing trade wars and high tariffs, Canada and many other countries have become parties to trade agreements to improve market access and to establish common rules to govern trade.

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The site offers a wide array of new features including an interactive world map and customized graphing and data downloads which will make it significantly easier for people to analyze and share economic freedom data. It is mobile-friendly and highly visual whether you are viewing it on a smart phone, tablet or desktop computer.

The new site houses all the resources found on the previous site, plus additional resources such as:

- an explanation (written and in video format) of economic freedom in laymen's terms;
- the history of the development of measurement of economic freedom;
- links to posts on economic freedom from the Institute's Fraser Forum blog; and
- information on our international economic freedom audit program.

Let us know what you think of the new site and, of course, please share the new site with your friends and colleagues.





# ECONOMICS MADE THE WORLD GREAT—AND CAN MAKE IT EVEN BETTER

### Don Boudreaux, Mercatus Center

A lot of doom and gloom types say we're living in dark times. But they're wrong. While there are real problems, the world has never been healthier, wealthier, and happier than it is today. Over a billion people have been lifted from dire poverty in just the past few decades. What has contributed to this improvement of our well-being? The answer can be found in the evolution of economic and policy ideas. ©

See the video here >>>

# Freiser Forum

THE FRASER

# ECONOMIC FREEDOM HAS BEEN KEY TO ADVANCEMENT OF WOMEN WORLDWIDE

### by Fred McMahon

hrough March, we've seen two well-publicized celebrations of freedom, though the architecture of freedom has been little discussed.

CNN's Freedom Week featured clips of people, many of them famous, describing what freedom means to them. More global was International Women's Day, marking women's gains in freedom and achievement across much of the planet. Achievement depends on freedom and, with freedom, women's achievements become inevitable.

But these celebrations seldom mention one of the most fundamental freedoms; economic freedom—the ability of individuals to make their own economic decisions, without government or crony capitalist control or dependence.

Economic freedom has been key to women's advancement, opening many doors, including the ability to make their own career decisions and enter into once virtually forbidden professions such as engineering.

In the quarter freest countries women's literacy is 92% and men's 95%.

Antony Davies, Duquesne University, and James R. Harrigan, of Strata, a Utah-based think-tank, have found a strong relationship between economic freedom, as measured by the Fraser Institute economic freedom index, and gender equality, as measured by the United Nations Development Programme.

Economic freedom has been shown to be correlated with a number of outcomes for women, for example, literacy, which increases for both men and women in economically



free nations, but most dramatically for women.

According to data from the World Development Indicators, in the quarter freest countries, women's literacy is 92% and men's 95%. In the least free nations, women's literacy is 60%, a huge gap below men's literacy at 75%.

for everyone. It provides the foundation on which the architecture for freedom is built.

We at the Fraser Institute have just made a huge advance. Many countries do not extend the same economic liberties to women as to men. In the past, data were not available to measure the difference adequately.

Data availability now enables us to adjust the economic freedom index to take this into account. In the 2016 report, Rosemarie Fike explored the adjustment methodology, which will be fully incorporated into the 2017 report. And here too, the positive relation between economic freedom and gains in gender inequality still holds.

The adjustment technique penalizes the score of countries lacking economic freedom for women. The penalty is not based on subjective judgments but rather from data from the OECD and World Bank. The downward adjustment for the quarter least free nations is two-and-a-half times the adjustment for the freest nations.

#### **GENDER INEQUALITY INDEX 2005-2014**



Economic freedom is important for everyone. It provides the foundation on which the architecture for freedom is built. In an economically unfree society, government or crony capitalists have plenty of coercive tools that influence an individual's ability to find a job, get a promotion, gain education, feed and clothe their families, and see opportunity for their children.

One of the last century's great totalitarian thinkers realized the power that comes from suppression of economic freedom. As Leon Trotsky put it: "In a country where the sole employer is the State, opposition means death by slow starvation. The old principle, who does not work shall not eat, has been replaced by a new one: who does not obey shall not eat."

Of course, few states have been this extreme, but the more control government or crony elites have over an individual's economic life, the greater the individual's dependence. Economic freedom liberates individuals from this dependence and opens the door for other freedoms.

Read the blog post here >>



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World Project and coordinates the Economic Freedom Network, an international alliance of over 100 think tank partners in about 100 nations and territories.



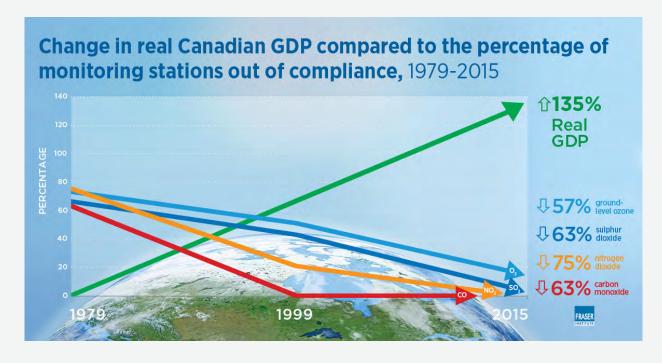
### CANADA'S AIR QUALITY SINCE 1970: AN ENVIRONMENTAL SUCCESS STORY

by Ross McKitrick and Elmira Aliakbari

anadians have long been concerned about the state of our air quality and the belief that air pollution is a major problem seems to be widespread. This publication examines the evolution of air quality in Canada from the 1970s onward and looks at how the current state of air quality compares to the stringent standards established by

Canadian government policy. The study concludes that air quality in Canada has improved substantially and that this significant change over the past four decades occurred at the same time there was considerable growth in Canada's population, economic activity, energy use, and consumption of motor fuel.

Read the study here >>>





# COMPLEMENTARY AND ALTERNATIVE MEDICINE: USE AND PUBLIC ATTITUDES

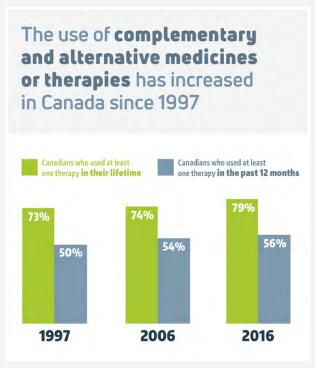
1997, 2006, AND 2016

by Nadeem Esmail

onventional medicine's ability to deal with and treat pain and disease continues to progress thanks to changes in medical practice and the introduction of new medical and pharmaceutical technologies. At the same time, the public's knowledge about what health care can do has also grown considerably, in part because of continually expanding access to information and knowledge via the internet. These significant changes in the health care world led to the question of whether or not, and to what degree, Canadians' use of, and public attitudes towards, complementary and alternative medicine (such as chiropractic, naturopathic, and herbal therapies) have changed over the past two decades. To answer this question, the Fraser Institute commissioned Compas to conduct a Canadian national survey to determine the prevalence, costs, and patterns of complementary and

alternative medicine (CAM) use in 2016. This is the third in a series of surveys on the use of and public attitudes towards CAM published by the Fraser Institute.

Read the study here >>>



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