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The Impact of Trump's Tariff Announcements on the World Financial Markets

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Master in Finance

Supervisor:

Professor Doutor José Dias Curto, Associate Professor with Habilitation,

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BUSINESS
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Dedication

To you two special persons who will be forever in my heart, "Avó Luz" e "Avô Filipe" this thesis is dedicated to her, and to his memory.

Acknowledgements

First, I would like to thank Prof. José Dias Curto, Associate Professor at ISCTE-IUL Business School, Department of Finance, for his support, advises and commitment. This thesis could not have been completed without his contribution.

Secondly, to my parents, Henrique e Isabel, and my brother, Fábio, for all the great efforts taken during my live but especially during my academic course. Without them this wouldn't be possible. To my uncles and godmother for having opened their doors and having much importance on this journey. To all my grandparents how always gave me strength to fight for my goals.

Finally, to Filipa for the constant support and love.

Resumo

No início de 2017, Donald Trump obteve uma das eleições mais inesperadas para presidente dos Estados Unidos da America (EUA) da história. Desde novembro de 2017, Trump tem como alvo implacável o relacionamento económico entre a União Europeia (UE) e a China. Consequentemente, durante 2018, 2019 e o início de 2020, o presidente fez uma série de anúncios ameaçando a UE e a China com tarifas e medidas protecionistas. Em seguida, diversos artigos estudaram o impacto macroeconômico, no entanto, faltou uma visão clara do impacto sobre os principais mercados financeiros mundiais de ações. Neste artigo, é medido o impacto total causado por todos os anúncios de tarifas durante as guerras comerciais nos principais mercados financeiros mundiais. Usando a metodologia de estudo de eventos e assumindo o Retorno Cumulativo Anormal geral implícito no Retorno Cumulativo Médio Anormal, estimamos o impacto total em cinco diferentes contextos: Mundo, América do Norte, América do Sul, Europa e Ásia.

Os resultados revelaram que nas duas guerras comerciais, como esperado, os índices asiáticos, europeus e norte-americanos apresentam resultados significativos para quase todos os índices analisados. Porém, no âmbito sul-americano, apenas um índice apresenta resultados estatisticamente significativos.

Palavras-chave: Guerras Comerciais, Tarifas, Estudo de Eventos, Reações de Mercados.

Índices de Ações Financeiras.

Classificação JEL: G1 General Financial Markets, G14 Information and Market Efficiency, Event Study.

Abstract

Early in 2017, Donald Trump has one of the most unexpected elections for United States (US) president in history. Since November 2017, President Trump has ruthlessly targeted the economic relationship between the European Union (EU) and China. Consequently, during 2018, 2019 and early 2020, President Trump conducted a series of announcements threatening the EU and China with tariffs and protectionism measures. Following, many scholars studied the macroeconomic impact. However, a clear view of the impact on the main world financial stock markets was lacking. On this study, we measure the total impact caused by all tariff announcements per trade war in the main world financial markets. Using an event study methodology, and assuming the implied overall Cumulative Abnormal Return within the Cumulative Average Abnormal Return, we estimate the total impact in five different scopes: World, North America, South America, Europe and Asia.

Results revealed that on both trade wars, as expected, the Asian, European, and North American Indices present significant results for almost all analysed indices. However, on the South American scope, only one index shows statistically significant results.

Keywords: Trade Wars, Tariffs, Event Study, Financial Stock Indices, Market Reaction.

JEL Classification: G1 General Financial Markets, G14 Information and Market Efficiency, Event Study

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List of Abbreviations

AAR – Average Abnormal Returns

APT – Arbitrage Pricing Theory

AR – Abnormal Returns

BHAR – Buy and the Buy-Hold Abnormal Returns

CAAR – Cumulative Average Abnormal Returns

CAPM – Capital Asset Pricing Model

CAR – Cumulative Abnormal Returns

MM – Market Model

Introduction

Early in 2017, President Trump has got one of the most unexpected elections for United States (U.S.) president in history. Since November 2017, President Trump has ruthlessly targeted the relationship between the U.S. and China, threatening it due to China's aggressive and powerful economy that impacts the economic performance of the U.S. On Twitter, Trump said: "I blame the incompetence of past Admins for allowing China to take advantage of the U.S. on trade leading up to a point where the U.S. is losing $ 100's of billions" (Trump, 2017). Following this aggressive posture, President Trump developed a significant number of threats in the shape of possible tariffs to penalise China's unfair industrial competition in the global economy.

In March 2018, he announced the first tranche of tariffs on aluminium and steel, marking the beginning of the event known as the "Trade War". Later in 2018, Trump announced and implemented the second and third tranche of tariffs, as well as an increase of the previous tariff rate.

During this trade war, following the U.S. Department of Commerce recommendations Trump also targeted the European Union, announcing tariffs on 2019.

Trump referred on Twitter: "If the E.U. wants to further increase their already massive tariffs and barriers on U.S. companies doing business there, we will simply apply a Tax on their Cars which freely pour into the U.S. They make it impossible for our cars (and more) to sell there. Big trade imbalance!" (Trump, 2018b).

Predictably, the U.S., E.U. and China's economies will go through significant macroeconomic effects with these protectionist policies. However, as the three main economic agents in the world, it is also expected that all of their actions will cause some sharp reactions to other markets. However, how significant will this impact be? The goal is to quantify the effects of Trump's protectionist measures on the American, European and Asian stock markets and analyse with the impact changes depending on the tariff target.

Some empirical studies have been done on the Trade War. However, these are very few as this is a recent subject. The results of some of the empirical studies on the impacts on the U.S. economy point to the direct and substantial impact of Trump's administration measures on the U.S./China macroeconomic indicators and financial markets. However, apart from these

macroeconomic studies on the consequences to the U.S. and Chinese economy, empirical research on the impact of the Trade War on worldwide markets could not be found.

As mentioned before, the goal of this thesis is to study the effect of Trump's protectionist measures of the US-China trade war on the American, European and Asian main financial stock markets. We will accomplish this objective by studying these markets through the main representative indexes of each area: the MSCI World Index as the world indicative financial index; the S&P 500, NASDAQ, Dow Jones Industrial and S&P TSX 60 Composite as the North American representatives; the S&P Asia 50, SSE Composite Index, Hang Seng Index, Nikkei 225 for the Asian market representative; the STOXX 600, CAC 40, FTSE 100, DAX 30 as the European representatives; and finally the S&P Latin America 40, IPC MEXICO ICO, Ibovespa and the S&P MERVAL as the South American representatives. The chosen methodology for this study was Event Studies, as described in chapter 4, a well-known approach to measuring the impact of an event, which in this case is the announcement of the tariffs.

From the overall impact of both trade wars, we expect the Asian, European and the North American to be the most impacted indices since they are the direct intervenient of the events. On the South American, we also expect significant reactions, although smaller ones but the consistency thru all the event period will be questioned.

In the next section, we discuss the literature review, by analysing previous studies on the subject and their main conclusions, the review of the reasoning behind both trader wars and also a historical overview of the thematic; chapter 3 focus on the data structure to be used on the event study; chapter 4 addresses the event study methodology including a literature overview, the process to apply an event study and finally the significance tests applied for validation purposes. Lastly, in chapter 5, we analyse the results per region: World, Europe, North America, South America, Asia, and we take the main conclusions of the total impact of the trade wars announcements.

1. Literature Reviews

In the section, we present and discuss the literature review related to the topic of the thesis. Firstly, we approach the protectionism concept since it is intrinsically linked to the topic of trade wars. We analyse the reasoning of President Trump and the U.S. administration behind the applicability of tariffs, both for the U.S./China and U.S./Europe trade wars. Finally, we look at the previous studies on the impact of Trump's tariff application.

1.1. Protectionism

In the first place, before taking a look at the specific case of the U.S./China and E.U. trade war chronology, arguments and consequences, we will analyse the protectionism concept, trends and outcomes.

Protectionism is a trade policy with the goal of shielding industries from sovereign competitors by imposing barriers to the import of goods. The trade between the two countries is restricted through "high tariffs on imported or exported goods, restrictive quotas, a variety of restrictive government regulations designed to discourage imports, and anti-dumping laws designed to protect domestic industries from foreign take-over or competition" (Adele & Fouda, 2012, p. 351).

Modern economists discourage protectionism, arguing that it decelerates economic growth, having more downsides than upsides. Protectionism has been decaying through the years, Datt, Hoekman and Malouche (2011), Figure 23 - A steady Reduction in Protectionism 1995-2010 (Source: Datt, Hoekman and Malouche, 2011) and Figure 24 - Average G-20 Tariffs, 1996-2010 (Source Datt, Hoekman and Malouche, 2011) show a steady reduction of the use of this approach between 1995 and 2010 by considering the standard tariffs or yet other instruments such as anti-dumping, i.e. a temporary tool generally used during macroeconomic downturns (Leidy, 1997) to reduce external competition.

Cœuré (2018) discusses the short to medium-term and long-term consequences of tariffs to the worldwide economy and to the country that imposes them. By taking a macroeconomic view, Cœuré (2018) states that once external goods cannot be easily imported, and there are no other domestic alternatives, production costs will increase, resulting in a decrease of purchase power. Consequently, the influence on consumption, investment and employment will produce a negative weight on the GDP. Also, with growing uncertainty, consumers and investors tend to delay their investments, or else, sell their equities or demand higher compensation for the same level of risk.

On the global economy, the level of impact depends on the openness and the amount of trade that connects the two countries. A close relation means more substantial effects. Despite this, a global chain value dependence also means vulnerability to those measures (Cœuré, 2018).

1.2. The Trade War between the U.S. and China

Next, to allow an extensive analysis of the trade war event, the timeline of the decisions and announcements made by President Donald Trump must be understood and investigated. On the following paragraphs, we review some of the events.

Firstly, soon after his election, Trump started to threaten China with tariffs. As a result of the constant threats, on the 1st of March 2018, Trump announced tariffs on all imports of steel and aluminium. Although the news about this announcement started to spread on the 27th of February, we considered this day as the first event day. On the 22nd of March 2018, Trump threats china with 25% tariff on 60 billion dollars' worth products.

Later on, on the 15th of June, the US administration released the final list of goods that would be subject to the new tariffs. On the 6th of July, these tariffs were placed on imports worth $34 billion with a tariff rate of 10%. On the 11th of July 2018, the US warned China to impose tariffs on $200bn of Chinese imports.

On the 23rd of August 2018, Trump raised tariffs on Chinese goods with another $16 billion of Chinese products being taxed. The last date of announcements of measures took place on the 17th of September 2018 with tariffs on $200 billion worth of Chinese goods and an increase in the tariff rate from 10% to 25%. This increase was officially implemented on the 10th of May 2019.

Through the event study, it will be possible to ascertain the importance and the impact of the announcement in each Stock Index.

In addition to the above sentence, the arguments behind these measures need to be understood. Therefore, what outcome does the US administration want from this confrontation? According to Qiu, Zhan and Wei (2019), there are three main answers to this question.

Firstly, to reduce the trade balance deficit between the US and China from $376 billion to $176 billion. Secondly, to force China to change its aggressive industrial policies, i.e. unfair competition. Alternatively, the other "reason might be the dissatisfaction over the Chinese

government's interventions in investment activities of US firms" (Qiu, Zhan and Wei, 2019: 150).

In addition, on the other hand, the decline in the Chinese currency can relieve the impact of the tariffs, once lower Chinese currency value gives more competitiveness to the Chinese. Therefore, to overtake this, the US raise the tariffs (Qiu, Zhan and Wei, 2019).

1.3. The Trade War between U.S. and EU

Following, we continue to analyse the trade wars. Although Trump E.U. tariff announcements are not as aggressive as the ones targeting China, we still have political moves to discuss. Note, as it will be possible to see, in this case, the threats are a joint product of Trump himself and the U.S. Department of Commerce being the last one responsible for the recommendation on tariffs application.

Trump justified the tariffs due to the imbalance on trade policy prevailing in the relation between the two countries. He argued on Twitter that "(USA) is losing many billions of dollars on trade with virtually every country it does business" (Trump, 2018a) and that U.S. companies operating on E.U. already suffer from great tariff and barriers:" If the E.U. wants to further increase their already massive tariffs and barriers on U.S. companies doing business there" (Trump, 2018b). Another reason behind Trump's aggressive attitude is the unfair E.U. subsidies to large European civil aircraft manufacturers, such as Airbus.

Let us now review some of the announcements that are subject of this thesis. The first statement came on the 2nd of October of 2019, Trump signs order for tariffs on French wine and cheese, aircraft and other European products. Although the 02nd of October was announcement day, the issuance of the tariff took place on the 18th of October 2019 after a victory at the World Trade Organization, on this day, the U.S. imposed tariffs on $7.5bn (£6.1bn; €6.7bn) on E.U. goods.

On the 02nd of December 2019, the U.S. threatened the E.U. with new tariffs associated with the battle airbus-boing manufactures.

Finally, on the 22nd of January 2020, the U.S. threatened to impose high tariffs on imports of cars from the European Union if they both do not reach an agreement on a trade deal.

1.4. Previous studies on Trump's tariff impact

Considering the research on the impact of protectionism on the overall markets, the results are sparse. However, regarding the impact on the U.S. and China, some studies are worth mentioning.

Noland, Robinson and Moran (2016) analysed the impact of Trump's decision on the U.S., by using simulations of a model developed by Moody's Analytics, designed to study significant short-term changes in GDP, employment, private consumption, investment, government demand, imports, and exports that, for example, are a consequence of the trade tariffs. This model is set to produce different scenarios; in this case, the authors tested three different scenarios:

1. ***Full trade war scenario:*** the U.S. imposes 45% tariffs on China and 35% on Mexico, these countries answer in the same way;
2. ***Asymmetric trade war scenario****:* Same as the first scenario, but China and Mexico do not retaliate;
3. ***Aborted trade war scenario:*** There is no trade war

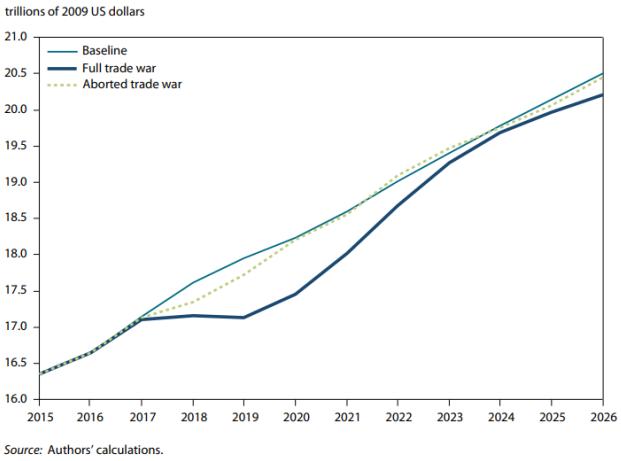

Figure 1 - Projected US GBP under baseline, full trade war, and aborted trade war 2015-2026 (Source: Noland, Robinson /& Moran, 2016)

	Percent deviation from baseline			Projected	
Year	Consumption	Investment	Government	GDP growth rate (percent)	Unemployment rate (percent)
			Full trade war		
2017	–0.2	–0.5	–0.2	2.7	4.9
2018	–1.7	–5.2	–1.6	0.3	6.4
2019	–2.9	–9.5	–2.7	–0.1	8.4
2020	–3.0	–8.7	–2.9	1.9	8.6
2021	–2.4	–5.1	–2.7	3.2	7.8
2022	–1.6	–0.8	–2.1	3.7	6.6
2023	–1.1	2.1	–1.3	3.2	5.6
2024	–1.0	2.3	–0.9	2.1	5.3
2025	–1.2	0.8	–0.8	1.4	5.5
2026	–1.5	–1.0	–1.0	1.3	5.9
			Aborted trade war		
2017	–0.2	–0.2	–0.1	2.9	4.8
2018	–1.3	–3.4	1.2	1.2	5.6
2019	–0.6	–3.5	–0.8	2.2	6.0
2020	0.1	–0.2	–0.0	2.7	5.2
2021	–0.0	0.3	–0.3	1.9	5.3
2022	0.2	2.5	0.2	2.9	4.8
2023	0.2	1.9	0.3	2.0	4.7
2024	–0.0	–0.0	0.2	1.4	5.1
2025	–0.2	–0.9	0.1	1.6	5.2
2026	–0.2	–0.7	0.0	2.0	5.1

Source: Authors' calculations.

Figure 2 - Projected changes in selected macroeconomic variables as a result of the full trade war and aborted trade war, 2017-2026

As figure 1 and 2 show that their conclusions point of substantially worse in the full trade war scenario than in any other case, with GDP growing much slower between 2015 and 2026. The predictions reach their lowest value in 2019 with a decrease in employment of 5% compared with the baseline. Investment falls almost 10%, and sectors like high-speed drives, gear manufacturing, constructing equipment, and iron and other metal ore mining have the most significant decrease, reaching a reduction of 10%. The authors Noland, Robinson and Moran (2016) also evidence that a trade shock could force the shutting of factories that exclusively export to these countries.

Huang, Chen, Liu and Tang (2018) studied the evolution of firms after each announcement of tariffs on China and the US stock market through an event study. The authors constructed a dataset that separates US firms that have direct exposure to imports from China, from US firms that have direct exposure to exports to China (the same is done but with Chinese firms). Their conclusion is the following: after the first announcement of tariffs by President Trump on March 22, 2018, companies exposed to the war presented lower stock and bond returns and higher default risk. Also, US firms downstream of industries that have more dependence on imports from China tend to have more significant losses in stock markets. Chinese import firms did not report these lower stock returns.

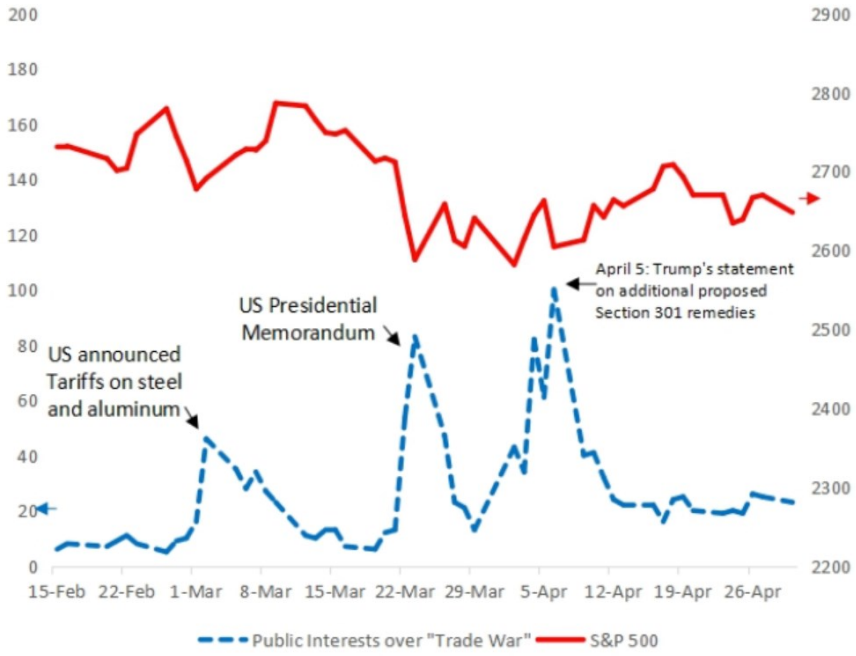

Figure 3 - Public interest over the trade war and stock returns (Source: Huang, Chen, Liu and Tang (2018))

Figure 3 - Public interest over the trade war and stock returns (Source: Huang, Chen, Liu and Tang (2018)) illustrates the reactions on stock returns after the announcements. It can be seen that the sharpest decrease in the stock market occurred on March 22 with President Memorandum, accompanied by the Dow Jones declining by 4.7% and the S&P 500 dropping by 4.5%.

Also, the Shanghai Composite Stock Market Index declined dramatically by approximately 20% from March 2018 to January 2019 (Huang et al., 2018). Thus, it is evident that there is a relationship between those announcements and the market responses; Figure 3 proves this statement as it shows that an increase in public interest over the trade war generates a negative impact over the stock markets.

Fajgelbaum, Goldberg, Kennedy and Khandelwal (2019) also valued the effect of the trade war in the US economy, and they estimate the impact on import, export and import prices. By using variations in the US and response of China to the tariffs, they estimate structural demand and supply elasticities that in part, determine the incidence of tariffs across countries. They then combine those elasticities with a supply model that allows quantifying the aggregated impact on the US. Using event study methodology, Fajgelbaum et al. conducted further analysis to validate the relevant shocks in export and import volumes. They concluded that imports of

varieties levied on taxes fell on average 31.5%, while on the other side of the balance, exports of products affected by the trade war declined by 11.0% (in volume).

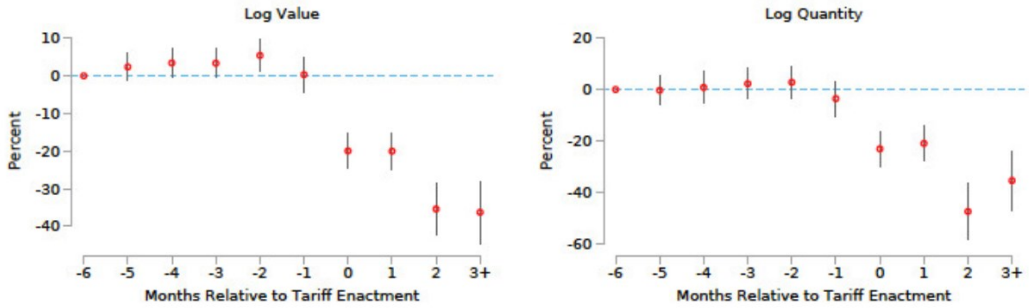

Figure 4 - Import event study (Source: Fajgelbaum et al.)

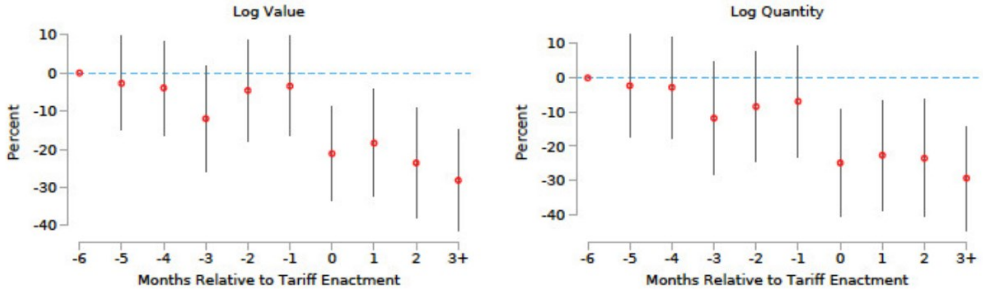

Figure 5 - Export event study (Source: : Fajgelbaum et al.)

As can be seen in Figure 4 and Figure 5, the impacts occur immediately after. This study also points towards an annual loss for the US of $68.8 billion due to higher import prices versus a gain of $21.6 billion from export higher prices. Including producer gains and tariff revenue, the net value is a loss of $7.8 billion, which represents a -0.04% in GDP.

Frímannsson (2019), through an event study methodology using Fama and French's three-factor model (Fama & French, 1992), analysed the consequences of the trade war in 2018, by aggregating the US announcements and the answer from European Union, China and Canada into one event only. The market reactions are measured in the following indexes: the US S&P 500 Index, the STOXX Europe 600 Index, the Chinese CSI 300 Index and the Canadian S&P/TSX Composite Index, exclusively the direct agents. The results show that not only the stock markets from direct agents react to the tariffs but other markets too. Also, some market reactions examples contradict the market efficiency hypothesis. The author suggests that China has felt quite strong effects or else, the Fama and French model does not work with Chinese firms due to the results for the Chinese market being statistically significant, often at the 1%

level. Regarding the global factors from Fama and French, the author states that they are calculated using stock returns from developed countries, but China is not considered as one of them.

McCarthy (2019) studied the market reaction to the announcements and implementation days of tariffs in the trade war. Through a self-financed portfolio with long positions on stocks with expected positive impacts from the trade war and short positions in stocks with expected negative impacts from the trade war. McCarthy, analysis the portfolio daily returns, thus, better performance of the portfolio means that the market had a more significant reaction to the news. The portfolio had higher results in the early period of the Trade War, meaning that the news had a more substantial impact on stock markets at this time. The portfolio continues to move in the same direction as day 0, the event day. Negative returns had higher values than the positive one, indicating that firms' losses suffered by companies expected to have negative impacts are higher than gains from companies expected to have positive impacts.

1.5. Other studies on tariff impact

As previously mentioned, Trump's tariff impact is a recent topic, and we can go back on tariffs decisions and analyse previous studies on their impact, for example, the president Bush tariffs on steel, in 2002.

Francois and Baughman (2003) have done some empirical studies on the impact of higher steel costs on American steel-consuming industries imposed by Bush in 2002. A regression analysis was used to quantify the relationship between the data. They regressed the log of employment on the log of overall manufacturing employment and the log of steel prices. Their main conclusions are: net job losses in the US; for every job related with the steel industry sustained, as a result of the tariff, eight jobs will be lost in all sectors of the economy; the steel industry would save between 4,400 and 8,900 jobs with costs around $439,485 and $451,509 per job; Higher prices for steel products would decreasing its efficiency, consequently, reducing US income between $500 million and $1.4 billion.

2. Data

As referred previously, the main goal of the thesis is to quantify how much Trump's announcements impact on the main worldwide stock markets and analyse if the impact changes depending on the target country/area. The implications will be quantified by financial Index through an event study methodology since it can provide a broader and global observation of the empirical consequences.

Therefore, we divided our sample stock indices into five distinct groups:

1. World
2. North America
3. South America
4. Europe
5. Asia

For each component, we present four underlying stock indices: the main regional stock index that captures the overall performance and three other subjacent minor stock indices associated with specific countries. Appendices C provides more details and references about the correspondent market.

Following, we present the analysed indices:

Region	Index
World	MSCI World Index
North America	S&P 500 NASDAQ Dow Jones Industrial S&P TSX 60 Composite
Asia	S&P Asia 50 SSE Composite Hang Seng Nikkei 225
Europe	STOXX 600 CAC 40 FTSE 100 DAX 30
South America	S&P Latin America 40 IPC MEXICO ICO Ibovespa S&P MERVAL

Table 1 – Data Structure

3. Methodology

In the section, we present the followed methodology on the event study proposed by MacKinlay (1997), where the author defines clearly the steps needed to perform an event study. We also complement the previous paper with other authors that supplement and try to improve the original approach.

3.1. Event Studies

As referred before, to analyse the impact of protectionist measures on global markets, we will conduct an event study. Using market data, we can estimate if a specific occurrence truly affects the stock indices. This evaluation takes the difference between the occurred returns after the event and the estimated returns in the same period if the event had not occurred (normal returns). If the market efficiency hypothesis holds, the reactions to the event must be immediate and quick. Therefore, in this case, the difference between the two scenarios should be clear and evident.

3.1.1. Process

To proceed with this model, we can follow the methodology suggested by MacKinlay (1997). In his paper, Mackinlay (1997) divides the methodology into six steps: define the event; define the samples and news; choose the return model to calculate the expected return; categorise the estimation window; derive the abnormal returns, cumulative abnormal returns and cumulative average abnormal returns; and finally test for statistical significance.

Define the event

As previously mentioned, for this study, the events of interest are the announcements made by Trump's administration of protectionist measures. These announcements will be assumed to have occurred on day 0.

Define the samples and news

As referred before, we will measure the impact of Trump tariff announcements throughout the trade wars between U.S./China and U.S./Europe.

Following we resume all event news:

Announcements for China:

Event 1: 26 February 2018

US steel stocks rally on Trump steel tariff comments (Badkar, 2018)

Event 2: 22 March 2018

Donald Trump to impose 25% tariffs on $60bn of Chinese imports (Donnan, 2018a)

Event 3: 15 June 2018

Trump approves US tariffs on $50bn in Chinese imports (Donnan, 2018b)

Event 4: 06 July 2018

The US imposes tariffs on $34bn of imports (Donnan, 2018c)

Event 5: 11 July 2018

The US to impose tariffs on $200bn of Chinese imports (Hornby, 2018)

Event 6: 23 August 2018

Trump will raise tariff rates on Chinese goods in response to trade war retaliation (*The US-China Trade War: A Timeline - ABC Group*, n.d.)

Event 7: 17 September 2018

Donald Trump imposes tariffs on $200bn of Chinese goods (Sevastopulo, 2018)

Event 8: 10 May 2019

Donald Trump signals tougher line after trade talks end (Politi, 2019a)

Announcements for EU:

Event 9: 02 October 2019

The US tariffs to hit aircraft, French wine and cheese, and Spanish olive oil (Politi, 2019b)

Event 10: 18 October 2019

USTR confirms U.S. tariffs to hit certain EU goods on Oct. 18 (Reuters Editorial, 2019)

Event 11: 02 December 2019

US threatens EU with new tariffs in Airbus-Boeing battle (Fleming, 2019)

Event 12: 22 January 2020

Trump threatens big tariffs on car imports from the EU (Reuters Editorial, 2020)

Choose the return model to calculate the expected return

According to Mackinlay (1997, p. 15), "there are two common choices for modelling the normal return: the constant mean return model where Xt is a constant, and the market model where Xt is the market return".

The market model (Sharpe, 1964) is one of the most used models in the literature, and it is widely used for long term analysis and to analyse a company's performance. The Market Model (MM) assumes a simple linear regression between the stock return and the respective market index return:

$$r_{i,t} = \alpha_i + \beta_i r_{m,t} + \varepsilon_{i,t} \quad (1)$$

Where, $r_{i,t}\ is$ the return of the stock *i* for the time *t*, α_i (the intercept) is the expected value of $r_{i,t}$ when the value of $r_{m,t}$ it equals to zero, $r_{m,t}$ is the return of the reference market on day *t*, the regression coefficient β_i is a measure of the sensitivity (systematic risk of the correspondent stock i) of $r_{i,t}$ on the reference market $r_{m,t}$. The $\varepsilon_{i,t}$ is zero-mean error term on the asset i on the period t.

Although in literature it is one of the most common models, it has some known limitations; the model conflicts with the presupposition that market returns are not constant throughout time, once the risk-free interest rate included in the α_i factor is constant.

To increment the MM quality of results, there is also the GARCH model by dealing with the conditional heteroskedasticity in $\varepsilon_{i,t}$, the error term. As a consequence of adding the heteroskedastic term, we enable the MM to capture time-varying volatility impact.

In the GARCH model, the log return of a stock i at time t is given by:

$$r_{it} = \mu_t + u_{it} \quad (2)$$

$$u_{it} = \sigma_t z_t \quad (3)$$

And the conditional variance (Bollerslev, 1986) may be written as:

$$\sigma_t^2 = \omega + \gamma_1 \varepsilon_{t-1}^2 + \delta_1 \sigma_{t-1}^2 \quad (4)$$

Where u_{it} is the mean-corrected return of stock at time t, μ_t is the conditional mean of rit , σ_t is the conditional variance at time t, ω the intercept, γ_1 and δ_1 the parameters of the model and z_t the sequence of independent and identically distributed standardized random variables.

As an alternative to the MM, we can apply other models such as the Capital Asset Pricing Model (CAPM) and the Arbitrage Pricing Theory (APT). However, these present some weakness. By using the CAPM, there is a "possibility that the results of the studies may be sensitive to the specific CAPM restrictions" (MacKinlay, 1997: 19). In the case of APT, this works like a market model, but "additional factors add relatively little explanatory power" (MacKinlay, 1997: 19). Therefore, the improvements in using APT instead of a market model are minimal.

For the CAPM, the expected return of the stock *i* for the time *t* is given by:

$$ER_i = R_f + \beta_i\left(ER_m - R_f\right) \tag{5}$$

Where R_f is the risk-free rate, the regression coefficient β_i is a measure of the sensitivity (systematic risk of the correspondent stock *i*) of $r_{i,t}$ on the reference market $r_{m,t}$ and $\left(ER_m - R_f\right)$ is the risk premium of the reference market.

For the APT, the expected return of the stock *i* for the time *t* is given by:

$$ER_i = R_f + \beta_1\left(ER_i - R_f\right) + \beta_2(SMB) + \beta_3(HMB) + \varepsilon_{it} \tag{6}$$

Where R_f is the risk-free rate, the regression coefficient β_1 is a measure of the sensitivity (systematic risk of the correspondent stock *i*) of $r_{i,t}$ and $\left(ER_m - R_f\right)$ is the risk premium of the reference market. β_2 and β_3 are the measure of the sensitivity of R_i to the correspondent factors, which are macroeconomic variables causing systemic risk.

Finally, the constant mean return model, as referred by MacKinlay (1997), it is one of the most common models among literature. To estimate the expected return of a stock, the constant mean return model takes the average return of the stock i in the estimation window, therefore, the expected return of the stock i is given by the following equation:

$$\bar{R_i} = \frac{1}{T_1 - T_0}\sum_{t\in[T_0,T_1]} R_{it} \tag{7}$$

Where T_0 is the first day of the estimation period, T_1 is the last day of the estimation day and R_{it} is the return of the stock i on the day t.

The constant mean return model was the chosen one because it is one of the most commonly used models in the literature. Although it is considered one of the simplest models, Brown and Warner (1985) affirm that it leads to similar results (especially using daily returns)

as other more complex models, and it is often used to study short-term changes. Another critical reason for this choice is that we are using Financial Index data, thus we cannot estimate the betas, because we are not considering individual stocks. Since the market model and other models are based on betas, we don' consider them.

Categorise the estimation window

Figure 6 illustrates the chronology that we must establish to conduct the study, (1)$[T_0; T_1]$ is the estimation window used to generate the expected returns, (2)$[T_1; 0]$ are the pre event days,(3) $[0; T_2]$ is the post event window used to analyse the market reactions.

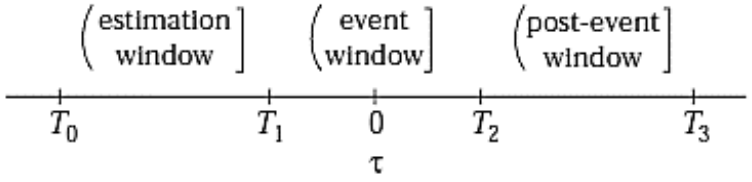

Figure 6 Event study chronology

Considering the estimation window, there is no single defined interval generally accepted among literature. Usually, researchers use the estimation size that best fits their data sample to get better and accurate results. Benninga (2008) recommends that no estimation window should be less than 126 days and Armitage (1995) states that the estimation window should include from 100 to 300 days for daily returns and 24 to 60 months for monthly basis returns. For this study, we will apply an estimation window of 250 days, this is, a trading year.

Derive the abnormal returns, cumulative abnormal returns and cumulative average abnormal returns

As previously stated, to measure the impact of the announcement, we must compute the Abnormal Returns. Abnormal Returns are obtained by the difference between the observed return (influenced by the event) minus the expected return (without the event).

$$AR_{it} = R_{it} - \bar{R}_{\iota} \tag{8}$$

$$\bar{R}_{\iota} = \frac{1}{T_1 - T_0} \sum_{t \in [T_0, T_1]} R_{it} \tag{9}$$

Corrado and Truong (2008) recommend using logarithmic daily stock returns once they perform more accurate test results in event studies. The daily stock returns are given by:

$$R_{it} = LN\left(\frac{S_{i,t}}{S_{i,t-1}}\right) \tag{10}$$

being $S_{i,t}$ the index i value on the time t.

To better understand the markets' reactions to the announcements, we can analyse the aggregated Abnormal Returns to determine the total impact of each announcement on a multiple-day post-event period. For this, we can compute the Cumulative Abnormal Returns (CAR) or Buy and the Buy-Hold Abnormal Returns (BHAR). As Loughran and Ritter (1995) and Fama (1998) showed, BHAR should be applied for long-horizon studies as it presents better results and CAR for short term studies.

The BHAR calculates abnormal returns by subtracting the normal buy-and-hold return from the actual buy-and-hold return.

$$BHAR_{i_{[T_1,T_2]}} = \prod_{t=T_1}^{T_2}(1 + R_{i,t}) - \prod_{t=T_1}^{T_2}(1 + R_{m,t}) \tag{11}$$

The CAR is given by the sum of the abnormal returns of each index i within the post-event period:

$$CAR_{i_{[T_1,T_2]}} = \sum_{t=T_1}^{T_2} AR_{i,t} \tag{12}$$

With multiple events analysis, it is possible to find pattern responses to the announcements, especially associated with a distinct period, typically days after the event. The Average Abnormal Return gives us the average return across multiple events for a given day:

$$AAR_i = \frac{1}{N}\sum_{i=1}^{N} AR_{i,t} \tag{13}$$

Lastly, by aggregation of abnormal returns across markets and time, we compute Cumulative Average Abnormal Return, given by averaging the cumulative abnormal returns of each market.

$$CAAR = \frac{1}{n}\sum_{i=1}^{n} CAR_i \tag{14}$$

As the goal of the study is to analyse the overall impact on the market and not the impact of each announcement, we will focus our investigation on multi-event instruments: Average Abnormal Returns and Cumulative Average Abnormal Returns. The Abnormal Returns will

also be used to allow an overview of the indices behaviour during the trade war timeline. Consequently, to complement the previous topic referring to the timeline of the event study, we compute the Abnormal return with an event window of 2 days (0,1). For the cumulative average abnormal return, we will take as normal the (0,5) range, since Oler, Harisson and Allen (2007) showed that the five days event length is the most used between in all event studies published in Strategic Management Journal, Academy of Management Journal, Journal of Management, Management Science, Administrative Science Quarterly, and Journal of Management Studies from 1994 to 2006 (including a study on trade protection with five-day window). As we want to ensure that we capture clear earlier reactions to the announcements, the CAAR range may be extended to include those particular situations. Thus, the Average Abnormal Return will support the decision on extending or not the event window range.

To estimate the overall impact of all events in each index, we will assume the implied sum of cumulative abnormal returns within a statistically significant CAAR, giving us the total impact of the announcements across all events.

3.1.2. Test for statistical significance

Finally, the last step is to test the statistical significance of the abnormal returns.

As a simplified methodology, the event study approach possesses a vast literature, containing much discussion on how it can be applied more reliably. Thus, various forms of statistical significance were developed to improve the reliability of the results presented by the model and to surpass some disadvantages or weaknesses of previously developed tests.

For this research, the *t*-test is used as a basis for statistical significance. As referred before, literature provides alternative tests with multiple improvements giving more robustness to the presented results, these tests include Patell (1976) and Boehmer, Musumeci and Poulsen (1991) two of the most popular. The introduction of the Patell test results of the limitation of the t-test proneness to event-induced volatility (Brown and Warner, 1985), consequently, Patell applied a standardised event window for the AR to overcome the limitation. Despite the attempt, the test too easily rejects the null hypothesis particularly without the presence of normal returns, as well, Campbell and Wasley (1993); Cowan and Sergeant (1996); Kolari and Pynnonen (2010) and Maynes and Rumsey (1993), showed that the test is still affected by event-induced volatility.

Boehmer, Musumeci and Poulsen (1991) made improvements on this topic by developing a test statistic robust to event-induced volatility called Standardized Cross-Sectional Test. As

the Patell test, the Standardised Cross-Sectional Test also suffers from over-rejection of the null hypothesis in cases where cross-sectional correlation is not considered. This problem was solved thru Kolari and Pynnonen (2010), these authors established adjustments to both Patell Test and Standardized Cross-Sectional Test to consider cross-sectional correlation.

The following table synthesises which test should be applied per indicator.

Type of return	Null Hypothesis	Parametric test
AR	AR=0	t-test
CAR	CAR=0	t-test
AAR	AAR=0	*Adjusted Cross sectional test* *Adjusted Patell test* *Skewness corrected test*
CAAR	CAAR=0	*Adjusted Cross sectional test* *Adjusted Patell test* *Skewness corrected test*

Table 2 – Preformed parametric test per type of Abnormal Return

As presented in the table, to guarantee accurate results, we will test the significance of all types of abnormal returns using the most widely used models in the literature. For the AR and CAR, we use the standard *t*-test introduced by Gosset (1908), and for AAR and CAAR we use the improved *Adjusted Cross sectional test*, *Adjusted Patell test*, *Skewness corrected test* when compared to the original t-test.

Following base guidelines of inferential statistics, the null hypothesis states that the abnormal returns are not significant, therefore all AR within the event window equal to 0. By the other hand, the alternative hypothesis admits that the presence of AR different from 0.

Significance Tests for Abnormal Returns and Cumulative Abnormal Returns

As previously referred, for the abnormal returns, we apply a t-test:

$$t_{AR_{it}} = \frac{AR_{it}}{S_{AR_i}} \tag{15}$$

where $S_{AR_{it}}$ is the standard deviation of the abnormal returns in the estimation window:

$$S^2_{AR_i} = \frac{1}{M_i - 2} \sum_{t=T_0}^{T1} (AR_{it})^2 \tag{16}$$

Where M_i refers to the number of non-missing returns.

The Abnormal Return t-test is calculated under the following hypothesis:

$$\begin{cases} H_0: AR_{it} = 0 \\ H_1: AR_{it} \neq 0 \end{cases} \quad (17)$$

The t-test statistic for testing Cumulative Abnormal Returns significance is given by:

$$t_{CAR_{it}} = \frac{CAR_i}{S_{CAR_i}} \quad (18)$$

where S_{CAR_i} is the standard deviation of the abnormal returns in the estimation window:

$$S^2_{CAR_i} = L_2 S_{AR_i} \quad (19)$$

and, L_2 represents the event window $[T_1; T_2]$.

The Abnormal Return t-test is calculated under the following hypothesis:

$$\begin{cases} H_0: CAR_i = 0 \\ H_1: CAR_i \neq 0 \end{cases} \quad (20)$$

Significance Test for Cumulative Average Abnormal Return and Average Abnormal Returns

As referred before, to overtake some flaws of the t-test, we apply additional tests to improve the quality of our results since as propensity to cross-sectional correlation and volatility changes.

Patell Test

Patell (1976) developed a test resistant to how the ARs are distributed across the event window.

Referred also as Standardized Residual Test, Patell test marks its difference by applying standardized abnormal returns and additionally, by adjusting the standard error by the forecast error once the event-window abnormal returns are out-of-sample estimates. By doing so, the test reduces the effect of stocks with larger returns.

The standardized abnormal returns are obtained by:

$$SAR_{it} = \frac{AR_{it}}{S_{AR_{it}}} \quad (21)$$

Where SAR*it* is described as a Student's t distributed with $M_i - 2$ degrees of freedom.

The variance (adjusted by the forecast-error) is given by:

$$S_{AR_{it}}^2 = S_{AR_i}^2 \left(1 + \frac{1}{M_i} + \frac{\left(R_{i,t} - \bar{R}_\iota\right)^2}{\sum_{t=T_0}^{T_1} \left(R_{i,t} - \bar{R}_\iota\right)^2} \right) \tag{22}$$

The test statistic for the average abnormal return with the following hypothesis:

$$\begin{cases} H_0 : AAR_t = 0 \\ H_1 : AAR_t \neq 0 \end{cases} \tag{23}$$

is given by:

$$z_{Patell,t} = \frac{ASAR_t}{S_{ASAR_t}} \tag{24}$$

Where $ASAR_t$ is the sum over the sample of the standardized abnormal returns.

$$ASAR_t = \sum_{i=1}^{N} SAR_{it} \tag{25}$$

SAR*it* is Student's t distributed with $M_i - 2$ degrees of freedom.

With variance:

$$S_{ASAR_t}^2 = \sum_{i=1}^{N} \frac{M_i - 2}{M_i - 4} \tag{26}$$

Secondly, the test for Cumulative Average Abnormal Return with the following hypothesis:

$$\begin{cases} H_0 : CAAR_i = 0 \\ H_1 : CAAR_i \neq 0 \end{cases} \tag{27}$$

is given by:

$$z_{Patell} = \frac{1}{\sqrt{N}} \sum_{i=1}^{N} \frac{CSAR_i}{S_{CSAR_i}} \tag{28}$$

With $CSAR_i$ as the cumulative standardized abnormal returns and $S_{CSAR_i}^2$ is the adjusted standard error of regression by the forecast error:

$$CSAR_t = \sum_{t=T1+1=1}^{T_2} S_{AR_{it}} \tag{28}$$

$$S^2_{CSAR_i} = L_2 \frac{M_i - 2}{M_i - 4} \tag{29}$$

As Kolari and Pynnönen (2010) proven, Patell test continued to be Prone to cross-sectional correlation and event-induced volatility, after, they developed an adjusted form of the Patell test that accounts for cross-sectional correlation.

Kolari and Pynnönen adjusted Patell test

The adjusted Patell test for Average abnormal returns and cumulative average abnormal returns is given by:

$$z_{Patell,t} = z_{Patell,t} \sqrt{\frac{1}{1 + (N-1)\ \bar{r}}} \tag{30}$$

$$z_{Patell} = z_{Patell} \sqrt{\frac{1}{1 + (N-1)\ \bar{r}}} \tag{31}$$

Where $\bar{r}$ is the average of the sample cross-correlation for the estimation period abnormal returns.

BMP Test

Again, Boehmer, Musumeci and Poulsen (1991) developed an improved method to test the significance of the results when compared to the T-test. The method once again, as the Patell Test, overcomes the proneness to event-induced volatility and additionally takes into consideration serial correlation.

The test statistic for the average abnormal return with the following hypothesis:

$$\begin{cases} H_0 : AAR_t = 0 \\ H_1 : AAR_t \neq 0 \end{cases} \tag{32}$$

is given by:

$$z_{BMP,t} = \frac{ASAR_t}{\sqrt{N}\ S_{ASAR_t}} \tag{33}$$

with $ASAR_t$ defined as for Patell-test and with standard deviation:

$$S^2_{ASAR_t} = \frac{1}{N-1} \sum_{i=1}^{N} \left(S_{AR_{i,t}} - \frac{1}{N} \sum_{l=1}^{N} S_{AR_{i,t}} \right)^2 \tag{34}$$

The test statistic for the cumulative average abnormal return with the following hypothesis:

$$\begin{cases} H_0: CAAR_i = 0 \\ H_1: CAAR_i \neq 0 \end{cases} \tag{35}$$

is given by:

$$z_{BMP} = \sqrt{N}\frac{\overline{SCAR}}{S_{\overline{SCAR}}} \tag{36}$$

where $\overline{SCAR}$ is the averaged standardized cumulated abnormal returns across the *N* firms, with standard deviation:

$$S^2_{\overline{SCAR}} = \frac{1}{N-1}\sum_{i=1}^{N}(SCAR_i - \overline{SCAR_i})^2 \tag{37}$$

$$\overline{SCAR} = \frac{1}{N}\sum_{i=1}^{N} S_{CAR_i} \tag{38}$$

$$SCAR_i = \frac{CAR_i}{S_{CAR_i}} \tag{39}$$

S_{CAR_i} is the forecast error adjusted standard deviation from Mikkelson and Partch (1988), where they adjust for each firm the serial correlation in the returns. For the mean return model, the expression of the correspondent variance is given by:

$$S^2_{CAR_i} = S^2_{AR_i}\left(L_i + \frac{L_i^2}{M_i}\right) \tag{40}$$

Lastly, as for the Patell test, Kolari and Pynnönen (2010) have proven that BMP test continued to be Prone to cross-sectional correlation, therefore, they developed an adjusted form of the BMP test that accounts additional for cross-correlation.

$$z_{BMP,t} = z_{BMP,t}\sqrt{\frac{1}{1 + (N-1)\ \bar{r}}} \tag{41}$$

$$z_{BMP} = z_{BMP}\sqrt{\frac{1}{1 + (N-1)\ \bar{r}}} \tag{42}$$

Skewness Adjusted Test

Finally, the last applied test is the Skewness Adjusted test. Developed thought three main authors: Cramer (1961), Hall (1992) and Rimoldini (2013), the test finds its difference on the specific adjustment for skewed distributions. The test can only be applied to Average Abnormal Return, Cumulative Average Abnormal Return and the averaged buy-and-hold abnormal return (which was not used throughout this study). For the Cumulative Average Abnormal Returns hypothesis:

$$\begin{cases} H_0 : CAAR_i = 0 \\ H_1 : CAAR_i \neq 0 \end{cases} \tag{43}$$

The cross-sectional variance of regression, unbiased by sample size, is given by:

$$S_{CAAR}^2 = \frac{1}{N-1 \sum_{i=1}^{N} (CAR_i - CAAR)^2} \tag{44}$$

And, the skewness estimation (unbiased by sample size) is given by:

$$\gamma = \frac{N}{(N-2)(N-1)} \sum_{i=1}^{N} (CAR_i - CAAR)^3 S_{CAAR}^{-3} \tag{45}$$

With:

$$S = \frac{CAAR}{S_{CAAR}} \tag{46}$$

Then, the skewness adjusted test statistic for Cumulative Average Abnormal Return is given by:

$$t_{skew} = \sqrt{N} \left(S + \frac{1}{3}\gamma S^2 + \frac{1}{27}\gamma^2 S^3 + \frac{1}{6N}\gamma \right) \tag{47}$$

Methodological Assumptions

As in (Brown & Warner, 1980), there are some critical methodological assumptions that we must consider in an event study:

1. Like the efficient market hypothesis (EMH) theory states: the market prices truly reflect any known and available information at any given point in time, thus, it has immediate reactions to new information (Fama, 1970). This statement is particularly crucial to an event study as we consider that stocks reflect the economic impact of an event;

2. The market price did not predict either consider the event effect before the announcement time;
3. At the post-event window, there are no other events that could spoil the market reaction to the analysed announcement.

4. Results

The final chapter contains the reporting and analysis of the results for each event on AR, on the AAR and CAAR for the US & China Trade War and US & EU Trade War separately. Each subchapter contains five graphs, one reporting the daily abnormal returns chronologically throughout the two trade wars (AR). Two for the daily average abnormal return for each trade war, helping in the choice of the range for the final two graphs, the cumulative average abnormal return, again for the two trade wars. In the CAAR, for the trade war US & China the range taken was (0,5) and for the US & EU (-1,5) once the AAR generally proves earlier reactions on this second trade war

Finally, each subchapter contains a geographical zone.

Following, for the statistically significant testing (found on Appendices A) we used a 5% significance level, thus, if the test value is superior to 1.96 or inferior to -1.96, the abnormal return is considered statistically different from zero. For this analysis, the value of the tests that exceed these critical values will be shown in bold and painted in grey on the results tables. The AR values in bold and painted in grey mean that in that particular day, the index prices were affected by the tariff announcement in a statistically significant way.

MSCI World Index

The first index to be analysed is the world financial index representative. As displayed in the results, the MSCI World Index presents statistically significant results at a 5% significance level. As presented in the Appendices A table 9 and 10, the index shows relevant results, all of which present negative returns: -0.94% (Event 1), -1.79% (Event 2), -1.9% (Event 8) and -1.73% (Event 9).

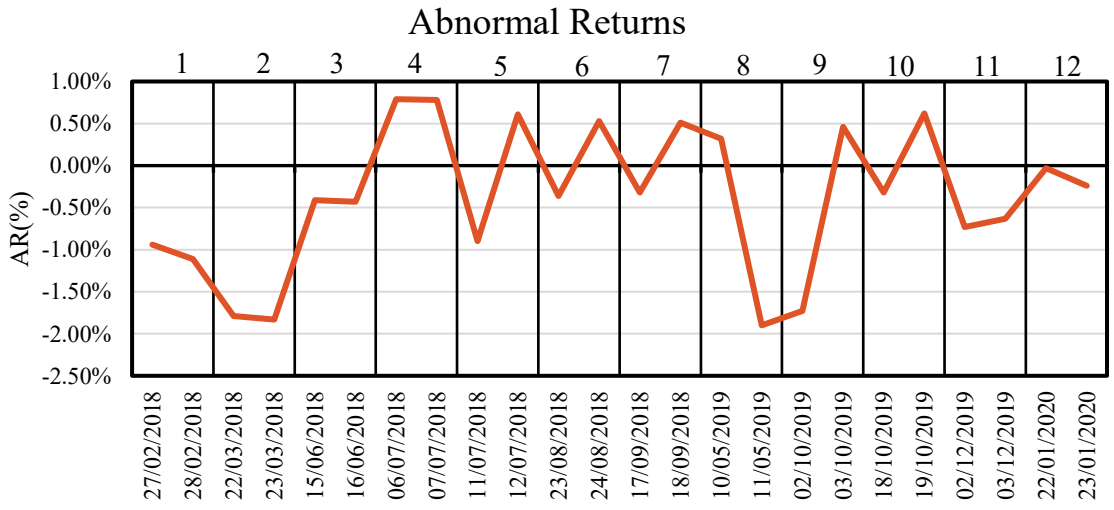

Figure 7 – Abnormal Returns across all events for the MSCI World Index

As can be seen in Figure 7 – Abnormal Returns across all events for the MSCI World Index, the market tends to react more aggressively to the first announcements of each trade war. For events whose target is China, the first two events show the sharpest reactions which correspond to the first threat and the first practical tariff. More subsequent measures follow the next few months until September 2018. This time, we can see that the market tends to adjust itself to the current economic situation, and for this period, we see small reactions and no statistically significant results. After, the market rests with a more peaceful and calmer environment over the trade war that endures for eight months. During May 2019, Trump strikes again with a new measure which results in a sharp move and, therefore, restarting the volatile atmosphere.

The same behaviour can be seen at the trade war with the EU, where the market reacts aggressively to the first announcement, the unique AR presenting statistically significant results, and then with small movements for the remaining events.

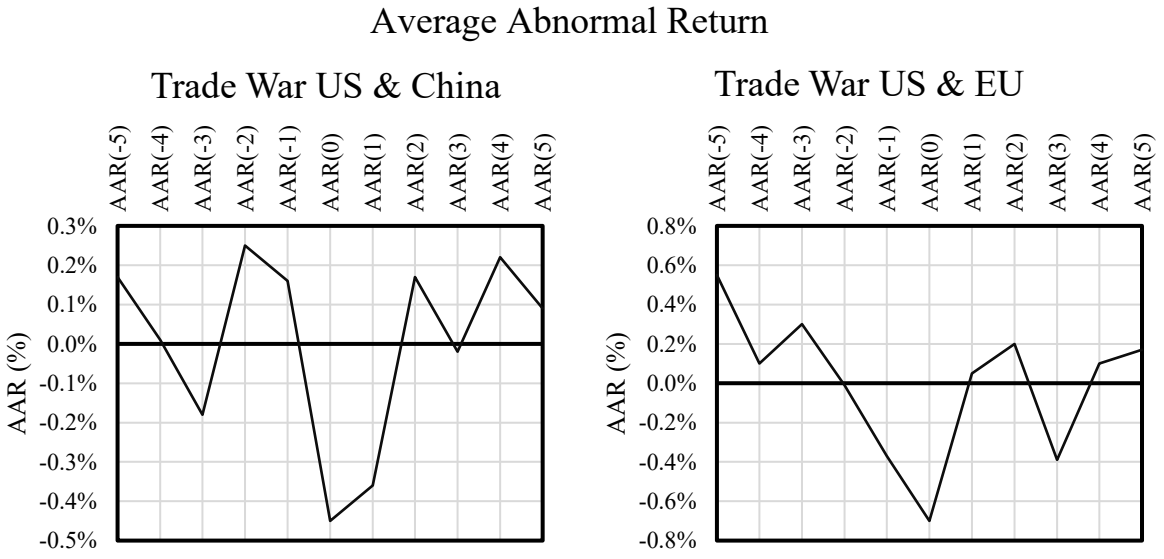

Figure 8 – Average Abnormal Return per Trade War for the MSCI World Index

Regarding the Average Abnormal Returns for the trade war between US and China, shown on Appendices A table 13 and 14, we cannot see any proof of earlier reactions on the worldwide markets, on average it comes on the announcement day and the next day. These first post-announcement day's present the higher reactions on the analysed period, with AAR of -0.45% and -0.36% on day 0 and day 1, respectively. Although with negative returns on AAR (0) and AAR (1), only the AAR (0) present statistically significant results. The MSCI World Index also shows that, on average, a recovery on the next following days to t=0. Using the CAAR, we will see if these positive reactions can overtake the negative ones. On the other

hand, as presented on Appendices A table 15 and 16, the Average Abnormal Returns for the trade war between the US and Europe shows a clear earlier reaction on t=-1, around -0.4%. Therefore, we will apply an earlier day on the CAAR estimations.

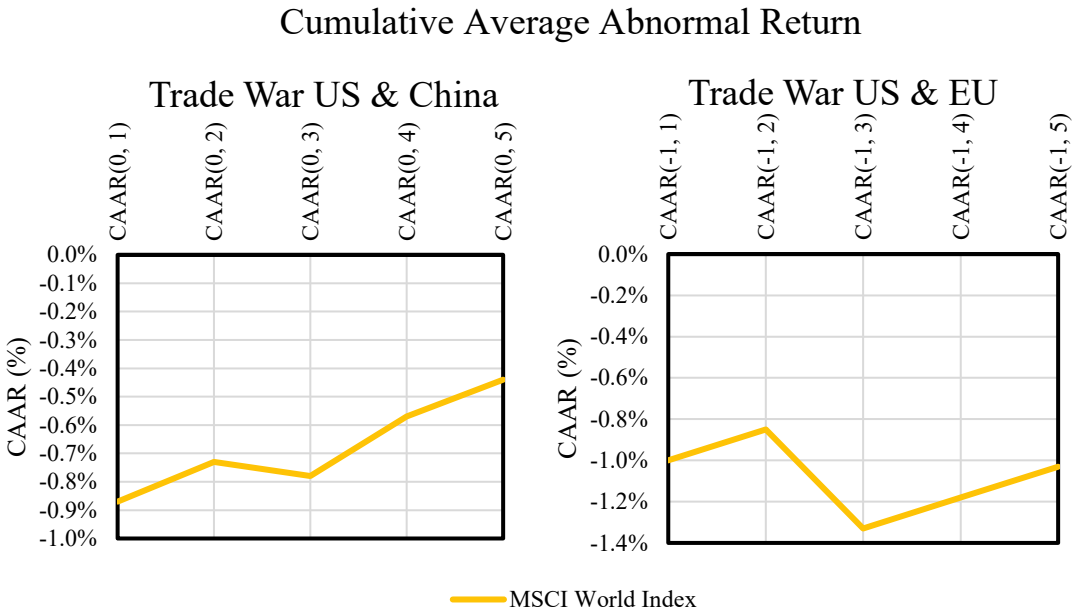

Figure 9 – Cumulative Average Abnormal Return per Trade War for the MSCI World Index

Following, the CAAR shows that the positive AAR does not overtake the negative AAR. By taking the CAAR from day 1 to 5, we see a recover on the next following days on the US-China enrolment (Appendices A table 17 and 18) from the CAAR (0,1) -0.87% to -0.44% on CAAR (0,5). On the other hand, on the US EU trade war (Appendices A table 19 and 20), the recovery does not happen mainly due to adverse developments caused by the AAR (3), as it is possible to see on Figure 9 – Cumulative Average Abnormal Return per Trade War for the MSCI World Index, CAAR (-1,1) presents a value of -1.00%, CAAR (-1,2) of -0,85% and, finally, CAAR (-1,3) of -1.33%, all statistically significant.

TOTAL IMPACT OF TRUMP TARIFF ANNOUNCEMENTS			
US CHINA	**Impact (%)**	**US EU**	**Impact (%)**
MSCI World Index	-6.96%	MSCI World Index	-5.32%

Table 3 – Total Impact of Trump Tariff Announcements per trade war for the MSCI World Index

Assuming the highest statistically significant Cumulative Average Abnormal return, the impact of Trump's tariff announcements on the MSCI World Index was -6.96% on the announcements within the US-China Trade War scope and -5.32% on the US EU trade war.

North American Indices

Contrary to the MSCI World Index, the North American indices show statistically significant results, but only present on the trade war between the US and China, as the trade war between the US and the EU does not show any repercussions in the main US indices on the AR level. As presented in the Appendices A table 9 and 10, all relevant abnormal returns have negative returns: -1.33% (event 1); -2.61% (event 2); -2.48% (event 8) for the S&P 500. -1.31% (event 1); -2.56% (event 2) and -3.52% (event 8) for the NASDAQ. -1.24% (event 1); -3.05% (event 2) and -2.44% (event 8) for the Dow Jones Industrial and finally the S&P TSX 60 Composite shows only two statistically significant results on the first two events: -1.46% and -1.77%.

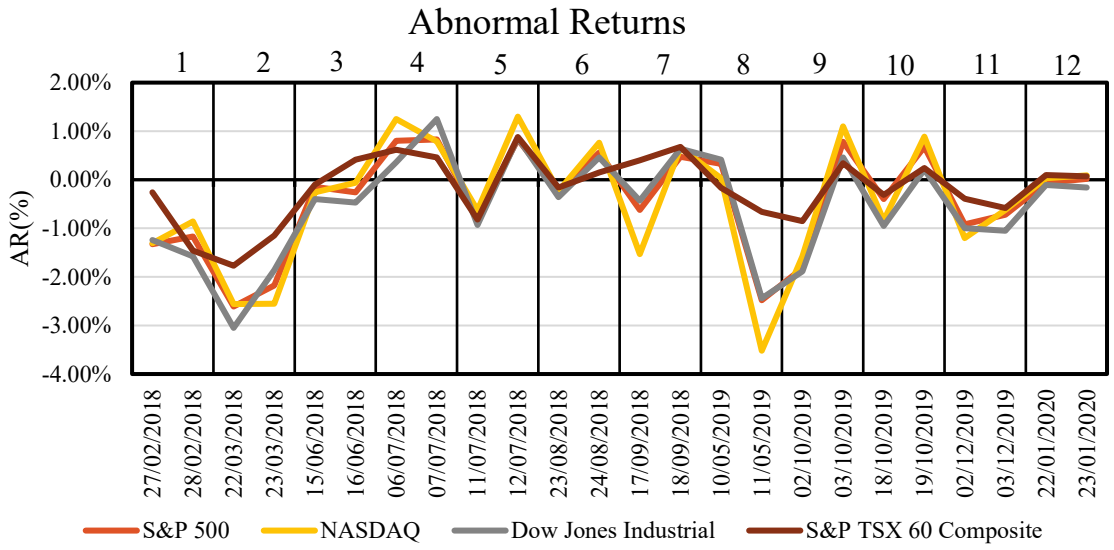

Figure 10 - Abnormal Returns across all events for the S&P 500, NASDAQ, Dow Jones Industrial and the S&P TSX 60

As seen with the MSCI World Index, the market adjusted to the political situation and, once again, the reaction is considerably higher on the first few announcements of the trade war, and then, very few statically significant abnormal returns through the following events. Again, after the calm period between September 2018 and May 2019, Trump strikes again, and the AR increases considerably when compared with the previous ones. The trade war between EU and US present statistically significant results for the first announcement in every US index, we will extend our analysis on these events using AAR and CAAR.

Overall, event 1, event 2 and event 8 present the most drastic AR, which marks the beginning and the return of the announcements period.

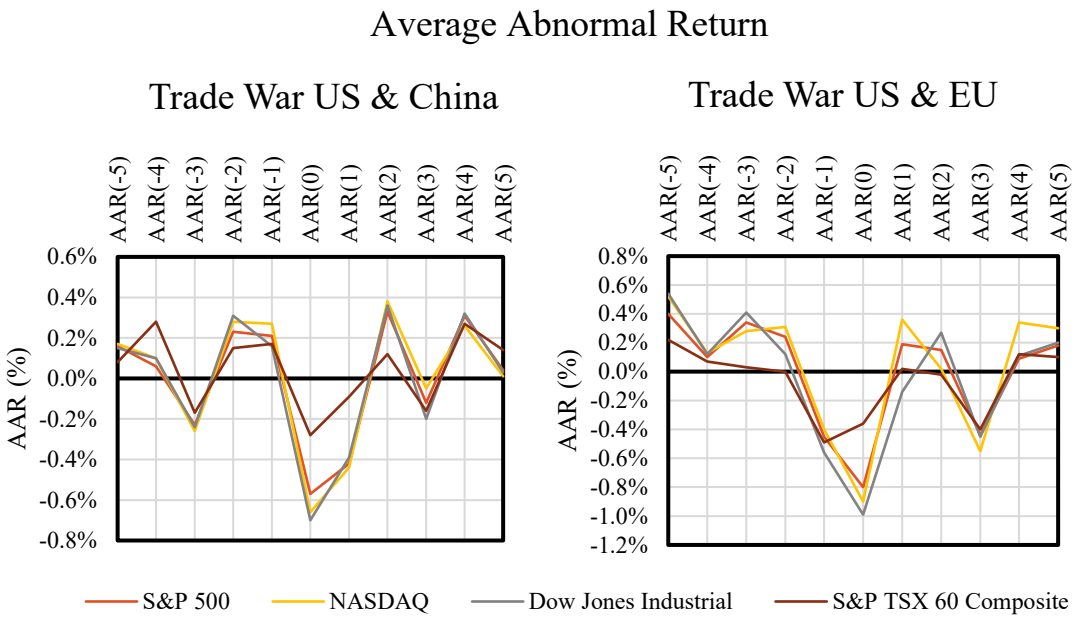

Figure 11 - Average Abnormal Return per Trade War for the S&P 500, NASDAQ, Dow Jones Industrial and S&P TSX 60 Composite

Regarding the Average Abnormal Returns for the trade war between US and China presented on Appendices A table 13 and 14, we cannot see any proof of earlier reactions on the North American Indices, on average the reaction happens on AAR (0) and AAR (1). These first post-announcement days present the higher consequences on the analysed period, with AAR around -0.7% and -0.4% on the day 0 and day 1, thus, the AAR (1) is not statistically significant.

Although with negative returns on AAR (0) and AAR (1), all indices tend to recoup from those returns on the AAR (2). Still, the SP Canada do not show any statistical significance to Trump's announcements for China tariffs after the announcement day, the only relevant result is AAR (-4) with 0.28%.

On the Average Abnormal Returns for the trade war between the US and the European Union presented on the Appendices A table 15 and 16, we see an earlier reaction to Trump's announcements on AAR (-1) of -0.5% even if the Dow Jones Industrial and the S&P Asia 50 are the only ones with results statistically significant. On this second trade war, we see again, as expected, a negative AAR on the announcement day of -0.9%, relevant on all indices. On the following days, a recovery from the market can also be seen as in the previous trade war, common development of all indices until now. The S&P TSX 60 Composite, contrary to what we have seen until now, does show statistically significant results on some AAR so that we can consider consequences from Trump's announcements for the European Union. As seen previously with the MSCI World Index in the trade war US and EU scope the AAR present

earlier reactions on AAR (-1) we will use the CAAR starting at t = -1 to capture all those reactions.

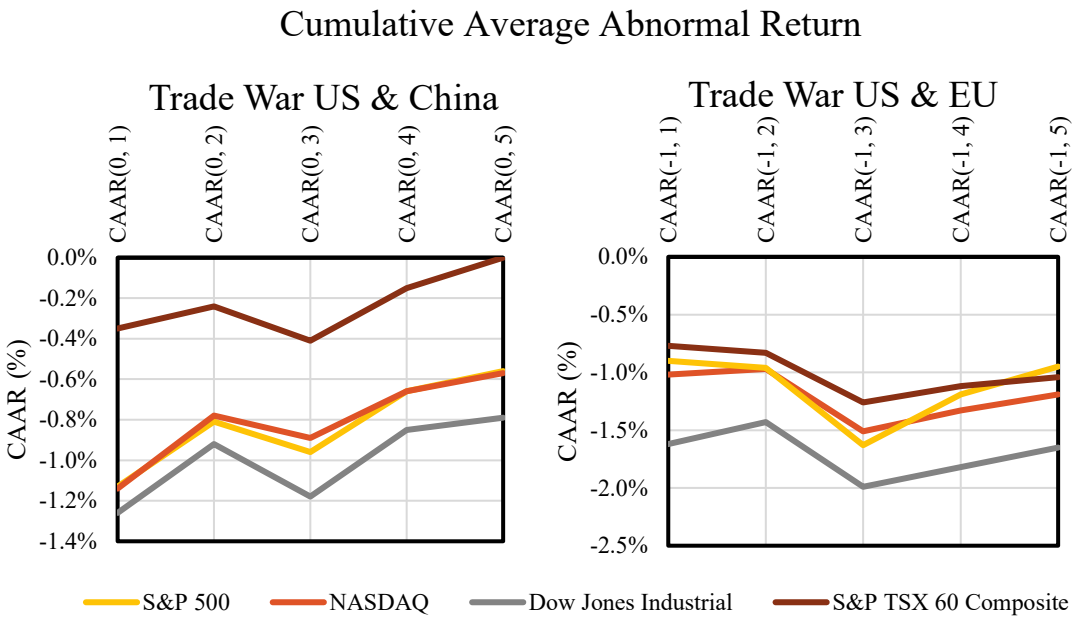

Figure 12 – Cumulative Average Abnormal Return per Trade War for the S&P 500, NASDAQ, Dow Jones Industrial and S&P TSX 60 Composite

Following, the CAAR for the US & China trade war (Appendices A table 17 and 18), shows that the positive AAR does not overtake the negative AAR. By taking the CAAR from day 1 to 5, we see a recover on the next following days on the US-China enrolment from the CAAR (0,1) -0.1% to -0.5% on CAAR (0,5). The CAAR (0,1) presents statistically relevant results for every North American index except the Canadian main index. By the other hand, on the US EU trade war (Appendices A table 19 and 20), the recovery does not happen, as seen in the MSCI World analysis, the AAR (3) as a high impact on the CAAR making a recovery much more dubious as it is possible to see on Figure 12 – Cumulative Average Abnormal Return per Trade War for the S&P 500, NASDAQ, Dow Jones Industrial and S&P TSX 60 Composite. CAAR (-1,1) presents a statistically significant result for the Dow Jones and for the S&P TSX 60 Composite of -1.62% and -0.77%, respectively. The CAAR (-1,2) and the CAAR (-1,3) present statistically relevant results for every North American indices at least higher than -0.83% and, finally, the remaining CAAR (-1,4) and (-1,5) present statistically significant results only on the Dow Jones and the S&P TSX 60 Composite.

TOTAL IMPACT OF TRUMP TARIFF ANNOUNCEMENTS			
US CHINA	**Impact (%)**	**US EU**	**Impact (%)**
S&P 500	-9.04%	S&P 500	-6.04%
NASDAQ	-9.12%	NASDAQ	-6.52%
Dow Jones Industrial	-10.08%	Dow Jones Industrial	-7.96%
S&P TSX 60 Composite	0.00%	S&P TSX 60 Composite	-5.04%

Table 4 - Total Impact of Trump Tariff Announcements per trade war for the S&P 500, NASDAQ, Dow Jones Industrial and S&P TSX 60 Composite

Assuming only the top statistically significant Cumulative Abnormal return, the impact of Trump's tariff announcements on the S&P 500 was -9.04%, on the NASDAQ -9.12%, on the Dow Jones Industrial -10.08% and on the S&P TSX 60 Composite 0% (as we do not have any statistically significant results) on the announcements within the US-China Trade War scope. On the trade war between US European Union the impact of Trump's announcements was -6.04% on the S&P 500, -6.52% on the NASDAQ, -7.96% on the Dow Jones Industrial and finally, and contrary to the previous trade war, -5.04% on the S&P TSX 60 Composite.

Asian Indices

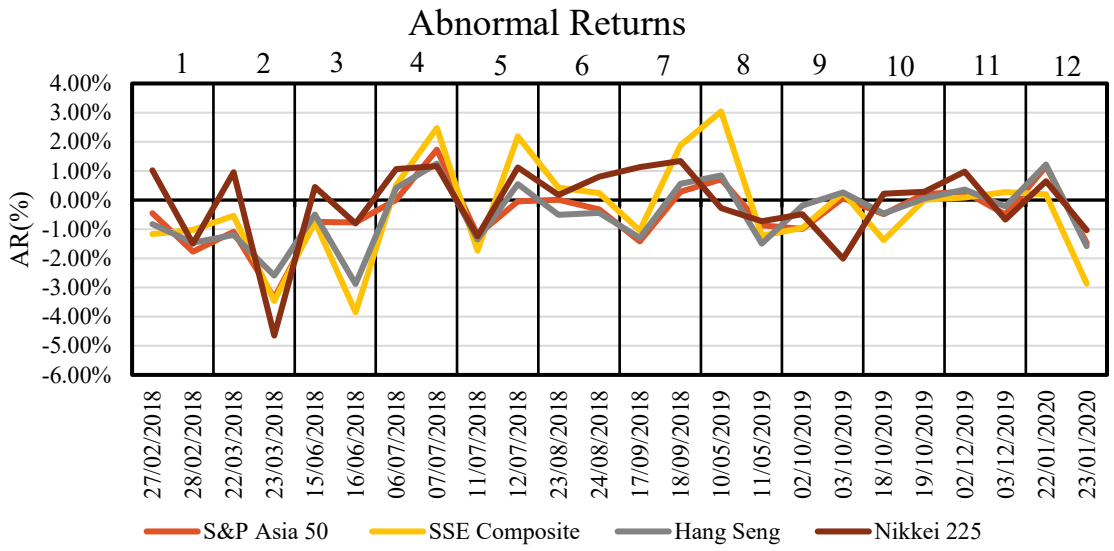

Figure 13 - Abnormal Returns across all events for the S&P 50 Asia, SSE Composite, Hang Seng and Nikkei 225

The Chinese indices as the direct target of Trump's tariff announcements on the first trade war are expected to be the most impacted financial indices. As presented in the Appendices A table 9 and 10, all relevant abnormal returns have the highest absolute value: -1.77% (event 1); -3.36% (event 2) for the S&P Asia 50. -1.46% (event 1); -2.59% (event 2) and -2.88% (event 3) for the Hang Seng. -1.16% (event 1); -3.46% (event 2); -3.85% (event 3), 2.47% (event 4); -1.74% (event 5); 2.18% (event 5); 1.88% (event 7) 3.04% (event 8) for the SSE Composite and -4.65% (event 2) for the Nikkei.

Opposing the previous indices and geographical regions we cannot see a clear trend within all components, on this case, we see a mix of positive AR and more especially on the SSE Composite whose index is the one who presents more statistically significant results. In addition, we can see that again, the first few events present strong negative abnormal returns that reach 4% for some cases. Additionally, we observe that SSE Composite is the most affected index of all during the first trade war, what we can consider as usual once it is the targeted country and the direct agent of the conflict. However, not all of the AR present negative returns, the SSE Composite tends to react negatively to tariff announcements and positively to tariff effective dates. Thanks to the alternated high negative and positive abnormal returns, we do not expect the SSE Composite to be the most impacted index since the positive can reduce or even overtake the negative enrolments of other events.

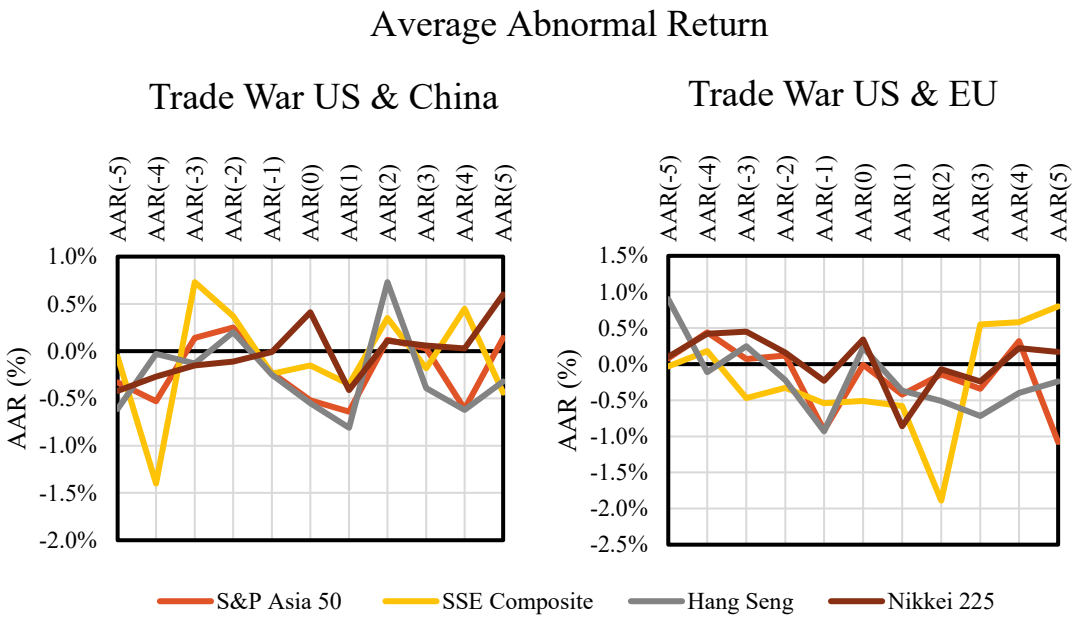

Figure 14 - Average Abnormal Return per Trade War for the S&P Asia 50, SSE Composite, Hang Seng and Nikkei 225

Regarding the Average Abnormal Returns for the trade war between US and China, shown on the Appendices A table13 and 14, we see that on average there are some small earlier reactions on the Chinese Indices. However, we have a peek at AAR (-4) on the SSE Composite. Generally, the reaction starts to occur at AAR (-1), increments on AAR (0) and reaches its highest value on AAR (1). These first post-announcement day's present the higher reactions on the analysed period, with AAR around -0.5% and -0.6% on the day 0 and day 1, significant for the S&P Asia 50 and the Hang Seng Index only on at the AAR (0). As referred, the SSE Composite presents statistically significant results on AAR (-4) and AAR (-3). Once again, we

see a mix of positive and negative average abnormal returns. The Nikkei does not present any statistically significant results. All indices tend to recoup from those returns on the AAR (2).

On the US European trade war scope (Appendices A table 15 and 16), there is an overall negative trend that reaches its highest at different points in time: The SSE Composite with overall negative AAR, reaches its peak at AAR(2) with a value of -1.82%, again presenting some relevant and positive results on the last two AAR; the Hang Seng and the S&P Asia 50 share a similar trend with AAR with overall neutral or positive values for the first few AAR and then show a statistically significant result on the AAR (-1) of -0.9%. For the rest of the AAR timeline, we cannot see any statistically significant result. Finally, the Nikkei index presents AAR no statistically significant result close to the AAR (0), on the other hand, we see just a small positive AAR on AAR (-4) of 0.25%. As in the previous indices, since in the trade war EU and US scope the AAR present earlier reactions on AAR (-1) we will use the CAAR starting at t = -1 to capture all those reactions.

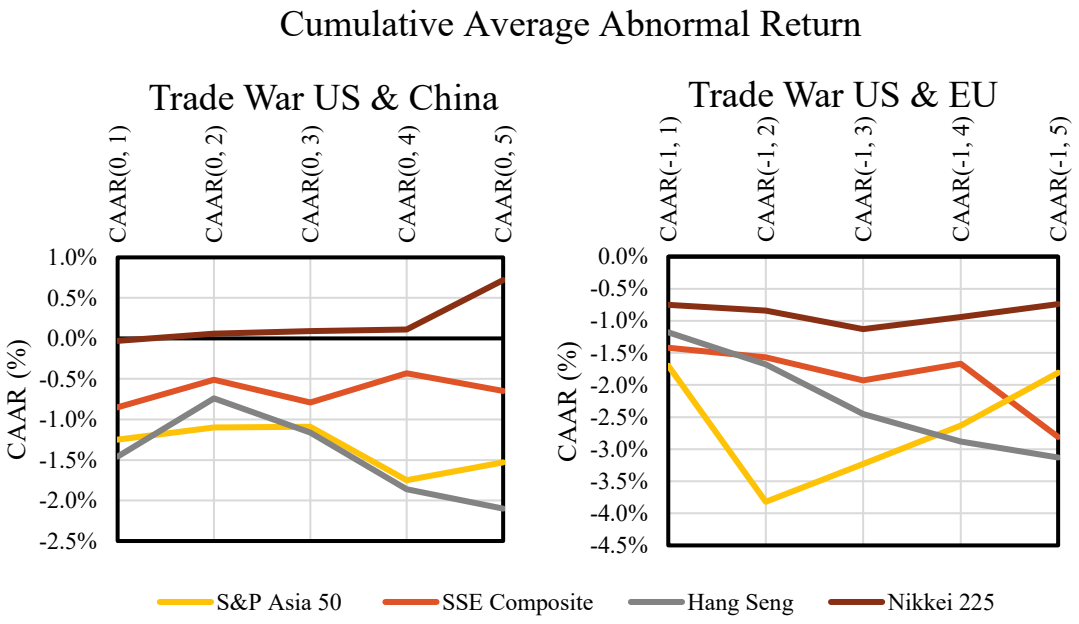

Figure 15 – Cumulative Average Abnormal Return per Trade War for the S&P Asia 50, SSE Composite, Hang Seng and Nikkei 225

Following, the CAAR for the US & China trade war (Appendices A table17 and 18) shows that the S&P Asia 50 alongside with the Hang Seng index present the higher statistically significant CAAR, -1.25 CAAR (0,1) and -1.75% CAAR (0,4) for the S&P Asia 50 and -1,46% CAAR (0,1) -1.86% CAAR (0,4) and -2.10% CAAR (0,5) on Hang Seng index. By the other hand, on the SSE Composite, we see a negative CAAR that, by increasing the range, sees its absolute value decrease, the mix of both statistically significant big positive and negative AR

reduces the visibility of Trump's announcements impact, thus, reducing its CAAR absolute value. Still, the value presented by the CAAR on the SSEC can also be explained by the countermeasures assumed by the Chinese government during the trade war, creating noise around the impact of Trump's announcements contributing to the referred alternate between positive and negative AR. The SSE Composite presents a statistically significant CAAR (0,1) of -0.85%, the only one.

On the US EU trade war (Appendices A table 19 and 20), the Nikkei repeats the previous behaviour, having no statistically significant results on the CAAR. Every other index present high statically significant CAAR values. Although we present them, the results for the Asian indices on the trade war between the US and EU contain two events on December 2019 and January 2020 that were influenced by an exogenous variable: the *COVID-19 virus** increasing the impact on our analysis dramatically. This effect exposes one of the disadvantages of the event study methodology.

TOTAL IMPACT OF TRUMP TARIFF ANNOUNCEMENTS			
US CHINA	**Impact (%)**	**US EU**	**Impact (%)**
S&P Asia 50	-10.00%	S&P Asia 50	-11.24%*
SSE Composite	-6.80%	SSE Composite	-15.28%*
Hang Seng	-11.68%	Hang Seng	-12.52%*
Nikkei 225	0.00%	Nikkei 225	0.00%*

Table 5 - Total Impact of Trump Tariff Announcements per trade war for the S&P Asia 50, SSE Composite, Hang Seng and Nikkei 225

Finally, assuming only the top statistically significant Cumulative Abnormal returns, the impact of Trump's tariff announcements on the S&P Asia 50 was -10%, -6.8% on the SSE Composite, -11.68% on the Hang Seng and Nikkei 0% (as we don't have any statistically significant results) on the announcements within the US-China Trade War scope. On the trade war between US European Union the impact of Trump's announcements was -11.24% on the S&P Asia 50, -15.28% on the SSE Composite, -12.52% on the Hang Seng and finally, as on the previous trade war, 0% on the Nikkei.

European Indices

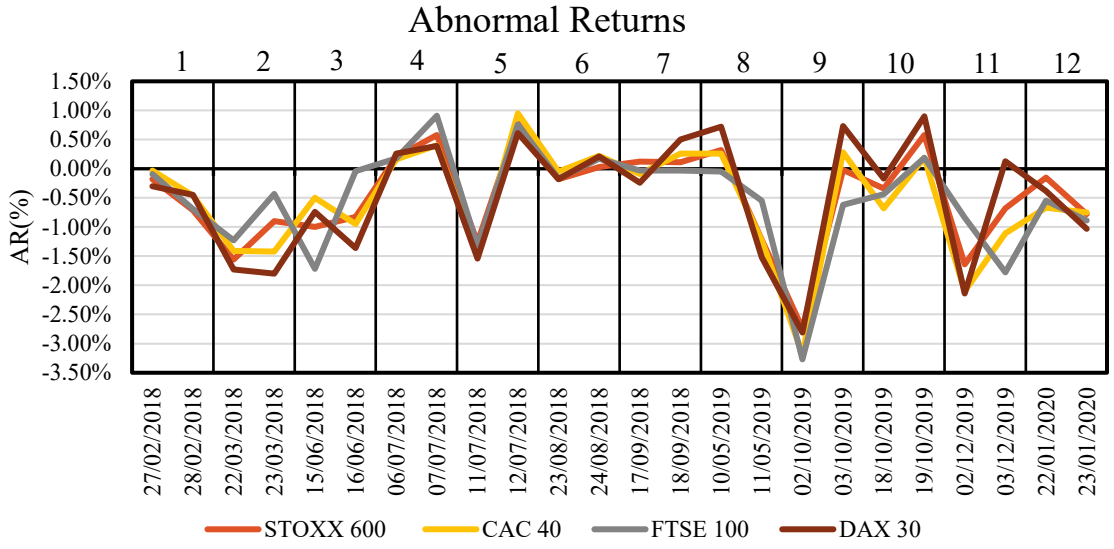

Figure 16 - Abnormal Returns across all events for the STOXX 600, CAC 40, FTSE 100 and DAX 30

The European indices show similar results as the MSCI World index, the European financial markets are in the middle of crossfire as they show abundant statistically significant results for both trade wars. As presented in the Appendices A table 9 and 10, the STOXX 600 presents statistically significant results of -1.56% (event 2), -1.26% (event 5), -2.74% (event 9), -1.64% (event 11); the CAC 40 -1.41% (event 2), -1.50% (event 5), -3.18% (event 9), -2.1% (event 11); the FTSE 100 -1.23% (event 2), -1.72% (event 3), -1.33% (event 5), -3.27% (event 9), -1.78% (event 11) and finally de DAX 30 -1.73% (event 2), -2.81% (event 9), and -2.14% (event 11);

All relevant results present negative AR, and as we check the timeline, we can observe the same behaviour as almost every index: a sharp reaction for the first events, although, in this case just in the first tariff valid day, and then the market adjusts to the political scenario. Interesting to see that the European indices also react to one of the more ferocious tariffs alongside SSE on event 5. Then again, after a few peaceful months without any development, we see a sharp reaction to the return of the trade war.

As expected, the European Indices present the higher AR concerning the US-EU trade war. Additionally, we see a big reaction on the beginning of the conflict, where the AR on event 9 (the first announcement) is considerably higher than the tariff introduction itself on event 10 since the results do not point for statistically relevant results. As well as on the trade war between US-China, we have a few peaceful months followed by a new announcement and, once

more, we see another sharp reaction to the return of the conflict.

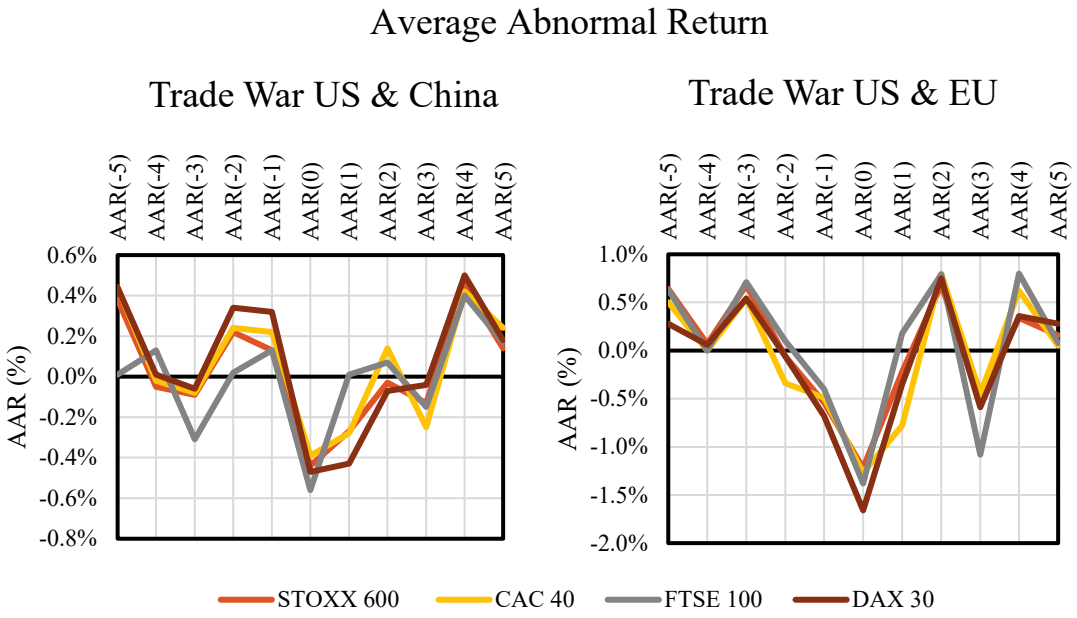

Figure 17 - Average Abnormal Return per Trade War for the STOXX 600, CAC 40, FTSE 100 and DAX 30

Regarding the Average Abnormal Returns for the trade war between the US and China (Appendices A table 13 and 14), we do not see any proof of earlier reactions on the European Indices; on average the reaction happens on AAR (0). The announcement day presents a higher reaction on the analysed period, with AAR around -0.5% on the day. Although with negative returns on AAR (0), all indices tend to recoup from those negative returns starting on the AAR (2). All presented Indices show statistically significant results at AAR (0) on Trump's announcements for China tariffs.

On the Average Abnormal Returns for the trade war between the US and the European Union, shown on the Appendices A table 15 and 16, we see an earlier reaction to Trump's announcements on AAR (-1) of -0.5%. However, none of those AAR is statistically significant. On this second trade war, we see again, as expected, a negative statistically significant AAR on the announcement day around -1.4%. On the following days, a recovery from the market can also be seen as in the previous trade war even though with some oscillations on AAR (3). Again, the AAR on the trade war between the US and the EU present earlier reactions on AAR (-1), so we will use the CAAR starting at t = -1 to capture all those reactions.

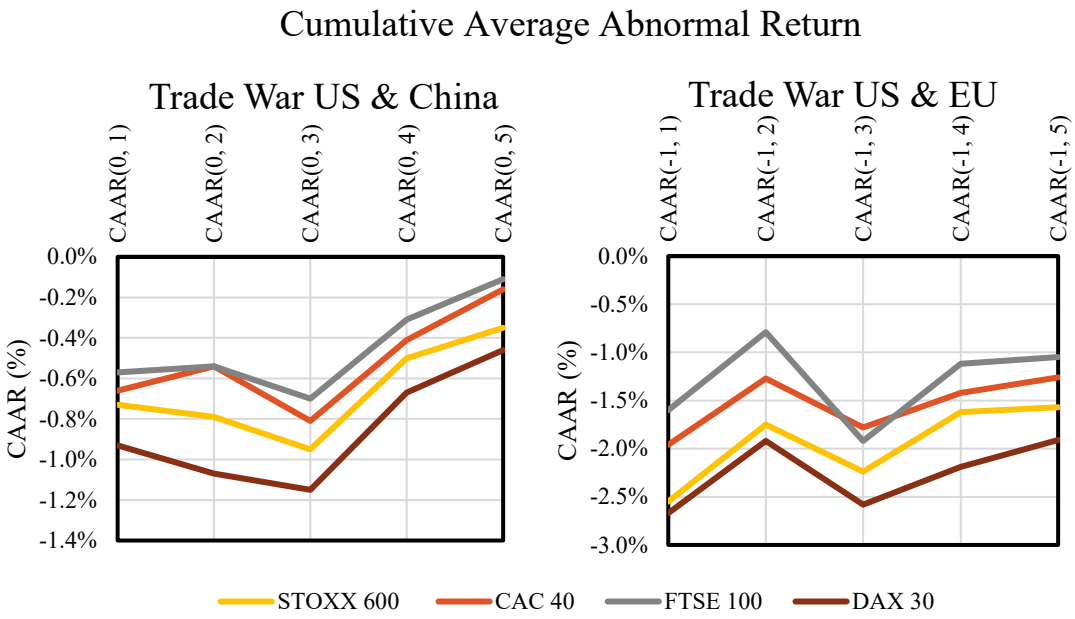

Figure 18 – Cumulative Average Abnormal Return per Trade War for the STOXX 600, CAC 40, FTSE 100 and DAX 30

Next, the CAAR for the US & China trade war, presented on Appendices A table 17 and 18, shows that the positive AAR do overtake the negative AAR as we see a steep recovery on the days followed by the announcements. By taking the CAAR from day 0 to 5, we see on the US-China enrolment that the CAAR (0,1) is the only statistically significant result for all European indices. By the other hand, on the US EU trade (Appendices A table17 and 18), we see more recurrent statistically significant results between the CAAR (-1,1) and (-1,3) except for the FTSE 100 where the CAAR (-1,2) is not. The AAR (3) has a high impact on the CAAR, making a recovery much more dubious and paying much importance to maintaining the overall negative level of the CAAR.

TOTAL IMPACT OF TRUMP TARIFF ANNOUNCEMENTS			
US CHINA	**Impact (%)**	**US EU**	**Impact (%)**
STOXX 600	-5.84%	STOXX 600	-7.84%
CAC 40	-5.28%	CAC 40	-10.20%
FTSE 100	-4.56%	FTSE 100	-7.68%
DAX 30	-8.56%	DAX 30	-10.68%

Table 6 - Total Impact of Trump Tariff Announcements per trade war for the STOXX 600, CAC 40, FTSE 100 and DAX 30

Finally, by taking into consideration only the statistically significant CAAR's or in the cases that we have more than one statically significant CAAR, we assume the worst one, the total impact of Trump's tariff announcements during the trade war with China was: -5.84% for the STOXX 600, -5.28% for the CAC 40, -4.56% for the FTSE 100 and -8.56% on DAX 30. Regarding Trump's tariff announcements during the trade war with the European Union, the

impact stands at -7.84% for the STOXX 600, -10.20% for the CAC 40, -7.68% for the FTSE 100 and -10.68% for the DAX 30.

South America Indices

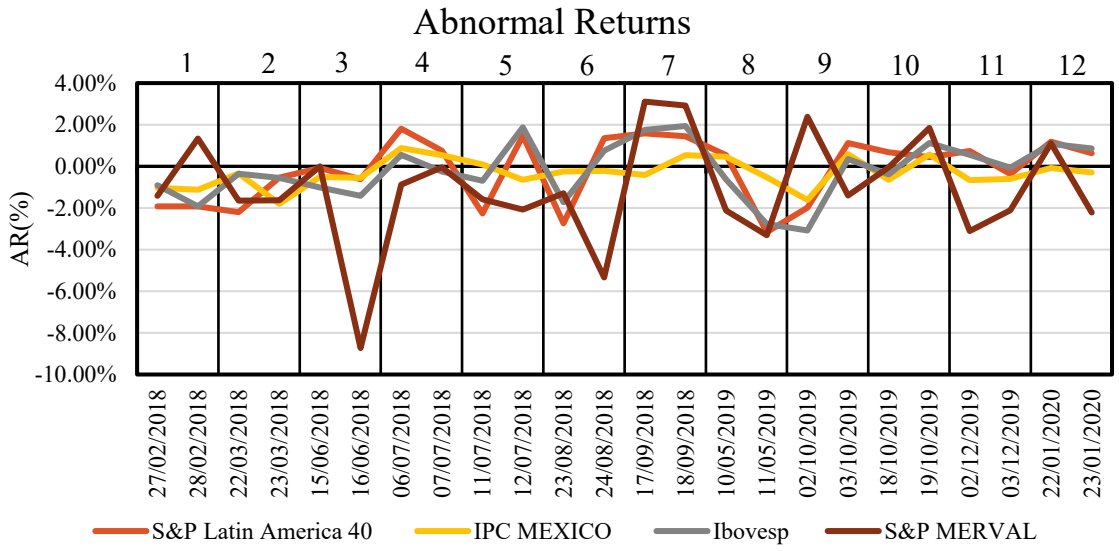

Figure 19 - Abnormal Returns across all events for the S&P Latin America 40, IPC Mexico, Ibovespaa and S&P Merval

Lastly, we analyse the South America region, where the correspondent indices present very few statistically significant results at the AR level. As shown in figure 15, the AR does not present a clear trend in the reaction to the events. As presented in the Appendices A table 9 and 10, the S&P MERVAL shows the sharpest reactions in the US & China trade war with AR reaching -8% and -5% on events 3 and 6. The S&P Latin America 40 presents statistically significant results only on event 6 of -2,74%, the Ibovespa presents good results on event 8 with an AR of -2.77%, and the IPC Mexico presents on event 2 with -1.8%. On the US & EU trade war scope, only the Ibovespa shows a statistically significant result on event 9 of -3.08%.

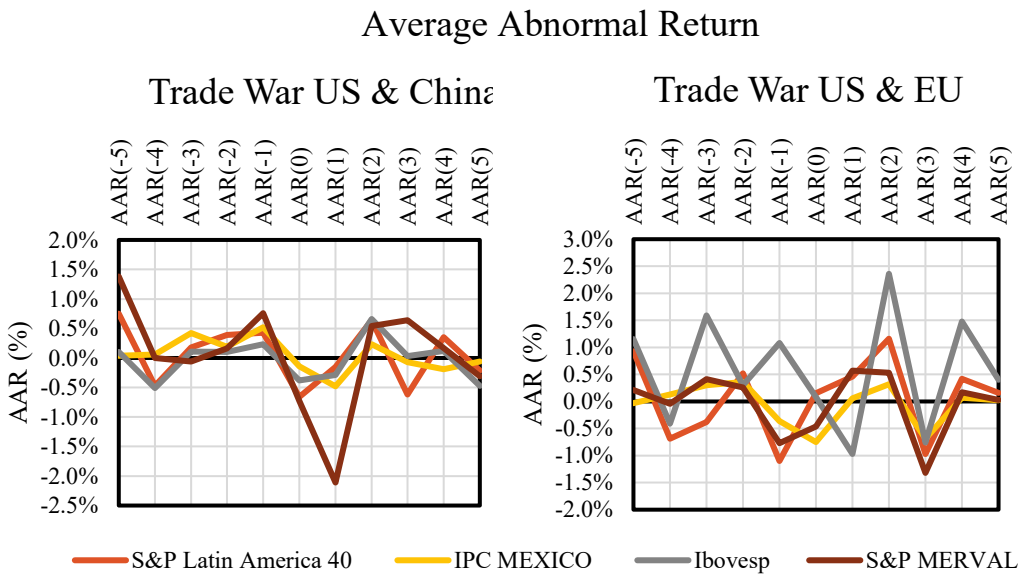

Figure 20 - Average Abnormal Return per Trade War for the S&P Latin America 40, IPC Mexico, Ibovespa and S&P Merval

Regarding the Average Abnormal Returns for the trade war between the US and China on Appendices A table13 and 14, we do not see any proof of earlier reactions on the South American Indices. Before the announcements, we see only a few positive AAR. On average the reaction happens on AAR (0) and continues with AAR (1), although, AAR (0) do not resent statistically significant abnormal returns in any index, and the AAR (1) presents good results for IPC Mexico of -0.48% and S&P Merval with -2.11%. The Ibovespa index presents a late significant AAR at time 3 with an unexpected positive value of 0.66%. The S&P Latin America 40 does not show any significant results. By disregarding the non-statistically significant results we see that on the analysed period, the negative AAR are concentrated within time 0 and time 1, all the other ones tend to be positive and close to 0.

On the Average Abnormal Returns for the trade war between the US and the European Union on Appendices A table15 and 16, we see again an earlier reaction to Trump's announcements on AAR (-1) on IPC Mexico, S&P Merval and S&P Latin America 40 of -0.36%, -0.77% and -1.10%. Furthermore, on this second trade war, we see just a few statistically significant results after the announcement day, on IPC Mexico and Ibovespa financial Index of -0.75% at time 0 on IPC Mexico and 0.57 at time 1 for the Ibovespa. Nevertheless, by disregarding the statistically Significant tests, we can see that we have a very volatile behaviour of the AAR oscillating between 2.36% and -1.3% within the [-5,5]. As seen within all indices, the trade war US and EU scope the AAR present earlier reactions on AAR (-1) so, we will use the CAAR starting at t = -1 to capture all those reactions.

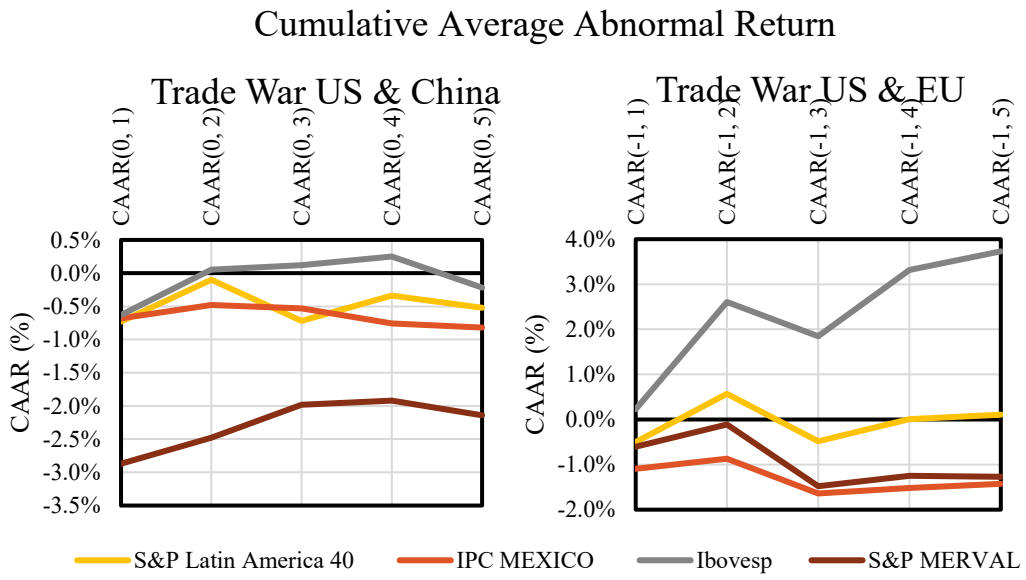

Figure 21 - Cumulative Average Abnormal Return per Trade War for the S&P Latin America 40, IPC Mexico, Ibovespa and S&P Merval

Following, the CAAR for the US & China do not present good results (Appendices A table 17 and 18), the S&P Merval index was the unique index presenting statistically relevant results. Since the S&P Merval is not a direct victim of these announcements and presents suspicious AR of -8% and -5%, further investigation reveals that on these crucial AR the S&P Merval has been impacted by external factors on the -5% AR due to democratic elections results. Taking that information into account, and since those AR are the only statistically significant results, we choose not to consider the S&P Merval index as significant for our conclusions. The IPC Mexico reveals a statically significant result on CAAR (0,5) of -0.82% being the only index which seems to be impacted by the overall trade war.

On the second trade war, the results do not improve much. As shown on Appendices A table 19 and 20, the IPC Mexico is the only index presenting relevant results: on CAAR (-1,1) and (-1,5) of -1.09% and -1.43% on average and the S&P Latin America 40 on the CAAR (0,2) with 1.48%. Finally, being the S&P Latin America 40 capturing approximately 70% of the region's total market capitalization, we conclude that on the overall area the reaction was positive for these announcements, although, as we saw the IPC Mexico financial market, solely, presents adverse reactions to Trump’s tariff announcements.

TOTAL IMPACT OF TRUMP TARIFF ANNOUNCEMENTS			
US CHINA	**Impact (%)**	**US EU**	**Impact (%)**
S&P Latin America 40	0.00%	S&P Latin America 40	0.00%
IPC MEXICO	-6.56%	IPC MEXICO	-5.72%
Ibovespa	0.00%	Ibovespa	0.00%
S&P MERVAL	0.00%	S&P MERVAL	0.00%

Table 7 - Total Impact of Trump Tariff Announcements per trade war for the S&P Latin America 40, IPC Mexico, Ibovespa and S&P Merval

Conclusively, by taking into consideration only the statistically significant CAAR's or in the cases that we have more than one statically significant CAAR, we assume the worst one, on the south American indices we assume no impact caused by Trump's since we have no significant statistical for the S&P Latin America 40, the Ibovespa and the S&P Merval. The IPC Mexico presents a negative impact of -6.56%. Regarding Trump's tariff announcements during the trade war with the European Union, the impact stands at -5.72% for the IPC Mexico Index. As the other indices do not present statistically significant results, we consider that the total impact was 0.

Total impact of Trump's announcements

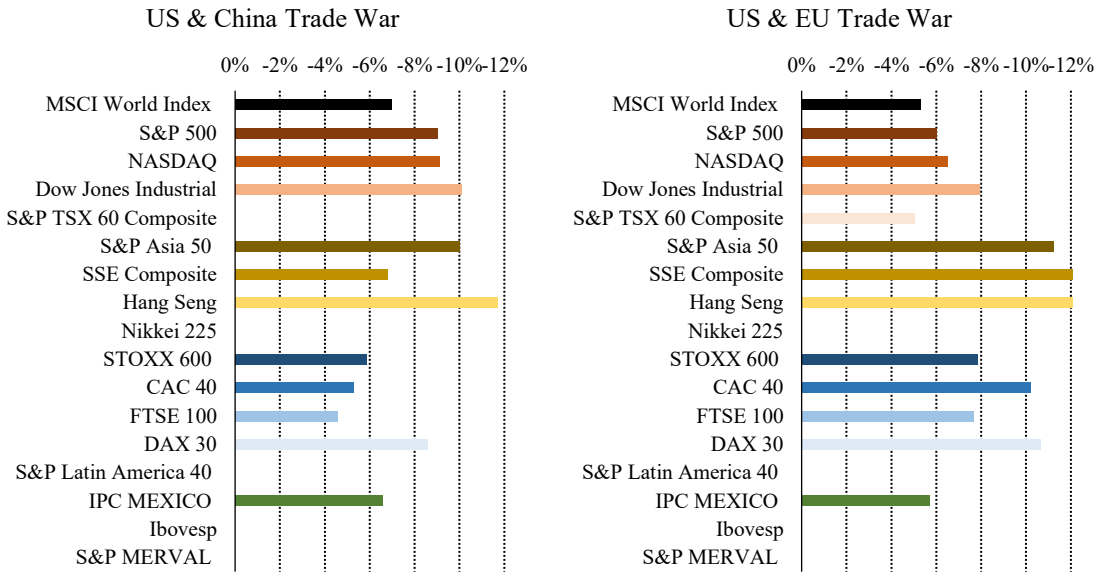

Figure 22 - Total Impact of Trump Tariff Announcements per trade war

TOTAL IMPACT OF TRUMP TARIFF ANNOUNCEMENTS			
US CHINA	**Impact (%)**	**US EU**	**Impact (%)**
MSCI World Index	-6.96%	MSCI World Index	-5.32%
S&P 500	-9.04%	S&P 500	-6.04%
NASDAQ	-9.12%	NASDAQ	-6.52%
Dow Jones Industrial	-10.08%	Dow Jones Industrial	-7.96%
S&P TSX 60 Composite	0.00%	S&P TSX 60 Composite	-5.04%
S&P Asia 50	-10.00%	S&P Asia 50	-11.24%*
SSE Composite	-6.80%	SSE Composite	-15.28%*
Hang Seng	-11.68%	Hang Seng	-12.52%*
Nikkei 225	0.00%	Nikkei 225	0.00%
STOXX 600	-5.84%	STOXX 600	-7.84%
CAC 40	-5.28%	CAC 40	-10.20%
FTSE 100	-4.56%	FTSE 100	-7.68%
DAX 30	-8.56%	DAX 30	-10.68%
S&P Latin America 40	0.00%	S&P Latin America 40	0.00%
IPC MEXICO	-6.56%	IPC MEXICO	-5.72%
Ibovespa	0.00%	Ibovespa	0.00%
S&P MERVAL	0.00%	S&P MERVAL	0.00%

Table 8 - Total Impact of Trump Tariff Announcements per trade war

On Figure 22 and Table 8, we can see the overall results for both trade wars. On the trade war between the US and China, the most affected indices were the North American and Asian ones. The main North American indices vary between a negative impact of -9% and -10%, excluding the S&P TSX 60 Composite once, as referred before, we do not have any statistically significant result. The Asian indices present a negative impact between -6.8% and -11.6%, as well; the Nikkei 225 does not present any statistically significant results. Different than what was expected, the SSE Composite does not show the worst impact since the mixture between positive and negative statistically significant abnormal returns reduces the amplitude of the total impact. The impact on European indices stands between 4.5% and 8.5%, minor than

other indices but still significant. Predictably, the South American indices do not show statistically significant results except for the IPC Mexico, where we had an overall -6.5% impact. The possibility of additional announcements that also influenced the Mexican economy during the analysed period (new applied tariffs) do also disclosure, even more, the weakness of one assumption of the event study methodology: at the post-event window, there are no other events that could spoil the market reaction to the analysed announcement.

On the trade war between the US and Europe, we see a clear improvement on the absolute impact on the European markets, which was expected since now those indices are Trump's target. The impact on the second trade war stands now between -7.6% and 10.6% on the European Indices. The impact on the US indices is significantly lower, between -5% and 8%. This reduction can also be explained by the smaller impact of each measure or threat and the lesser amount of events. The South American indices continue with the same behaviour as on the US-China trade war. Only the IPC Mexico presents statistically significant results of -5.7%. Lastly, the Asian indices show the higher absolute impact of all analysed indices. Unexpected, since none of the Asian markets is directly affected by Trump's actions or threats. On the other end, we can explain this situation once the event study can be influenced and susceptible to exogenous events, which is the case. On the last event of the trade war between the US, the EU and the Chinese market are already feeling the impacts of the COVID-19 virus. On our study, the Asian stock markets present an impact between -11% and-15%.

Conclusion

In this study, we measure the total impact of Trump's tariff announcements throughout the trade wars with China and the European Union during 2018, 2019 and the beginning of 2020. More precisely, we measure its total impact on the main world financial markets.

Four main indices per preselected region compose our sample. Consequently, the analysed regions were World, North America, South America, Asia and Europe in which we selected four prominent representatives (except for the world). The world financial stock markets representative is the MSCI World Index; the four North American representatives are the S&P 500, NASDAQ, Dow Jones Industrial and the S&P TSX 60 Composite; the South American representatives are the S&P Latin America 40, IPC MEXICO, Ibovespa a and the S&P MERVAL; the Asian representatives are the S&P Asia 50, SSE Composite, Hang Seng, Nikkei 225; finally, the European representatives are the STOXX 600, CAC 40, FTSE 100 and DAX 30. The proposed objective explains the use of stock indices: we want to capture and measure the overall reactions of the stock markets, and not specific movements of stocks.

To estimate the impact of the announcements, we used an event study methodology proposed by MacKinlay (1997). To estimate the abnormal returns, the constant mean return was the chosen model. The goal of a wide measurement through stock indices limited the variety of models that could be applied to our studies since the majority require the estimation of betas, therefore, we choose the constant mean return model because the model does not require the estimation of any model. As estimation window, we used 250 days following Benninga (2008) and Armitage (1995) recommendations and approaches. For the event window, we choose five days as a base rule since Oler et al. (2007) showed that the five days event length is the most used between all event studies. The study focuses on three forms of abnormal returns: the abnormal returns were used to spot the trend of the reactions through time; the average abnormal returns were used to spot earlier reactions, allowing us to adjust the original event window and incorporate those early reactions into the cumulative average abnormal returns results. Finally, the cumulative average abnormal returns were used to measure the overall average reaction during each trade war, but most importantly, to retrieve the total impact of Trump's announcements by taking the implied sum of cumulative average returns within the cumulative average abnormal return.

When arranged through time, the Abnormal Returns showed that the market tends to react more aggressively to the first announcements of each trade war, on those events; we found

persistent statistically significant results. Then, in the following months where the majority of the announcements are placed, very few statically significant abnormal returns were found, thus, we assume that the markets adjusted to the political scenario. This behaviour is repeated after a period of 8 months without any relevant announcement. The return of the tense environment is portrayed on the first abnormal return. After the calm atmosphere, we found again sharp, statistically significant abnormal returns, for example, S&P 500, NASDAQ, Dow Jones Industrial, STOXX 600, CAC 40, FTSE 100 and DAX 30. The behaviour is typical between both trade wars.

Through the Average Abnormal Returns, we tried to assess whether or not we were choosing the most optimal event range for the Cumulative Average Abnormal Return since we wanted to include any early reactions to every announcement. We decided to apply distinct fields per trade war. By analysing the Average Abnormal Returns for the trade war between the US and China, we found no consistent statistically significant results that could suggest frequent earlier reactions on the financial stock indices during the trade war. By the other hand, on the trade war between the US and the European Union, we choose to extend the event range of the Cumulative Average Abnormal Return since we found clear evidence of earlier reactions on the events under this trade war scope. The results showed persistent statistically significant average abnormal returns on t-1 among all regions, so we decided to apply a range [-1,5], allowing us to include the desired early reactions.

Finally, we found on the Cumulative Average Abnormal return, at 5% significance level, that the MSCI World Index was impacted by -6.9% on the announcements associated with the trade war between the US and China. As expected, the most affected indices were the North American and Asian ones. The North American indices were impacted on: -9% on the S&P 500, -9.1% on the NASDAQ, -10.1% on the Dow Jones Industrial, lastly, the S&P TSX 60 Composite does not present any statistically significant result, so we did not consider any impact caused by Trump's announcements. The Asian indices were impacted on: -10% for the S&P Asia 50, -6.8% for the SSE Composite, -11.7% for the Hang Seng Index, the Nikkei 225 index, as the S&P TSX 60 Composite, does not present any statistically significant result, so we did not consider any impact caused by Trump's announcements. Different from what was expected, the SSE Composite does not show the worst impact since the mixture between positive and negative statistically significant abnormal returns reduces the amplitude of the total estimated impact. As the North American Indices, the European ones also present statistically significant results within all components: the STOXX 600 presents an impact of -5.8%, the

CAC 40 of -5.3%, the FTSE 100 of -4.6% and the DAX 30 of -8.6%. Last, the South American indices do not show statistically significant results except for the IPC Mexico, where we had an overall -6.5% impact. The possibility of additional announcements that also influenced the Mexican economy during the analysed period (new applied tariffs) does disclose the weakness of one assumption of the event study methodology. At the event window, there are no other events that could spoil the market reaction to the analysed announcement.

On the trade war US and Europe scope, we see a clear increase on the absolute impact on the European markets, which was predictable since the announcements hit those countries. The impact on the second trade war were -7.8% for the STOXX 600, -10.2% for the CAC 40, -7.7% for the FTSE 100 and -10.7% for the DAX 30. The impact on the North American indices reduces significantly, the smaller amount of announcements, the visibility of the announcements or even the reduced consequences of the tariffs can be explanatory reasons for the reduction. The North American indices were impacted on -6% on the S&P 500, -6.5% on the NASDAQ, -8% on the Dow Jones Industrial, lastly, the S&P TSX 60 Composite was impacted on -5%. The South American indices continue with the same behaviour as on the US-China trade war. Only the IPC Mexico presents statistically significant results of -5.7%. Unexpectedly, the results for the Asian indices show an extremely high impact, which suggests some inaccuracy of these results since none of the Asian markets is directly affected by Trump's actions or threats. This situation reflects once more the event study methodology susceptibility to exogenous events during the event window. On the last event of the trade war between the US, the EU and the Chinese market are already feeling the impacts of the COVID-19 virus. On our study, the Asian indices were impacted on -11.2% for the S&P Asia 50, -15.3% for the SSE Composite, -12.5% for the Hang Seng Index, the Nikkei 225 index does not present any statistically significant results.

For further developments on this topic, the introduction of another model or methodology could present improvements and more accurate results than the used event studies. The assumption of no other events that could spoil the market reaction was a clear limitation on the analysed announcements since it impacted a minor part of the announcement list and in some indices, for example, the Asian indices or on the IPC Mexico. In addition, it would be interesting to include other events, since President Trump continued to launch new announcements still on the trade wars topic. In addition, Trump conducted other measures against other countries less powerful on a global context. As seen, the European stock indices

were impacted by external trade wars so, widening the research and check if measures on smaller economies can still affect other markets.

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Appendices

A. Event Study Output

ABNORMAL RETURNS																
Announcements to China	**27/02/2018**		**22/03/2018**		**15/06/2018**		**06/07/2018**		**11/07/2018**		**23/08/2018**		**17/09/2018**		**10/05/2019**	
AR Timeline	AR(0)	AR(1)	AR(0)	AR(1)	AR(0)	AR(1)	AR(0)	AR(1)	AR(0)	AR(1)	AR(0)	AR(1)	AR(0)	AR(1)	AR(0)	AR(1)
MSCI World Index	**-0.94%**	**-1.11%**	**-1.79%**	**-1.83%**	-0.41%	-0.43%	0.79%	0.78%	-0.90%	0.61%	-0.36%	0.53%	-0.32%	0.51%	0.32%	**-1.90%**
t test	**-1.96**	**-2.31**	**-3.51**	**-3.59**	-0.71	-0.74	1.36	1.34	-1.55	1.05	-0.62	0.91	-0.53	0.85	0.43	**-2.57**
S&P 500	**-1.33%**	**-1.17%**	**-2.61%**	**-2.18%**	-0.15%	-0.26%	0.80%	0.83%	-0.76%	0.83%	-0.23%	0.56%	-0.62%	0.47%	0.33%	**-2.48%**
t test	**-2.18**	**-1.92**	**-4.08**	**-3.41**	-0.19	-0.33	1.01	1.05	-0.96	1.05	-0.29	0.71	-0.78	0.59	0.35	**-2.64**
NASDAQ	**-1.31%**	-0.86%	**-2.56%**	**-2.55%**	-0.26%	-0.06%	1.25%	0.79%	-0.63%	1.30%	-0.23%	0.76%	-1.53%	0.66%	0.03%	**-3.52%**
t test	**-1.95**	-1.15	**-3.28**	**-3.27**	-0.28	-0.06	1.34	0.85	-0.68	1.40	-0.24	0.81	-1.65	0.71	0.02	**-2.89**
Dow Jones Industrial	**-1.24%**	**-1.58%**	**-3.05%**	**-1.86%**	-0.40%	-0.47%	0.36%	1.25%	-0.93%	0.86%	-0.36%	0.46%	-0.43%	0.64%	0.41%	**-2.44%**
t test	**-1.91**	**-2.43**	**-4.42**	**-2.70**	-0.48	-0.56	0.42	1.47	-1.09	1.01	-0.42	0.53	-0.49	0.74	0.42	**-2.52**
S&P TSX 60 Composite	-0.26%	**-1.46%**	**-1.77%**	**-1.15%**	-0.10%	0.41%	0.62%	0.46%	-0.82%	0.88%	-0.16%	0.15%	0.40%	0.68%	-0.17%	-0.66%
t test	-0.53	**-2.98**	**-3.61**	**-2.35**	-0.21	0.85	1.32	0.98	-1.67	1.80	-0.33	0.31	0.80	1.36	-0.28	-1.08
S&P Asia 50	-0.45%	**-1.77%**	-1.09%	**-3.36%**	-0.75%	-0.77%	0.01%	1.73%	-1.20%	-0.05%	0.01%	-0.32%	-1.42%	0.29%	0.71%	-0.87%
t test	-0.54	**-2.13**	-1.25	**-3.86**	-0.78	-0.80	0.01	1.77	-1.22	-0.05	0.01	-0.33	-1.42	0.29	0.63	-0.78
SSE Composite	**-1.16%**	-1.02%	-0.54%	**-3.46%**	-0.74%	**-3.85%**	0.52%	**2.47%**	**-1.74%**	**2.18%**	0.43%	0.24%	-1.04%	**1.88%**	**3.04%**	-1.22%
t test	**-1.93**	-1.70	-0.77	**-4.94**	-0.93	**-4.81**	0.62	**2.94**	**-2.05**	**2.56**	0.45	0.25	-1.07	**1.94**	**2.29**	-0.92
Hang Seng	-0.82%	**-1.46%**	-1.20%	**-2.59%**	-0.50%	**-2.88%**	0.42%	1.25%	-1.35%	0.55%	-0.51%	-0.44%	-1.30%	0.56%	0.85%	-1.50%
t test	-0.99	**-1.96**	-1.33	**-2.88**	-0.51	**-2.91**	0.41	1.23	-1.32	0.54	-0.49	-0.42	-1.23	0.53	0.75	-1.33
Nikkei 225	1.02%	-1.49%	0.95%	**-4.65%**	0.45%	-0.80%	1.07%	1.16%	-1.24%	1.12%	0.17%	0.80%	1.13%	1.34%	-0.28%	-0.73%
t test	1.23	-1.80	1.09	**-5.34**	0.49	-0.88	1.16	1.26	-1.35	1.22	0.18	0.83	1.16	1.38	-0.25	-0.65
STOXX 600	-0.18%	-0.71%	**-1.56%**	-0.90%	-1.00%	-0.83%	0.20%	0.58%	**-1.26%**	0.78%	-0.18%	0.03%	0.12%	0.11%	0.32%	-1.22%
t test	-0.31	-1.20	**-2.56**	-1.48	-1.54	-1.28	0.30	0.88	**-1.91**	1.16	-0.28	0.05	0.18	0.17	0.43	-1.65
CAC 40	-0.03%	-0.46%	**-1.41%**	**-1.42%**	-0.50%	-0.95%	0.16%	0.40%	**-1.50%**	0.95%	-0.05%	0.22%	-0.09%	0.26%	0.26%	-1.23%
t test	-0.04	-0.64	**-1.91**	**-1.92**	-0.70	-1.34	0.23	0.56	**-2.11**	1.34	-0.07	0.31	-0.13	0.37	0.31	-1.46
FTSE 100	-0.09%	-0.69%	**-1.23%**	-0.43%	**-1.72%**	-0.04%	0.18%	0.91%	**-1.33%**	0.76%	-0.17%	0.17%	-0.03%	-0.03%	-0.05%	-0.55%
t test	-0.15	-1.15	**-2.02**	-0.70	**-2.69**	-0.06	0.27	1.38	**-1.99**	1.13	-0.25	0.25	-0.04	-0.04	-0.06	-0.71
DAX 30	-0.30%	-0.45%	**-1.73%**	**-1.80%**	-0.74%	-1.36%	0.26%	0.39%	-1.54%	0.61%	-0.18%	0.21%	-0.24%	0.50%	0.72%	-1.52%
t test	-0.41	-0.62	**-2.31**	**-2.40**	-0.90	-1.66	0.31	0.47	-1.83	0.73	-0.21	0.25	-0.28	0.59	0.77	-1.62
S&P Latin America 40	-1.92%	-1.93%	-2.20%	-0.54%	-0.08%	-0.62%	1.81%	0.75%	-2.26%	1.48%	**-2.74%**	1.35%	1.59%	1.44%	0.53%	-3.16%
t test	-1.27	-1.28	-1.50	-0.37	-0.06	-0.48	1.35	0.56	-1.70	1.11	**-1.96**	0.96	1.08	0.98	0.31	-1.84
IPC MEXICO	-1.03%	-1.12%	-0.34%	**-1.80%**	-0.51%	-0.56%	0.88%	0.54%	0.09%	-0.65%	-0.25%	-0.22%	-0.42%	0.54%	0.46%	-0.53%
t test	-1.63	-1.78	-0.55	**-2.90**	-0.78	-0.86	1.31	0.81	0.13	-0.97	-0.35	-0.31	-0.56	0.72	0.43	-0.50
Ibovespa	-0.91%	-1.92%	-0.35%	-0.56%	-1.01%	-1.42%	0.56%	-0.25%	-0.69%	1.88%	-1.73%	0.76%	1.76%	1.94%	-0.63%	**-2.77%**
t test	-0.74	-1.56	-0.28	-0.46	-0.91	-1.28	0.48	-0.21	-0.59	1.62	-1.44	0.63	1.42	1.56	-0.44	**-1.94**
S&P MERVAL	-1.41%	1.33%	-1.65%	-1.63%	0.00%	**-8.73%**	-0.87%	-0.05%	-1.59%	-2.07%	-1.29%	**-5.33%**	3.11%	2.92%	-2.13%	-3.31%
t test	-1.04	0.98	-1.18	-1.16	0.00	**-5.46**	-0.48	-0.03	-0.87	-1.13	-0.64	**-2.63**	1.43	1.35	-0.85	-1.32

Table 9 – Abnormal Returns (part 1)

ABNORMAL RETURNS								
Announcements to China	**02/10/2019**		**18/10/2019**		**02/12/2019**		**22/01/2020**	
AR Timeline	AR(0)	AR(1)	AR(0)	AR(1)	AR(0)	AR(1)	AR(0)	AR(1)
MSCI World Index	**-1.73%**	0.46%	-0.32%	0.62%	-0.73%	-0.63%	-0.03%	-0.24%
t test	**-2.11**	0.56	-0.40	0.78	-0.99	-0.85	-0.05	-0.39
S&P 500	**-1.82%**	0.78%	-0.40%	0.68%	-0.92%	-0.72%	-0.06%	0.02%
t test	-1.93	0.74	-0.37	0.64	-0.95	-0.74	-0.08	0.03
NASDAQ	**-1.58%**	1.10%	-0.84%	0.89%	-1.20%	-0.62%	0.03%	0.09%
t test	-1.91	0.82	-0.62	0.66	-1.00	-0.52	0.03	0.10
Dow Jones Industrial	**-1.89%**	0.46%	-0.95%	0.21%	-1.00%	-1.05%	-0.11%	-0.16%
t test	-1.98	0.44	-0.90	0.20	-1.03	-1.08	-0.15	-0.22
S&P TSX 60 Composite	-0.85%	0.34%	-0.31%	0.24%	-0.39%	-0.58%	0.10%	0.07%
t test	-1.33	0.53	-0.48	0.38	-0.67	-1.00	0.23	0.16
S&P Asia 50	-0.99%	0.07%	-0.48%	0.21%	0.28%	-0.49%	1.15%	-1.47%
t test	-0.88	0.06	-0.45	0.20	0.29	-0.50	1.26	-1.62
SSE Composite	-0.96%	0.25%	-1.37%	0.01%	0.09%	0.27%	0.20%	**-2.87%**
t test	-0.72	0.19	-1.03	0.01	0.08	0.23	0.18	**-2.54**
Hang Seng	-0.19%	0.26%	-0.46%	0.05%	0.36%	-0.22%	1.22%	-1.58%
t test	-0.17	0.23	-0.41	0.04	0.35	-0.22	1.24	-1.61
Nikkei 225	-0.48%	-2.01%	0.22%	0.29%	0.98%	-0.67%	0.65%	-1.03%
t test	-0.42	-1.76	0.19	0.26	0.93	-0.64	0.66	-1.05
STOXX 600	**-2.74%**	-0.02%	-0.34%	0.58%	**-1.64%**	-0.68%	-0.15%	-0.78%
t test	**-3.43**	-0.03	-0.43	0.73	**-2.10**	-0.87	-0.21	-1.11
CAC 40	**-3.18%**	0.28%	-0.68%	0.19%	**-2.10%**	-1.11%	-0.67%	-0.75%
t test	**-3.42**	0.30	-0.73	0.20	**-2.31**	-1.22	-0.82	-0.91
FTSE 100	**-3.27%**	-0.62%	-0.44%	0.19%	-0.84%	**-1.78%**	-0.55%	-0.89%
t test	**-4.14**	-0.78	-0.54	0.23	-1.06	**-2.25**	-0.75	-1.22
DAX 30	**-2.81%**	0.73%	-0.17%	0.90%	**-2.14%**	0.13%	-0.38%	-1.03%
t test	**-2.87**	0.74	-0.17	0.91	**-2.23**	0.14	-0.44	-1.20
S&P Latin America 40	-1.99%	1.12%	0.67%	0.44%	0.73%	-0.37%	1.18%	0.63%
t test	-1.22	0.69	0.41	0.27	0.49	-0.25	0.86	0.46
IPC MEXICO	-1.62%	0.58%	-0.65%	0.57%	-0.66%	-0.60%	-0.08%	-0.29%
t test	-1.50	0.54	-0.60	0.52	-0.74	-0.67	-0.10	-0.35
Ibovespa	**-3.08%**	0.35%	-0.38%	1.12%	0.55%	-0.06%	1.07%	0.86%
t test	**-2.33**	0.27	-0.29	0.86	0.46	-0.05	0.96	0.77
S&P MERVAL	2.38%	-1.40%	-0.05%	1.84%	-3.11%	-2.10%	1.11%	-2.21%
t test	0.59	-0.35	-0.01	0.46	-0.76	-0.52	0.27	-0.54

Table 10 – Abnormal Returns (part 2)

CUMULATIVE ABNORMAL RETURNS																							
EVENT DATE	**27/02/2018**			**22/03/2018**			**15/06/2018**			**06/07/2018**			**11/07/2018**			**23/08/2018**			**17/09/2018**			**10/05/2019**		
CAR TYPE	(0, 1)	(0, 3)	(0, 5)	(0, 1)	(0, 3)	(0, 5)	(0, 1)	(0, 3)	(0, 5)	(0, 1)	(0, 3)	(0, 5)	(0, 1)	(0, 3)	(0, 5)	(0, 1)	(0, 3)	(0, 5)	(0, 1)	(0, 3)	(0, 5)	(0, 1)	(0, 3)	(0, 5)
MSCI World Index	**-2.05%**	**-3.49%**	**-2.26%**	**-3.62%**	**-2.81%**	**-2.44%**	-0.84%	-1.29%	-1.50%	**1.57%**	0.84%	1.58%	-0.29%	-0.25%	0.13%	0.17%	1.04%	0.91%	0.19%	1.20%	1.01%	-1.58%	-0.45%	-0.18%
CAR t-test	**-3.02**	**-3.64**	**-1.92**	**-5.02**	**-2.75**	**-1.95**	-1.02	-1.11	-1.06	**1.91**	0.72	1.11	-0.35	-0.22	0.09	0.21	0.90	0.64	0.22	1.00	0.69	-1.51	-0.30	-0.10
S&P 500	**-2.50%**	**-3.44%**	-2.18%	**-4.79%**	**-3.97%**	**-3.01%**	-0.41%	-0.74%	-1.28%	1.63%	1.17%	2.05%	0.07%	-0.02%	0.50%	0.33%	0.99%	0.99%	-0.15%	0.62%	0.10%	-2.15%	-0.85%	-0.62%
CAR t-test	**-2.90**	**-2.82**	-1.46	**-5.29**	**-3.10**	**-1.92**	-0.37	-0.47	-0.67	1.46	0.74	1.06	0.06	-0.01	0.26	0.30	0.63	0.51	-0.13	0.39	0.05	-1.62	-0.45	-0.27
NASDAQ	**-2.17%**	-2.52%	-1.11%	**-5.11%**	**-5.07%**	**-4.48%**	-0.32%	-0.02%	-1.31%	2.04%	1.37%	2.61%	0.67%	0.28%	0.74%	0.53%	1.40%	1.93%	-0.87%	-0.16%	-0.79%	**-3.49%**	-1.34%	-1.52%
CAR t-test	**-2.05**	-1.68	-0.60	**-4.63**	**-3.25**	**-2.34**	-0.24	-0.01	-0.57	1.55	0.74	1.15	0.51	0.15	0.32	0.40	0.74	0.84	-0.66	-0.09	-0.35	**-2.02**	-0.55	-0.51
Dow Jones Industrial	**-2.82%**	**-4.95%**	**-3.70%**	**-4.91%**	**-3.69%**	-2.81%	-0.87%	-2.32%	-2.75%	1.61%	1.19%	2.36%	-0.07%	0.39%	0.83%	0.10%	1.03%	0.61%	0.21%	1.62%	1.12%	-2.03%	-0.83%	-0.45%
CAR t-test	**-3.07**	**-3.81**	**-2.32**	**-5.03**	**-2.67**	-1.66	-0.73	-1.38	-1.34	1.34	0.70	1.13	-0.06	0.23	0.40	0.08	0.60	0.29	0.17	0.93	0.53	-1.48	-0.43	-0.19
S&P TSX 60 Composite	**-1.72%**	**-2.07%**	-1.00%	**-2.92%**	**-2.97%**	-1.99%	0.31%	0.50%	0.65%	1.08%	0.81%	1.62%	0.06%	-0.43%	-0.59%	-0.01%	-0.09%	-0.06%	1.08%	1.14%	1.04%	-0.83%	-0.11%	0.35%
CAR t-test	**-2.48**	**-2.11**	-0.83	**-4.21**	**-3.03**	-1.66	0.46	0.52	0.55	1.62	0.86	1.41	0.09	-0.44	-0.49	-0.01	-0.09	-0.05	1.53	1.14	0.85	-0.96	-0.09	0.23
S&P Asia 50	-2.22%	**-3.25%**	-2.55%	**-4.45%**	-2.73%	**-5.15%**	-1.52%	-3.14%	-3.98%	1.74%	0.46%	1.21%	-1.25%	-0.71%	-1.56%	-0.31%	1.91%	2.02%	-1.13%	0.48%	1.35%	-0.16%	-1.08%	-3.10%
CAR t-test	-1.89	**-1.96**	-1.25	**-3.62**	-1.57	**-2.42**	-1.12	-1.64	-1.69	1.26	0.23	0.50	-0.90	-0.36	-0.65	-0.22	0.97	0.84	-0.80	0.24	0.55	-0.10	-0.48	-1.13
SSE Composite	**-2.18%**	**-2.39%**	-1.37%	**-4.00%**	**-3.57%**	**-3.78%**	**-4.59%**	**-5.70%**	**-6.28%**	**2.99%**	1.72%	3.69%	0.44%	-0.30%	-1.17%	0.67%	2.56%	1.23%	0.84%	2.08%	4.13%	1.82%	3.01%	1.06%
CAR t-test	**-2.57**	**-1.99**	-0.93	**-4.04**	**-2.55**	**-2.20**	**-4.06**	**-3.56**	**-3.20**	**2.52**	1.02	1.79	0.37	-0.18	-0.56	0.49	1.33	0.52	0.61	1.07	1.74	0.97	1.13	0.33
Hang Seng	**-2.28%**	**-3.32%**	-3.74%	**-3.79%**	-2.43%	**-4.93%**	**-3.38%**	**-4.10%**	**-5.38%**	1.67%	0.24%	0.88%	-0.80%	-0.69%	-2.28%	-0.95%	1.45%	0.75%	-0.74%	0.71%	0.79%	-0.65%	-0.09%	-1.81%
CAR t-test	**-1.94**	**-2.00**	-1.84	**-2.98**	-1.35	**-2.24**	**-2.41**	**-2.07**	**-2.22**	1.16	0.12	0.35	-0.55	-0.34	-0.91	-0.64	0.69	0.29	-0.49	0.33	0.30	-0.41	-0.04	-0.65
Nikkei 225	-0.47%	**-4.65%**	-3.63%	**-3.70%**	-0.43%	-1.24%	-0.35%	-1.00%	-1.27%	2.23%	1.59%	**4.48%**	-0.12%	1.63%	2.41%	0.97%	1.80%	1.95%	2.47%	3.43%	4.42%	-1.01%	-1.03%	-0.75%
CAR t-test	-0.40	**-2.80**	-1.79	**-3.01**	-0.25	-0.58	-0.27	-0.55	-0.57	1.71	0.86	**1.99**	-0.09	0.89	1.07	0.71	0.94	0.83	1.80	1.77	1.86	-0.64	-0.46	-0.27
STOXX 600	-0.89%	**-4.26%**	**-3.08%**	**-2.46%**	-1.98%	-1.08%	**-1.83%**	-2.24%	-2.05%	0.78%	-0.07%	0.87%	-0.48%	-0.56%	0.23%	-0.15%	0.32%	0.27%	0.23%	1.25%	1.12%	-0.90%	0.55%	1.45%
CAR t-test	-1.07	**-3.61**	**-2.13**	**-2.85**	-1.62	-0.72	**-1.99**	-1.72	-1.29	0.84	-0.05	0.54	-0.51	-0.42	0.14	-0.16	0.25	0.17	0.25	0.96	0.70	-0.86	0.37	0.80
CAC 40	-0.49%	**-4.04%**	**-3.42%**	**-2.83%**	-2.47%	-1.51%	-1.45%	**-2.93%**	-2.68%	0.56%	-0.30%	1.06%	-0.55%	-0.51%	0.17%	0.17%	1.08%	0.90%	0.17%	1.74%	2.15%	-0.97%	1.12%	2.29%
CAR t-test	-0.48	**-2.81**	**-1.94**	**-2.70**	-1.67	-0.83	-1.44	**-2.06**	-1.54	0.56	-0.21	0.61	-0.55	-0.36	0.10	0.17	0.77	0.52	0.17	1.23	1.24	-0.82	0.67	1.11
FTSE 100	-0.78%	**-3.04%**	-1.94%	**-1.66%**	-0.52%	0.30%	**-1.76%**	-1.83%	-1.13%	1.09%	-0.19%	0.70%	-0.57%	-1.27%	-0.31%	0.00%	-0.23%	-2.02%	-0.06%	0.83%	2.05%	-0.60%	1.26%	1.98%
CAR t-test	-0.92	**-2.53**	-1.32	**-1.92**	-0.43	0.20	**-1.94**	-1.43	-0.72	1.17	-0.14	0.43	-0.60	-0.95	-0.19	0.00	-0.17	-1.21	-0.06	0.60	1.21	-0.54	0.81	1.04
DAX 30	-0.75%	**-5.06%**	**-3.42%**	**-3.53%**	-2.85%	-1.82%	-2.10%	**-3.18%**	**-4.09%**	0.65%	-0.35%	0.65%	-0.93%	-0.39%	1.23%	0.03%	1.05%	0.74%	0.26%	1.63%	1.82%	-0.80%	1.07%	2.23%
CAR t-test	-0.73	**-3.47**	**-1.91**	**-3.33**	**-1.90**	-0.99	-1.81	**-1.94**	**-2.04**	0.55	-0.21	0.32	-0.78	-0.23	0.60	0.03	0.62	0.36	0.22	0.96	0.87	-0.60	0.57	0.97
S&P Latin America 40	-3.85%	-3.65%	-2.13%	-2.74%	-3.26%	-0.64%	-0.70%	-0.94%	-1.95%	2.56%	0.79%	2.94%	-0.78%	-0.11%	1.22%	-1.39%	-0.91%	-2.75%	3.03%	4.63%	4.03%	-2.63%	-2.90%	-5.94%
CAR t-test	-1.80	-1.21	-0.58	-1.32	-1.11	-0.18	-0.38	-0.36	-0.61	1.35	0.29	0.90	-0.41	-0.04	0.37	-0.70	-0.33	-0.80	1.46	1.57	1.12	-1.08	-0.84	-1.41
IPC MEXICO	**-2.15%**	-1.92%	-1.22%	**-2.14%**	-1.55%	**-3.64%**	-1.07%	-0.78%	-0.75%	1.42%	1.03%	-0.20%	-0.56%	-1.02%	0.15%	-0.47%	0.34%	-0.38%	0.12%	-0.16%	-0.33%	-0.07%	0.44%	0.75%
CAR t-test	**-2.41**	-1.52	-0.79	**-2.44**	-1.25	**-2.40**	-1.16	-0.60	-0.47	1.50	0.77	-0.12	-0.59	-0.76	0.09	-0.47	0.24	-0.22	0.11	-0.11	-0.18	-0.05	0.21	0.29
Ibovespa	-2.83%	-2.53%	-2.83%	-0.91%	-1.79%	-0.15%	-2.43%	0.67%	-1.56%	0.31%	1.53%	2.47%	1.19%	2.10%	2.89%	-0.97%	0.48%	-1.04%	**3.70%**	3.38%	3.15%	-3.40%	-3.61%	-5.50%
CAR t-test	-1.63	-1.03	-0.94	-0.52	-0.73	-0.05	-1.55	0.30	-0.57	0.19	0.65	0.86	0.73	0.91	1.02	-0.57	0.20	-0.35	**2.11**	1.36	1.04	-1.68	-1.26	-1.57
S&P MERVAL	-0.08%	-3.86%	-1.24%	-3.28%	-4.43%	-4.54%	**-8.73%**	2.04%	-5.03%	-0.92%	-4.63%	-6.58%	-3.66%	-5.56%	-2.87%	**-6.62%**	-7.33%	-0.85%	**6.03%**	**13.10%**	8.94%	-5.44%	-2.60%	-2.27%
CAR t-test	-0.04	-1.42	-0.37	-1.66	-1.58	-1.32	**-3.86**	0.64	-1.28	-0.36	-1.28	-1.48	-1.41	-1.52	-0.64	**-2.31**	-1.81	-0.17	**1.96**	**3.02**	1.68	-1.53	-0.52	-0.37

Table 11 – Cumulative Abnormal Returns (part 1)

CUMULATIVE ABNORMAL RETURNS												
EVENT DATE	**02/10/2019**			**18/10/2019**			**02/12/2019**			**22/01/2020**		
CAR TYPE	(0, 1)	(0, 3)	(0, 5)	(0, 1)	(0, 3)	(0, 5)	(0, 1)	(0, 3)	(0, 5)	(0, 1)	(0, 3)	(0, 5)
MSCI World Index	-1.27%	-0.32%	-0.99%	0.30%	0.21%	0.83%	-1.36%	-0.76%	-0.23%	-0.27%	**-2.51%**	-1.92%
CAR t-test	-1.10	-0.20	-0.49	0.27	0.13	0.42	-1.30	-0.51	-0.13	-0.31	**-2.06**	-1.29
S&P 500	-1.04%	-0.10%	-0.79%	0.28%	0.19%	0.77%	-1.64%	-0.96%	-0.47%	-0.04%	-2.72%	-1.99%
CAR t-test	-0.70	-0.05	-0.31	0.19	0.09	0.29	-1.20	-0.49	-0.20	-0.04	-1.84	-1.10
NASDAQ	-0.48%	0.56%	-0.12%	0.05%	-0.50%	0.99%	-1.82%	-1.37%	-0.91%	0.12%	-2.93%	-1.67%
CAR t-test	-0.25	0.21	-0.04	0.03	-0.19	0.30	-1.07	-0.57	-0.31	0.09	-1.56	-0.73
Dow Jones Industrial	-1.43%	-0.40%	-0.92%	-0.74%	-0.72%	-0.26%	-2.05%	-1.50%	-0.75%	-0.27%	-2.58%	-2.03%
CAR t-test	-0.96	-0.19	-0.36	-0.49	-0.34	-0.10	-1.49	-0.77	-0.32	-0.26	-1.74	-1.12
S&P TSX 60 Composite	-0.51%	-0.22%	-0.51%	-0.07%	-0.59%	-0.18%	-0.97%	-1.29%	-0.82%	0.17%	-0.97%	-0.69%
CAR t-test	-0.56	-0.17	-0.33	-0.08	-0.46	-0.11	-1.18	-1.11	-0.58	0.27	-1.10	-0.64
S&P Asia 50	-0.92%	-1.06%	-0.90%	-0.27%	-0.36%	-0.22%	-0.21%	-0.76%	0.57%	-0.32%	-1.46%	**-6.14%**
CAR t-test	-0.58	-0.47	-0.33	-0.18	-0.17	-0.08	-0.15	-0.39	0.24	-0.25	-0.80	**-2.75**
SSE Composite	-0.71%	0.38%	2.33%	-1.36%	-1.37%	-0.99%	0.36%	0.79%	1.23%	-2.67%	**-9.55%**	**-6.77%**
CAR t-test	-0.38	0.14	0.72	-0.72	-0.52	-0.30	0.22	0.33	0.43	-1.67	**-4.23**	**-2.45**
Hang Seng	0.07%	-0.77%	-1.49%	-0.41%	-0.96%	-0.53%	0.14%	-0.56%	0.46%	-0.36%	-3.17%	**-6.43%**
CAR t-test	0.04	-0.33	-0.53	-0.26	-0.43	-0.19	0.10	-0.27	0.18	-0.26	-1.62	**-2.68**
Nikkei 225	-2.49%	-2.31%	-1.91%	0.51%	1.48%	2.08%	0.31%	-0.09%	0.41%	-0.38%	-2.38%	-2.31%
CAR t-test	-1.54	-1.01	-0.68	0.32	0.65	0.75	0.21	-0.04	0.16	-0.27	-1.21	-0.96
STOXX 600	**-2.76%**	-1.34%	-2.04%	0.24%	0.40%	1.11%	**-2.32%**	-1.37%	-0.55%	-0.93%	-2.50%	-1.36%
CAR t-test	**-2.44**	-0.84	-1.04	0.21	0.25	0.57	**-2.10**	-0.88	-0.29	-0.94	-1.79	-0.79
CAC 40	**-2.90%**	-1.41%	-1.83%	-0.49%	-0.45%	0.70%	**-3.21%**	-2.07%	-1.60%	-1.42%	**-3.45%**	-2.08%
CAR t-test	**-2.21**	-0.76	-0.80	-0.37	-0.24	0.31	**-2.49**	-1.14	-0.72	-1.22	**-2.10**	-1.04
FTSE 100	**-3.89%**	-2.19%	-2.60%	-0.25%	1.10%	1.98%	**-2.62%**	-2.94%	-1.63%	-1.44%	**-2.80%**	-1.91%
CAR t-test	**-3.48**	-1.39	-1.34	-0.22	0.68	1.00	**-2.35**	-1.86	-0.84	-1.39	**-1.92**	-1.07
DAX 30	-2.08%	-2.44%	-0.84%	0.73%	1.13%	1.89%	-2.01%	-1.64%	-1.38%	-1.41%	-2.95%	-2.05%
CAR t-test	-1.50	-1.24	-0.35	0.52	0.57	0.78	-1.48	-0.85	-0.59	-1.16	-1.72	-0.97
S&P Latin America 40	-0.87%	-0.84%	-0.85%	1.11%	4.15%	4.74%	0.36%	2.99%	3.98%	1.81%	-3.15%	-2.43%
CAR t-test	-0.38	-0.26	-0.21	0.48	1.28	1.19	0.17	1.00	1.09	0.93	-1.15	-0.72
IPC MEXICO	-1.04%	0.26%	-0.68%	-0.08%	0.34%	0.07%	-1.26%	-1.46%	-2.11%	-0.37%	**-3.38%**	-1.15%
CAR t-test	-0.68	0.12	-0.26	-0.05	0.16	0.03	-1.00	-0.82	-0.97	-0.32	**-2.06**	-0.57
Ibovespa	-2.73%	-3.93%	-3.52%	0.74%	1.96%	1.59%	0.49%	1.83%	1.98%	1.93%	-2.57%	-1.97%
CAR t-test	-1.46	-1.49	-1.09	0.40	0.75	0.50	0.29	0.77	0.68	1.22	-1.15	-0.72
S&P MERVAL	0.98%	2.85%	0.87%	1.79%	2.55%	7.81%	-5.21%	2.65%	5.32%	-1.10%	-5.17%	-3.59%
CAR t-test	0.17	0.35	0.09	0.31	0.32	0.79	-0.91	0.33	0.53	-0.19	-0.63	-0.36

Table 12 – Cumulative Abnormal Returns (part 2)

AVERAGE ABNORMAL RETURNS											
Announcements to China	**AAR(-5)**	**AAR(-4)**	**AAR(-3)**	**AAR(-2)**	**AAR(-1)**	**AAR(0)**	**AAR(1)**	**AAR(2)**	**AAR(3)**	**AAR(4)**	**AAR(5)**
MSCI World Index	0.17%	0.01%	-0.18%	0.25%	0.16%	**-0.45%**	-0.36%	0.17%	-0.02%	0.22%	0.09%
Adjusted Patell Z	0.66	0.02	-0.82	1.36	0.92	**-2.47**	-1.78	0.69	-0.23	1.01	0.63
Adjusted StdCSect Z	0.90	0.03	-0.66	1.49	1.19	-1.67	-0.92	0.40	-0.23	1.12	0.74
Skewness Corrected T	1.14	0.04	-0.78	1.73	0.99	-1.64	-0.97	0.50	-0.10	1.05	0.54
S&P 500	0.16%	0.06%	-0.23%	0.23%	0.21%	**-0.57%**	-0.42%	0.33%	-0.12%	0.31%	0.04%
Adjusted Patell Z	0.40	0.19	-0.82	1.05	0.90	**-2.48**	-1.69	1.21	-0.58	1.12	0.36
Adjusted StdCSect Z	0.54	0.32	-0.71	1.01	1.18	-1.56	-0.95	0.68	-0.48	1.30	0.41
Skewness Corrected T	0.77	0.39	-0.85	1.10	1.38	-1.85	-0.99	0.93	-0.51	1.26	0.28
NASDAQ	0.17%	0.10%	-0.26%	0.28%	0.27%	**-0.66%**	-0.44%	0.38%	-0.05%	0.26%	0.01%
Adjusted Patell Z	0.35	0.30	-0.75	1.02	0.91	**-2.24**	-1.24	1.12	-0.36	0.70	0.28
Adjusted StdCSect Z	0.50	0.58	-0.60	1.07	1.29	-1.62	-0.70	0.68	-0.21	0.68	0.32
Skewness Corrected T	0.74	0.64	-0.69	1.05	1.30	-1.63	-0.82	0.98	-0.20	0.71	0.10
Dow Jones Industrial	0.15%	0.10%	-0.24%	0.31%	0.16%	**-0.70%**	-0.39%	0.36%	-0.20%	0.32%	0.03%
Adjusted Patell Z	0.36	0.25	-0.78	1.21	0.73	**-2.78**	-1.55	1.15	-0.89	1.16	0.21
Adjusted StdCSect Z	0.35	0.42	-0.71	1.28	0.75	-1.77	-0.89	0.59	-0.90	1.31	0.28
Skewness Corrected T	0.54	0.52	-0.95	1.28	0.78	**-2.53**	-0.84	0.73	-0.82	1.26	0.14
S&P TSX 60 Composite	0.08%	**0.28%**	-0.17%	0.15%	0.17%	-0.28%	-0.09%	0.12%	-0.16%	0.27%	0.14%
Adjusted Patell Z	0.39	1.62	-0.85	0.85	1.05	-1.58	-0.38	0.64	-0.95	1.43	0.84
Adjusted StdCSect Z	0.68	**2.59**	-0.94	1.07	1.47	-1.04	-0.22	0.73	-0.89	1.25	0.75
Skewness Corrected T	0.78	**1.98**	-1.02	1.22	1.06	-1.30	-0.32	0.77	-0.82	1.34	0.90
S&P Asia 50	-0.33%	**-0.53%**	0.14%	0.25%	-0.23%	**-0.52%**	**-0.64%**	0.12%	0.03%	**-0.61%**	0.14%
Adjusted Patell Z	-0.98	-1.50	0.47	0.73	-0.55	-1.61	**-2.06**	0.45	0.03	**-1.95**	0.64
Adjusted StdCSect Z	-0.87	-1.86	0.57	0.74	-0.42	**-2.21**	-1.25	0.33	0.03	-1.32	0.50
Skewness Corrected T	-0.78	**-2.05**	0.63	0.78	-0.52	-1.78	-1.31	0.20	0.04	-1.15	0.43
SSE Composite	-0.06%	**-1.40%**	**0.73%**	0.37%	-0.24%	-0.15%	-0.35%	0.35%	-0.18%	0.45%	-0.44%
Adjusted Patell Z	-0.03	**-3.77**	**2.73**	1.38	-0.37	-1.22	-1.68	1.16	-0.94	1.21	-0.77
Adjusted StdCSect Z	-0.02	**-2.37**	**2.42**	0.94	-0.37	-0.84	-0.54	1.23	-0.72	0.78	-0.59
Skewness Corrected T	-0.08	**-3.17**	**4.08**	0.82	-0.78	-0.18	-0.42	1.25	-0.37	1.05	-1.10
Hang Seng	**-0.61%**	-0.03%	-0.13%	0.20%	-0.25%	**-0.55%**	**-0.81%**	**0.73%**	-0.39%	**-0.62%**	-0.32%
Adjusted Patell Z	-1.73	0.15	-0.50	0.60	-0.61	-1.64	**-2.45**	**2.01**	-1.18	**-1.98**	-0.67
Adjusted StdCSect Z	**-1.99**	0.11	-0.48	0.46	-0.59	**-2.07**	-1.54	**3.11**	-1.21	-1.22	-0.55
Skewness Corrected T	-1.88	-0.11	-0.38	0.44	-0.76	-1.52	-1.52	**4.57**	-1.32	-1.15	-0.65
Nikkei 225	-0.42%	-0.27%	-0.15%	-0.11%	-0.01%	0.41%	-0.41%	0.11%	0.06%	0.03%	0.60%
Adjusted Patell Z	-1.34	-0.78	-0.44	-0.23	0.04	1.30	-1.40	0.28	0.09	0.05	1.83
Adjusted StdCSect Z	-1.76	-0.81	-0.44	-0.26	0.04	1.44	-0.61	0.19	0.05	0.05	1.88
Skewness Corrected T	-1.88	-1.12	-0.43	-0.38	-0.03	1.05	-0.71	0.20	0.10	0.07	1.89
STOXX 600	**0.38%**	-0.05%	-0.09%	**0.22%**	0.13%	**-0.44%**	-0.27%	-0.03%	-0.13%	**0.45%**	0.14%
Adjusted Patell Z	1.68	-0.14	-0.36	0.98	0.68	**-1.97**	-1.17	-0.30	-0.67	**1.94**	0.64
Adjusted StdCSect Z	**3.42**	-0.17	-0.32	**2.71**	0.57	-1.77	-1.06	-0.25	-0.38	**1.98**	0.78
Skewness Corrected T	**2.24**	-0.27	-0.39	**2.87**	0.32	**-1.98**	-0.99	-0.14	-0.41	1.41	0.78
CAC 40	**0.44%**	-0.02%	-0.08%	**0.24%**	0.22%	**-0.39%**	-0.28%	0.14%	-0.25%	0.42%	0.24%
Adjusted Patell Z	1.72	-0.01	-0.17	0.91	1.04	-1.57	-0.98	0.45	-1.05	1.56	0.95
Adjusted StdCSect Z	**3.60**	-0.01	-0.14	**2.63**	0.82	-1.66	-0.85	0.36	-0.63	1.63	1.15
Skewness Corrected T	**3.71**	-0.15	-0.30	**2.56**	0.46	**-2.02**	-0.92	0.38	-0.67	1.23	1.28
FTSE 100	0.01%	0.13%	-0.31%	0.02%	0.13%	**-0.56%**	0.01%	0.07%	-0.15%	0.40%	0.17%
Adjusted Patell Z	0.08	0.59	-1.32	0.07	0.66	**-2.45**	0.03	0.11	-0.69	1.69	0.83
Adjusted StdCSect Z	0.14	0.66	-0.96	0.10	0.85	**-2.13**	0.03	0.13	-0.40	1.36	0.68
Skewness Corrected T	0.14	0.44	-1.07	0.18	0.60	**-2.56**	0.09	0.34	-0.36	1.23	0.64
DAX 30	**0.44%**	0.01%	-0.06%	**0.34%**	0.32%	-0.47%	-0.43%	-0.07%	-0.04%	0.50%	0.18%
Adjusted Patell Z	1.54	0.07	-0.19	1.16	1.20	-1.72	-1.51	-0.47	-0.28	1.67	0.72
Adjusted StdCSect Z	**2.40**	0.09	-0.17	**3.07**	1.06	-1.68	-1.25	-0.33	-0.17	1.38	0.83
Skewness Corrected T	**1.98**	0.04	-0.22	**2.40**	0.76	-1.72	-1.30	-0.22	-0.15	1.14	0.73

Table 13 - Average Abnormal Return for US &China Trade War (part 1)

AVERAGE ABNORMAL RETURNS											
Announcements to China	**AAR(-5)**	**AAR(-4)**	**AAR(-3)**	**AAR(-2)**	**AAR(-1)**	**AAR(0)**	**AAR(1)**	**AAR(2)**	**AAR(3)**	**AAR(4)**	**AAR(5)**
S&P Latin America 40	0.75%	-0.47%	0.18%	0.39%	0.43%	-0.66%	-0.15%	0.64%	-0.62%	0.35%	-0.21%
Adjusted Patell Z	1.61	-0.84	0.41	0.73	0.88	-1.32	-0.12	1.24	-1.23	0.76	-0.36
Adjusted StdCSect Z	1.24	-1.28	0.43	0.86	0.91	-1.02	-0.11	1.84	-1.33	0.77	-0.29
Skewness Corrected T	1.12	-1.32	0.37	1.01	0.77	-0.96	-0.30	1.82	-1.38	0.60	-0.35
IPC MEXICO	0.04%	0.06%	**0.42%**	0.19%	**0.52%**	-0.14%	**-0.48%**	0.23%	-0.07%	-0.19%	-0.06%
Adjusted Patell Z	0.20	0.29	**1.94**	0.73	**2.28**	-0.70	**-2.05**	0.82	-0.21	-0.91	-0.24
Adjusted StdCSect Z	0.16	0.14	1.72	0.68	1.43	-0.80	-1.67	0.78	-0.37	-0.86	-0.25
Skewness Corrected T	0.16	0.16	0.99	0.70	1.61	-0.61	-1.78	0.97	-0.49	-0.89	-0.30
Ibovespa	0.10%	-0.51%	0.11%	0.10%	0.23%	-0.38%	-0.29%	**0.66%**	0.03%	0.12%	-0.47%
Adjusted Patell Z	0.21	-1.11	0.32	0.18	0.53	-0.88	-0.58	1.58	0.15	0.30	-1.07
Adjusted StdCSect Z	0.23	-1.21	0.49	0.20	0.60	-1.00	-0.42	1.76	0.17	0.21	-0.94
Skewness Corrected T	0.24	-1.26	0.35	0.25	0.67	-0.79	-0.47	**2.03**	0.11	0.14	-0.98
S&P MERVAL	1.38%	0.00%	-0.06%	0.16%	**0.76%**	-0.73%	**-2.11%**	0.54%	0.64%	0.17%	-0.31%
Adjusted Patell Z	1.84	-0.06	-0.30	-0.06	1.16	-1.28	**-3.32**	0.63	0.80	0.08	-0.35
Adjusted StdCSect Z	0.97	-0.07	-0.16	-0.07	**1.99**	-1.53	-1.55	0.39	0.48	0.10	-0.20
Skewness Corrected T	1.18	-0.03	0.03	0.30	**2.71**	-0.77	-1.80	0.63	0.70	0.30	-0.26

Table 14 - Average Abnormal Return for US &China Trade War (part 2)

AVERAGE ABNORMAL RETURNS											
Announcements to EU	**AAR(-5)**	**AAR(-4)**	**AAR(-3)**	**AAR(-2)**	**AAR(-1)**	**AAR(0)**	**AAR(1)**	**AAR(2)**	**AAR(3)**	**AAR(4)**	**AAR(5)**
MSCI World Index	**0.55%**	0.10%	0.30%	-0.01%	-0.37%	**-0.70%**	0.05%	0.20%	-0.39%	0.10%	0.17%
Adjusted Patell Z	1.46	0.37	0.86	-0.05	-1.02	-1.81	0.05	0.40	-1.33	0.42	0.41
Adjusted StdCSect Z	**2.01**	0.79	1.28	-0.28	-1.60	**-2.03**	0.06	0.43	-0.93	0.35	0.90
Skewness Corrected T	**2.54**	0.80	1.09	0.03	-1.36	**-2.78**	0.15	0.59	-1.30	0.04	1.03
S&P 500	0.40%	0.10%	0.34%	0.24%	-0.45%	**-0.80%**	0.19%	0.15%	-0.44%	0.09%	0.18%
Adjusted Patell Z	0.71	0.23	0.77	0.52	-0.93	-1.55	0.33	0.12	-1.14	0.38	0.30
Adjusted StdCSect Z	1.25	0.53	1.08	1.68	-1.58	**-2.13**	0.48	0.11	-1.00	0.31	0.52
Skewness Corrected T	1.48	0.61	0.80	0.86	-1.61	**-2.86**	0.43	0.31	-1.34	0.02	0.72
NASDAQ	0.52%	0.13%	0.28%	0.31%	-0.40%	**-0.90%**	0.36%	0.02%	-0.55%	0.34%	0.30%
Adjusted Patell Z	0.72	0.24	0.58	0.53	-0.66	-1.38	0.53	-0.11	-1.14	0.75	0.41
Adjusted StdCSect Z	1.17	0.38	0.67	1.50	-1.40	**-2.60**	0.88	-0.12	-1.08	0.66	0.79
Skewness Corrected T	1.28	0.47	0.40	1.00	-1.20	-1.62	0.80	0.08	-1.63	0.27	0.84
Dow Jones Industrial	**0.54%**	0.12%	0.41%	0.12%	**-0.56%**	**-0.99%**	-0.14%	0.27%	-0.45%	0.11%	0.20%
Adjusted Patell Z	1.05	0.29	0.94	0.25	-1.20	**-1.93**	-0.33	0.40	-1.18	0.37	0.36
Adjusted StdCSect Z	**2.32**	0.68	1.49	1.46	**-2.15**	**-2.87**	-0.49	0.42	-1.06	0.35	0.71
Skewness Corrected T	**3.02**	0.62	1.25	1.46	**-2.30**	**-2.85**	-0.54	0.69	-1.53	0.16	0.69
S&P TSX 60 Composite	**0.22%**	0.07%	0.03%	0.00%	**-0.49%**	**-0.36%**	0.02%	-0.02%	**-0.40%**	0.12%	0.10%
Adjusted Patell Z	0.78	0.32	0.23	0.06	-1.59	-1.08	0.03	-0.21	-1.48	0.51	0.28
Adjusted StdCSect Z	**1.93**	0.79	0.30	0.19	-1.84	-1.68	0.04	-0.31	**-2.25**	0.46	0.48
Skewness Corrected T	1.06	1.12	0.01	-0.10	**-2.65**	**-1.99**	-0.05	-0.05	**-6.46**	0.24	0.56
S&P Asia 50	0.08%	0.44%	0.07%	0.12%	**-0.92%**	-0.01%	-0.42%	-0.14%	-0.34%	0.32%	**-1.08%**
Adjusted Patell Z	0.15	0.81	0.19	0.18	**-1.93**	0.10	-0.90	-0.28	-0.70	0.50	**-2.19**
Adjusted StdCSect Z	0.12	1.45	0.44	0.40	-1.36	0.11	-1.10	-0.38	-0.84	0.47	-1.19
Skewness Corrected T	0.14	1.72	0.16	0.50	-1.39	0.02	-1.46	-0.41	-0.85	0.36	-1.84
SSE Composite	-0.03%	0.18%	**-0.47%**	-0.33%	**-0.54%**	-0.51%	-0.58%	**-1.89%**	0.55%	**0.58%**	**0.80%**
Adjusted Patell Z	-0.06	0.23	-0.70	-0.47	-0.94	-0.74	-1.05	**-3.39**	0.94	0.97	1.31
Adjusted StdCSect Z	-0.08	0.41	**-2.10**	-0.92	-1.51	-1.26	-0.79	-0.93	1.57	**2.14**	**2.16**
Skewness Corrected T	-0.08	0.59	**-2.61**	-0.71	**-2.06**	-1.40	-1.14	-1.37	0.97	**1.95**	**2.48**
Hang Seng	0.90%	-0.11%	0.25%	-0.22%	**-0.93%**	0.23%	-0.37%	-0.51%	-0.72%	-0.40%	-0.24%
Adjusted Patell Z	1.59	-0.16	0.47	-0.46	**-1.92**	0.50	-0.76	-0.92	-1.40	-0.80	-0.45
Adjusted StdCSect Z	1.38	-0.20	1.84	-0.73	-1.05	0.68	-0.90	-1.23	-0.88	-0.46	-1.44
Skewness Corrected T	1.52	-0.29	1.87	-0.60	-1.06	0.76	-1.28	-1.28	-1.20	-0.55	-1.45
Nikkei 225	0.10%	**0.42%**	0.45%	0.16%	-0.23%	0.34%	-0.86%	-0.07%	-0.24%	0.22%	0.17%
Adjusted Patell Z	0.16	0.73	0.80	0.29	-0.48	0.67	-1.56	-0.15	-0.53	0.34	0.35
Adjusted StdCSect Z	0.28	1.59	0.83	0.43	-0.74	1.12	-1.85	-0.24	-0.41	0.57	0.70
Skewness Corrected T	0.33	**2.56**	0.94	0.57	-0.62	0.89	-1.82	-0.37	-0.54	0.65	0.43
STOXX 600	0.64%	0.07%	**0.68%**	-0.06%	**-0.54%**	**-1.22%**	-0.22%	**0.68%**	-0.44%	0.34%	0.16%
Adjusted Patell Z	1.61	0.19	1.76	-0.16	-1.37	**-3.07**	-0.64	1.77	-1.30	0.92	0.42
Adjusted StdCSect Z	1.03	0.34	**3.57**	-0.49	**-2.02**	**-2.03**	-0.76	**3.06**	-0.70	0.73	1.00
Skewness Corrected T	1.22	0.28	**3.64**	-0.21	**-3.23**	**-2.53**	-0.60	1.68	-0.90	0.42	0.68
CAC 40	**0.50%**	0.00%	**0.54%**	**-0.34%**	**-0.49%**	**-1.27%**	**-0.78%**	**0.80%**	-0.45%	0.62%	0.05%
Adjusted Patell Z	1.25	-0.02	1.40	-0.86	-1.27	**-3.22**	**-1.99**	**2.04**	-1.27	1.58	0.13
Adjusted StdCSect Z	**2.19**	-0.03	**2.28**	**-3.83**	**-2.04**	**-1.91**	**-1.94**	**4.74**	-0.67	1.32	0.51
Skewness Corrected T	**1.99**	0.09	**2.02**	**-7.75**	-1.17	**-3.44**	**-2.01**	**3.04**	-0.79	0.77	0.74
FTSE 100	0.63%	0.00%	**0.71%**	0.10%	**-0.40%**	**-1.38%**	0.18%	**0.79%**	**-1.08%**	**0.80%**	0.08%
Adjusted Patell Z	1.26	-0.01	1.50	0.21	-0.83	**-2.86**	0.30	1.73	**-2.41**	1.71	0.15
Adjusted StdCSect Z	0.81	-0.03	**4.51**	0.59	-1.31	**-2.18**	0.31	**2.76**	-1.58	**8.56**	0.33
Skewness Corrected T	1.11	0.16	**5.32**	0.40	**-2.09**	**-2.28**	0.28	1.76	**-2.05**	**8.74**	0.26
DAX 30	0.28%	0.06%	**0.54%**	-0.06%	**-0.68%**	**-1.66%**	-0.35%	**0.75%**	-0.59%	0.36%	0.28%
Adjusted Patell Z	0.58	0.13	1.23	-0.17	-1.51	**-3.65**	-0.82	1.69	-1.48	0.85	0.63
Adjusted StdCSect Z	0.51	0.28	**2.06**	-0.30	**-2.67**	**-2.85**	-1.07	**3.49**	-0.82	0.73	0.90
Skewness Corrected T	0.62	0.33	1.60	-0.10	**-4.41**	**-3.64**	-1.06	1.60	-1.11	0.42	0.54

Table 15 - Average Abnormal Return for US & EU Trade War (part 1)

AVERAGE ABNORMAL RETURNS											
Announcements to EU	**AAR(-5)**	**AAR(-4)**	**AAR(-3)**	**AAR(-2)**	**AAR(-1)**	**AAR(0)**	**AAR(1)**	**AAR(2)**	**AAR(3)**	**AAR(4)**	**AAR(5)**
S&P Latin America 40	**0.93%**	-0.69%	-0.38%	0.52%	**-1.10%**	0.15%	0.46%	1.16%	-0.97%	0.42%	0.16%
Adjusted Patell Z	1.14	-0.97	-0.46	0.72	-1.49	0.26	0.57	1.38	-1.35	0.64	0.12
Adjusted StdCSect Z	1.74	-1.34	-0.64	1.08	-1.78	0.29	1.44	1.29	-0.81	0.70	0.17
Skewness Corrected T	**1.90**	-1.47	-0.86	1.01	**-3.30**	0.04	1.16	0.74	-0.85	0.71	0.16
IPC MEXICO	-0.03%	0.13%	0.30%	**0.36%**	**-0.36%**	**-0.75%**	0.06%	0.32%	-0.69%	0.07%	0.02%
Adjusted Patell Z	-0.16	0.36	0.76	0.70	-0.82	-1.45	0.02	0.45	-1.59	0.25	0.18
Adjusted StdCSect Z	-0.26	0.22	1.06	**3.12**	**-2.23**	**-2.50**	0.03	0.34	-1.11	0.22	0.23
Skewness Corrected T	-0.09	0.19	1.24	**4.25**	**-2.46**	**-3.35**	0.20	0.67	-1.35	0.17	0.07
Ibovespa	0.21%	-0.04%	0.41%	0.26%	**-0.77%**	-0.46%	**0.57%**	0.53%	-1.32%	0.17%	0.03%
Adjusted Patell Z	0.22	-0.11	0.73	0.42	-1.27	-0.60	0.91	0.77	1.88	0.38	-0.03
Adjusted StdCSect Z	0.22	-0.15	1.12	1.04	**-2.16**	-0.41	**2.13**	0.86	-1.44	0.40	-0.05
Skewness Corrected T	0.39	-0.24	1.31	0.77	**-3.58**	-0.68	**1.91**	0.55	-1.73	0.41	0.07
S&P MERVAL	1.15%	-0.41%	1.59%	0.30%	1.08%	0.08%	-0.97%	2.36%	-0.76%	1.48%	0.40%
Adjusted Patell Z	0.57	-0.20	0.78	0.15	0.54	0.04	-0.47	1.17	-0.37	0.72	0.20
Adjusted StdCSect Z	0.93	-0.30	1.04	0.41	0.63	0.07	-1.01	1.21	-0.73	1.18	0.43
Skewness Corrected T	1.18	-0.38	1.20	0.24	0.43	-0.01	-0.59	0.82	-0.54	0.65	0.57

Table 16 - Average Abnormal Return for US & EU Trade War (part 2)

CUMULATIVE AVERAGE ABNORMAL RETURNS					
Announcements to China	**(0, 1)**	**(0, 2)**	**(0, 3)**	**(0, 4)**	**(0, 5)**
MSCI World Index	**-0.87%**	-0.73%	-0.78%	-0.57%	-0.44%
Adjusted Patell Z	**-2.71**	-1.85	-1.71	-1.12	-0.79
Adjusted StdCSect Z	-1.24	-0.99	-1.03	-0.78	-0.75
Skewness Corrected T	-1.56	-1.10	-1.17	-0.69	-0.66
S&P 500	**-1.13%**	-0.81%	-0.96%	-0.66%	-0.56%
Adjusted Patell Z	**-2.89**	-1.68	-1.74	-1.06	-0.83
Adjusted StdCSect Z	-1.35	-1.10	-1.21	-0.89	-0.94
Skewness Corrected T	-1.64	-1.10	-1.32	-0.72	-0.74
NASDAQ	**-1.14%**	-0.78%	-0.89%	-0.66%	-0.57%
Adjusted Patell Z	**-2.43**	-1.34	-1.34	-0.89	-0.70
Adjusted StdCSect Z	-1.24	-1.06	-1.05	-0.70	-0.72
Skewness Corrected T	-1.45	-1.04	-1.20	-0.62	-0.66
Dow Jones Industrial	**-1.26%**	-0.92%	**-1.18%**	-0.85%	-0.79%
Adjusted Patell Z	**-3.00**	-1.80	**-1.99**	-1.27	-1.08
Adjusted StdCSect Z	-1.45	-1.08	-1.21	-0.98	-1.00
Skewness Corrected T	-1.76	-1.05	-1.22	-0.75	-0.80
S&P TSX 60 Composite	-0.35%	-0.24%	-0.41%	-0.15%	0.00%
Adjusted Patell Z	-1.37	-0.75	-1.12	-0.37	0.00
Adjusted StdCSect Z	-0.64	-0.43	-0.76	-0.27	0.01
Skewness Corrected T	-0.86	-0.56	-0.94	-0.33	-0.02
S&P Asia 50	**-1.25%**	-1.10%	-1.09%	**-1.75%**	-1.53%
Adjusted Patell Z	**-2.30**	-1.65	-1.41	**-2.04**	-1.63
Adjusted StdCSect Z	-1.60	-1.29	-1.35	-1.34	-1.38
Skewness Corrected T	**-2.01**	-1.47	-1.45	-1.44	-1.50
SSE Composite	**-0.85%**	-0.51%	-0.79%	-0.43%	-0.65%
Adjusted Patell Z	**-1.94**	-0.95	-1.27	-0.62	-0.86
Adjusted StdCSect Z	-1.02	-0.68	-0.97	-0.61	-0.72
Skewness Corrected T	-0.56	-0.17	-0.33	0.07	-0.27
Hang Seng	**-1.46%**	-0.74%	-1.16%	**-1.86%**	**-2.10%**
Adjusted Patell Z	**-2.68**	-1.11	-1.51	**-2.17**	**-2.24**
Adjusted StdCSect Z	**-1.98**	-1.13	-1.45	-1.45	**-1.97**
Skewness Corrected T	**-2.08**	-1.08	-1.59	-1.50	**-2.20**
Nikkei 225	-0.03%	0.06%	0.09%	0.11%	0.72%
Adjusted Patell Z	-0.07	0.10	0.13	0.14	0.85
Adjusted StdCSect Z	-0.09	0.00	0.00	0.00	0.55
Skewness Corrected T	-0.03	0.13	0.14	0.14	0.76
STOXX 600	**-0.73%**	-0.79%	-0.95%	-0.50%	-0.35%
Adjusted Patell Z	**-1.94**	-1.74	-1.80	-0.85	-0.55
Adjusted StdCSect Z	-1.60	-1.17	-1.20	-0.68	-0.59
Skewness Corrected T	**-2.09**	-1.42	-1.61	-0.65	-0.57
CAC 40	**-0.66%**	-0.54%	-0.81%	-0.41%	-0.16%
Adjusted Patell Z	-1.59	-1.07	-1.39	-0.63	-0.23
Adjusted StdCSect Z	-1.46	-0.75	-0.94	-0.42	-0.22
Skewness Corrected T	**-2.23**	-0.97	-1.12	-0.43	-0.20
FTSE 100	**-0.57%**	-0.54%	-0.70%	-0.31%	-0.11%
Adjusted Patell Z	**-1.98**	-1.31	-1.48	-0.58	-0.19
Adjusted StdCSect Z	-1.64	-1.19	-1.44	-0.58	-0.32
Skewness Corrected T	-1.53	-1.10	-1.37	-0.32	-0.08
DAX 30	**-0.93%**	**-1.07%**	-1.15%	-0.67%	-0.46%
Adjusted Patell Z	**-2.09**	**-1.95**	-1.82	-0.95	-0.59
Adjusted StdCSect Z	-1.64	-1.25	-1.22	-0.72	-0.60
Skewness Corrected T	**-2.38**	-1.38	-1.33	-0.54	-0.44

Table 17 – Cumulative Average Abnormal Return for the US & China Trade War (part 1)

CUMULATIVE AVERAGE ABNORMAL RETURNS					
Announcements to China	**(0, 1)**	**(0, 2)**	**(0, 3)**	**(0, 4)**	**(0, 5)**
S&P Latin America 40	-0.73%	-0.10%	-0.72%	-0.34%	-0.52%
Adjusted Patell Z	-0.99	-0.11	-0.69	-0.29	-0.41
Adjusted StdCSect Z	-0.76	-0.05	-0.73	-0.21	-0.38
Skewness Corrected T	-0.82	-0.17	-0.68	-0.31	-0.57
IPC MEXICO	-0.68%	-0.48%	-0.53%	-0.76%	**-0.82%**
Adjusted Patell Z	-1.81	-1.04	-1.00	-1.27	-1.25
Adjusted StdCSect Z	-1.38	-1.13	-1.32	-1.50	-1.50
Skewness Corrected T	-1.40	-0.90	-1.25	-1.64	**-2.13**
Ibovespa	-0.63%	0.05%	0.12%	0.25%	-0.22%
Adjusted Patell Z	-0.98	0.07	0.13	0.24	-0.19
Adjusted StdCSect Z	-0.71	0.14	0.24	0.26	-0.12
Skewness Corrected T	-0.70	-0.01	0.02	0.11	-0.33
S&P MERVAL	**-2.87%**	**-2.48%**	-1.98%	-1.92%	-2.14%
Adjusted Patell Z	**-3.05**	**-2.15**	-1.49	-1.29	-1.32
Adjusted StdCSect Z	-1.85	**-1.97**	-1.14	-1.26	-1.58
Skewness Corrected T	-1.40	-0.73	-0.48	-0.45	-0.72

Table 18 - Cumulative Average Abnormal Return for the US & China Trade War (part 2)

CUMULATIVE AVERAGE ABNORMAL RETURNS					
Announcements to EU	**(-1, 1)**	**(-1, 2)**	**(-1, 3)**	**(-1, 4)**	**(-1, 5)**
MSCI World Index	**-1.00%**	**-0.85%**	**-1.33%**	-1.18%	-1.03%
Adjusted Patell Z	-1.63	-1.21	-1.68	-1.36	-1.10
Adjusted StdCSect Z	**-1.92**	**-2.29**	**-1.96**	-1.56	-1.38
Skewness Corrected T	-1.32	-0.85	**-1.96**	-1.22	-0.91
S&P 500	-1.02%	**-0.97%**	**-1.51%**	-1.33%	-1.19%
Adjusted Patell Z	-1.24	-1.01	-1.41	-1.14	-0.94
Adjusted StdCSect Z	-1.76	**-2.06**	-1.53	-1.61	-1.42
Skewness Corrected T	-1.37	-1.21	**-1.97**	-1.43	-0.95
NASDAQ	-0.90%	**-0.96%**	**-1.63%**	-1.19%	-0.95%
Adjusted Patell Z	-0.86	-0.80	-1.21	-0.81	-0.59
Adjusted StdCSect Z	-1.49	**-2.11**	-1.60	-1.70	-1.26
Skewness Corrected T	-1.48	**-2.90**	**-2.61**	-1.13	-0.64
Dow Jones Industrial	**-1.62%**	**-1.43%**	**-1.99%**	**-1.82%**	**-1.65%**
Adjusted Patell Z	**-2.03**	-1.55	**-1.93**	-1.61	-1.35
Adjusted StdCSect Z	**-3.94**	**-3.80**	**-2.23**	**-2.38**	**-2.13**
Skewness Corrected T	**-3.14**	**-4.94**	**-4.09**	**-3.13**	**-2.08**
S&P TSX 60 Composite	**-0.77%**	**-0.83%**	**-1.26%**	**-1.12%**	**-1.04%**
Adjusted Patell Z	-1.51	-1.41	**-1.92**	-1.54	-1.33
Adjusted StdCSect Z	-1.76	**-3.03**	**-3.83**	**-3.25**	**-3.23**
Skewness Corrected T	**-1.91**	**-2.76**	**-2.46**	**-5.15**	**-2.47**
S&P Asia 50	**-1.42%**	-1.57%	**-1.93%**	-1.67%	**-2.81%**
Adjusted Patell Z	-1.59	-1.52	-1.68	-1.32	**-2.06**
Adjusted StdCSect Z	**-2.03**	-1.72	**-1.96**	-1.21	-1.24
Skewness Corrected T	**-2.33**	-1.48	**-2.51**	-1.65	**-2.10**
SSE Composite	**-1.70%**	**-3.82%**	**-3.23%**	-2.63%	-1.81%
Adjusted Patell Z	-1.60	**-3.11**	**-2.35**	-1.75	-1.12
Adjusted StdCSect Z	-1.66	-1.18	-1.09	-0.96	-0.77
Skewness Corrected T	**-3.05**	**-1.92**	-1.66	-1.34	-0.92
Hang Seng	-1.18%	-1.68%	**-2.45%**	**-2.88%**	**-3.13%**
Adjusted Patell Z	-1.25	-1.54	**-2.01**	**-2.16**	**-2.17**
Adjusted StdCSect Z	-1.21	-1.64	-1.55	-1.23	-1.27
Skewness Corrected T	-1.29	-1.53	**-2.36**	**-1.96**	**-2.14**
Nikkei 225	-0.75%	-0.84%	-1.13%	-0.94%	-0.74%
Adjusted Patell Z	-0.78	-0.75	-0.90	-0.69	-0.50
Adjusted StdCSect Z	-1.43	-1.54	-1.06	-0.78	-0.67
Skewness Corrected T	-1.35	-0.73	-0.98	-0.84	-0.58
STOXX 600	**-1.96%**	**-1.27%**	**-1.78%**	-1.42%	-1.26%
Adjusted Patell Z	**-2.68**	-1.51	-1.88	-1.37	-1.13
Adjusted StdCSect Z	**-2.03**	-1.51	**-2.13**	-1.36	-1.33
Skewness Corrected T	**-2.15**	**-2.08**	-1.08	-1.51	-1.32
CAC 40	**-2.55%**	**-1.75%**	**-2.24%**	-1.62%	-1.57%
Adjusted Patell Z	**-3.56**	**-2.12**	**-2.43**	-1.61	-1.44
Adjusted StdCSect Z	**-2.52**	-1.77	-1.79	-1.23	-1.23
Skewness Corrected T	**-1.94**	-1.47	-0.86	-0.69	-0.66
FTSE 100	**-1.60%**	-0.79%	**-1.92%**	-1.12%	-1.05%
Adjusted Patell Z	**-1.92**	-0.82	-1.79	-0.95	-0.82
Adjusted StdCSect Z	**-2.01**	-1.12	**-1.93**	-1.20	-1.16
Skewness Corrected T	-1.49	-1.33	-1.15	-0.78	-0.60
DAX 30	**-2.67%**	**-1.92%**	**-2.58%**	**-2.19%**	**-1.91%**
Adjusted Patell Z	**-3.12**	**-1.94**	**-2.33**	-1.81	-1.46
Adjusted StdCSect Z	**-3.44**	**-3.22**	**-2.76**	**-2.23**	**-2.15**
Skewness Corrected T	**-3.30**	**-4.83**	**-3.48**	**-2.65**	-1.36

Table 19 - Cumulative Average Abnormal Return for the US & EU Trade War (part 1)

CUMULATIVE AVERAGE ABNORMAL RETURNS					
Announcements to EU	**(-1, 1)**	**(-1, 2)**	**(-1, 3)**	**(-1, 4)**	**(-1, 5)**
S&P Latin America 40	-0.50%	0.57%	-0.48%	0.01%	0.11%
Adjusted Patell Z	-0.36	0.35	-0.26	0.01	0.05
Adjusted StdCSect Z	-0.94	0.40	-0.25	-0.04	-0.02
Skewness Corrected T	-1.02	0.47	-0.20	0.05	0.08
IPC MEXICO	**-1.09%**	-0.87%	-1.64%	-1.52%	**-1.43%**
Adjusted Patell Z	-1.31	-0.91	-1.53	-1.29	-1.13
Adjusted StdCSect Z	**-2.62**	-1.22	-1.42	-1.66	**-2.09**
Skewness Corrected T	**-2.84**	-0.83	-1.70	-1.25	**-2.48**
Ibovespa	-0.60%	-0.11%	-1.48%	-1.25%	-1.27%
Adjusted Patell Z	-0.56	-0.09	-1.07	-0.82	-0.78
Adjusted StdCSect Z	-0.63	-0.11	-0.85	-0.76	-0.81
Skewness Corrected T	-1.03	-0.19	-0.83	-0.84	-0.79
S&P MERVAL	0.23%	2.61%	1.85%	3.32%	3.73%
Adjusted Patell Z	0.07	0.68	0.43	0.71	0.74
Adjusted StdCSect Z	0.10	0.74	0.57	1.13	1.03
Skewness Corrected T	0.07	0.49	0.27	0.65	0.69

Table 20 - Cumulative Average Abnormal Return for the US & EU Trade War (part 2)

B. Figures

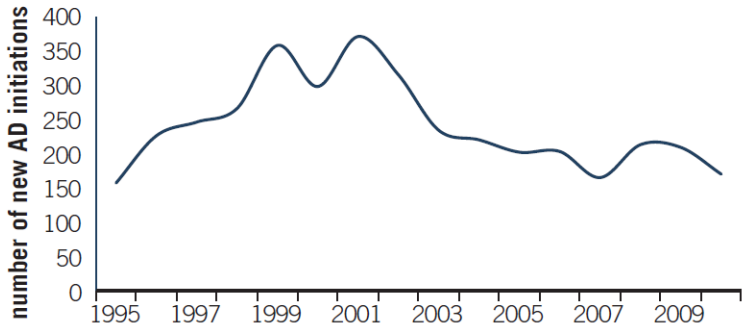

Figure 23 - A steady Reduction in Protectionism 1995-2010 (Source: Datt, Hoekman and Malouche, 2011)

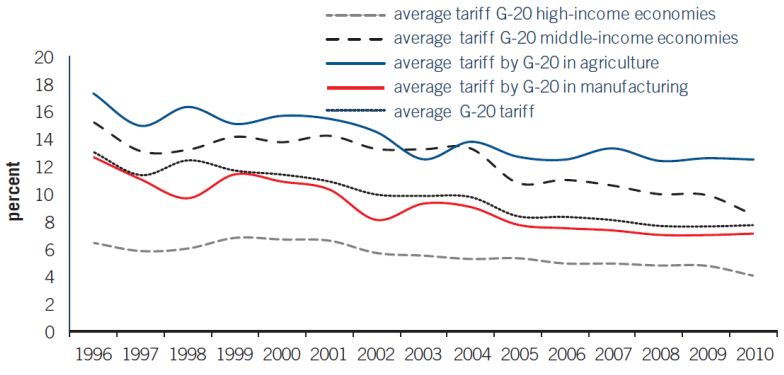

Figure 24 - Average G-20 Tariffs, 1996-2010 (Source Datt, Hoekman and Malouche, 2011)

C. Stock Indices Description

World:

- MSCI World Index

  The MSCI World Index is a broad global equity index that represents large and mid-cap equity performance across all 23 developed markets countries. It covers approximately 85% of the free float-adjusted market capitalization in each country. (MSCI)

North America:

- S&P 500 Index:

  The S&P 500 is the main stock market index from the U.S., it tracks the stocks of large-cap 500 leading U.S. companies listed on the New York Stock

Exchange, NASDAQ and Cboe BZX Exchange, “the index covers approximately 80% of available market capitalization” (SPindices.com)

- NASDAQ Index

  NDX includes 100 of the largest domestic and Intl non-financial companies listed on The NASDAQ based on market capitalization. It reflects companies across major industry groups including computers, telecom, retail/wholesale trade & biotechnology. (Reuters)

- Dow Jones Industrial Index

  The Dow Jones Industrial Average represents 30 large and well-known U.S. companies covering all industries with the exception of transportation and utilities. Editors of The Wall Street Journal select stocks. The index is price-weighted. (Reuters)

- S&P TSX 60 Composite Index

  The S&P/TSX Composite Index is a capitalization-weighted index that tracks the performance of companies listed on Canada's largest stock exchange, the Toronto Stock Exchange (TSX). (Reuters)

South America

- S&P Latin America 40 Index

  The S&P Latin America 40 includes 40 leading, blue-chip companies that capture approximately 70% of the region's total market capitalization. Constituents are drawn from five major Latin American markets: Brazil, Chile, Colombia, Mexico and Peru. (SPindices.com)

- Ibovespa Index

  Ibovespa Index is a gross total return index weighted by free-float market cap & is comprised of the most liquid stocks traded on the Sao Paulo Stock Exchange. (Bloomberg)

- IPC MEXICO

  The S&P/BMV IPC seeks to measure the performance of the largest and most liquid stocks listed on the Bolsa Mexicana de Valores. The index is designed to provide a broad, representative, yet easily replicable index covering

the Mexican equities market. The constituents are weighted by modified market cap subject to diversification requirements. (Bloomberg)

- S&P MERVAL Index

The S&P MERVAL Index, Argentina's flagship index, seeks to measure the performance of the largest, most liquid stocks trading on the Bolsas y Mercados Argentinos Exchange (BYMA) classified as domestic stocks. The constituents of the index must meet minimum size and liquidity requirements. (SPindices.com)

Europe

- STOXX 600 Index

It is a stock index of European stocks designed by STOXX Ltd. It has a fixed number of 600 components representing large, mid and small capitalization companies among 17 European countries, covering approximately 90% of the free-float market cap. (Reuters)

- CAC 40

The CAC 40 is a benchmark French stock market index. The index represents a capitalization-weighted measure of the 40 most significant stocks among the 100 largest market caps on the Euronext Paris (formerly the Paris Bourse). (Reuters)

- DAX 30

The DAX is a blue-chip stock market index consisting of the 30 major German companies trading on the Frankfurt Stock Exchange. It is the equivalent of the FT 30 and the Dow Jones Industrial Average. (Reuters)

- FTSE 100

The Financial Times Stock Exchange 100 Index, also called the FTSE 100 Index, is a share index of the 100 companies listed on the London Stock Exchange with the highest market capitalization. (Reuters)

Asia

- S&P Asia 50 Index

The S&P Asia 50 consists of 50 leading blue-chip companies that are listed in four major Asian markets—Hong Kong, Korea, Singapore and Taiwan. (SPindices.com)

- Hang Seng Index

HSI serves as a market benchmark that reflects the overall performance of the Hong Kong stock market. (Reuters)

- SSE Composite Index

The SSE Composite, which is short for the Shanghai Stock Exchange Composite Index, is a market composite that tracks stocks listed on the Shanghai Stock Exchange. The stock index includes both stocks that only traded in RMB (Renminbi, China's official currency) as shares that trade in foreign currencies. (Reuters)

- Nikkei 225

The Nikkei-225 Stock Average is a price-weighted average of 225 top-rated Japanese companies listed in the First Section of the Tokyo Stock Exchange. The Nikkei Stock Average was first published on May 16, 1949. (Bloomberg)