Canadian
STUDENT REVIEW

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BRADY, LEBRON AND THE ECONOMICS OF G.O.A.T

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Canadian STUDENT REVIEW

WELCOME

Dear Readers:

Congratulations on completing yet another academic year! It's time to enjoy the better weather, and we have a *Canadian Student Review* issue that we hope will make this summer that much brighter!

In this edition, we showcase the work of two student contributors. Kevin Donaghey explores Canada's endeavors to address climate change in his analysis of the delicate equilibrium between ambitious environmental objectives and the economic repercussions of the federal carbon policy. Meanwhile, Bella Jackson delves into another intricate balancing act, this time in the realm of politics and trade, uncovering the dance politicians perform as they maneuver through the aspirations of voters and local industries amid the complexities of global trade dynamics.

In addition to these contributions, you'll discover a trio of compelling articles on disparate topics from the Fraser Institute's blog. One post uses economic analysis to explore the iconic status of figures like Tom Brady and LeBron James. Another uncovers some of the major difficulties that both renters and landlords face in Canada's post-pandemic rental markets. The third challenges widely held assumptions about forest fires and advocates for well-informed forest management strategies.

For your enjoyment this issue also showcases a recent infographic, a thought-provoking quote from Marian Tupy, a simple but important video, and two more recordings from the *Explore Public Policy Issues* webinar series.

If you or someone you know wishes to contribute content to the *Canadian Student Review*, please have them contact Ryan Hill directly at Ryan.Hill@fraserinstitute.org.

Best,

Ryan

BRADY, LEBRON AND THE ECONOMICS OF G.O.A.T.

JASON CLEMENS

NFL quarterback Tom Brady's retirement and NBA basketball player LeBron James breaking Kareem Abdul-Jabbar's longstanding scoring record have sparked renewed discussions and analyses of the G.O.A.T. (Greatest of All Time). It's hard to turn on a sports station without avoiding such discussions. The problem is not only defining what's meant by "G.O.A.T." but adjusting for factors that over time influence performance and playing statistics.

This is where economics helps. There are entire subdisciplines within economics dedicated to understanding the influence and power of rules and how they affect behaviour and performance over time. Moreover, economists are constantly adjusting data from nominal values to "real" values to account for the effects of inflation over time, so we're well-versed in thinking about how to make adjustments to reflect changes over time.

Let's start with the discussion of Tom Brady as the G.O.A.T. in professional football. For comparative purposes, let's stack Brady against three other highly successful quarterbacks: Terry Bradshaw of the Pittsburgh Steelers, Joe Montana of the San Francisco 49ers (and later the Kansas City Chiefs), and Bart Starr of the Green Bay Packers.

Starr played from 1956 to 1971 and won three consecutive league championships and the first two Super Bowls. In 16 professional seasons, he won five championships, resulting in a championship win ratio of 31.3 percent. Terry Bradshaw played 14 seasons from 1970 to 1983 and won four Super Bowls, resulting in a win ratio of 28.6 percent. Montana played 16 seasons from 1979 to 1994, winning four Super Bowls for a win ratio of 25.0 percent. Brady won seven Super Bowls over 23 seasons, resulting in a win ratio of 30.4 percent, slightly less than Starr and just ahead of Bradshaw.

This is not to diminish Brady's record of championships but rather to emphasize that to some extent his success at winning championships was the result of his having had a longer career. As medicine and sports science more generally have advanced, the length of athletes' careers has also been extended, so analyses need to be careful about conflating longevity and performance,

A HOST OF RULE CHANGES COUPLED WITH MEDICAL AND HEALTH ADVANCES HAVE ENABLED PLAYERS, PARTICULARLY QUARTERBACKS, TO EXTEND THEIR CAREERS

[1] *As of June 5th, 2022.*

particularly with respect to career statistics such as passing, touchdowns, etc.

Consider, for example, what happens to career passing yards statistics when adjusted for the number of seasons played. As of the end of the 2022 season, Brady led with 89,214 followed by Drew Brees (80,358), Peyton Manning (71,940), Brett Favre (71,838), and Ben Roethlisberger (64,088). However, if we adjust career passing yards by the number of seasons played, Brady falls to third behind Brees and Manning. Again, there's a risk of conflating longevity with performance.

In addition, the length of the regular season has changed over time. In 1978, the number of games increased from 14 to 16 and, just recently in 2021, to 17. So the number of games played per season by quarterbacks such as Starr and Bradshaw is less than those who followed them and needs to be accounted for when considering career statistics.

Perhaps most importantly, the NFL rules have been changed to better protect the quarterback and promote a more offensively oriented game. Sean Cunningham (with the assistance of former NFL quarterback Tim Hasselbeck) assessed some of the more important rule changes that favour quarterbacks for the magazine *InsideHook*. In 1995, for instance, the NFL changed the rule so that defensive players could not unnecessarily or violently throw quarterbacks to the ground or land on them while tackling. In 2002, the NFL made it a penalty—and a severe one—to hit a quarterback helmet-to-helmet. In 2006, the NFL prohibited defensive players from hitting quarterbacks below the knee. These are just some of the rule changes that protect quarterbacks, which makes it easier for them to perform and extends their longevity.

Put simply, a host of rule changes coupled with medical and health advances have enabled players, particularly quarterbacks, to extend their careers. When debating the G.O.A.T.

these changes must at least be included in the discussions.

Rule changes should also feature prominently in any discussion about Lebron James surpassing Kareem Abdul-Jabbar's NBA scoring record. Consider, for example, that when Kareem played, the NBA required players to attend college to be draft eligible, which meant Abdul-Jabbar spent four years in college compared to James, who was drafted out of high school because the NBA had changed the rule.

A recent analysis by Sporting News columnist Kyle Irving suggests that had Kareem not been required to play college ball before going professional, he could have reached 48,759 points, which he concludes "would almost certainly never be broken." Kareem's actual scoring record was 38,387, which James surpassed in February.

Another rules-based change that clearly influenced performance, and scoring more specifically, was the NBA's introduction of the three-point shot in 1979, in the middle of Kareem's career. Prior to 1979, long-distance shooting was not as valued as inside play, in which Kareem dominated. Interestingly, Kareem only made one three-point shot in his professional career whereas James, as of the beginning of February 2023, had made 2,237 three-pointers in regular season play, which represents a material points advantage.

Again, this is not to discount James' accomplishments, but rather to recognize how rule changes over time influence performance and any comprehensive debate about the G.O.A.T. in any sport. ◆

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TAX FREEDOM DAY

CANADA'S RENTAL MARKETS IN EVEN WORSE SHAPE POST-PANDEMIC

JOSEF FILIPOWICZ AND STEVE LAFLEUR

One indicator that life is getting back to normal is the return of some of Canada's pre-pandemic ills. For example—declining affordability for rental accommodation. While some might have expected cities to recover slowly from COVID, rental markets in Canada's cities are even tighter than they were in 2019. So we're right back where we started, and trending in the wrong direction.

The Canada Mortgage and Housing Corporation recently released its latest Rental Market Report, which summarizes the previous year's rental market dynamics at the national and metropolitan levels. Among the most significant findings is that Canada's rental vacancy rate fell to 1.9 percent—the lowest it's been since 2001. In other words, fewer than two percent of rental units nationwide were available to prospective renters, far below the average of 3.2 percent from the past three decades.

Previously, only chronically undersupplied markets such as the Toronto, Vancouver, and Victoria metropolitan areas saw rental vacancy rates fall consistently below two percent. Now, markets including London, Waterloo Region, Peterborough, Hamilton, Kingston, Gatineau, Quebec City, and Halifax have all fallen below this threshold. In fact, many of these cities have lower vacancy rates than Toronto.

Low vacancy rates are bad news for current and prospective renters. Fewer units available to rent doesn't just affect how difficult it is to find a place, it also has an impact on how much renters pay. Rents are inversely correlated with rental vacancy rates, meaning that if vacancy rates go down, rents go up (and vice versa). Indeed, average rents for two-bedroom units in the primary (built for renting) rental market rose 5.6 percent year-over-year Canada-wide, with even greater increases in many of the cities mentioned above.

Tight rental markets also have negative economic and social consequences. High rents and low rental availability dissuades workers from moving in search of better job prospects as higher living costs outweigh potential wage gains. Further, worsening rental prospects can undermine federal and provincial immigration policies. As an essential source of housing for many (if not most) new

arrivals, properly functioning rental markets play a key role in accommodating a growing Canada.

With the pandemic in the rear-view mirror, Canadian cities must adjust to the reality that housing demand is back with a vengeance, meaning they should allow more housing to be built if they want to restore functioning rental markets. This is no longer just a Toronto and Vancouver issue. Smaller metropolitan areas with tight rental markets must also start building more housing to avoid chronically low vacancy rates and high rents. ◆

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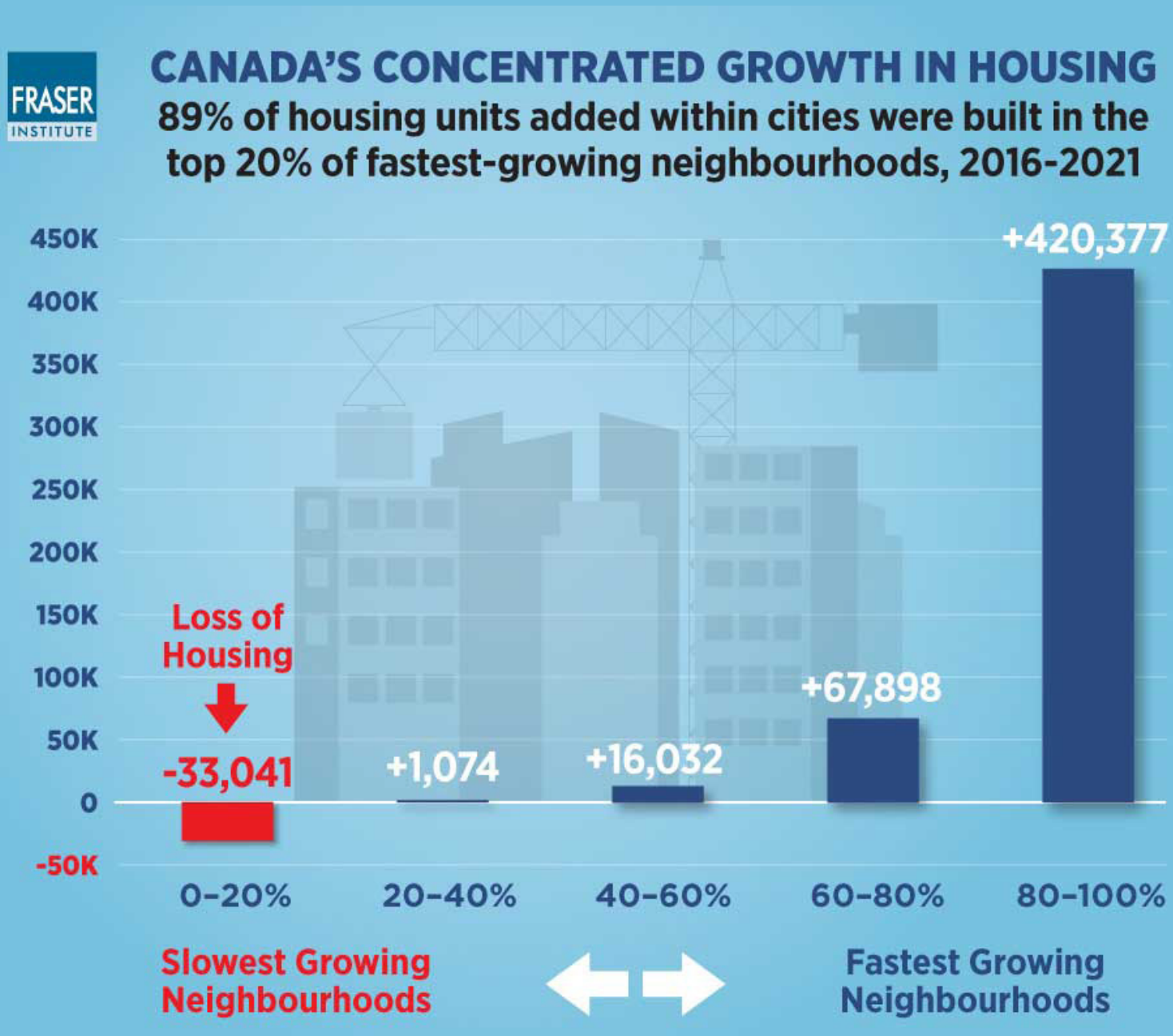
INFOGRAPHIC

MAKING ROOM FOR GROWTH HOUSING INTENSIFICATION IN CANADA'S CITIES, 2016–2021

READ MORE HERE



DON'T FORGET THE COSTS OF CARBON POLICY

KEVIN DONAGHEY

Canada's federal carbon policy aims to combat climate change. The federal government wants to reduce emissions by 45 percent (2005 base year) by 2030 and have net zero emissions by 2050 (Government of Canada, 2022). But Canada's annual emissions are less than 1.5 percent of global emissions (CAPP, 2023). The federal government highlights the benefits of reducing carbon emissions, but it also needs to focus more on the costs of reducing emissions to determine whether federal carbon policy benefits Canadians.

The carbon pricing system is also the most efficient way of reducing emissions. Using the price system will ensure that emissions that create economic value higher than the cost of the tax will continue, while emissions that create less value than the tax will not, because it costs the emitter more to make the product than what it is worth. However, carbon emissions are a global issue. In order to have an impact on climate change, environmental policy must target global emissions, not national emissions. If federal carbon policy reduces national emissions, but the emissions simply move to another country; the policy is pointless.

Canada creates just a small portion of global emissions and therefore reducing our emissions will not have a big impact on global carbon emissions. Any reductions Canada makes are trivial relative to large emitters such as China. A reduction of 30 percent of Canadian emissions would amount to a 0.45 percent global reduction (CAPP, 2023).

With the carbon tax, companies that produce carbon emissions from their operations in Canada will have an incentivize to leave Canada so they can operate in jurisdictions where it is cheaper to do so, or where there are less strict regulations on carbon emissions. In such cases, emissions in Canada might be lower but they are not necessarily reduced globally. Instead, companies move their production to another country that perhaps has less stringent environmental regulations or no carbon tax. In economics this is referred to as leakage. The true leakage rate (the extent of pollutions going abroad) of the carbon tax policy is unknown, but as prices on carbon increase, the leakage rate will increase with it.

The benefits of reducing national emissions are much smaller than they may appear at first glance. If Canada maintains its national carbon tax framework and reduces national emissions while global emissions remain constant or decrease only slightly because other countries have increased their respective emissions, then current federal policy won't have done much to combat climate change.

The second part of the equation is the costs associated with the carbon tax. The federal carbon tax is expected to reach $170 per tonne in 2030 (Canada, 2020). Canadians pay these taxes when they buy just about anything—gas, groceries, and clothing, for instance. The carbon tax is projected to account for nearly a quarter of the price of gas by 2030 (Kaplan and Milke, 2021). The burden on Canadian consumers will only increase as the tax increases.

The federal government claims that Canadians will be better off with a carbon tax. The reality is that taxing an economy's main energy source will reduce economic activity. It is estimated that the carbon tax will cause a 1.8 percent decline in GDP (or $1,540 per person) and a net loss of 184,000 jobs (McKitrick and Aliakbari, 2021). Taxing the main energy source of an economy will have a negative impact on every Canadian and the nation's economic prosperity.

Federal carbon policy will reduce government revenue by reducing economic output and consumption. Even though revenue from the carbon tax will increase, other revenues could decrease. A recent Fraser Institute report shows that the net impact of the current emissions reduction plan will result in an additional $22 billion of borrowing by the federal government (McKitrick and Aliakbari, 2021).

Government officials consistently highlight and overstate the benefits of a federal carbon tax, but often understate and sweep the costs under the rug. The notion that Canadians should lead environmental policy globally is a moral debate while the cost and benefits are measurable and concerning. It is important that Canadians consider the costs associated with the tax and weigh it against the actual benefits. Does the carbon tax really benefit Canadians? ◆

Kevin Donaghey is a Fraser Institute research intern. He is a recent graduate of the Lang School of Business and Economics at the University of Guelph.

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THE REALITY IS THAT TAXING AN ECONOMY'S MAIN ENERGY SOURCE WILL REDUCE ECONOMIC ACTIVITY

THE GREAT BARRIER GRIEF

WHY THE NEW ERA OF GLOBALIZATION MEANS AN INCREASE IN NON-TARIFF BARRIERS.

BELLA JACKSON

Non-tariff barriers are protectionist policies that affect trade by imposing requirements on firms. Overuse of these policies obstructs market access and trade efficiency, harming the collective prosperity of a nation and its stakeholders. So why are they so popular? The answer is anchored in public choice theory and "slowbalization."

Politicians want to get elected and re-elected. To do so, they must obtain support from voters and interest groups, respect established international trade agreements, and defeat political rivals. As a result, politicians cater to concentrated interest groups by implementing policies with diffuse costs and effects, unnoticed by the average voter. The discretionary nature and complexity of non-tariff barriers makes them an increasingly common tool for politicians to employ (IMF, 2023: 16).

Non-tariff barriers (NTBs) refer to any trade restriction measure other than a customs tariff and are divided into two categories. Non-technical NTBs are price and quantity protectionist measures, such as anti-dumping or import licenses. Technical (or quality) NTBs implement import quality standards, such as packaging requirements or testing certifications.

Differentiating the necessary non-tariff barriers from the superfluous ones is difficult, as is measuring their subsequent effects. Their discretionary nature (i.e., politicians can implement such trade barriers on a case-by-case basis, not according to pre-determined rules) means that consumers will be faced with increasing prices and will have great difficulty understanding the mechanisms that unleashed them.

The IMF's review of global trade reveals that recent economic shocks and geopolitical pressures have led to global economic fragmentation and a rise in nationalist sentiment. Nations are increasingly adopting protectionist measures. For example, the North American Free Trade Agreement, now the US-Mexico-Canada Agreement, or USMCA, was renegotiated to prioritize domestic manufacturing. One of its updates now requires that 75 percent of car parts be made in North America (it was 62.5 percent under NAFTA).

But the rules are meant to be unambiguous. The World Trade Organization's (WTO) five fundamental principles are meant to protect multilateral trade. Specifically, the "Most Favored Nations" principle prohibits prioritizing domestic industries and limits the use of tariffs.

Tariffs are a direct and transparent form of protecting domestic industries. However, they can quickly become unpopular with consumers and political opponents will exploit them to discredit the government. A protectionist paradox exists because as consumers, knowingly or not, voters desire liberal policies where low prices, low taxes, and choice reign. Protectionism usually leads to decreased competition, higher prices, and limited choice. And an "unhappy customer" makes an "unhappy voter."

In liberal democracies, competitive elections and the occurrence of public choice theory may hinder beneficial long-term economic policies. The pressure to maintain trade liberalization for consumer and international benefits while providing domestic satisfaction through protectionism "reduces politicians' incentives to use simple, transparent trade barriers" (Kono, 2006: 370). Removing tariffs while simultaneously implementing protectionist NTBs can lead to a balance, the benefit of which is that it is too complex for political rivals to explain.

In 2022, the organization Global Trade Alert reported that a total of 5,724 new trade policies were implemented worldwide, of which 4,638 had a restrictive effect on global trade. According to the WTO's 2021 worldwide NTB analysis, roughly 60 percent of imported products worldwide must comply with at least one non-tariff barrier (the average is three NTBs per product), representing 80 percent of the total value of imported goods. The UN Conference on Trade and Development (UNCTAD) estimates that the average trade expenses of non-tariff barriers are more than double those of customs tariffs. Unfortunately, the demographic most affected by the resultant price hikes is small businesses and lower income households.

The Covid-19 pandemic, climate decarbonization, and the rise of China have accelerated the protectionist momentum, a trend confirmed by recent country elections. A new form of globalization is emerging. It is more subtle and is often tied to forms of government and ideology, such as climate policies that favor localizing electric vehicle manufacturing or reshoring/nearshoring chip manufacturing in response to military considerations. Politicians are using NTBs to bypass decades of trade liberalization.

The regulatory intricacies of non-tariff barriers and the complexity of their resulting effects mean governments are inclined to use them to balance conflicting pressures. Non-tariff barriers are implemented with legal tools and must follow specific standards established by the WTO. These guidelines are in place to ensure that NTBs are based on scientific principles and not a subjective whim. But new protectionist and climate trends question the durability of the WTO's principles.

Non-tariff barriers can be protectionist signaling. Politicians can develop a strong support base and resources if they appeal to powerful labor unions. In Canada, the Dairy Farmers of Canada (DFC) is a dominant union that has strongly supported all federal parties in exchange for industry protectionism. The union has successfully pressured the government to implement several NTBs on foreign dairy imports, such as quotas limiting the quantity of dairy imported. By doing so, the Liberal government maintained the DFC Union's electoral support. Canada has the highest prices for milk in the Western world.

Non-tariff barriers can be hidden in ambitious projects with high moral and economic appeal while helping boost local industries that have lagged. The 2022 US Inflation Reduction Act proposes significant investment in Electric Vehicle (EV) incentives, aiming to reduce inflation by growing the domestic supply chain and onshoring jobs. It is not so much a climate bill as it is an industrial one. Seventeen states have introduced Zero-Emissions Vehicle (ZEV) mandates, requiring automakers to sell a specific percentage of EVs in their respective markets.

THE DEMOGRAPHIC MOST AFFECTED BY THE RESULTANT PRICE HIKES IS SMALL BUSINESSES AND LOWER INCOME HOUSEHOLDS

Starting in 2026, California will be requiring that 35 percent of the cars produced be ZEVs.

This creates a hurdle for foreign automakers that may not have the capacity to produce and sell such vehicles in the US. Additionally, some states have implemented regulations on EV charging infrastructure. These regulations may include compatibility requirements with specific charging standards or a patchwork of different regulations across different regions.

This can create confusion and add further costs for EV charging providers. Finally, some states have implemented incentives that may favor domestic EV manufacturers or specific types of EV technologies. These non-tariff barriers limit competition, affect consumer choice, and create high barriers to entry for foreign companies in the US EV market.

Politicians clearly face complex pressures when it comes to trade policy. While free trade principles resonate with the average consumer and voter, politicians must navigate a web of competing interests including domestic industries, labor unions, and foreign governments. Non-tariff barriers are one tool that politicians can use to signal their support for domestic industries and address domestic concerns about foreign competition. By carefully deploying this measure,

politicians improve their chances of winning elections by promoting economic growth and stability in their countries. However, it is critical that politicians take a careful approach when implementing NTBs.

Unfortunately, the growing number of opportunistic NTBs leads to the misallocation of investment and can create economic imbalances. Resources may be directed towards industries or firms that are inefficient, uncompetitive, and have limited growth potential. This hinders long-term growth as resources are politically allocated rather than being based on economic merit. Market signals will be disrupted as industries that are not competitive are sustained by government support, suppressing firms that may have been more innovative and productive. In the long run, this will lead to slower economic growth and innovation. Voters will ultimately be left to bear the heaviest consequences of these protectionist policies.

It will be interesting to see how the WTO's principles and guidelines navigate the evolution of global trade. ◆

A recent graduate of McGill University in political science, Bella Jackson was born and raised in Paris, France, to international parents. Her background includes work in a lobby firm and as a research intern for the federal Leader of the Official Opposition. Bella is currently working for the Montreal Economic Institute in research/analytics and external relations.

QUOTE WALL

CONTRARY TO WHAT MANY PEOPLE HAVE BEEN EXPECTING, THE GROWTH OF THE HUMAN POPULATION FROM ROUGHLY 1 BILLION IN 1800 TO 7.8 BILLION IN 2020 HAS NOT BEEN ACCOMPANIED BY A LOWERING OF LIVING STANDARDS BUT BY AN EXPLOSION IN MATERIAL ABUNDANCE. IF YOU APPROACH THIS VOLUME WITH AN OPEN MIND, YOU WILL BE ASTOUNDED BY THE PROGRESS THAT HUMANITY HAS MADE, ESPECIALLY OVER THE LAST 200 YEARS OR SO. THE BOOK WILL AFFIRM THE MORAL AND PRACTICAL VALUE OF EVERY ADDITIONAL HUMAN BEING, LEAVE YOU APPRECIATIVE OF THE ABUNDANCE THAT YOU ARE ENJOYING TODAY, AND EVEN HOPEFUL ABOUT THE FUTURE FATE OF HUMANITY.

— MARIAN L. TUPY,
SUPERABUNDANCE: THE STORY OF POPULATION GROWTH, INNOVATION, AND HUMAN FLOURISHING ON AN INFINITELY BOUNTIFUL PLANET

FOREST FIRES—TRUTH GOING UP IN FLAMES

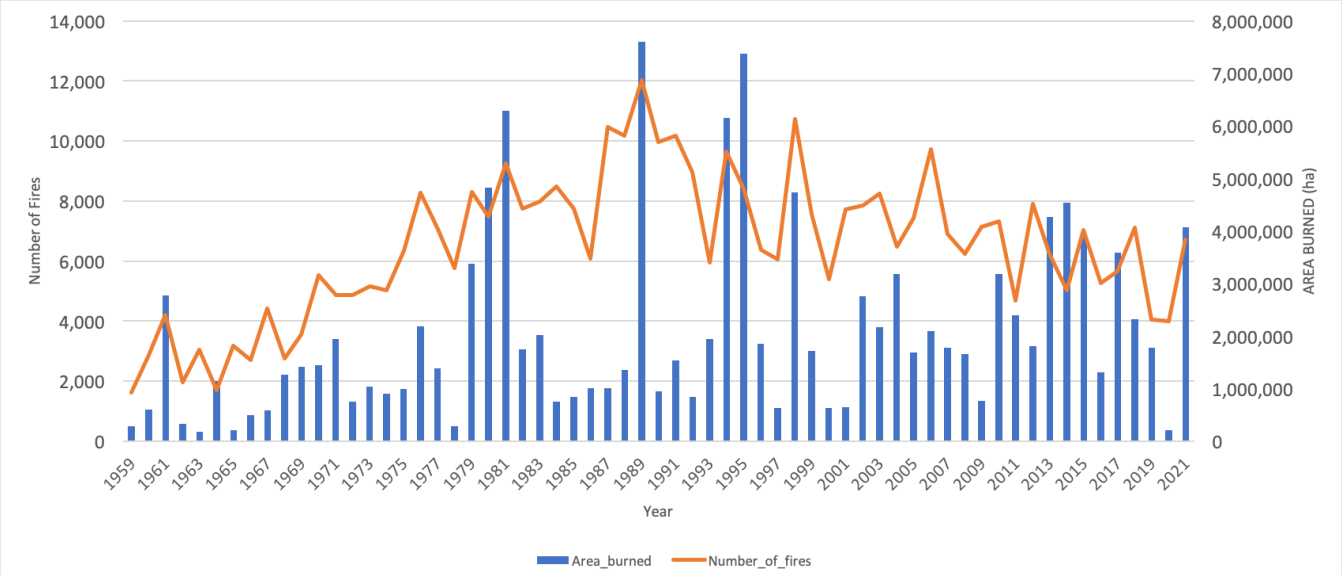
ROSS MCKITRICK

Until the recent Canadian wildfires sent plumes of smoke over the densely populated cities around the Great Lakes, the Eastern Seaboard, and the Okanagan, few people in those cities had ever experienced the weird orange haze of a forest fire or the temporary spike in fine particulates and the pervasive smell of smoke. And understandably, many people reacted with some alarm. We city dwellers typically only see wildfires on television, usually alongside footage of fire crews and water bombers valiantly trying to put them out, which creates the impression they are somehow unnatural events that must be avoided at all costs. Of course, in reality, forest fires are not only natural but are essential to the life cycle of the forest ecosystem.

Unfortunately, politicians, reporters, and climate activists rushed in to exploit this unusual event to push their agenda. They made a lot of glib claims that climate change was causing wildfires to become more common. For instance, Prime Minister Trudeau tweeted, "We're seeing more and more of these fires because of climate change."

That statement is false. Amid the smokescreen of untrue claims, nobody seems to have bothered to look up the numbers. Canadian forest fire data are available from the Wildland Fire Information System. Wildfires have been getting less frequent in Canada over the past 30 years (see figure 1). The annual number of fires grew from 1959 to 1990, peaking in 1989 at just over 12,000 that year, and has been trending down since. From 2017 to 2021 (the most recent interval available), there were about 5,500 fires per year, half the average from 1987 to 1991.

Figure 1: Wildfires in Canada, 1959 to 2021.

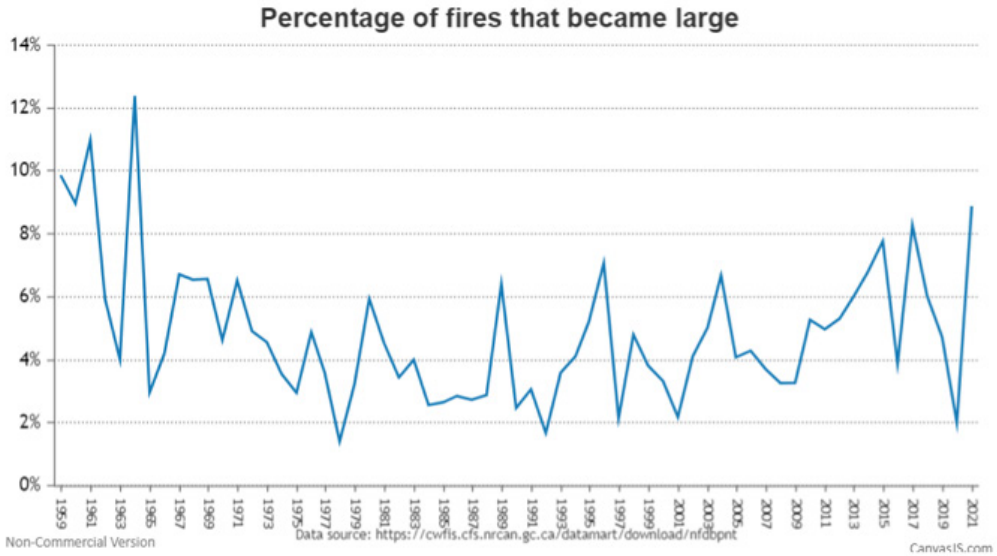


Source: Canada, Natural Resources Canada (undated).

The annual area burned also peaked 30 years ago. It grew from 1959 to 1990, peaking in 1989 at 7.6 million hectares before declining to the current average of 2.4 million hectares per year over 2017 to 2021. And 2020 marked the lowest point on record with only 760,000 hectares burned.

The record shows that the fraction of fires each year that become major (more than 200 hectares in size) peaked back in 1964 at 12.3 percent. From 1959 to 1964, it averaged 8.7 percent then dropped to 3.4 percent in the early 1980s. By the 2017 to 2021 interval, it had climbed again to 6.0 percent, but that's still well below the average 60 years ago (see figure 2).

Figure 2: Percentage of Fires That Became Large



Source: Canada, Natural Resources Canada (undated).

At the global level, satellite data from the European Space Agency also show that wildfire activity has been trending downward in recent decades and is currently approaching its lowest level since the record began in the early 1980s (ESA, 2021).

In an extensive discussion on the Royal Society blog back in 2020, UK forestry experts Stefan Doerr and Cristina Santin acknowledged that climate change may be making conditions for fire more favourable in some areas, but also noted it's leading to reductions in other areas. As for the tendency for some fires to become larger and more dangerous, this can be traced to our approaches to forest management. "[Very] aggressive fire suppression policies over much of the 20th century have removed fire from ecosystems where it has been a fundamental part of the landscape rejuvenation cycle" they explained. This has led to a build-up of fuel in the form of woody debris leading to the risk of more explosive and unstoppable fires.

"We cannot completely remove fire from the landscape" they stressed. "That is the misconception that led to the '100% fire suppression' policies in the US and elsewhere that have made things worse in many cases" (Royal Society, 2020).

As Environmental Studies professor Roger Pielke Jr. notes on his Substack, the UN Intergovernmental Panel on Climate Change is also reluctant to connect forest fire activity to climate change. While it notes there has been an increase in "fire weather" (hot dry conditions conducive to forest fires) in a few regions globally, it does not claim a "signal" of greenhouse gas influence is currently present in the probability of fire weather nor do they expect one to be detected over the coming century (Pielke, 2023).

When it comes to climate change, we're constantly told to "follow the science." Yet the same people who say that also regularly fabricate claims about trends in forest fires here in Canada and globally, and the connection to climate change. Science tells us forest fires are not becoming more common and the average area burned peaked 30 years ago. It also tells us that greenhouse gases won't put out fires, and raising the carbon tax will only make it costlier to fight the ones now burning. ◆

Ross R. McKitrick is a Professor of Economics and CBE Fellow in Sustainable Commerce at the University of Guelph where he specializes in environment, energy and climate policy, and a senior fellow of the Fraser Institute. He has published widely on the economics of pollution, climate change and public policy. His book Economic Analysis of Environmental Policy *was published by the University of Toronto Press in 2010. His background in applied statistics has also led him to collaborative work across a wide range of topics in the physical sciences including paleoclimate reconstruction, malaria transmission, surface temperature measurement and climate model evaluation.*

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Rosemarie Fike

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