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Trade Wars, COVID-19, USMCA, and Protectionism: Exogenous Factor Influence on U.S- Mexico Supply Chains in the Automotive Industry

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Introduction:

The COVID19 pandemic changed the world. Some of these changes were noticeable in the day to day lives of citizens, others were not as evident. Perhaps it was taking a bit longer to receive a package, perhaps it was that certain products were unavailable and had not been restocked. Though these factors may seem inconvenient they hint at larger problems in supply chains.

Supply chains are a network of companies and people that are involved in the production and delivery of a product or service (IBM 2023). Supply chains account for planning, sourcing, manufacturing, delivery, and returning of goods and services. There are reasons why a company may want to assure that their supply chains stay in certain places and why it might be better to relocate.

Consider China. For decades, China has dominated global supply chains, many of which come from the U.S. A Gartner report states that “China has been the go-to destination for high-quality, low-cost manufacturing, and it has established itself as a key source of supply for almost all major industries including retail and pharmaceutical” (Gartner 2020). However, many companies are choosing to distance, if not remove themselves and their supply chains away from China. The study further showed that the margin between companies planning to add jobs in China versus taking them away narrowed sharply in 2019. The primary reason is the increase in tariff costs. They found that, “Tariffs imposed by the U.S. and Chinese governments during the past years have increased supply chain costs by up to 10% for more than 40% of organizations” (Gartner 2020).

The trade war certainly had an impact on the location of some supply chains. The increase in tariffs made it more challenging to continue manufacturing in China. The unlikely winner in this scenario was Mexico. Mexico, which has been a key trade partner for the United States for many years faced challenges in competing with the lower costs of Chinese manufacturers.

Many economists credit NAFTA with helping U.S. manufacturing industries, especially the U.S. auto industry, become more competitive through the development of North American supply chains. “A significant portion of merchandise trade between the United States and Mexico occurs in the context of production sharing, as manufacturers in each country work together to create goods. The flow of intermediate inputs produced in the United States and exported to Mexico and the return flow of finished products greatly increased the importance of the U.S.-Mexico border region as a production site” (Villarreal 2022).

Another key component that has defined the relationship between Mexico and the U.S. is bilateral foreign investment. The implementation of NAFTA in the 1990s increased bilateral foreign investment. The U.S. is Mexico’s largest investor. The liberalization of Mexico’s restrictions on foreign investment in the late 1980s and early 1990s, combined with NAFTA investment provisions, played a vital role in attracting foreign investment to Mexico.

All these factors have played an integral role in the development and presence of supply chains in Mexico. It is important to explore further these impacts as their development are still relevant to Mexico’s trading partnerships. For this reason, this analysis of Mexican supply chains will focus on three factors. The three factors are as follows.

1. COVID Effect on Supply Chains
2. Policy implementation from the U.S.
3. The U.S.- China trade war

This research explores the breath of the impact (or lack thereof) in how these factors that shocked the global economy also influences industry specific sectors. To do so I looked at the released articles from two automotive companies to understand the impacts on automotive supply chains.

In the past few decades, rising trends of protectionism in commerce have developed. This research will explore language in corporate media releases. Articles in both Spanish and English are included in this analysis. In the 2021-2023 period, Mexico company websites collectively released 97 articles. The sample greatly consisted of articles from General Motors. However, because the presence of General Motors is much more established in Mexico than Tesla, this is expected. The presence of the variables COVID19, USMCA, U.S. China Trade War, and rising protectionism caused major impacts to the global economy. Through content analyses of the released media articles from General Motors and Tesla, I found that these factors - which deeply impacted the global economy – also impact smaller sectors of the economy, namely automotive supply chains.

The narrative of these variables particularly for the U.S-Mexico trade relationship illustrates an interesting picture companies choose to include in their communication into the public. The implications of this illustrate a bigger picture of events to come in international commerce.

Glossary

Before continuing, it is important to understand the following terms for the context of this research.

Supply Chains:

A supply chain is a network of companies and people that are involved in the production and delivery of a product or service (Hayes 2023).

Supply Chain Efficiency:

An efficient supply chain is a supply chain that uses its resources, such as financial, human, technological, and physical, in the most optimal way possible (Rajasekaran 2023).

Supply Chain Robustness:

Much like the biological definition of robustness, a supply chain's robustness is its ability to cope with external and internal disruptions and disturbances (Monostori 2017). Some examples of these disturbances include the variables explored in this article.

Vertical Integration:

Vertical integration is a business strategy in which a company controls multiple stages of its production process and supply chain, minimizing or eliminating the need for outside entities (Amadeo 2022).

Horizontal Integration:

Wherein a company produces several items that are related to one another. For example, a chain of supermarkets buys out another chain of supermarkets. This has the risk of leading to monopoly (Amadeo 2022).

Protectionism:

Trade that limits foreign trade and foreign products to bolster national economy. Protectionism refers to government actions and policies that restrict international trade (Investopedia 2022).

Near Shoring:

Nearshoring involves shifting business operations to a nearby country (Diaz 2021).

Localization:

For the context of this research, localization should be looked at under the lens of trade barriers. In the last few years, a growing number of America's trading partners have imposed what are called "localization barriers to trade" - measures designed to protect, favor, or stimulate domestic industries, service providers, and/or intellectual property (IP) at the expense of goods, services, or IP from other countries (Office of the United States Trade Representative 2022).

Literature review

I. Trade Foundations

The most prevalent thesis around trade today is the Strong Globalization Thesis. This theory came to prevalence in the 1980's and is still highly regarded today. It claims that we now inhabit a truly global economy. This means that there is increased international economic integration (reduced or eliminated trade barriers, such as tariffs and quotas, between two or more countries or regions) and is qualitatively different from previous eras. The pathways that have enabled the economy to globalize are the global marketplace itself, forms of foreign direct investment, global finance, and the global labor market.

Why the Strong Globalization Thesis came into prevalence is due to two main causes (DeMartino 2022). The first being technological revolutions, especially in IT, communications, transportation, and globe-shrinking developments; enabling commodity chains to flourish. There are earlier periods of technological change, esp. 19th century and 20th century that led to this prevalence.

However, the implications of a globalized economy go much further. This is because under this theory the global economy determines the economic fate of individuals and communities. This overall trend, according to Polanyi and later Ala Ruggie, developed into a disembeded global economy which simply means that over time, the economy has become less or is no longer constrained by the political sphere. What this means is that national economies have become more porous and arguably even borderless. Corporations were untethered, and short-term finance completely delinked from territory. Economic practices escape legal

jurisdictions; investors and corporations are now free to roam the globe in search of lower costs and greater profits.

For many theorists, this is the result of natural historical processes, driven by technological change and economic competition. As a result, to meet demand and become competitive states suddenly became forced to liberalize. This allowed for neoliberal trade theory to start to gain prevalence. The global neoliberal ideal focuses on strategies and results: privatization; de-regulation; de-politicization of economic affairs—at least in theory: liberalizing trade, direct foreign investment (DFI), and profitability index (PI, which is an index that represents the relationship between the costs and benefits of an investment), while providing strong corporate protections.

There are many critics to the Globalization theory today. Where some such as Dicken, (1998 and 2003) claim that the theory is based on unevenness, economic processes or tendencies, not universal laws, economic activity not global, but concentrated activity.

This of course led to the prominence of the idea of the gravity model. The United Nations reported that "the gravity model of international trade in international economics is a model that, in its traditional form, predicts bilateral trade flows based on the economic sizes and distance between two units" (UNESCAP 2016). The gravity model is the workhorse of the applied international trade literature, as it is consistently referenced in research papers and published articles covering all areas of trade. It is of particular interest to policy researchers because it makes it possible to estimate the trade impacts of various trade-related policies, from traditional tariffs to new "behind-the-border" measures. A great example of this is NAFTA and now USMCA. This trade agreement was arranged to facilitate trade between trade states that were relatively close in proximity and with significant trade volumes.

Beyond the theories for increased cross border trade, the global economy is also vulnerable and susceptible to various shocks. An economic shock refers to any change to fundamental macroeconomic variables or relationships that has a substantial effect on macroeconomic outcomes and measures of economic performance, such as unemployment, consumption, and inflation. Shocks are often unpredictable and are usually the result of events thought to be beyond the scope of normal economic transactions. A more recent example of this is the COVID 19 pandemic. The World Economic Forum reports that the COVID 19 pandemic "has caused an economic shock three times worse than the 2008 financial crisis" (WEF 2020).

In other instances, politics do end up intertwining with the global economy. This can especially be seen in states that are in conflict with one another. A trade war happens when one country retaliates against another by raising import tariffs or placing other restrictions on the other country's imports. "Trade wars can commence if one country perceives that a competitor nation has unfair trading practices. Domestic trade unions or industry lobbyists can pressure politicians to make imported goods less attractive to consumers, pushing international policy toward a trade war" (Chen 2022). Chen continues to note that trade wars are usually considered a side effect of protectionism.

Protectionism refers to government actions and policies that restrict international trade. A country will undertake protectionist actions to shield domestic businesses and jobs from foreign competition. Protectionism is also a method used to balance trade deficits. A trade deficit occurs when a country's imports exceed the amounts of its exports. A tariff is a tax or duty imposed on the goods imported into a nation. In a global economy, a trade war can become

very damaging to the consumers and businesses of both nations, and the contagion can grow to affect many aspects of both economies.

These aspects of the global economy are pivotal in understanding the undertaking of this research. Within various aspects of the economy these factors can deeply influence different industries. This research will be centered around supply chains, particularly those in the automotive industry. The case study of the U.S. and Mexico trade relations within this industry can provide interesting insight in how these variations cast an influence even in interstate relations.

II. Recent History on the Vulnerability of Supply Chains

Almost four years ago now, the term "slowbalisation" (Reynolds 2022) was being utilized in different academic contexts to describe the fragile state of international trade and commerce.

This economic period was shaped by the remaining impacts from the go-go 1990s (go-go reflecting the work and business attitude of the time) and the economic stagnation in the 2010s as a result of stagnating firms who were grappling with the aftershocks of the financial crisis, and the populist revolt against open boarders, and of course the infamous trade war waged during the Trump administration. These factors undoubtedly contributed to the stagnation of the flow of goods and capital globally. With much of the corporate leadership hesitating to invest internationally, a stagnation in the pressing trend of globalization ensued.

In "The tricky restructuring of global supply chains" the Economist describes how after the Berlin Wall fell in 1989, the lodestar of globalization was efficiency. Companies located production where costs were lowest, while investors deployed capital where returns were highest. Governments aspired to treat firms equally, regardless of their nationality, and to strike trade deals with democracies and autocracies alike (Reynolds 2022). This kept prices low for consumers and helped lift a billion people out of extreme poverty. Further, certain states in the emerging world and especially China were able to quickly industrialize and become an economic powerhouse. However, the article also notes that hyper-efficient globalization had problems. "Volatile capital flows destabilized financial markets. Many blue-collar workers in rich countries lost out. Recently, two other worries have loomed large. First, some lean supply chains are not as

good value as they appear: mostly they keep costs low, but when they break, the bill can be crippling" (Reynolds 2022). Further, Covid-19 was a shock showing vulnerabilities in supply networks. Further, wars, and another virus could create greater disruption in the decades to come. It is for these reasons that such impacts should be analyzed so that meaningful conclusions can be derived for the current, as well as future, global economy.

These impacts on supply chains are also not distributed evenly. The industry of the supply chains matters greatly. For instance, the automotive, electronics assembly, and energy sector overall are facing unique challenges. Reynold notes that "the industry under most pressure is already reinventing their business models, encouraged by governments that from Europe to India are keen on "strategic autonomy" (Reynolds 2022). This has led to emerging trends of vertical integration in supply chains. So that if these factors impact one form of revenue, there are others that corporations can pull from. This research will focus on the automotive industry. An example of vertical integration is that the car industry is beginning to model after Elon Musk's Tesla by moving towards vertical integration. In Tesla, everything is controlled from nickel mining to chip design by Tesla.

III. COVID Effect on Supply Chains

Supply chains are found amongst different industries and as such, the impact of a pandemic can be quite different. That said, pandemics have been encountered at various points in history and a commonality amongst these pandemics is their negative impact on the global economy (Aday, Aday 2020).

The COVID effect was explored by Ernst & Young LLP (EY US) who conducted a survey of 200 senior-level supply chain executives in late 2020 and 2022. The survey looked at topics including COVID-19 impact on supply chains, priorities for the next 1-3 years and the path to digital/autonomous supply chains. This article made two key findings from the research. The COVID-19 pandemic was a global disruption across trade, finance, health and education systems, businesses and societies like few others in the past 100 years. Some sectors, particularly consumer products, couldn't keep products on the shelves in the early days of the pandemic since toilet paper, canned goods, flour and other staples were in high demand.

In the agricultural sector of the food chain, Aday and Aday claim that "COVID-19 resulted in the movement restrictions of workers, changes in the demand of consumers, closure of food production facilities, restricted food trade policies, and financial pressures in food supply chains. Therefore, governments should facilitate the movement of workers and agri-food products." (Aday Aday 2020). This is a familiar narrative in the impacts of COVD 19 across various supply chains in the global economy.

And although the former two examples are of the pandemic disrupting the workforce, many employees were asked to create work from home options. Still others — especially in factory settings — had to adapt to new requirements for physical spacing, contact-tracing and more personal protective equipment (PPE). Industrial products and high-tech manufacturing companies are investing overwhelmingly in technology to reduce employee exposure to COVID-19 in more labor-intensive industries. The implications of modernizing supply chains through technologies are another consideration in how supply chains are shifting. And although this factor is not explicitly considered as a part of this research, a few words need to be considered about it.

The face of logistics and supply chain management have been hugely impacted by innovations in communication technology, information technology and the transformation of identification technology. The improvement in efficiency, reduction of costs, increased competitiveness and changes in strategies have changed modern supply chains. This lowering of costs has led to the relocation and localization of supply chains.

Another trend in supply chains that resulted from the COVID effect is that of trade protectionism. In a report published by A.T. Kearney it was stated that trade protectionism, along with consumer preference for local products and emerging technologies, are some of the factors driving the trend toward localization during the pandemic (Kapadia 2018).

These factors among all contributed to the development of a hypothesis from the Brookings institute which suggested that COVID 19 would lead to a triple economic shock. A triple shock is experienced when a demand shock, a supply shock, and/or a financial shock occur.

For instance, the world economic forum states that, “it is clear companies have been faced with substantial business and operational disruptions, which has included everything from mitigating the effects of reduced supply, to managing disruptions to logistics suppliers, and indeed hurdles in meeting their own contractual obligations to customers” (“The Ongoing Impact of COVID-19 on Global Supply Chains” 2020). These factors made it evident that globally, many companies are hugely reliant on production and supplies in China, Southeast Asia, and other low-cost jurisdictions. Coronavirus outbreaks across Southeast Asia have severely disrupted factory production rates, leading to decreased production of goods like apparel, automobiles, and electronics. The Economic Times reports that Coronavirus curbs have led companies to shut factories and suspend or reduce operations at a time when “Asia's manufacturing sector is already grappling with rising raw material costs and signs of a slowing Chinese economy” (Chaudhury 2021). The actions of these corporations are certainly creating economic stress, which is exacerbated by and contributing to geopolitical tensions which disrupt trade entirely by creating an increasing desire from states to enact restrictive policy with the other state with which it contends.

The following section will explore the case study of how the US China trade war influenced trade and supply chains and how their complex relationship and behaviors of these countries had residual effects, particularly impacting countries like Mexico. Although these events were taking place before the pandemic, literature suggests that it did create outcomes worth analyzing in understanding why corporations are choosing to localize supply chains and how COVID 19 may or may not have influenced the developments from the trade war.

IV. U.S.- China Trade War

As this paper explores the impact of COVID 19 on supply chains, it is important to discuss the U.S.-China trade war, as it continues to become more prominent. Though many of the factors leading up to the trade war had been brewing prior to this time, the tipping point was reached in 2016.

Various factors attributed to this conflict, including the US trade deficit, China's economic reform agenda, Intellectual property theft, currency manipulation, and unfair FDI norms (Iscru 2019). Blackwell Global reports that in 2017, "the US launched an investigation into Chinese trade policies and, as a result, imposed tariffs on $250 billion worth of Chinese goods. The main area of concern was the increasing U.S. trade deficit. A record US trade deficit of $375 billion was revealed in 2017" (Iscru 2019). This issue was explored further in 2018 where records illustrate that the U.S. had a $419.2 billion trade deficit with China.

In his research, Gachúz Mayahe came across the claim that the U.S. China trade was a reason for recent economic growth in Mexico. In the context of the U.S.–China trade war and the increase in tariffs between the two countries, Mexico has become the main trading partner of the U.S., displacing China. In 2019, by the first time, Mexico surpassed China in trade with the U.S., reaching a historic commercial exchange of $614 billion (Gachúz Maya 2022). That amount exceeds the commercial flow of $558 billion between China and the U.S. by 9.95 per cent of (United States Census Bureau, 2020a, 2020b).

In terms of its trade relationship with the U.S., historically, Mexico has some advantages over Southeast Asian supply chains. John Murphy, the senior vice president for international policy for the U.S. Chamber of commerce stated that Mexico's advantages in the context of trade for U.S. manufacturers are as follows:

1. "Mexico's close proximity to the U.S. market and tariff-free access it enjoys with the United States

2. A relatively minor cultural gap between the U.S. and Mexico that has improved drastically over the years

3. Substantial degree of integration between the two countries:
   - 36 million Americans of Mexican descent
   - hundreds of billions in annual bilateral trade
   - more than $100 billion in U.S. direct investment in Mexico

4. Infrastructure connections domestically and cross-border that continue to improve"

(Shao 2019)

Gachuz's study shows that this trend was short lived. In April 2020, however, China once again displaced Mexico as the main trading partner of the U.S. The main reason has been attributed to the lack of dynamism in bilateral trade between the U.S. and Mexico in the context of the COVID-19 pandemic and the economic crisis in the U.S. (Roberts, 2020). This shift in the international trade of the U.S. (even when it has been influenced by exogenous factors) showed that the benefits of the trade war for Mexico are temporary. This finding may be a little hasty, as

many of the impacts of the trade war were impacted by and disrupted by the pandemic. This factor is significant as it allows for and removes external factors and will allow the focus of the research to center more on tracing the shifts of supply chains in the years of COVID 19 which will be defined as 2020, 2021, and data available from 2022.

V. Trade impacts from USMCA

A significant portion of merchandise trade between the U.S. and Mexico occurs in the context of production sharing, as manufacturers in each country work together to create goods. The flow of intermediate inputs produced in the U.S;. and exported to Mexico and the return flow of finished products greatly increased the importance of the U.S.-Mexico border region as a production site. U.S. manufacturing industries, including motor vehicles and electronics, all rely on the assistance of Mexican manufacturers. In the auto sector, for example, there are multilayered connections between U.S. and Mexican suppliers and assembly points (Villarreal 2022). An automobile produced in the U.S., for example, can have thousands of parts that come from different various U.S. states and Mexican locations. This therefore led to a multitude of economic linkages between the two countries. Linkages can offer important trade and welfare gains from free trade agreements.

On July 1, 2020, USMCA replaced NAFTA and is composed of thirty-four chapters and twelve side letters. The Congressional Report notes that USMCA retains most of NAFTA's provisions, while making notable changes to market access provisions for motor vehicles and agriculture products, rules on investment, government procurement, IPR, and on worker rights and the environment. New provisions on digital trade, state-owned enterprises, and currency misalignment are part of the new agreement, as well.

Some USMCA provisions that most affect the U.S.-Mexico trade relationship arguably include changes to the rules of origin for motor vehicles, the new chapter on digital trade, and more enforceable provisions on worker rights (Villarreal 2022).

For example, USMCA modified NAFTA rules of origin for motor vehicles by raising the minimum level of regional value content from 62.5% to 75%, adding a wage requirement that

40%-45% of motor vehicle content be made by workers earning at least $16 per hour, and requiring 70% of a vehicle's steel and aluminum originate in North America. On labor issues, USMCA added a new "rapid response" mechanism to provide a faster independent panel investigation of labor disputes. This however received some criticism from the Mexican end of the agreement. The raise in wages may prove difficult to finance on the Mexican end as the Mexican government could lack the means to meet U.S. wage standards. From a humanitarian perspective, this is rather progressive because maquiladora and other mass manufacturing practices in manufacturing were called out for their exploitative practices. The problem lies within the notion that the U.S. economy is significantly larger than that of Mexico and asking a smaller economy to meet these standards can seem unfair.

VI. Trade War, COVID and USMCA Impacts in the Automotive Industries

These impacts were enhanced because years prior the U.S. China trade war was already raising havoc. In 2019 Forbes reported that in that year, auto sales were coming under pressure from the tariff war between China and the U.S. and predicted the global industry would "lose sales over the next 5 years' worth nearly $770 billion because of this and other problems, according to Germany's Center for Automotive Research (CAR)" (Winton 2020). The article was written before the COVID19 pandemic and therefore failed to mention the impacts of the pandemic on the automotive industry. However, it is important to consider the findings of the article because they illustrate the preexisting conditions of the industry during the pandemic and may illustrate a clearer picture of some of the dynamics exacerbated by the pandemic.

In fact, according to S&P Global Ratings Credit Analyst Vittoria Ferraris, that year was one of "Worsening global economic conditions, the trade war between the U.S. and China, and the high cost of innovation for carmakers will continue to dampen sales," ("Sharing Insights Elevates Their Impact" 2020). Ferraris continued to note that it was expected for auto manufacturers to suffer some margin erosion, particularly in the mass-market segment, as they may struggle to fully pass through the increased cost of connectivity, electrification, and autonomous driving" ("Sharing Insights Elevates Their Impact" 2020). What this ultimately means is that rising costs would translate into higher auto prices, reducing consumer affordability, and deterring car buyers.

The automotive industry pumped the brakes hard in the early months of the global COVID-19 pandemic. The McKinsey Quarterly reported that supply chains could be radically reconstructed not just because of COVID-19, but because of geopolitical tensions, microchip

shortages, and even the blockage of the Suez Canal. All of these variables are reported to be holding, though pressures suggest that change will come. For example, some vehicle lines that had been operating on 50 to 60 days' supply are down to only ten to 15 days' supply. Those supply pressures aren't (yet) manifesting in notably higher prices for the consumer; rather, the squeeze is being felt across the supply chain, with customers getting more car for less money than they did ten or even five years ago. Further, trends in the industry overall suggest that mobility will continue to become more digital, more connected, and especially more electric. Consumers who factored sustainability into their buying decisions helped electric-vehicle sales increase by 43 percent (McKinsey 2021). These trends are heavily shaping the automotive industry today, and the opportunities that the USMA agreement brought on are further pushing them in this direction.

The White House report *on the Estimated Impact of the United States Mexico-Canada (USMCA) on the Automotive Sector* reports that some of the expected impacts of the trade agreement on the industry are estimated to be $34 billion in new automotive investments, $23 billion in new annual auto parts purchases, and is expected to generate approximately 76,000 jobs (Office of the United States Trade Representative Executive Office of the President 2019). This is an example of what the Brookings Institute refers to as an era of rising protectionism. Protectionism in trade refers to economic policy(s) that restrict imports from other counties through methods such as high tariffs to bolster national economies (Clouthier 2020). However, due to the pandemic and a recession trend across the global economies, closer collaboration, deeper integration, more coordination, and more dialogue is necessary.

For North America, whose economies are deeply intertwined, these unilateral or isolationist measures are unnecessary and can be harmful. Brookings reports that "This is why

Mexico voiced its deep concern about a recent protectionist proposal introduced in the U.S. Congress that wrongly aims at diverting electric vehicle production to the U.S. by offering discriminatory tax incentives (Clouthier 2022)(Kharas 2020).

Such a policy proposal is deeply troubling because it directly contradicts the spirit of the USMCA as it intends to divert investment and production of these types of vehicles to the U.S. while disarticulating the North American automobile supply chain. Such a move would have dramatic consequences not only for the Mexican auto industry but also for the U.S. since it would reduce the ability of U.S. manufacturing to produce with its most important trading partners, at a remarkably high cost to the U.S. and to North America. The Bookings Institute reports that “the way for North America to be competitive vis-à-vis other regions is by deepening our integration, not by isolating our economies” (Clouthier 2022).

For Mexico's automotive industry, it will likely struggle to meet new USMCA local content requirements. Besides increasing local content requirements in the automotive industry to 75%, Mexico is committing to generate 40-45% of its automotive and automotive parts production at hourly wages of $16 by 2023; Mexico's average hourly manufacturing wage was $3.73 in 2019 according to Mexico's National Auto parts Industry chamber (Industria Nacional Autopartes 2023)

S&P Global reports that “Some Mexican automotive industry representatives have said that where specific requirements have been published only recently and imply higher costs, companies may choose instead to pay tariffs” ("Sharing Insights Elevates Their Impact” 2020). And although the USMCA stabilized Mexico's external trade relations following global recession, its foreign direct investment inflows are still likely to be limited by a broader deterioration of the business environment under the current Mexican administration.

This deterioration is what concerns investors. Presently, the government was pursuing an aggressive tax collection strategy on private firms and planning modifications on the privately run pensions system in Mexico to grant greater control to the executive government.

Research Overview

I. Objective and Research predictions

The main objective of this research is to explore how frequently terms relating to COVID, the U.S. China trade war, USMCA, and protectionist language generally appear in different articles in the automotive supply chain industry.

I predict that these variables are prevalent in the media analyzed as the literature review illustrated that they have played a massive role in shaping the general economy. Because these variables played a role in shaping the economy, I predict these impacts trickled down into a smaller section of the economy. I predict that due to the shock that these variables caused, protectionism may be increasing prevalent as efforts to protect the national economy on the U.S. side have increased.

This is a reasonable conclusion given that the literature review above discussed how in recent years the U.S. has made significant strides to narrow its dependence on China and other global partnerships. Some of these variables may have indicated a shift from these protectionist policies such as the reinstitution of NAFTA with USMCA but it could be argued that this was an effort to localize supply chains and assure that the networks are close and therefore efficient. The trade war on China may have also bolstered this detachment and offensively pushed to localize supply chains.

COVID exacerbated anti-China sentiments in the U.S. A report from Adelaide University found that, “The U.S. and China have engaged in a battle to control the narrative of COVID-19. Trump has criticized the PRC for failing to act fast enough during the initial outbreak in

November 2019 in Wuhan, and inflamed tensions by referring to COVID-19 as the "Chinese virus" ("Geopolitics, Trade and Protectionism: Covid-19's Impact and Paths Forward" 2023).

However, the pandemic globally did enact policy geared at protectionists trends. The Global Trade Alert in its 'Tackling Covid-19 Together' report, from 1 January through to 21 March 2020, noted that 54 governments had placed 46 export curbs on medical supplies, with 33 of those instigated since the beginning of the month (Evenett 2022). These findings however are being felt by auto manufacturers as well; in a news report in the Financial Times, the chief of Mercedes also reported these concerns. The article states, "Shortages in semiconductors and U.S. restrictions on the export of certain chips to China have partly driven the automotive industry to regionalize some of its sourcing" (Nilsson 2023). Though there are limits in this approach it is undeniable that protectionism may be connected to these variables.

METHODS

I. Automotive Industry Sample

"The automotive industry in Mexico represents a significant manufacturing sector with 79% of production exported to the United States" (CPI 2021). Most of my research will focus on the automotive industry and how the variables have impacted specific corporations. The corporations under analysis must have met the following criteria.

1. The corporation must be a U.S. Headquartered Company
2. The company must have a connection to Mexico for manufacturing.

These criteria are very broad. CPI reported that in 2021, "there are over 30 automotive OEMs in Mexico and over 1,100 Tier 1, and a few thousand Tier 2, and Tier 3 car parts manufacturers and suppliers clustered throughout twenty-four states to support the automotive sector in Mexico." This makes my pooling sample very broad, as many corporations meet these requirements. Given the limited time scope of this research, I was only able to focus on two corporations.

The first of which is General Motors (GM). GM has been in Mexico since the 1960's. As of 2018, GM was the largest automotive manufacturer in Mexico by units produced, turning out over 800,000 vehicles (Nearshore 2020 BANGFIX). One consequence of such volume is that suppliers are drawn into the orbit of these facilities, helping GM minimize inventory and increasing flexibility. Plus, they build a strong local base of technical trades and expertise with demanding automotive quality management systems. It is because of GM's established presence and resilience that it is a company analyzed in this research. GM's strong presence in Mexico has

the potential to illustrate how COVID, the U.S.-China Trade war and USMCA may or may not have caused changes in the industry and whether these trends hold true for the wider industry. Further, GM owns Buick, Cadillac, Chevrolet, and GMC and will therefore provide insight into how such a large manufacturer can be impacted by these variables.

The second corporation that this research will focus on is Tesla. Tesla recently announced that it would be building a major manufacturing plant in Mexico. This decision harnessed mass attention and can illustrate how the three variables of my research may influence the setting in which it is entering, and further provide insight as to whether doing so impacted supply chains. Tesla will serve as an interesting contrast to GM's long-established presence.

Although I could have chosen different corporations for my analysis, both companies have been gaining attention from the Mexican media. As such, they are presently in much of the prevailing discourse on the topic. Determining if these variables are present or not in what they release to the public could be an interesting addition to the conversation. In the future more research including more companies could illustrate a larger picture of these variables being present in discourse.

II. Procedure

To determine the breadth of the impact (or lack thereof) of these variables, focus will be on those managing supply chains and what they communicate to the public.

To answer the question of whether the U.S.-China trade war, COVID 19, the reimplementation of USMCA in Mexico and the U.S., and protectionism more broadly are being discussed in the smaller supply chain context, content analysis will be conducted for each of these companies' released media articles from 2021 to March 2023 from each respective companies' websites in Mexico. Articles in both Spanish and English are included in this analysis.

1. From GM, the following link was utilized to gather articles:

   https://media.gm.com/media/mx/es/gm/news.html

2. From Tesla, the following link was used:

   https://www.tesla.com/es_MX/blog

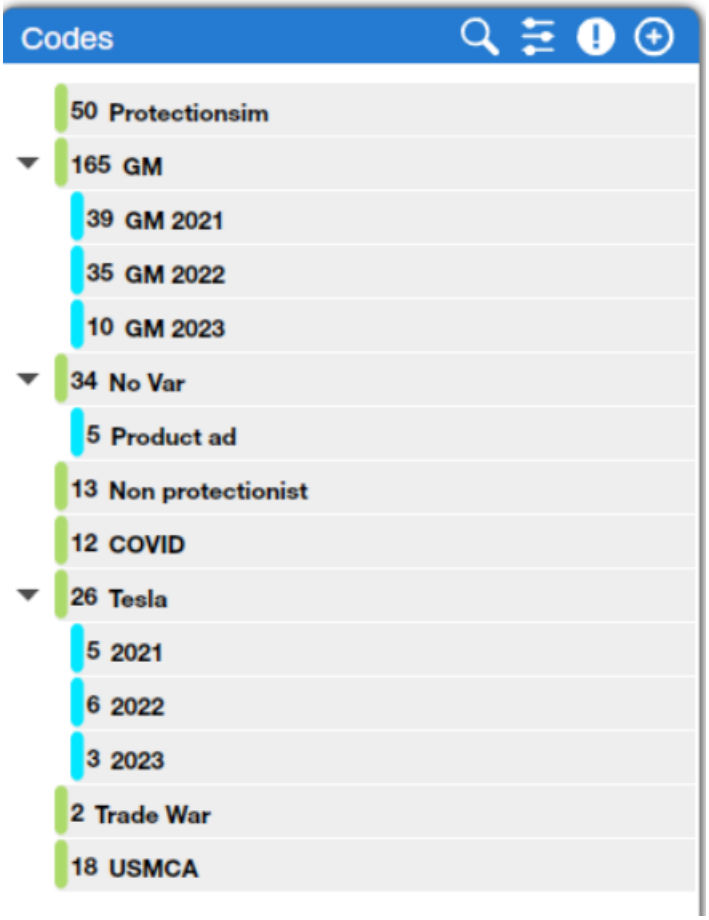
The analysis consists of various steps. Each of the press release articles from these corporations was coded in the following way.

The first code of this analysis explores the mention of each of the research variables. Each of these articles were transferred into the text analysis software Dedoose. In Dedoose, one can select and create different variables.

For instance, every time the articles mentioned one of the variables, they were coded into different colors. Any time the press release mentioned COVID, the color denotation was blue, mentions of the trade war were coded red, and mentions of USMCA were coded in yellow. If the press release failed to mention any of the above variables, then it was noted in pink. The other key code was for protectionist language or non-protectionist language.

The following image depicts how categories appear in Dedoose:

Image 1:



The image above illustrates how codes appear in Dedoose. The codes in this software act like folders. The image above has numbers in front of them. These numbers illustrate the cases of occurance of the variable. Additionally, I found it useful to code by company and year to separate data. Therefore those are also included as codes to better navigate the data.

The software in Dedoose tracks the number of instances in which each color was present. It is important to code for these variables because they illustrate which of these issues had more prevalence in each of these years.

Because the code for mentioning the variables of the Trade War, USMCA, and COVID are more explicit, coding through these variables was straight forward. However, when coding for a variable such as protectionism, the process is more inductive and subject to interpretation. For example, to determine whether the article illustrated protectionism, I turned to the literature and found that in general what illustrates protectionist efforts focus on strengthening the national economy and pulling firms from abroad. Thus, when coding the following considerations were made.

A. If the article mentioned strengthening America, whether it be supply chains, the presence of the company for the public.
B. If it mentioned the need to localize manufacturing firms
C. If it mentioned efforts to pull away from or shift from Asia or another region of the world

If any of the above themes were mentioned or hinted at it was coded as protectionist. It should be noted that this is in fact highly subjective. Interpretation of these criteria in the articles languages

was left to the discretion of the researcher and thus could create bias. To reduce bias, a team with more researchers could be used.

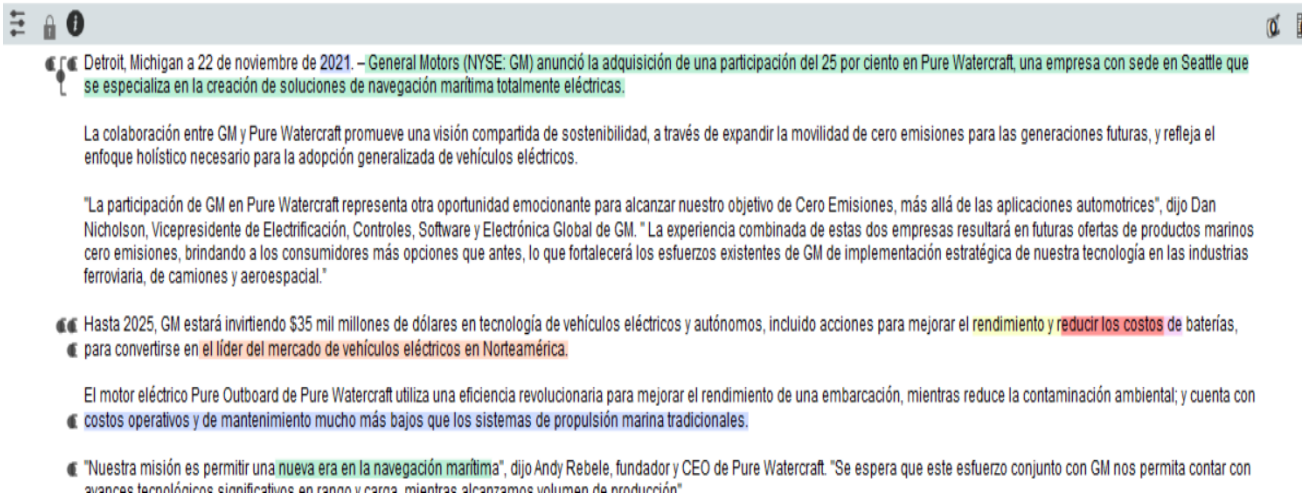
Similarly, If the company hinted instead at:

A. Efforts to globalize or expand global networks.
B. Efforts to lower tariffs or increase accessibility (outside the Americas)

Which by definition are more closely associated to globalization and not protectionism, they were coded as non-protectionist. Like the protectionism criteria they may be subject to the bias of the author. If non-protectionist language was used, then it was noted under the non-protectionist category in Dedoose.

Ultimately the reports from the company will look as follows when coded:

Image 2:



Detroit, Michigan a 22 de noviembre de 2021. – General Motors (NYSE: GM) anunció la adquisición de una participación del 25 por ciento en Pure Watercraft, una empresa con sede en Seattle que se especializa en la creación de soluciones de navegación marítima totalmente eléctricas.

La colaboración entre GM y Pure Watercraft promueve una visión compartida de sostenibilidad, a través de expandir la movilidad de cero emisiones para las generaciones futuras, y refleja el enfoque holístico necesario para la adopción generalizada de vehículos eléctricos.

"La participación de GM en Pure Watercraft representa otra oportunidad emocionante para alcanzar nuestro objetivo de Cero Emisiones, más allá de las aplicaciones automotrices", dijo Dan Nicholson, Vicepresidente de Electrificación, Controles, Software y Electrónica Global de GM. " La experiencia combinada de estas dos empresas resultará en futuras ofertas de productos marinos cero emisiones, brindando a los consumidores más opciones que antes, lo que fortalecerá los esfuerzos existentes de GM de implementación estratégica de nuestra tecnología en las industrias ferroviaria, de camiones y aeroespacial."

Hasta 2025, GM estará invirtiendo $35 mil millones de dólares en tecnología de vehículos eléctricos y autónomos, incluido acciones para mejorar el rendimiento y reducir los costos de baterías, para convertirse en el líder del mercado de vehículos eléctricos en Norteamérica.

El motor eléctrico Pure Outboard de Pure Watercraft utiliza una eficiencia revolucionaria para mejorar el rendimiento de una embarcación, mientras reduce la contaminación ambiental; y cuenta con costos operativos y de mantenimiento mucho más bajos que los sistemas de propulsión marina tradicionales.

"Nuestra misión es permitir una nueva era en la navegación marítima", dijo Andy Rebele, fundador y CEO de Pure Watercraft. "Se espera que este esfuerzo conjunto con GM nos permita contar con avances tecnológicos significativos en rango y carga, mientras alcanzamos volumen de producción"

The image above illustrates how the text once coded for appears. As illustrated from the image above, the year is coded for as is the company. One phrase in particular from this article was how frequently the cost of reduction was made. The costs it was referring to was those of batteries for electric vehicles to be the global leader of electric vehicles in North America. Because it mentioned these goals, which align more with non-protectionist language, it was coded in that manner.

While originally in this research I sought to have a more causal relationship be a part of this research, after discussion with my research advisor, I found that simply analyzing this research in a more descriptive statistical manner important insights can still be gained. I believe that in the earlier years of this research, meaning 2021, and early 2022 that some variables like COVID 19 were more prevalent due to its proximity to 2020 when the pandemic came across. I also believe that there may be more intersections between the presence of these variables. For instance, USMCA and non-protectionist language should intersect because USMCA is a mechanism to facilitate trade among U.S., Mexico, and Canada.

RESULTS

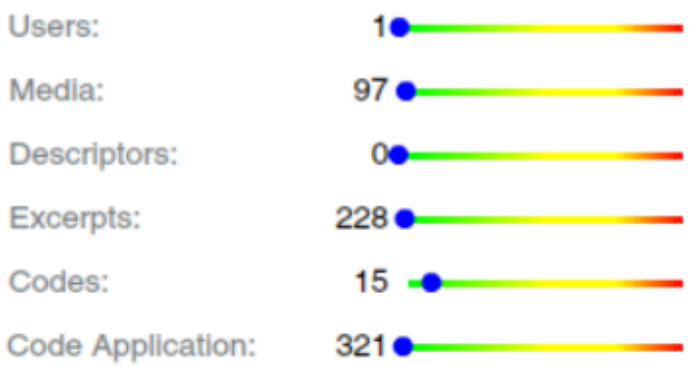
In the 2021-2023 period, the Mexico company websites collectively released 97 articles. However, there is a noticeable difference between the number of articles that the GM website released in comparison to those of Tesla.

I. Sample Discussion

Before the results are discussed it is important to note that the dates analyzed 2021 to March 2023, General Motors released 85 articles, while Tesla only released 12 out of a total of 97 articles. This finding is significant because it illustrates just how much more ingrained GM is in Mexico in comparison to Tesla. The significance of this will be analyzed further in the discussion portion of this article.

The following image shows the total breakdowns of the media sample, codes used, and other key information tracked in Dedoose.

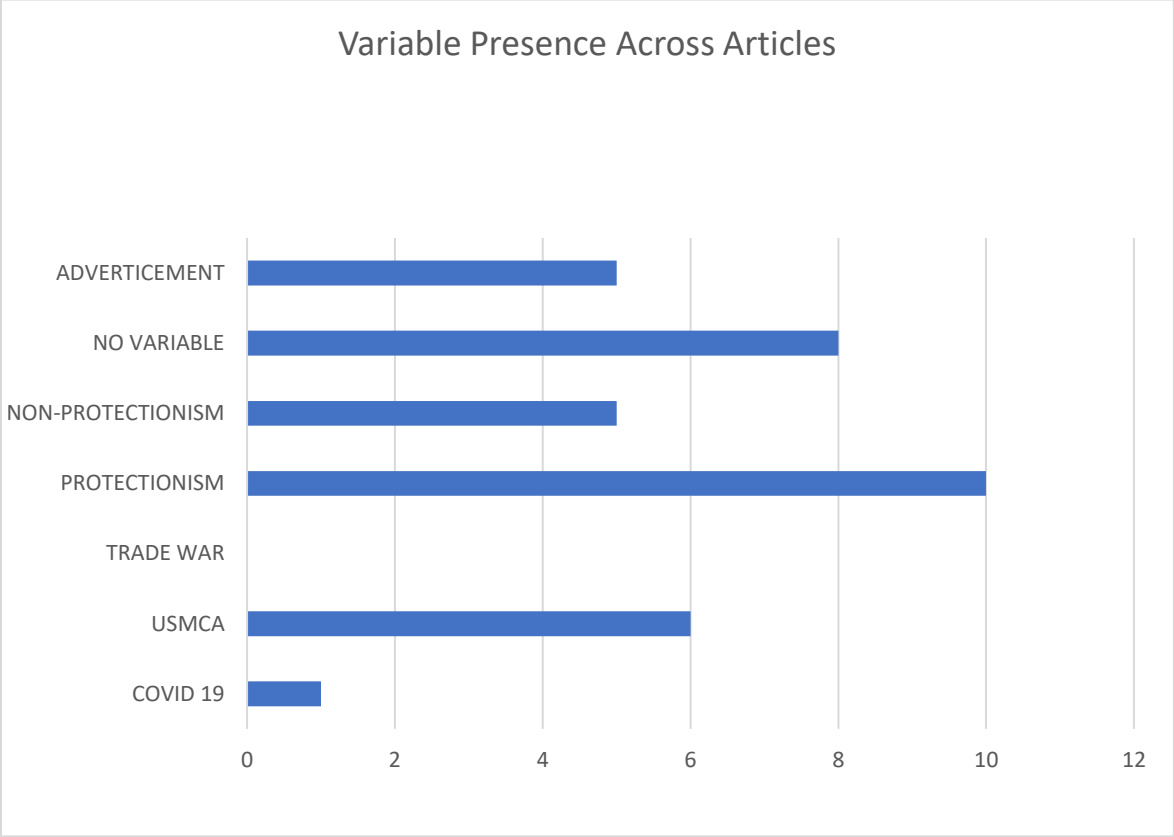
Image 3:



The image above illustrates the total number of times codes were applied, the number of articles used (97) and the number of excerpts refers to the number of paragraphs found in the media. How the code application was distributed will be discussed in the following graphs and table.

The following graph illustrates the frequency of appearance for the variables in the sample.

Graph 1:

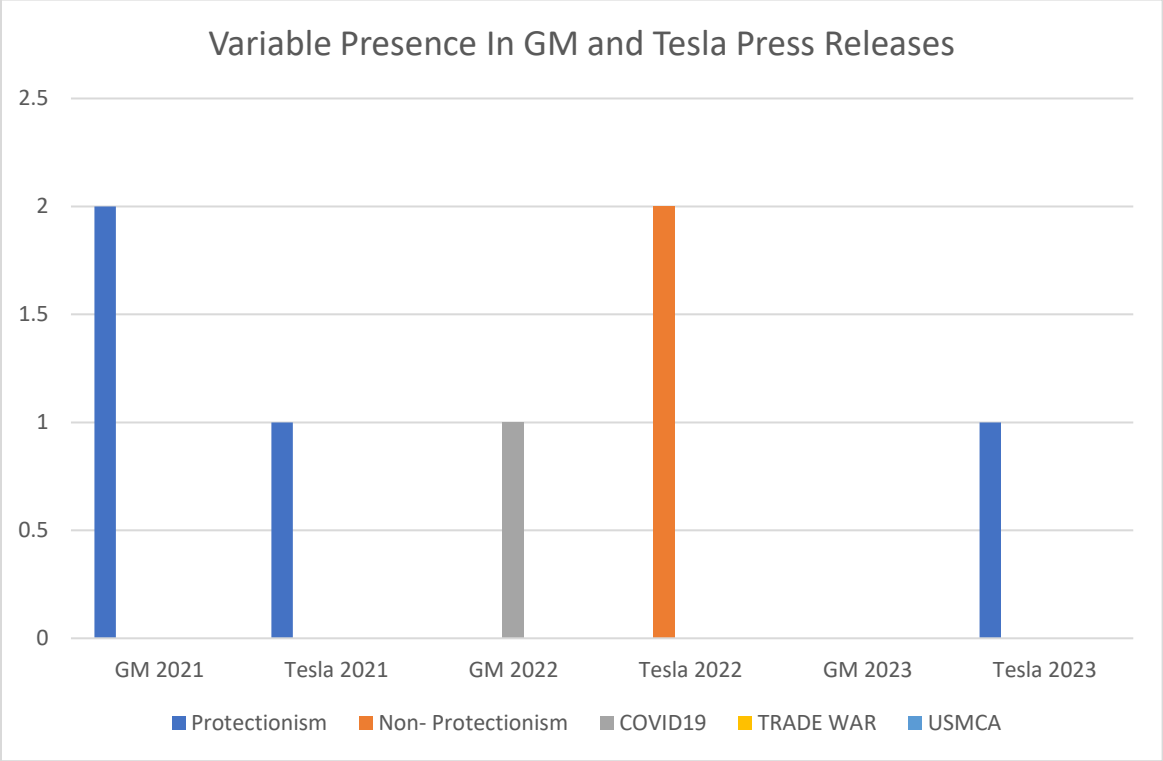


Graph one illustrates the frequency at which each of the variables appeared. The most prominent one being protectionism. This was a result of the fact that companies often announced their goals of localizing manufacturing firms or graining greater presence in the U.S. There are

certainly points of interception within the data which will be discussed in Table one. Some variables were not mentioned at all such as the U.S- China Trade War.

The following graph is a breakdown of the code presence of the variables in the years 2021-2023.

Graph 2:



The graph above illustrates the occurrence of each variable in the articles released in those years. Note that articles which did not contain any of the variables were not included. This is important to illustrate as some of these articles, namely those that were solely advertisements that mentioned some of the variables are not present.

The following table illustrates the how many times variables appeared alongside another variable and the totals of the frequency of said variable in the sample.

Table 1.0

Variable Co-Apperance and Totals

Codes	COVID	GM	GM 2021	GM 2022	GM 2023	No Var	Product ad	Non protectior	Protectionsim	Tesla	2021	2022	2023	Trade War	USMCA	Totals
COVID				1												1
GM			38	33	10				2							83
GM 2021		38							2							40
GM 2022	1	33														34
GM 2023		10														10
No Var							5				2				1	8
Product ad						5										5
Non protectionist										2		2			1	5
Protectionsim		2	2							1	1				4	10
Tesla								2	1		2	6	3			14
2021						2			1	2						5
2022								2		6						8
2023										3						3
Trade War																
USMCA						1		1	4							6
Totals	1	83	40	34	10	8	5	5	10	14	5	8	3		6	

The table above illustrates the amount of co occurrence of each of these variables. As noted, the company and company years often interlap. However, the key things to notice are the totals of each factor and the blue boxes that illustrate instances in which variables co occurred. For instance, Protectionism and USMCA co occurred 4 times, Product adds were also more often indicative of no variable.

Given that this research sought to understand whether the trade war, COVID 19, USMCA and protectionism were present (or not) in the discourse of these companies with the public; this data illustrates that these variables remain a part of the discourse. The frequency of discourse obviously differs; however, one variable was present with the exception of 5 instances out of the 97 articles. It should also be noted that if an article showed a variable multiple times, the occurrence in Dedoose only appeared as once per article. So, if the article mentioned COVID 5 times, it would only show up in the totals once.

IMPLICATIONS

A. On Protectionism

Various economists across the world have already noticed the rise of protectionist behaviors even prior to the pandemic. Cigna, Gunnella and Quaglietti (2018) found that trade integration has slowed over the last decade. The process of trade integration started after the Second World War. It gained momentum in the 1980s and had a golden age in the period 1990-2008, when total trade in goods and services increased from 39% to 61% of world GDP. Since then, trade has slowed (to its current 58% of world GDP), while protectionism has been on the rise, driven by an increase in non-tariff and, more recently, tariff barriers.

The findings of this research are consistent with at least two companies in North America. Though the presence of GM in Mexico is well established, Tesla's new shift into Mexico could be considered an example of near shoring in my opinion. To reiterate, nearshoring is when a company shifts operations to a nearby country. GM has been in Mexico since 1935 and has a long established presence there so this narrative of near shoring does not represent GM's narrative today, however it would have back in 1935. In the case of the U.S,, the high tensions with China could have led to greater efforts to nearshore supply chains to Mexico to meet market demands.

With the exception of two instances, the articles rarely alluded to tariffs imposed during the trade war. I believe that had the sample included data going back to 2018-2020, perhaps more articles would discuss the issue further. The instances which protectionist language was used was

in instances where the company sought most to increase efficiency in North America and North America only. Policy such as USMCA plays a key role on the Mexican end of the deal because it did lead companies like Tesla to shift operations into Mexico.

DISCUSSION

a. Sample discussion

Tesla and General Motors in Mexico

The available content in Mexico was starkly different between these companies. As mentioned in the results portion of this analysis, out of the 97 articles that were included in this research, only 12 were from Tesla and 85 were from General Motors. This therefore led to a sample more skewed results toward General Motors. A potential explanation for this is that General Motors has a well-established and well-respected presence in Mexico. Many of the articles from the General Motors page discussed how the company across Mexico was being awarded for their inclusive practices. Consider the following excerpt:

"GM de México sea una compañía certificada con el distintivo EquidadMx por la fundación internacional Human Rights Campaign durante 4 años consecutivos, obteniendo la máxima calificación en cada ocasión", menciono Francisco Garza, Presidente y Director General de GM de México."

Translation: GM of Mexico is a company certified with the EquidadMx distinction by the international Human Rights Campaign foundation for 4 consecutive years, obtaining the highest rating on each occasion," said Francisco Garza, President and CEO of GM de Mexico.

This is just one example of their presence in Mexico. Many other articles discussed other topics completely unrelated to the variables assessed. Other topics included GM investing in Robotics competitions in Mexico, or how it was investing in Women in STEM among or other

community-based incentives. Even though these findings are completely unrelated to my research variables, they illustrate an interesting picture of the different priorities that these companies hold in Mexico. They also illustrate how a corporation or supply chain can become integrated into foreign communities which could be another interesting subject matter to research. The overall impression that I gained as a researcher in this matter is that General Motors is incredibly integrated into the communities in which it is in. This has benefits because it could allow for loyalty to the company from the community and thus establish trust in their products.

While more limited, the Tesla articles were starkly different from the GM articles. A few were mostly about new products Tesla is seeking to market, others were about the positive impacts that the company had in California and Nevada, quarterly reports, and so forth. Because Tesla is just now establishing its presence in Mexico it could be an explanation as to why none of the articles actually discuss Mexico. This is a major limitation to this research as it skewed much of the data variables being present in General Motors. Because of this factor I considered removing Tesla from the research because the content and available information from these two companies was so different. It was also interesting to note how few articles the company released in the research time frame in comparison to General Motors. Further, in a CNN article from earlier this year reported the following:

"Mexican President Andres Manuel Lopez Obrador announced for Tesla to build its next factory in the country. Reuters reported that Mexican officials said the plant could cost $1 billion. The company estimates to build the additional plants needed to reach 20 million vehicles will cost a total of $150 billion to $175 billion, including the $28 billion in investment that it has

already made in its history. "Maybe this total investment looks large," said CFO Zachary Kirkhorn. "I think it's quite small relative to our ambitions" (Isidore 2023).

Tesla's presence in Mexico is just starting and provided insight into a trend of companies nearshoring. I decided to include it in this research however, because there were some instances in which the language in the article discussed a variable, and I believed that the narrative of a company with an older more established company vs. a newer one would provide an interesting comparison. I believe that it would be an interesting study in the future when Tesla has a more established presence in Mexico to track the number of auto sales from these companies in Mexico and determine whether the company having a longer term more established presence had any sort of impact on auto sales for the company.

One variable that popped up in a few articles that was not included in my research was climate change. Both GM and Tesla had articles which discussed how important it was to collaborate and partner with other companies, both American or foreign based to accelerate their environmental policy. The language in articles used where this variable was present was rather indicative of a desire for free trade of information and global collaboration to combat climate change. Though this variable is irrelevant to my research, as I coded data its prevalence became hard to ignore and I felt it worth mentioning, as this may continue to be present in the future. I believe that research on climate change's impact on supply chains would prove to be rather interesting as well.

This was similarly the case with the COVID19 variable. Table one illustrates the few instances in which COVID19 was highlighted in the article. In the instances it was present, it was to discuss the global impact that the pandemic had on the company and how it brought it closer

to other parts of the world because of the demand for N1 masks. I feel that had I included 2020 to the years of analysis for this data then the variable would have been more present and could have potentially illustrated a more complete picture of COVID 19's impact.

In the instances in which the trade war was mentioned, it was more so alluded to than anything else. The way that these articles alluded to the trade war was when they discussed how certain tariffs imposed impacted them. Because these corporations operate independently from the U.S. government, it was interesting to note their mostly politically neutral language. Though this also was by no means something included as a variable, it was something that I consequently noticed as I read these articles. Additionally, because it was merely alluded to and not explicitly expressed it did not count as a code. Therefore, this variable is not expressed in the code totals.

Gachúz Maya's article, "Mexico's Trade Relationship with China in the Context of the United States–China Trade war" provides an interesting insight into both the trade war and USMCA. The empirical findings of this article show that two structural problems in Mexico's foreign policy have been reinforced by the implementation of the USMCA: lack of complementarity of the Mexico–China trade, and Mexico's high dependency on the US market. The article states:

"The new triangular commercial exchange of the USMCA implies the increase of dependency on the US market and hinders trade relationship with China in the medium and long term. This could have serious repercussions on the growing Mexican trade deficit with China and may bring more complications to enhance exports to China. In the last ten years, Mexican exports to the United States are on average 80 per cent of total Mexican exports. This high concentration of

exports fuels vulnerability to economic disruptions in the United States and generates uncertainty in international markets outside North America" (Gachuz Maya 2020).

The push to strengthen ties in North America is of interest because much of the language that I came across from General Motors in Mexico did focus on strengthening connections across north America.

Further, the impact of the automotive industry for both Mexico and the United States is of great importance. In fact, reports from the Center for Collective Learning (OEC) found that "In 2020, Mexico exported $326B to United States. The most common products that Mexico exported to United States were Cars ($29.1B), Computers ($28.5B), and Motor vehicles; Parts and accessories ($22.9B). During the last 25 years the exports of Mexico to United States have increased at an annualized rate of 6.66%, from $65B in 1995 to $326B in 2020."

This shows just how impactful the automotive industry is for U.S.-Mexico trade relations. With companies such as GM and its strong presence in Mexico and new companies like Tesla following suit, Mexico's partnership with the US is of significant importance to understand as it illustrates a trend that is only projected to expand in the future. Further research in other industries could also illustrate an interesting picture of how supply chains are shifting.

The presence of these variables and the impacts that they caused in the economy did carry forth into the conversations in much narrower scopes such as those in the automotive industry supply chains for two companies.

Conclusion:

COVID19, USMCA, U.S. China Trade War, and rising protectionism caused major impacts in the global economy. Through content analyses of the released media articles from General Motors and Tesla, it was found that these factors which deeply impacted the global economy are being discussed in a smaller level. It is important to look at the impacts of these variables at a much smaller level because it can illustrate the scope of the issue and provide insight into how different aspects of the economy are impacted. Although there are more variables that could have provided interesting insight into the shock that different factors can create into the global economy (such as climate change), the narrative of these variables particularly in the case of U.S-Mexico trade relations illustrates an interesting picture of what companies choose to include in their communication to the public.

Appendix

I. Research Resources

- From GM, the following link was utilized to gather articles:

https://media.gm.com/media/mx/es/gm/news.html

- From Tesla, the following link was used:

https://www.tesla.com/es_MX/blog

II. Coding Software:

- Dedoose, link for download: Dedoose

III. Tables

Table 1.0

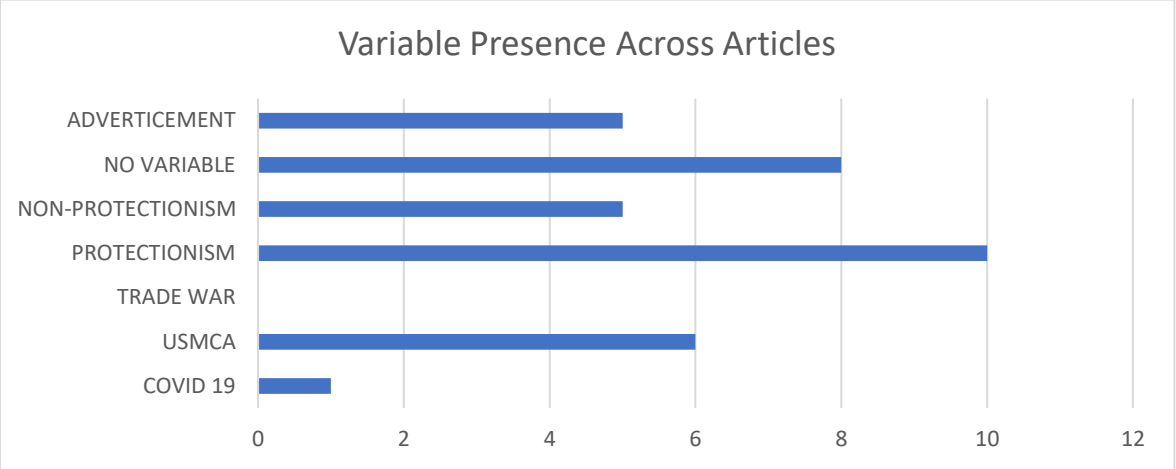
Variable Co-Apperance and Totals

Codes	COVID	GM	GM 2021	GM 2022	GM 2023	No Var	Product ad	Non protectior	Protectionsim	Tesla	2021	2022	2023	Trade War	USMCA	Totals
COVID				1												1
GM			38	33	10				2							83
GM 2021		38							2							40
GM 2022	1	33														34
GM 2023		10														10
No Var							5				2				1	8
Product ad						5										5
Non protectionist										2		2			1	5
Protectionsim		2	2							1	1				4	10
Tesla								2	1		2	6	3			14
2021						2			1	2						5
2022								2		6						8
2023										3						3
Trade War																
USMCA						1		1	4							6
Totals	1	83	40	34	10	8	5	5	10	14	5	8	3		6	

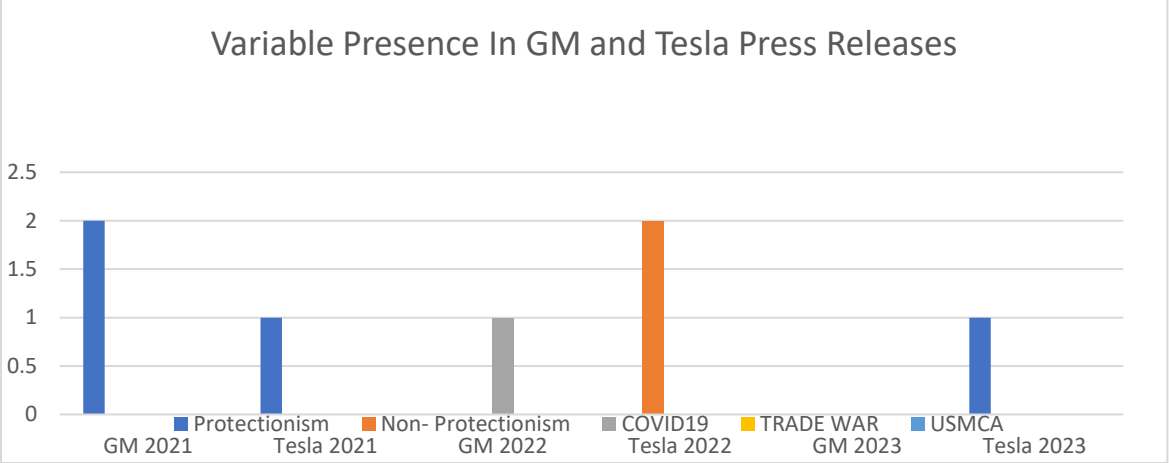
Please note that this is how the table appeared in Dedoose. When transferring into excel the data looked vastly different so I chose to include the Dedoose image although some of the values for the code are cut off.

IV. Graphs

Graph 1:



Graph 2:



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