

Inflation in North America: A Critical Review and Analysis of the Year 2022

Ruth Endam Mbah

Department of Business and Economics, Bethany College, Lindsborg, KS, USA

Laura Hultquist

Department of Criminal Justice, Bethany College, KS, USA

Rande Repp

Department of Criminal Justice, Bethany College, KS, USA

Abstract

The year 2022 has been a year of unprecedented change and global unrest. The world is still struggling to recover from the first global pandemic in over a century and the coordinated global response thereof which changed both the social and the economic landscapes. Amid this recovery, the world economy has been hit by the Russia-Ukraine war, the effect of climate change on agriculture, citizen unrest and leadership changes in nations across the globe, global supply-chain disruptions, and record-high inflation. This review presents a comparative analysis of the causes/impacts of inflation during 2022 in North America as well as discusses mitigation strategies proposed by the nations therein. Monetarism is used to review North America's responses to the high inflation rates. Findings indicate that the causes for inflation in North America were very similar for all three countries. These causes included disruption in the supply chain, an excessive rise in demand over supply, the impact of the Russian-Ukraine war, the lingering effects of the governmental response to Covid-19, a tight labor market, expansionary monetary policies by the central banks, and the global impact of drought on agriculture. Our findings also show that the impact of this record-high inflation aligned across all three countries like elevated food prices, housing/rental costs, energy costs, gas prices, household operational costs, healthcare insurance, education cost, and increased poverty, especially among low and fixed-income earners. The central banks of all three countries are using monetary policies to mitigate the situation by increasing their interest rates. However, monetary policies on their own cannot solve the situation and must be complemented by fiscal policies. This can be evidenced by the intervention of all three governments in the high-inflation challenge. Nevertheless, this review is limited to North America, thus, it will be essential for future research to focus on other countries and regional blocs.

Key Words: Inflation, Monetarism, North America, Supply Chain Disruption, Russian-Ukraine War, Central Bank Interest Rates, Federal Reserve, Bank of Canada, Banxico, Monetary Policy

INTRODUCTION

A Brief Review of 2022 and the Global Events that Affected Economies

The twelve months of 2022 saw unprecedented events shape the globe. “Future historians may come to regard 2022 as a hinge in history, marking the end of one era and the beginning of another” (Lindsay, 2022). What exactly makes 2022 such a pivotal year in history? Many factors are at the heart of the answer. Political divisiveness and unrest sparked protests and governmental turnover across the globe as nations shifted across ideological and political boundaries and populations spoke out against blatant corruption of their political processes and their leaders (Lindsay, 2022). The conflict between Russia and Ukraine sparked in March 2022, and the corresponding multinational response has led to an unsettling geopolitical climate and strained supply-chain issues globally (Kim, 2022). Furthermore, continued ideological conflict between Western nations and the People’s Republic of China which shapes international political and trade relations has further intensified supply-chain issues and global tensions as well as incited dialogue of a potential future “World War III” in the event of a Chinese invasion of Taiwan (Palmer, 2022).

Governmental response to the pandemic and corresponding restrictions which affected national and global economies have eased in comparison to their 2020-2021 enforcement levels (Lindsay, 2022); however, the COVID-19 pandemic, previously declared over by United States President Joe Biden in September of 2022 (Wolf, 2022), has been reinstated as a public health emergency as of January 11, 2023, and lingering effects of the governmental response to the pandemic has seen a rise in tensions on intrapersonal, interpersonal, institutional, and societal levels in the United States and across the globe (Becerra, 2023). And all of these have played out against a backdrop of increased migration/immigration from third-world to first-world nations exacerbating already strained resources and ideological fractures embedded in the latter; climate change and the emergent green policies developed to mitigate pollutants and designed to change the energy and transportation landscape being instated across the globe; enforcement of community standards and censorship of content by governmental agencies in collusion with private corporations banning public discussion of topics on specific media platforms (Picchi, 2022; Porterfield, 2023); and, increases in inflation across the globe (Lindsay, 2022). The purpose of this review is to examine the last factor in the list above affecting the world during 2022 (and into the present, as of this writing): inflation. Specifically, the paper will focus on the national and international causes and national-level consequences of inflation in Canada, the United States, and Mexico.

According to the International Monetary Fund, 2022 global inflation is one of the worst pressures on the global economy since the 1970s. By August 2022, the global inflation rate was at 7.5% compared to 3.4% in 2020, hence, leading to “a blame game for the rise in inflation” (Binici et al., 2022). A recent publication by the Harvard Business Review defined inflation as “Inflation is defined as a rise in prices across an economy, and in 2022 it has emerged as one of the biggest threats to global prosperity” (Frick, 2022). Below is a graphical representation of the fluctuations in inflation rates in North America from 2000 to 2027. Inflation rose from 3.4% in 2021 to 6.9% in 2022 in Canada; from 5.7% in 2021 to 8% in Mexico and from 4.7% in 2021 to 8.1% in 2022 in the USA. However, it is projected that inflation in all three countries will ease off in 2023 and fall back into the ideal situation by 2024. In other words, it is expected that North America will see a more ideal economy between 2024 and 2027.

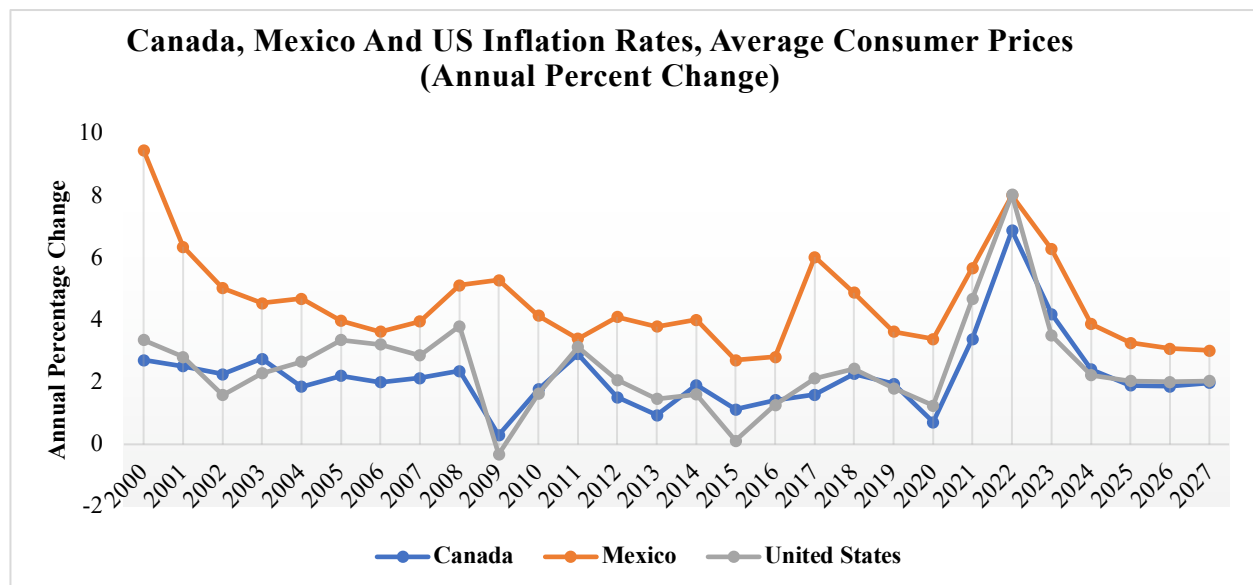


Figure I: A Graphical Representation of Canada, Mexico, and US Inflation Rates from 2000-2027
Source: Author's Presentation based on data from IMF, World Economic Outlook Database, (2022)

Purpose of the Study

The purpose of this review is to compare and contrast the determinate and proximate causes of inflation across North America during 2022. As such, an in-depth analysis of the current state of inflation and its causes in Canada, the United States, and Mexico will be undertaken. The complexity of this task cannot be overstated as each nation has unique economic, demographic, geographic, civil, and political factors which will affect variances in inflation and the evolution/implementation of fiscal policy at the national level. In addition, the role of each nation in the global geopolitical landscape will alter how multi- and inter-national events influence the individual economies under scrutiny. The multiplicity of factors and the determination of their effects will be daunting. Additionally, the review will undertake an examination of the strategies employed by each nation at the conclusion of 2022 to mitigate inflation. This will be accomplished before providing a comprehensive analysis of the similarities and differences found between nations. An analysis of inflation from the perspective of the monetary theory of inflation will be applied to contextualize the review at the national and comparative levels. The paper will conclude with a summary of findings as well as avenues for future research. However, before presenting said discussion, an overview of the nations under examination will be presented.

An Overview of the Continent North American

The continent of North America is comprised of three nations: Canada; The United States; and, Mexico. Populated by indigenous peoples and thriving civilizations for hundreds, if not thousands, of years, the North American continent was resettled by explorers from the European continent beginning in earnest in the sixteenth century (National Geographic, 2023). Much of the political and governmental structure seen in the United States and Canada today can be traced back to its European roots, either in alliance with or counter to the dominant ideas from the era of their respective political formations. The current geographic, social,

political, institutional, and economic landscape of the continent reflects the diversity of those who currently inhabit it, from the earliest peoples to the newest migrants crossing the border.

Canada:

The nation of Canada is slightly larger than the United States and located in northern North America with oceanic boundaries of the Arctic Ocean in the north, the North Pacific Ocean on the west, and the North Atlantic Ocean on the east (CIA, 2023). A nation rich in history and varied in climate from incrementally temperate weather in the south to subarctic freezes in the north, Canada's population of over 38 million is unevenly distributed across the land with large population centers in the provinces of Ontario, Quebec, and British Columbia (CIA, 2023) though recent trends have seen the populations of these areas decreasing in favor of Maritime provinces (Statistics Canada, 2022). During 2021-2022, Canada set a record in population growth (Statistics Canada, 2022) with the majority of growth being due to international migration. The average age of a Canadian citizen is currently 41.7 years old and one in five Canadians is over the age of 65 (Statistics Canada, 2022). The average household income in Canada is \$74,452 with variations in income dependent on geographic location (Insurdinary, 2022). Popular industries include service industries, manufacturing, agriculture, mining, financial and technology sectors, oil and gas, real estate, and construction to name but a few (Insurdinary, 2022). Canada is a constitutional monarchy that recognizes the King or Queen as the Head of State and the Prime Minister as the Head of Government (Elections Canada, 2023). The Parliament is comprised of the King or Queen of Canada, the Senate (composed of 105 individuals appointed by the King or Queen and recommended by the Prime Minister), and the House of Commons (composed of 338 members elected by the Canadian population) (Elections Canada, 2023). The political system is primarily comprised of a Liberal and Conservative platform with emerging political affiliations including parties such as the New Democrats and the Green Party.

The United States:

The United States sits in the middle of the North American continent with oceanic borders of the Pacific Ocean in the west and the Atlantic Ocean in the east and land borders of Canada in the north and Mexico in the south. The nation spans a wide geography, from beaches along the coastlines to mountain ranges to the farmland of the Midwest to the deserts of the Southwest, the 48 continuous states of the United States as well as the unconnected Alaska and Hawaii, feature many climates and cities as well as rural areas for the nations' residents. The population of the United States is currently tabulated at over 334 million people (United States Census Bureau, 2023) with racial and ethnic diversity increasing every decade (Johnson, 2021). The most populated areas are the South, the West, the Midwest, and the North East (WorldAtlas, 2023) with recent migration showing a trend toward the population moving South. The median age of the average American is 38.8 (Duffin, 2022) and 16.8% of the population is over the age of 65 (United States Census Bureau, n.d.). The average household income in the United States is \$70,784 (Semega & Kollar, 2022) with variances in average income based on location and occupation. The most common jobs in the United States according to data from the Bureau of Labor Statistics include those in the service industry, healthcare, manual labor, office work, and management to name a few (Underwood, 2021). The political system in America is a representative federal democracy mainly comprised of the Democratic and Republican parties in which open elections dictate the political leaning of the nation.

Mexico:

The nation of Mexico is located in the southern region of the North American continent, with land borders of the United States in the north and Guatemala and Belize in the south as well as water barriers of the Pacific Ocean in the west and the Gulf of Mexico in the east. Mexico is the smallest country in North America in terms of geography and boasts a population of 132 million (Worldometer, 2023). The topography of Mexico varies across the nation and features coastlines with endless beaches as well as mountains, plateaus, peninsulas, volcanoes, and rivers (WorldAtlas, 2023). The median age in Mexico is 29.2 years (Worldometer, 2023) and 83.4% of the population lives in urban areas (Worldometer, 2023). The average income in Mexico is roughly \$20,000 a year (Time Doctor, n.d.) and roughly 59% of the population aged 15-64 is employed in a paid job (OECD, n.d.). The economy in Mexico is primarily export-oriented with industrial sectors comprised of automotive, food, electronics, and banking among others (WorldAtlas, 2023). The political system in Mexico is a federal presidential representative democratic republic and government officials are voted into office in open elections.

In the following pages, the direct and proximate causes and ramifications of inflation in the three aforementioned nations will be explored. Additionally, the strategies in place to curb inflation and its consequences at the national level will be discussed. The causes, effects, and strategies across the North American continent will then be compared and contrasted before a theoretical application that contextualizes this information in the form of a theory on economics and inflation is undertaken. The paper will then conclude with a critical analysis of the material presented and avenues for future research.

THEORETICAL FRAMEWORK: THE MONETARY THEORY OF INFLATION (MONETARISM)

Also known as monetarism, the monetary theory of inflation is associated with Milton Friedman (Noble Prize-winning economist). The excessive growth of money in the 1970s was highly blamed for the rapid growth of inflation during that period and in response to this, central banks worldwide started using 'monetarist rhetoric' in the description of their policy. In other words, this uncontrollable growth caused countries worldwide to incorporate it into their standard procedure target for monetary growth (Friedman, 1983). This theory, therefore, became popular in the 1970s as it helped reduce inflation in the United Kingdom and the United States as well as aid the U.S. Central Bank's strategy to stimulate its economy during the 2007-2009 worldwide recession (Jahan & Papageorgiou, 2014). Hansen (1951) suggests that this theory links inflation to the rise in the prices of commodities as a result of the increase in the supply of money. That is, a rise in the quantity of money leads to a rise in prices and hence, inflation. In other words, the origin of the monetary theory of inflation is the Quantity Supply of Money (Jahan & Papageorgiou, 2014) or the Quantity Theory of Money as coined by Friedman (1970). Friedman (1983) disclosed that he did not like the term 'monetarist' but preferred the name 'quantity theory of money' which to him was a "perfectly respectable ancient name." Yet, he simply accommodates the label 'monetarist' because it has become established. This theory had been used after WWII in implementing "several interesting monetary reforms" that were somewhat successful in fighting inflation (Hansen, 1951). The U.S. shifted its operating policy towards monetarism in 1979 when inflation peaked at 20% (Jahan & Papageorgiou, 2014). The core of the monetarist policy is the viewpoint that the growth of money should be stable and foreseeable but there. Yet the desirable growth rate depends on objectives as well as the country and the circumstances. The central banks often put forth a

desirable inflation target and utilize interest rates to regulate the rise in prices at a preset pace. In the U.S. for example, the Federal Reserve aims for an inflation rate of 2% each year (ideal rate) (Frick, 2022).

However, this theory was criticized by the followers of Keynesianism (Friedman, 1970) who postulate that the demand for commodities is the 'key to economic output'. Keynesians postulate that because the economy is subject to rapid changes and intermittent instability, it will be detrimental to make the 'Fed slave to a preordained money target.' Despite the criticisms, some vital canons of the monetary theory have found their way into nonmonetary theories (Friedman, 1970; Jahan & Papageorgiou, 2014). While the monetary theory emphasizes the regulation of money supply to tame inflation, the Keynesian theory postulates the regulation of government spending as a means to tame inflation. Keynesianism was headed by John Maynard Keynes (1883-1946), a British economist who suggested that aggregate demand is the principal determinant of an economy (Jahan et al., 2014). Keynesians believe that spending motivates the supply of commodities by businesses, thus, fiscal policies can be utilized to regulate aggregate demand and smooth the business cycle fluctuations. These fiscal policies include government expenditures, taxing, and borrowing policies (Gwartney et al., 2018).

REVIEW OF THE 2022 INFLATION IN CANADA

Canada has been successful in coming through the COVID-19 Pandemic and despite being a commodity exporter, it has received lesser strains from the Russia-Ukraine War than most of the other countries. However, inflation has been a point of concern as it rose above target with the price of housing drawing significant attention. A recent report from International Monetary Fund suggests that inflation had become 'Canada's principal macroeconomic challenge' as the country faces the highest level of inflation it has witnessed in a generation (International Monetary Fund (IMF), 2022). The rate of inflation in Canada had risen to 3% in the summer and fall of 2021 and approached 5% by early 2022. However, Canadians did not expect the rise in inflation to last for long. The sharp rise in consumer goods pushed up Canadian inflation to 8.1% between June 2021 and June 2022, a record high for 40 years (Lajartre, 2022; Macklem, 2022). According to the Bank of Canada, economic stability (price stability) is achieved at a level of inflation where the change in prices occurs at a slow pace that they do not influence how Canadians invest, save, or spend. This projected level of inflation is between 1% and 3% every year and economists in Canada depend on the Consumer Price Index (CPI) to determine any disparity in the inflation rate (Maguina & Poggianti, 2022). The figure below shows the trend in Canadian inflation from 2000 to 2027. Inflation rose to 6.9% in 2022 from 3.4% in 2021, it is expected to fall to 4.2% in 2023 and projections show that it is expected to fall back to the ideal rate of 2.4% by 2024.

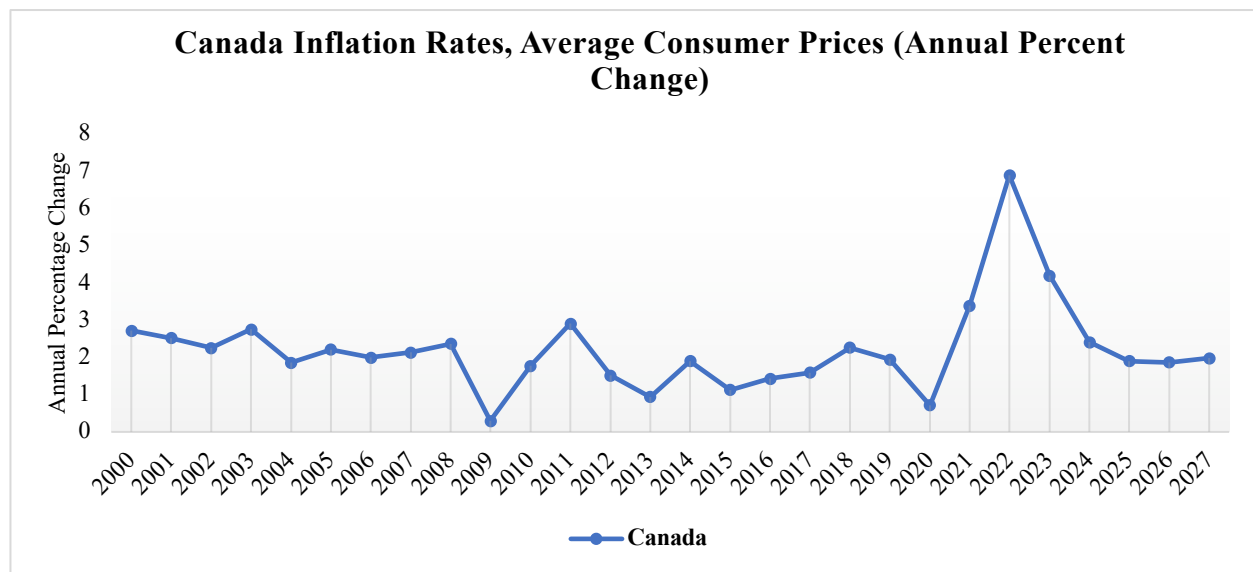


Figure II: A Representation of Canada's Inflation Rates from 2000-2027
Source: Author's Presentation based on data from IMF, World Economic Outlook Database, (2022)

The Causes of the 2022 Inflation in Canada

A recent report from the Canadian Union of Public Employees (2022) suggests that the principal causes of the recent "higher-than-normal inflation" in Canada are the worldwide disruptions in the supply chain, a temporal rise in the demand for commodities that were scarce during the COVID-19 pandemic, and the impact of widespread droughts on agricultural products. The Bank of Canada in a 2022 report acknowledges that although global events have impacted the high inflation rate in Canada, the rise in the demand for commodities that supersedes supply, tight labor market and supply chain disruptions have impacted this current high inflation rate (Macklem, 2022).

According to IMF's analysis, the inflation in Canada has been influenced by factors like the rise in the price of commodity goods and disruptions in the supply chain resulting from the Russia-Ukraine war; a significant rise in demand; and a tight labor market due to a slowdown from immigration arising from the COVID-19 pandemic. A 2022 publication by the McGill International Review in Montreal- Quebec, associate the current inflation with the disruption in the supply chain, that is, the disruption in the timely production and delivery of consumer goods (supply side). This publication also debatably associates the current inflation with the expansionary policies by the Bank of Canada and the Canadian Government to enhance demand to a point that it surpassed supply. This is because the Bank of Canada decreased the interest rate to 0.25%, a historically lower rate in March 2020 while the government released a pandemic economic relief package of \$100 billion (demand side) (Maguina & Poggianti, 2022).

The rise in the price of gas influenced a rise in the 'all-items CPI in October 2022 which rose to 6.9%. The price of gasoline rose by 9.2% in October 2022 even after a decrease of -7.4% in September 2022 due to the declaration to reduce future production of oil by the Organization of the Petroleum Exporting Countries (OPEC) and a weaker Canadian currency. Comparing the figure to October 2021, the price of gasoline increased by 17.8% in October 2022 following a 13.2% rise in September 2022 (Statistics Canada, 2022). The Russia-Ukraine war is also a factor

in the rise in prices of gas since about \$550 million of oil is imported by Canada from Russia (Mbah & Wasum, 2022).

The Impact of the 2022 Inflation in Canada

During the early parts of the second quarter of 2022, Statistics Canada carried out a survey called "Portrait of Canadian Society" to comprehend the impact of the current inflation on Canadians. Results from this survey suggest that the current rise in commodity prices is impeding the daily basic expenditures (clothing, food, housing, and transportation) of about three in four Canadians. About 43% of the respondents to this survey replied that food was the most affected by the inflation, second after the food was transportation (about 32%) then housing (about 9%), and household operations (about 8%). This has forced several Canadians to modify their daily expenditures as well as postpone their desires to purchase homes or get new rentals. This rise in prices weighs more on low-income households. The rise in the prices of food by 9.7% (between April 2021 and April 2022) caused Canadians to pay higher prices for basic foods like fruits, vegetables, and meat despite the reduction in their budget allocation for food due to the rise in prices in other sectors like transportation and housing (Statistics Canada, 2022).

Inflation has caused a sharp rise in the prices of houses/rentals as well as macroeconomic policy tightening by the Bank of Canada (IMF, 2022). The Bank of Canada set its key rate at 3.75% compared to 0.25% in early 2022, the highest it has been in about 15 years. These higher rates are directly correlated with the cost of borrowing for individuals and businesses. This is especially for homeowners who have to renew their mortgages or sell their homes to buyers who have a lower capacity to borrow (Lajartre, 2022). In other words, Canadians initiated or renewed their mortgages at higher interest rates. The mortgage interest rates rose on a year-over-year basis by 11.4%, the most elevated it has been since February 1991 (Statistics Canada, 2022). A 2022 report from the Bank of Canada suggests that those impacted by the high inflation are low or fixed-income earners whose lives have been made more difficult (Macklem, 2022)

The Mitigation Strategy by Canada

An analysis from IMF staff on the inflation situation in Canada suggests the need for tight continuous monetary and fiscal policies to tame inflation, especially on the supply side as to solve the housing cost subsequently. The Bank of Canada by March 2022 started a reduction in the size of its balance sheet as well as elevated policy rates. IMF in support of this policy, suggests that Canada continues to raise the policy rate to a minimum of 4% by the end of 2022 and stay within this stretch hold for several more quarters to reduce its inflation. The IMF is optimistic that the lessening of pandemic restrictions resulting in a return of immigration will do good to the tight labor-market condition characterized by high vacancies. This report also proposes a 'Rule-based fiscal stimulus' (a fiscal policy strategy that mandates a temporal rise in expenditure grounded on a pre-set macroeconomic trigger) as an addition to the already existing history of Canadian prudent fiscal policy strategies (IMF, 2022).

In an attempt to achieve the ideal 2% inflation rate amid the current high inflation, the Bank of Canada primarily announced the overnight interest rate. The Bank of Canada stated that it will borrow from commercial banks at an interest rate of 0.25% below and lend to them at an interest rate of 0.25% higher (Maguina & Poggianti, 2022). This rate is a monetary policy also

called the policy interest rate, the Bank of Canada's first strategy used to control inflation (Bank of Canada, 2022). This monetary policy is meant to discourage borrowing and thus, decrease consumer expenditure subsequently (Maguina & Poggianti, 2022). Nevertheless, experts project that if this hike in key interest rate which is meant to control inflation has a greater influence than anticipated, Canada is headed towards a recession in 2023 that could last for six months (Lajartre, 2022). Also, according to the 2022 Winter report by the Canadian Union of Public Employees, because the current inflation is caused by global problems like supply chain disruption, and droughts as earlier mentioned, modifying monetary policy in Canada would not solve the problem. This report postulates that these are global problems that require worldwide coordination to fix them, hence, elevating interest rates would only slow the economy.

REVIEW OF THE 2022 INFLATION IN THE UNITED STATES

At the dawn of 2022, the inflation rate in the United States was 6.5% (Chaufen, 2021). This can be viewed in stark contrast with the 1.4% inflation rate from just 2 years prior (Amadeo, 2022). A publication from Harvard Business Review suggests that the 2022 inflation in the U.S. is the 'worst inflation in decades' (Frick, 2022). How did inflation change so much in such a short time? Both internal and external factors played a role in this dramatic increase. External factors include, but are not limited to: the COVID-19 pandemic; global supply chain issues; internal and external policies in China; and Ukraine, Russia, and the geopolitical/economic response thereof to name but a few (Chaufen, 2021). Internal factors include the policies of the Federal Reserve (Chaufen, 2021); governmental response to the COVID-19 pandemic; labor shortages; and political divisiveness among others. In the following sections, an in-depth examination of the causes and consequences of inflation during the 2022 year will be undertaken. The figure below shows the trend in U.S. inflation from 2000 to 2027. Inflation rose to 8.1% in 2022 from 4.7% in 2021, it is expected to fall to 3.5% in 2023 and projections show that it is expected to fall back to the ideal rate of 2.2% by 2024.

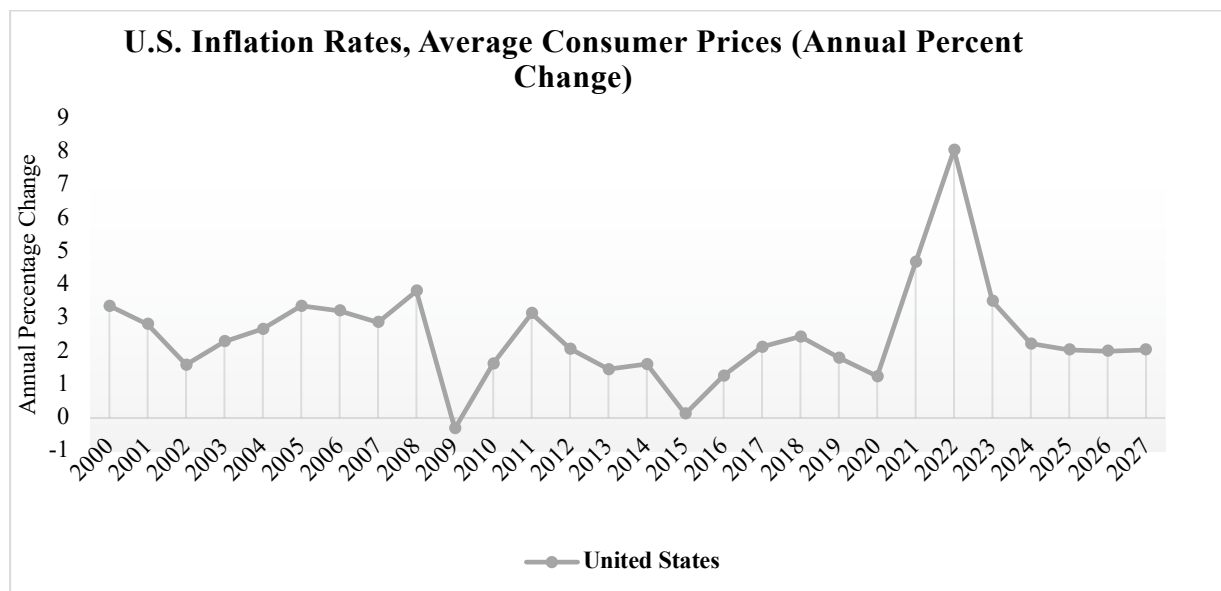


Figure III: A Representation of the United States Inflation Rates from 2000-2027
Source: Author's Presentation based on data from IMF, World Economic Outlook Database, (2022)

The Causes of the 2022 Inflation in the United States

At the heart of the inflation issue in the United States lies the Federal Reserve. “While many blame supply chain issues, labor ‘shortages,’ and even the climate for rising prices, the focus should be on the Federal Reserve’s policies. Inflation is a monetary phenomenon. When the money supply grows faster than the supply of goods and services, sooner or later, prices will rise” (Chaufen, 2021). What does this mean? It means that when interest rates are set too low or too much money is printed and enters into circulation too rapidly, the inflation rate will surge (De Witte, 2022). Due to the COVID-19 pandemic and governmental responses thereof, the Federal Reserve launched a four-pronged policy initiative which included:

(...) cutting interest rates, offering forward guidance, and rescaling and restarting programs to purchase Treasury securities and agency mortgage-backed securities (MBS) as well as repurchase agreement (repo) operations. In the second group, we would include measures to provide liquidity and funding to support money market functioning. In the third category, we would include a number of facilities the Federal Reserve launched to support more directly the flow of credit to households, businesses, and state and local governments. And in the fourth group, we would include temporary recalibrations the Federal Reserve made to regulations and supervisory practices to encourage and incentivize banks to support the flow of credit to their household and business customers (Clarida, Dugan-Burno, & Scotti, 2021; p. 2).

This approach was developed to counter the disruption to the economic and fiscal landscape in the United States initiated by the governmental response to the pandemic which resulted in the loss of 22 million jobs and a corresponding 50-year high unemployment rate, a significant collapse of the GDP, and a 5.8 trillion-dollar injection into the economy between 2020 and 2021 (Clarida, Dugan-Burno, & Scotti, 2021). And while external factors such as the COVID-19 pandemic itself, supply-chain issues, the Russia-Ukraine conflict, and corresponding national/international response have exacerbated inflation, the linchpin is the policies initiated by the Federal Reserve during the period under investigation. “Yes, there are international factors, such as the global supply chain and the Russian invasion of Ukraine. However, inflation started rising before these international factors appeared” (De Witte, 2022).

The Impact of the 2022 Inflation in the United States

The effects of inflation can be felt on every level of the economy. As inflation increases so do the cost of goods sold, from groceries to luxury items inflation will affect all categories of goods sold. This also means that every dollar becomes worth less, and its purchasing power diminished, as it can be used to buy only a fraction of what it could in the past. Between December 2021 and December 2022, the price of food in the United States went up by 10.4%, the price of energy increased by 7.3%, the cost of utility (piped) gas service increased by 19.3%, the cost of electricity increased 14.3%, the cost of health insurance rose 7.9%, and the price of education increased 3.3% among other daily necessities (U.S. Bureau of Labor Statistics, 2023). It is important to point out that before this inflation, the cost of higher education had already been burdensome and unmanageable to most Americans (Mbah, Wasum & Mende 2020; Mbah, 2021). With this backdrop in mind it is important to note how inflation can cause situations where the cost of living increases and, if not countered with a corresponding rise in wages, it results in increases in poverty, debt, and anxiety/stress among other outcomes that appear on individual and societal levels. Statistics on poverty in the United States for the year 2022 are not currently available, but data from 2021 indicate that roughly 37.9 million Americans (up

from 33.9 million in 2019) were in poverty during the year of economic collapse and heightened pandemic response.

Furthermore, historic trends indicate that poverty increases as the economy falls into recession (United States Census Bureau, 2023). Economists predict a recession in 2023 will likely exacerbate the current economic landscape, from the individual to the societal level (McIntyre, 2022). Data from small businesses for the year 2022 indicate that this segment of the population and economy can also be threatened by inflation with 39% of small businesses forced to take out additional loans to fund their day-to-day operations (including staff wages) (Sottosanto, 2022). In addition to increased debt, 41% of small businesses cut staff to maintain fiscal viability during the twelve months under examination (Electrotonic Cash Systems, 2022). The lack of purchasing power on the individual level can also affect larger businesses as people cannot afford to buy larger-ticket items which can lead to lower corporate profits and layoffs (McIntyre, 2022). The housing market has also seen changes with mortgage interest rates up to 6.49% and the real estate market stalled across the nation as fewer homes are being listed for sale and fewer Americans qualify for or are interested in mortgaging a new home (Fortune Builders, 2022). Subprime car loan repossession has hit a 5.67% high which is the highest percentage on record in over a decade (compared to 5.04% in 2009) (Ballentine, 2023).

During the pandemic, a surge in used car prices forced buyers to take out bigger loans for their vehicles. The monthly payments seemed doable in an era of stimulus checks, a tight labor market, and surging stocks, but that's changed for many people as inflation eats into their budgets and the job market cools (Ballentine, 2023).

These factors accumulate to create an environment in which individuals are living paycheck to paycheck, without the comfort of a monetary cushion to tide them through if times get even tougher.

The Mitigation Strategy by the United States

According to economist John Taylor, the rapid rise in inflation over the past two and a half years bodes well, as the nation could see an accelerated corresponding drop in the phenomenon (De Witte, 2022). "In general, the federal government has two types of tools available to fight inflation. Monetary policy, conducted by the Federal Reserve, can raise interest rates. Or fiscal policy, controlled by the Congress and President, can adjust taxes and spending" (Committee for a Responsible Federal Budget, 2022). As of February 1, 2023, the Federal Reserve raised the benchmark interest rate to curb inflation (Cox, 2023). "This is the eighth increase in a process that began in March 2022" (Cox, 2023). This increase will result in an expansion in savings as well as a decrease in large ticket purchases and needless consumption (Committee for a Responsible Budget, 2022). Furthermore, this will curb inflation and hopefully see it dip down to its 2% equilibrium in the coming months/years. Additional recommended strategies by the United States Congress Joint Economic Committee in 2022 include the reduction in government spending; increasing workforce participation through increasing work flexibility and mitigating work disincentives; deregulating energy; and, the removal of regulatory barriers and reduction of tariffs to increase global supply chain access and reliability.

REVIEW OF THE 2022 INFLATION IN MEXICO

In 2021, Mexico had a Gross Domestic Product (GDP) of \$1,272,839.90, compared to Canada's GDP of \$1,988,336.33 and the United States GDP of \$23,315,080.56 (World Bank, 2023). The Mexican currency (peso) has traded against the US dollar MXN\$18.50 during the first few weeks of January 2023, with a three-year historical low of MXN\$24.94 on April 22, 2020, to a near high of MXN\$18.54 on February 12, 2020 (Wall Street Journal Markets, 2023). Mexico's annual rate of inflation was estimated at 5.7% in 2021, up from 3.4% in 2020, and was projected to be near 8% in 2022 (International Monetary Fund, 2022). Mexico's national debt was 57.6% of its GDP in 2021, down from a high of 60.1% in 2020, and its unemployment rate was down slightly to 4.1% in 2021 from 4.4% in 2020 (International Monetary Fund, 2022). Mexico has a trade-oriented economy, with imports and exports totaling nearly 78% of the GDP in 2019 (World Bank, 2023).

Following the Covid-19 crisis of 2020, Mexico's poverty rate approached 44% in 2021, with the rate of extreme poverty increasing from 7% to 8.5% (Ore, 2021). Poverty in Mexico is defined as between \$111 and \$170 per month, depending on location. Extreme poverty is defined as between \$63 and \$88 per month, a sum less than the amount needed to purchase basic food requirements (Ore, 2021).

The Obrador administration has largely avoided taking on additional debt, adhering to pre-pandemic policies of fiscal austerity although allowing some increases for social programs (Ore, 2021). Expatriates from other countries favor Mexico ahead of traditional destinations such as Vietnam, Indonesia, or Thailand, largely due to the currency exchange rate and relatively low cost of living (Corbishley, 2022). A typical expat worker is from the United States, works remotely, and is paid in US dollars. Due to the favorable currency exchange rate, approximately 1.5 million US citizens were living in Mexico in 2020. This favors the expatriates living abroad and being paid in dollars but has a negative effect on the local economy as it drives up the price of rent and commodities, increasing the economic strain on locals (Corbishley, 2022).

A study by Banxico (Bank of Mexico) indicates the rate of inflation may have peaked in the third quarter of 2022, dropping to an expected rate near 3% by the third quarter of 2024 (CE Noticias Financieras, 2023). This was confirmed by a modest 0.58% rise in consumer prices in November which had been forecast to rise 0.69%, and the core consumer price rise increasing only 0.45% against an expected 0.52% rise (RTT News, 2022). Thus, while inflation remains a key issue for a large segment of the Mexican population, there are some indicators it may be easing back from previous highs. The figure below shows the trend in Mexican inflation from 2000 to 2027. Inflation rose to 8% in 2022 from 5.7% in 2021, it is expected to fall to 6.3% in 2023 and projections show that it is expected to fall back to the ideal rate of 3.9% by 2024.

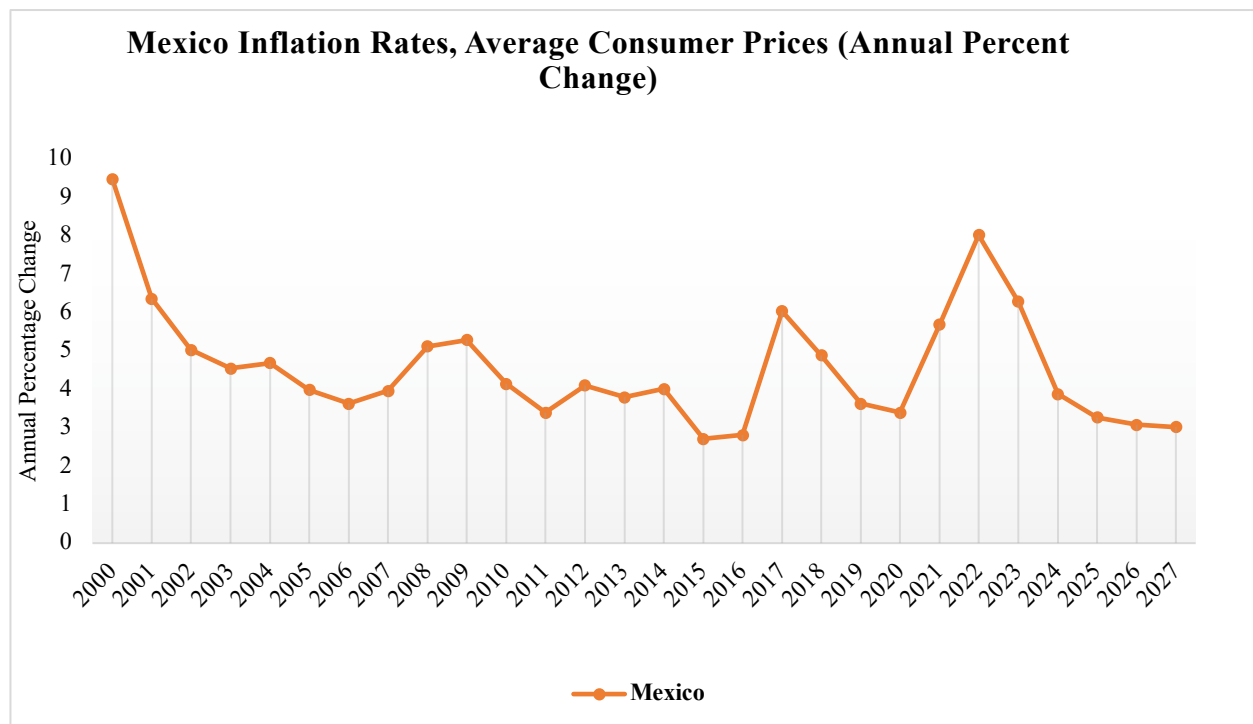


Figure IV: A Representation of Mexico's Inflation Rates from 2000-2027
Source: Author's Presentation based on data from IMF, World Economic Outlook Database, (2022)

The Causes of the 2022 Inflation in Mexico

Economist Milton Friedman is quoted as saying, "Inflation is always and everywhere a monetary phenomenon, in the sense that it is and can be produced only by a more rapid increase in the quantity of money than in output." James Anderson, the chair and CEO of Guantanamo Silver, believes the combined efforts of many governments around the world, including Mexico, of keeping interest rates artificially low, combined with the practice of quantitative easing, have been over-expanding many countries' money supply for over a decade (Anderson, 2022). This phenomenon may have been somewhat mitigated during the deflationary period of the COVID-19 pandemic, but the combination of a strained supply chain and sanctions related to the war in Ukraine has been sufficient to cause the rapidly rising prices we are currently seeing in Mexico and many other countries across the globe (Anderson, 2022).

Forbes Magazine notes a confluence of factors causing the rapid inflation of food prices. During the pandemic, the food supply chain was affected by many people dining at home, either by choice or by dictate, causing food suppliers to transition from producing goods destined for restaurants to goods destined for grocery stores (Smith, 2022). The war in Ukraine caused fluctuations in energy prices as boycotts of Russian crude were imposed by western governments, and both Russia and Ukraine were significant grain producers whose output has now slowed to a trickle. An ongoing drought in the United States, combined with regional outbreaks of avian flu and other diseases affecting livestock has also contributed to the price of food inflation (Smith, 2022).

The Impact of the 2022 Inflation in Mexico

Mexico's official annual rate of inflation was 7.82% in December 2022, the highest rate in over two decades, following a 2021 rate of 7.35% (The Associated Press, 2023). However, this rate is below the forecast amount of 7.86%. Mexican citizens experienced price inflation of over 14% of food prices in 2022, the highest rate of any category during the period (The Associated Press, 2023). Combined with the already high poverty rate, inflated food prices had a particularly harsh impact on those least able to afford the basics of life. Meanwhile, other sectors of the Mexican economy experienced a slowdown in the rate of inflation during December compared to November 2022. This includes transportation (6.52% vs 7.74%) and clothing and footwear (6% vs 6.74%) (Ferreira, 2023).

Drilling down into the rate of food inflation, processed food and beverage prices rose 14.14% while fresh produce rose 9.52% (Harrup, 2023). Energy costs were up 2.91% in 2021, with Mexico's President Lopez Obrador's government using additional revenue from oil exports to subsidize gasoline and diesel prices (Harrup, 2023). The number of Mexican citizens without access to health care grew by 12% in 2018, as the Mexican economy contracted by 8.5% in 2020 (Ore, 2021).

The Mitigation Strategy by Mexico

The Obrador administration has implemented a multi-faced approach to mitigate inflation in Mexico. The first prong is an attempt by the Mexican government to establish voluntary price controls on key staples including milk, corn, beans, and rice. In addition, Mexican farmers are being encouraged to retain more of their crops to feed themselves, making the country less dependent upon the price of imported foods (Reuters, 2022). The Mexican Central Bank Banxico raised its benchmark policy rate by 50bps at its December 2022 meeting and indicated an upcoming rate increase at its next meeting, with the pace to be determined. The December increase marked the 13th consecutive rate hike and followed a 75bps hike in November, for a total of 650bps added since June. Banxico hopes to return the rate of inflation to a target level of 3% by Q4 of 2024 (Trading Economics, 2023).

During the last quarter of 2022, the Mexican economy expanded 0.44% compared to the third quarter. Compared to the same period in 2021, this represented a 3% increase. Banco Base attributes the growth to fewer disruptions in the supply chain, greater availability of semiconductors, growth of exports, and direct foreign investment (Rodriguez, 2023)

APPLICATION OF MONETARISM TENETS TO THIS STUDY

Despite the criticisms that this theory has received, vital tenets from Monetarism (monetary policy) are being used by Central Banks around the world today to remedy consequences of deep fluctuations in the economy like inflation. Chaufen (2021) emphasizes that inflation is a monetary phenomenon, and so does Milton Friedman who believes inflation everywhere is a monetary phenomenon. However, there is a need to complement monetary policies with fiscal policies in ensuring a stable economy. A 2022 report from the Canadian Union of Public Employees suggests that monetary policy can help control fluctuations in prices caused by limitations in domestic capacity only in the long. Experts from the IMF have suggested the need to tighten both monetary and fiscal policies to tame the current inflation.

To smooth the inflation in Canada, the Bank of Canada set its policy interest rate to a minimum of 4% by the end of 2022 (monetary policy) to discourage borrowing. The IMF also hopes that Canada's lessening of its pandemic restriction will improve immigration and as such smooth the tight labor market that is characterized by several vacancies (fiscal policy) (IMF, 2022). By September 2022, the Bank of Canada had raised its policy interest rate five successive times since March 2022 and was expected to continue raising it until inflation rates went down to 2% (Canadian's ideal inflation rate) (Macklem, 2022). In line with Canada's monetary policy move, the U.S. Fed is hoping to increase its interest rate from 5% to 5.25% (Reuters, 2023). The U.S. Congress Joint Economic Committee is recommending fiscal policies that will complement the Fed's monetary policies like a reduction in government spending, deregulation of energy, and the removal of trade barriers limiting an increase in global supply chain access.

In Mexico, the Central Bank, Banxico used the monetary policy approach by raising its benchmark policy rate by 50bps in an attempt to control the country's high inflation. The Mexican government on the other hand employed fiscal policy measures by introducing a voluntary price control of significant staples. From the above applications, it is evident that both monetary and fiscal policies are vital in stabilizing the economy. It is therefore essential to reiterate the words of Friedman (1983) that "the primary task of the monetary authorities should be to avoid introducing uncertainty in the economy, that their primary task should be to produce a predictable pattern of monetary growth, preferably a steady one."

A COMPARATIVE ANALYSIS OF THE INFLATION SITUATIONS IN CANADA, MEXICO, AND THE US

As inflation raises prices across North America, one term of interest is the petrodollar. Defined by Merriam Webster as a dollar's worth of foreign exchange obtained by a petroleum-exporting country through sales abroad (Merriam Webster, 2023), the petrodollar is an agreement between Washington DC, and Riyadh to conduct oil trades in US dollars. Canada and Mexico both have a floating currency, one which is not pegged to another (such as the US dollar) and allows free market forces to direct the strength or weakness of its currency in international trade (Bank of Canada 2020)

Generally, a drop in the interest rate of a country will lead to a weaker domestic currency, which raises the price of imports and services domestically and lowers the price of that country's exports abroad. Conversely, a rise in the interest rate of a country will lead to a stronger domestic currency. This results in a lower domestic price for imported goods and services, and raises the price of that country's exports abroad, making them less attractive. Rising interest rates tend to dampen the rate of inflation (Bank of Canada, 2021). As shown in Table 1 (below), all three countries of North America experienced a rate of inflation between 6%-8% in 2022. The US and Canada have raised their interest rates to around 4.5%, whereas Mexico's interest rate has risen to 10.5%. Among the three nations, the USA (1.9%) had the least GDP Annual Growth Rate as of September 2022 while Mexico had the highest (4.3%). Mexico had the highest food inflation rate of 12.7% as well as an inflation rate of 7.82 as of December 2022. Canada had the highest unemployment rate of 5% while Mexico had the lowest rate (2.8%) as of December 2022.

Table I: A Comparative Analysis of Canada, Mexico, and the USA for Selected Indicators

Indicators	Canada	Mexico	USA
GDP Annual Growth Rate (Sept 22) %	3.9	4.3	1.9
Inflation Rate (Dec 22) %	6.3	7.82	7.1
Food Inflation (Dec 22) %	10.1	12.7	10.4
Unemployment Rate (Dec 22) %	5	2.8	3.5
Employment Rate (Dec 22) %	61.8	97.15 (Nov 22)	60.1
Interest Rate (Dec 22) %	4.25	10.5	4.5
Gold Reserves (Sep 22) Tonnes	0	120	8133
Gasoline Prices (Dec 2022) USD/Liter	1.1	1.12	0.85
Personal Income Tax Rate (Dec 22)	33	35	37
Corporate Tax Rate (Dec 22)	26.5	30	21
Sales Tax Rate (Dec 22)	5	16	0
Social Security Rate (Dec 22)	14.38	9.23	15.3

Source: Author's Presentation based on data from Trading Economics (2023)

Table I above provides a comparative analysis of some significant economic indicators to establish the impact of the 2022 inflation in North America. On the other hand, table II below summarizes the causes, impact, and mitigation strategy of the 2022 Inflation in Canada, Mexico, and the USA in a comparative representation.

Table II: A Comparative Summary of the Causes, Impact, and Mitigation Strategy of the 2022 Inflation in Canada, Mexico, and the USA

Basis for Comparison	Canada	USA	Mexico
Causes of Inflation	➤ Supply chain disruption ➤ A rise in demand over supply ➤ Impact of Covid-19 ➤ Impact of the Russia-Ukraine War ➤ Global impact of drought on agriculture ➤ Tight labor market ➤ Expansionary monetary policy by the Bank of Canada	➤ Supply chain disruption ➤ A rise in demand over supply ➤ Impact of Covid-19 ➤ Impact of the Russia-Ukraine War ➤ Tight labor market ➤ Expansionary monetary policy by the U.S. Federal Reserve	➤ Supply chain disruption ➤ A rise in demand over supply ➤ Impact of Covid-19 ➤ Impact of the Russia-Ukraine War ➤ Expansionary monetary policy ➤ Global impact of drought on agriculture
Impact of Inflation	➤ Elevated food prices ➤ A rise in the cost of housing and rentals ➤ High energy cost ➤ Elevated gas price ➤ Elevated transportation cost ➤ High household operational cost ➤ The impact was worst on low and fixed-income earners	➤ Elevated food prices ➤ A rise in the cost of housing and rentals ➤ High energy cost ➤ Elevated gas price ➤ High household operational cost ➤ High health insurance cost ➤ Rise in educational cost ➤ Increased poverty rate	➤ Elevated food prices ➤ High energy cost ➤ Elevated gas price ➤ High household operational cost ➤ High health insurance cost ➤ The impact was worst on low and fixed-income earners
Mitigation Strategy	➤ Bank of Canada increase in the policy rate ➤ Introduction of Overnight Interest Rates by the Bank of Canada ➤ Lessened pandemic restrictions resulting in a return of immigration to help the tight labor market	➤ A rise in interest rates by the Federal Reserve ➤ Reduction in government spending ➤ Increase workforce ➤ Deregulating energy ➤ Lessening barriers to increase global supply chain access	➤ Mexican Central Bank Banxico raised its benchmark policy rate ➤ Voluntary price controls on key staples ➤ Subsistent farming is being encouraged

Source: Author's Presentation based on reviewed pieces of literature

CONCLUSIONS

The global landscape has changed dramatically in the 21st century and the year 2022 was no exception to the rule. Both national-level and international events continue to shape the globe and affect every aspect of day-to-day existence. One such factor affecting the lives of countless individuals is inflation. This review has discussed the immediate and proximate causes, effects,

and mitigation strategies to combat inflation on the North American continent during the 2022 calendar year. In the course of the research overarching trends regarding government-initiated pandemic responses, supply-chain issues, climate change impact on drought, ongoing international conflicts, and national-level monetary policies have been associated with rising inflation in the nations under investigation. Inflation has led to an increase in the price of goods and services across the continent which has disproportionately affected the poorest segments of the population in all areas under investigation. The monetary theory of inflation states that the primary source of inflation is the monetary supply and the best strategies to combat inflation involve monetary policy rather than fiscal policy. Increases in interest rates have been implemented in Canada and the United States to mitigate inflation thereby aligning with this theory. However, it is important to note that monetary policy must be complemented with the appropriate fiscal policies to effectively control any fluctuations in the economy. Policymakers in all three countries under study are actively implementing strategic fiscal policy measures to complement their Central Bank's monetary policies in ensuring a return to economic normalcy.

The findings from this study align with the IMF's recent publication on the global cause of the current inflation. This IMF report states that the rise in inflation has been blamed on factors "...ranging from the strong rebound in aggregate demand caused by the extraordinary policy response to the COVID-19 pandemic to global supply constraints and shock waves through international commodity markets triggered by Russia's invasion of Ukraine" (Binici et al., 2022). This study is limited to North America. However, we cannot downplay the fact that 2022 has been challenging for several countries and regional blocs worldwide, thus, a need to expand this study. Avenues for future research are multifaceted and can integrate additional nations into the analysis of 2022 as well as provide a longer time frame for the tracking of trends and the relative successes and failures of mitigation strategies implemented to combat inflation in the region under investigation or an expanded geographic area.

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