Opportunism and Insider Trading during the Trade War

By

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Submitted in accordance with the requirements for the degree of

Doctor of Philosophy

The University of Leeds
Leeds University Business School
Accounting and Finance Division
Centre for Advanced Studies in Finance (CASIF)

February 2024

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This thesis is dedicated to my mother and daughter.

Acknowledgements

My heartfelt gratitude goes to my supervisors, Professor Moshfique Uddin and Professor Shima Amini, for their invaluable guidance, constant monitoring and support throughout the research. I wish to also thank the participants at the Leeds University Business School (LUBS) Conference 2022, International Symposium in Finance 2022, Greece and BAM (British Academy of Management) Conference 2022, UK, for the resourceful comments on the first empirical chapter; "Political Connections and Opportunism of Insider Trading". I am equally grateful for suggestions on the third empirical chapters (Social Connections and Opportunism of Insider Trading) by the participants at the Leeds University Business School (LUBS) Conference 2023 and the BAM (British Academy of Management) Conference 2023. The empirical chapters benefited from the discussions at the conferences, and I would like to thank the organisers for accepting the papers as an opportunity to be part of the proceedings.

I would also like to thank all my colleagues in the Centre for Advanced Studies in Finance (CASIF), the Department of Accounting and Finance community, and Leeds University Business School, who have given me precious help and support throughout my research. I am grateful to Professor Abdul Mohamed and Dr Ali Altanlar for their constructive advice on this research at my transfer stage. I would also like to give my special regards to Ms Michelle Dickson for their kind administrative aid and considerate advice when I have difficulties during my studies.

Most importantly, my deepest gratitude goes to my family, who survived the absence of a husband, a father and a son throughout my research. Finally, I enormously acknowledge the financial support from the Graduate School of Leeds University Business School.

Abstract

This thesis examines opportunism of insider trading during the trade war in 2018. The objectives of this thesis are: first, to investigate whether political connections can facilitate insiders to behave opportunistically; second, to examine whether opportunistic or routine insiders to be involved in informed trading; third, to observe whether social connections can facilitate opportunistic sellers to be involved in informed trading.

The first empirical chapter analyses the short-term profit making behaviour of politically connected insiders at all US companies during the trade war in 2018. The baseline results refer to the positive relation between political connections and informed trading during the trade war. These relations are stronger among insiders with recent direct political links than stale ones. Additionally, event studies and difference-in-differences results indicate that the politically connected insiders generated higher abnormal returns at event windows surrounding the announcement date of the trade war. All results suggest that politically connected insiders can have a significant information advantage during the trade war and that connections can facilitate them to behave opportunistically.

The second empirical chapter examines whether opportunistic insiders earn higher short-term returns compared to routine insiders in US during the trade war in 2018. Importantly, our findings provide evidence that opportunistic insiders receive higher returns compared to routine insiders during the trade war. This evidence is also pronounced when opportunistic insiders are politically connected. Furthermore, we interestingly find that opportunistic CEOs and female insiders receive higher returns compared to routine CEOs and female insiders. Our results are robust to various model specifications, alternative measures, and endogeneity concerns. Overall, our findings suggest that opportunistic insiders can have a significant information advantage and that information can facilitate them to be involved in informed trading during the trade war.

The final empirical chapter analyses the opportunistic selling by socially connected insiders at all US firms during the trade war in 2018. We find evidence that socially connected opportunistic sellers receive higher returns than socially connected routine sellers. This evidence is more pronounced when

opportunistic sellers are more socially connected and belong to firms which have business connections with China. Furthermore, we find supportive evidence that socially connected opportunistic sellers receive more returns than politically connected opportunistic sellers during the trade war. Our findings survive various alternative, robustness and endogeneity tests. Overall, our findings suggest that social connections can facilitate opportunistic sellers to be involved in informed trading.

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List of Abbreviations

AR	Abnormal Return
BM	Book-to-Market
CAR	Cumulative Abnormal Return
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CRSP	Center for Research in Security Prices
CIK	Central Index Key
EPU	Economic Policy Uncertainty
EMH	Efficient Market Hypothesis
EU	European Union
FDIC	Federal Deposit Insurance Corporation
Fed	Federal Reserve System
GDP	Gross Domestic Product
HPR	Holding Period Return
OCC	Office of Comptroller of Currency
OLS	Ordinary Least Squares regression
OTS	Office of Thrift Supervision
SEC	Securities and Exchange Commission
STOCK	Stop Trading on Congressional Knowledge
2-SLS	Two-Stage Least Squares
US	United States
WTO	World Trade Organization
WRDS	Wharton Research Data Services

Chapter 1

1. Introduction

1.1 Background and Motivation

Insiders[1] and their trading are the recent most important debated issue in corporate finance literature, for example, abnormal insider trading and profitability surrounding the important firm-level events (e.g., Altanlar et al., 2023; Arif et al., 2022; Haselmann et al., 2021; Kim, 2016; Cohen A. et al., 2015), major financial market events (e.g., Blackburne et al., 2021; Dechow et al., 2016), COVID-19 pandemic (e.g., Hoang, K. et al., 2023; Henry et al., 2022; Ozik et al., 2021; Anginer et al., 2020) and last financial crisis (e.g., Gangopadhyay et al., 2019; Cziraki, 2018; Ozkan and Trzeciakiewicz, 2014). However, abnormal insider trading and profitability surrounding the trade war in 2018[2][3] is overlooked. Therefore, we have a scope to contribute uniquely to finance literature on insider trading during the trade war.

Importantly, the insiders have preferential access to the firm's inside information (Biggerstaff et al., 2020; Angel and McCabe, 2018; Gębka et al., 2017; Cohen et al., 2012; White, 2020) and they may use the inside information opportunistically before publicly announcing (Kirkulak Uludag, 2013). The opportunistic insiders may seek an event or a suitable time[4] to trade their firms' stocks to earn higher returns. The events may arise from macroeconomic events, for example, the last macroeconomic events in the USA are the trade war, potential presidential candidate declaration, and COVID-19 pandemic or vaccine declarations. Notably, the trade war declaration by former US president Donald Trump with another economic super giant, China, was a major exogenous event (Da Costa and Sukartha, 2020). This event has had a significantly negative impact on financial markets, US stock prices (An et al., 2020; Amiti et al., 2020), US 10-year bond yield and stock market returns (Carlomagno and Albagli,

1 Officers, directors, and those that hold more than 10% of any class of a company's securities, together they are insiders (U.S. Securities and Exchange Commission; Bainbridge S. M., 1998; Li, X., 2020; Maddox and Suarez, 2021).

2 The trade war between US and China was initiated on 22 January 2018 by initially imposing 10% tariffs (later escalating to 25%) on Chinese exports ($200 billion) to the US and retaliating 10% tariffs on American exports ($65 billion) items to China (Van Aaken et al., 2019; Bhandari et al., 2019; Archana, 2020; Kumagai et al., 2019; Bekkers and Teh, 2019; Lai, 2019; Liu, T. and Woo, 2018).

3 The trade war in 2018 between US and China is considered as tariff shock or trade war shock (Chen, Y. et al., 2023) to account for the possible effects of unexpected exogenous shock (see, Cheng, N.F.L. et al., 2023), which refers to a random and unpredictable event that has a widespread impact on the economy (Fridgen et al., 2015).

4 For example, a positive event for firms may come from the declaration of higher dividends, and an adverse event for firms may arise from the statement of quitting a successful CEO.

2022; Chen, Y. et al., 2023; Dzieliński et al., 2018). Similarly, the US stock markets reacted negatively in 2002 when another former US president, George Walker Bush, declared to increase the tariff rate from 8% to 30% on steel imports (Jensen, N.M., 2007). Therefore, investors may significantly suffer because of stock market volatility (Baker et al., 2016; Boutchkova et al., 2012; Chen, Y.-F. and Funke, 2003).

The political issues[5] with the uncertainty create additional risks for the outcome of investments (Bloom et al., 2007), and political uncertainty creates information asymmetry in the market (Nagar et al., 2019). Therefore, stock market investors get a chance to use the information opportunistically as a key indicator of their greater earnings (Verrecchia, 2001). Specifically, opportunistic insiders can exploit the information advantage for greater returns from their informed trading. For example, the CEO, Greg Becker, of Silicon Valley Bank (SVB) sold $3.60 million worth of shares on 27 February 2023, just days before disclosing a large loss that triggered its collapse (Frank, 2023). On the other hand, Green et al. (2020); Crudele (2020) report that a few US senators (e.g. Richard Burr of North Carolina and Dianne Feinstein of California) sold their holding shares significantly after a specific secret briefing on COVID-19 updates by the authorised government committee. Therefore, in this thesis, we uniquely focus on opportunism (politically or socially connections or opportunistic behaviour) and insider trading during an exogenous political event like a trade war rather than the financial crisis. We expect that opportunism may influence the insiders to be involved in informed trading during the trade war.

1.2 Significance and Research Question of the Thesis

An extensive empirical literature examines the relationship between interpersonal ties or opportunistic behaviour of insiders and their informed trading (e.g., El-Khatib et al. (2015); Goergen et al. (2019); El-Khatib et al. (2021)), specifically, political connections and informed trading during the financial crisis in 2008 (Jagolinzer et al., 2020) or opportunistic trading (Cohen et al., 2012). Connections can be formed through their educational backgrounds, employment records, or both. In addition, opportunistic behaviour comes from insiders' non-routine trading behaviour. Personal ties or opportunistic behaviour works as an informal effective channel to transmit material inside information from one to another. The

[5] The trade war in 2018 was a political conflict with China and both countries wanted a political win over each other (e.g.,).

informal channel can facilitate the insiders to get material non-public information for participating in opportunistic trading.

The purpose of this thesis is to test whether personal connections and opportunistic behaviour provide an information advantage to be involved in informed trading during the trade war. In particular, based on the outlined motivations for this thesis, the content of this research has devoted its attention to the following three important questions: i) How do political connections influence the insiders to be involved in informed trading?, ii) How does opportunism behaviour influence the non-routine insiders to be involved in informed trading? and iii) How do social connections influence the insiders to be involved in informed trading?

1.3 Thesis Contributions

To address the research questions, this thesis makes several contributions to the finance literature. In the first empirical chapter, we contribute to the insider trading literature (e.g., Jagolinzer et al. (2020); Cohen et al. (2012); Jeng et al. (2003); Lakonishok and Lee (2001); Aboody and Lev (2000)) by focusing on political connections (Jagolinzer et al., 2020) of insiders and trading opportunistically during the trade war. In the second empirical chapter, we contribute to the opportunistic insiders (Cohen et al., 2012) and informed trading during the trade war. In the third empirical chapter, we contribute to the social connections (Goergen et al., 2019; El-Khatib et al., 2017; Ahern, 2017; Burt, 2010) of insiders and trading opportunistically during the trade war.

In the first empirical chapter, we investigate whether politically connected insiders earn higher returns from a particular form of opportunism-informed trading in US during the trade war in 2018. We use the cross-sectional regressions by partitioning politically connected and non-politically connected insiders' trading who may trade opportunistically during the trade war. From the baseline regressions, we find that politically connected insiders earn higher returns during the trade war. The findings interpret that politically connected insiders have an information advantage and are more likely to use material non-public information opportunistically when they trade their firm's shares. We also find the same results from various event studies and difference-in-difference specifications. We even find that the recent directly connected insiders generate higher returns than stale directly connected insiders. These findings

suggest that the direct and recent direct connections are stronger than indirect and stale direct connections to generate greater returns during the trade war. Our additional findings suggest that female insiders are more opportunistic compared to male insiders, young insiders are more opportunistic compared to old insiders, and CEOs are more opportunistic than other directors and officers. Importantly, using a two-stage least square instrumental variable approach, our findings are robust and free from endogeneity concerns from omitted variables bias and measurement errors. Our findings provide strong evidence of an increase in the opportunism or informativeness of politically connected insiders during the trade war. Overall, our results suggest that politically connected insiders had a significant information advantage during the trade war, and they opportunistically traded to exploit this advantage.

In the second empirical chapter, we investigate whether opportunistic (non-routine) or routine insiders involve in informed trading during the trade war in 2018. We employ a three-year back-trading algorithm to find opportunistic and routine insiders. In our analyses, we consider the various strategies and statistical techniques to find whether opportunistic insiders traded on prior material non-public information regarding the trade war announcement and its effect on firm performances and US stock markets. Our baseline findings suggest that opportunistic insiders generate higher returns compared to routine insiders. We find the same results from the different event studies surrounding the trade war announcement date and difference-in-difference specification. Our alternative measurements also suggest that politically connected opportunistic insiders generate greater returns compared to politically connected routine and non-politically connected insiders, which also support our baseline findings. Our additional analyses suggest that female insiders are more opportunistic compared to male insiders, old insiders are more opportunistic compared to young insiders, CEOs are more opportunistic than directors, highly compensated insiders are more opportunistic than lowly compensated insiders from buying shares, lowly compensated insiders are more opportunistic than highly compensated insiders from selling shares, and financial sector's insiders are more opportunistic in selling shares than other sectors. Overall, our findings suggest that opportunistic insiders had a significant information advantage, and they earned higher returns by involving in informed trading during the trade war.

In the third empirical chapter, we investigate whether socially connected opportunistic sellers earned higher returns by informed trading compared to socially connected routine sellers during the trade war in 2018. We focus on only sellers instead of traders by considering that insiders usually sell their shares on prior bad news regarding their own firms or the government's announcement like a trade war. Hence, we consider the different network centralities, such as eigenvector, degree, and closeness, to define the social connections. We then interact between social connections with opportunistic and routine sellers (sales) to find the potential results. We consider the eigenvector as the primary measurement of the social connection of the sellers to find the potential results, and we consider the degree and closeness as alternative social connections to support our baseline findings. Our baseline results from cross-sectional regressions suggest that socially connected opportunistic sellers earn higher returns compared to socially connected routine sellers during the trade war. The baseline findings interpret that socially connected opportunistic sellers had an information advantage from access to private information regarding the trade war announcement and firm's performance, and they involved in informed selling. From the different event studies surrounding the trade war and difference-in-difference specification, we also find that socially connected opportunistically sellers earn higher returns compared to socially connected routine sellers and support the baseline findings. Even, we uniquely consider the political connections of opportunistic sellers and compare them to socially connected opportunistic and routine sellers. This finding suggests that socially connected opportunistic sellers earn higher returns compared to routine and politically connected opportunistic sellers during the trade war. The alternative social connections, such as degree and closeness centralities, support the baseline findings. We also uniquely consider the insiders from China-connected (US firms have business relations with China) firms, and the findings also suggest that socially connected opportunistic sellers from China-connected firms earn higher returns compared to routine and non-connected opportunistic sellers. All findings suggest that the socially connected opportunistic sellers made higher returns from informed selling during the trade war, which was truly informative.

Since the trade war in 2018 was only a political event and the trade war period is free from other exogenous events like the interim election on 06 November 2018. The findings from the empirical

chapters are remarkable in the current stock market environment, where the government plays an active role in US capital markets[6]. Therefore, we encourage other investors and capital market regulators to monitor insider trades by insiders with political and social connections and opportunism behaviour.

1.4 Structure of the Thesis

The remainder of the thesis consists of 6 chapters organised as follows:

Chapter 2 reviews the relevant literature on the three empirical studies (politically connected insiders' trades during a political event like a trade war in 2018, opportunistic and routine insiders' trades during the trade war and socially connected insiders' sales during the trade war) along with the fundamentals of insider trades, insider trading during uncertainty, trade war elements and the effects of the trade war.

Chapter 3 presents the data and methodology of the three empirical chapters.

Chapter 4 emphasises the first empirical study of the thesis, focusing on politically connected insiders' trades during a political event like a trade war. We contribute to this literature by examining whether political connections facilitate opportunistic behaviour in informed trading of insiders at all USA companies using a sample of all open market purchases and sales between 2017 and 2019. The findings from the results suggest that political connections provided insiders with asymmetric information and that insiders traded to exploit.

In Chapter 5 emphasises the second empirical study of the thesis, focusing on whether opportunistic insiders generate higher returns compared to routine insiders during the trade war. Thus, we can contribute to this literature by examining whether opportunism facilitates the non-routine insiders of all public limited companies in informed trading using a sample of all open market transactions of common stock between 22 July 2017 and 21 July 2018. We examine the profitability of insiders more likely to generate returns from their transactions during the trade war. This chapter examines whether

[6]Capital market regulation ensures the integrity of securities markets and leads uninformed investors (Merl et al., 2023). For example, the short-swing profit rule (federal law) prevents insiders from exploiting their material non-public information in the financial markets (Lenkey, 2017). On the other hand, SEC Rule 10b-5 prohibits insider trading on private information.

opportunistic insiders participate in informed trading – opportunistic behaviour during the trade war.

Chapter 6 emphasises the third empirical study of the thesis, focusing on socially connected insiders' sales during the trade war in 2018. We contribute to this literature by examining whether social connections facilitate opportunistic behaviour in informed trading of insiders at all USA companies using a sample of all open market sales between 2017 and 2019. The findings from the results suggest that social connections provided insiders with asymmetric information and that insiders sold to exploit.

All three empirical chapters develop previously untested hypotheses, undertake detailed empirical analyses, alternative measurements and several robustness tests to mitigate endogeneity concerns.

Chapter 7 presents the conclusion summarising the key findings from three empirical studies (chapters 4, 5 and 6), and draws implications, limitations and directions for future research.

Chapter 2

2. Literature Review

The literature review provides an idea of the central themes of all empirical chapters with prior studies. We start this section with insider trading, where we explain the fundamentals of insider trades, the consequences of insider trades and insider trading during policy uncertainty. The readers can get a broader idea of insider trades and insider trading during uncertainty that may help insiders trade opportunistically. This section ends with opportunistic trades. In between, this section explores the discussion of trade war elements and the effects of the trade wars. These parts mainly focus on the detailed fundamentals and reasons for the trade war and explain how the stock market reacted during the trade war and how it is related to insider and insider trading.

2.1 Insider Trading

2.1.1 Insiders and Insider Trading

Officers, directors, and those that hold more than 10% of any class of a company's securities, together they are insiders (U.S. Securities and Exchange Commission; Bainbridge S. M., 1998; Li, X., 2020; Maddox and Suarez, 2021). Trades done by insiders are categorised as insider trades (Li, X., 2020). Generally, insider trading refers to buying and selling an insider's company shares. The insiders of public limited companies have preferential access to material inside information (Biggerstaff et al., 2020; Angel and McCabe, 2018; Gębka et al., 2017; Cohen et al., 2012; White, 2020). Gangopadhyay et al. (2019) state that insiders are better informed about their investment, merger, and asset sales information, helping them earn more abnormal returns. Similarly, Esen et al. (2019); Fidrmuc, J.P. et al. (2006) state that public limited companies' managers and directors are better informed than the outside shareholders. They know the firm's actual value, and they may take advantage of using this private information before announcing it publicly (Kirkulak Uludag, 2013).

Insider trading using private information may create a conflict of interest between the manager and the shareholder. Notably, the agency theory of insider trading emphasises the effect of insider trading on the corporate agency problem, which analyses the manager-shareholder conflict of interest (Jensen, M.C. and Meckling, 1976). This theory explains whether insider trading worsens or ameliorates this

conflict. If insider trading decreases (increases) the divergence between the managers' and shareholders' interests, the agency cost decreases (increases). A few proponents of law and economics on unregulated insider trading state that insider trading increases the manager-shareholder conflict of interest. Alternatively, few proponents argue that insider trading reduces the insider-shareholder conflict of interest and reduces agency costs (Carlton and Fischel, 1983). This insider trading on inside information might incentivise managers to take on too much risk (Klock, 1994).

As previously mentioned, the insiders have prior access to the firm's inside information. Based on this information, they may trade their own firm's shares. This information may carry positive or negative news for outsiders. In the US, insider purchase conveys positive information about the firm that helps to generate positive abnormal returns (Collin-Dufresne and Fos, 2016). Usually, this material inside information is revealed at a specific date to maximise the capital gain. On the other hand, insider sale conveys negative information about the firm (Fidrmuc, J.P. et al., 2006). In addition, the insiders' financial gain is more significant from their trading when the non-public information is disclosed publicly at the market's closing time (Biggerstaff et al., 2020). Ultimately, insiders generate higher trading profits than outsiders if the insiders trade on private information (Chen, G.-Z. and Keung, 2019; Zhang and Zhang, 2018; Ahern, 2017; Liu, H. and Zhang, 2011). However, insider trades may create false information and mislead outsiders (Kirkulak Uludag, 2013).

2.1.2 Types and Consequences of Insider Trades

There are two types of insider trades: legal and illegal insider trading (Sykes, 2021). Insider trading will be permitted when insiders trade their companies' securities (e.g., stock, bond, or option) and report to Security Exchange Commission (SEC) on time. In the US, insider trading is regulated by the Securities and Exchange Act 1934 (Fidrmuc, J.P. et al., 2006). Insider trading information needs to be reported to the SEC on 3 and 4 forms (White, 2020); otherwise, it is treated as illegal. According to the Sarbanes–Oxley Act of 2002, insiders have to report their trades to Security Exchange Commission (SEC) within two business days after their transaction (Lee, E. and Piqueira, 2019; Brochet, 2010). On the other hand, Section 16(a) of Securities and Exchange Act requires insiders to report their trades within 10 days after the end of the trading month (Lee, E. and Piqueira, 2019). The SEC discloses the reported insider trading

information on the company's website (Sykes, 2021). The law allows insiders to only trade within a trading window period (quarterly basis), while a company permits its employees and executives to trade its shares. Generally trading window period remains open for 4 to 6 weeks. Recently, the US government established a well-provisioned Securities and Exchange Commission, an efficient class-action system and legal environment ensured to protecting insider trading (White, 2020). The strictness and enforcement of insider trading law reduce the smoothness of insider trading earnings (Zhang and Zhang, 2018). Alternatively, illegal insider trading is associated with non-public and price-sensitive information. For example, the CEO of Keefe, Bruyette & Woods, Inc. (Wall Street Investment Bank), James McDermott Jr., shared information about pending bank industry mergers with his mistress, Kathryn Gannon. She was also known as Marilyn Star. She made $80,000 by insider trading on her prior knowledge. In 1999, McDermott Jr. was arrested and received eight months in prison. He was also fined $25000 (Anderson, 2020; CNBC, 2014).

However, legal insider trading may also be associated with material non-public information. Although legal insider trading is reported to the SEC on time. However, these trades can be executed opportunistically because of preferential access to non-public information during major firm-level or capital market or macroeconomic events (e.g., Jagolinzer et al., (2020)). Therefore, the thesis covers the legal insider trades, ignoring the illegal insider trades, to examine whether legal insider trading is conducted opportunistically.

2.2 The impact of economic policy uncertainty on insider trades

Uncertainty is a fact of doubt when people feel as if they are unsure if they want to take a new action. At a time of uncertainty, the economy is going wrong, causing all to worry about what will happen next. A few government actions create uncertainty in the economy, which is unavoidable to the investors, but they significantly suffer. The government's action to apply the new policy in the economy may be driven by obvious reasons, which may be unavoidable to them. This policy uncertainty indicates a different future political or economic policy than the existing one, which may affect the micro-level conditions (Baker et al., 2016).

Moreover, according to Financial Times (2020), the Eurozone was predicted to have lower growth in 2020 because of the policy uncertainty in Italy and the fallout from UK Brexit. Policy uncertainty reduces investment and employment (Bernanke, 1983) in defence, health care, finance, and infrastructure construction, which are policy-sensitive sectors (Baker et al., 2016). Notably, Shoag and Veuger (2016) find a robust negative relationship between the state-level economic performance and policy uncertainty indexes for US states on newspapers and other local indicators. In addition, Gulen and Ion (2016) find a negative relationship between policy uncertainty (BBD index) and capital expenditures in the US. Baker et al. (2016) also find a negative economic effect of the uncertainty shocks and show that the policy uncertainty in the US and Europe in recent years may have harmed the macroeconomic performance.

Notably, the Economic Policy Uncertainty (EPU) index was clearly spiked around several political events such as Gulf Wars, presidential elections, the 9/11 terrorist attack, Lehman Brothers bankruptcy and TARP legislation in late 2008, stimulus debate in early 2008, summer 2011 debt ceiling dispute, and the battle over the 'fiscal cliff'' in late 2012 but EPU index did not show any significant spike with the partial federal government shutdowns from November 1995 to January 1996, even if those shutdowns got the huge press coverages. As a result of these uncertainties, firm-level and cross-border investments were deducted by 4.8% in election years (Julio and Yook, 2012). The policy uncertainty raises the risk premium (Pástor and Veronesi, 2013) and the sensitivity of investors (Li, X., 2020), and forecasts the market returns (Brogaard and Detzel, 2015). The investors' reactions are less intense to the firm's earning announcement increasing the uncertainty. Economic policy uncertainty may also create uncertainty about the firm's value (Pastor and Veronesi, 2012). The asset price also moves with the reactions to this news. This uncertainty creates additional risks for the firm's performance and capital market.

Policy uncertainty increases stock market volatility (Baker et al., 2016; Boutchkova et al., 2012) and affects private investment (Chen, Y.-F. and Funke, 2003). Stock market investors react quickly to EPU (Nagar et al., 2019). The firm's investment sensitivity to the stock price is reduced by 40% during the election years (Durnev, 2010). At that time, shareholders demanded extra compensation for bearing the

additional political risks to offset their expectations of the firm's investment (Pástor and Veronesi, 2013).

All political events or uncertainties have huge effects on the stock market, and specific political incidents produce additional risks for the outcome of investments (Bloom et al., 2007). Importantly, Pástor and Veronesi (2013) present that political news has dominated the financial markets recently. For example, the stock market investors in Greece lost their gains when the Greek prime minister announced a referendum after the announcement of European politicians to cut the debt in half in October 2011. However, the stock price rose after the announcement of Greek politicians to stand against that initiative. Political statements seem to destroy or create millions of dollars for investors. Political uncertainty is not only standard in Europe but also in the US. Political uncertainty makes political shocks associated with the cost of the likely new policies. These shocks indicate the endless political news, which leads investors to revise their decisions on investment with the changing government policies. Investors want to offset their potential losses from the uncertainty of future political decisions. This political uncertainty creates asymmetric information in the market (Nagar et al., 2019). Stock market investors use this information opportunistically as a key earnings indicator (Verrecchia, 2001).

As mentioned, policy uncertainty carries asymmetric information to insiders (Durnev, 2010) and increases the bid-ask spread (Nagar et al., 2019). According to Li, X. (2020), insiders' decisions on buying and selling their company's stock contain material non-public information to outside investors. Insiders buy and sell using this personal information (Leland, 1992). However, insider trades on asymmetric information make the capital market less efficient (Bhattacharya and Daouk, 2002) but valuable private information (Chiang et al., 2017; Du and Wei, 2004). The more asymmetric information increases the possibility of arbitrating their personal information status. The outside investors could interpret these trades as a form of forfeiture and participate less in the stock trading, which may negatively impact the firm's performance and positively on firm risk (Li, X., 2020). Li, X. (2020) finds that profitability and insider trades are negatively correlated during high uncertainty.

In summary, policy or political uncertainty is associated positively with the frequency and volume of insider trades. However, insider trading negatively affects future firm performance during high economic policy uncertainty. In addition, the high economic uncertainty deteriorates the information environment in the market (Nagar et al., 2019). Significantly, this uncertainty increases the information advantage for insiders and insider trading (Li, X., 2020). This advantage comes from material non-public information. Non-public information is more valuable when the market is deficient in the information environment (Aboody and Lev, 2000). The atmosphere of information asymmetry between insiders and outsiders is higher during high uncertainty periods, and insiders benefit from private information trading. In addition, insiders reduce their risk of loss by applying their confidential information to the stock market during times of high economic uncertainty. The profitability from insider trading is significantly higher in firms with less information disclosure.

Dissimilar to recent studies by Yung and Root (2019); (Phan et al., 2019; Nguyen and Phan, 2017; Gulen and Ion, 2016) on the economic policy uncertainty index, we consider the period of the trade war between the US and China to measure the economic uncertainty.

2.3 Definition and Considerations of Trade War

A trade war may be initiated from a power conflict between two or more powerful countries or parties. Powerful countries or parties always have power-shifting anxiety, although every country shows a superficial friendship with partner countries. Notably, two countries may engage in a trade war by claiming against one country for another country's unfair business practices. Sometimes, domestic trade unions may pressure politicians to restrict imports and make foreign goods less attractive to local consumers. Examples of trade wars are the Smoot-Hawley tariff spark in 1930, chicken friction in 1963, Jabs at Japan in 1981, a war of the woods in 1982, pasta spat in 1985, the battle of the banana in 1993, steel salvoes in 2002 and Trump's tariff in 2018 (Desjardins, 2018).

The trade unions also pressure Congressmen or government members to amend the international trade policy and push for a trade war. Sometimes, the government takes a protectionism policy to benefit domestic firms, which may also push for a trade war. Protectionism states the government's policies (e.g., import quota, setting product standards or government subsidies to domestic firms) to restrict

international trade and save domestic firms. For example, the US adopted a protectionism policy in 2002 and 2018 to strengthen domestic businesses from foreign competition (Wei, 2019; Sheng, 2021). Even if US protection has a political intention to favour voters who are indecisive about providing the vote between two candidates (Mayer, 1984). For this reason, Donald Trump implemented a protectionism policy in 2018 against the EU and China to protect the US domestic industries (Wei, 2019; Sheng, 2021). However, Lascelles (2019) says that US domestic companies can succeed when the competition with foreign companies is reduced.

A trade war is a zero-sum game (e.g., Buckley (2022); Blanchard and Collins (2019); Platten (2018)) in which the available resources of both players can neither increase nor decrease. Both players in this game want to win and maximise their benefits. However, nobody can guarantee success in war (Churchill, 2002). Although this game's benefit goes to both players, one player's expense is equal to another player's benefit (Owen, 1995). Neither the US nor China wants to change their strategies. If the US or China introduces any plan, China or the US follows. Although Li, C. et al. (2018) state that the US may gain more than China in the trade war negotiations because the US has a higher bargaining power than China.

2.3.1 Elements of Trade War

Tariffs and non-tariff barriers are two elements of trade wars. Tariff means imposing taxes on import or export items. Alternatively, the non-tariff barrier refers to quotas, voluntary export restraints, several price supports and other related measures (Harrigan, 1993) such as import and export licenses, subsidies, embargo, currency devaluation and trade restrictions. The trade restrictions mainly affect small firms (ITC, 2015) and force consumers to buy a limited choice of items at higher prices.

Introducing tariff and non-tariff barriers aims to generate government revenue, protect domestic firms, and boost their economy. In particular, the tariff is widely used as a policy instrument to restrict international trade (Hoekman and Nicita, 2008). Tariffs reduce the pressure on domestic companies from foreign competition. The tariff also reduces the trade deficit. In this thesis, we pay precise attention to the tariff barrier and trade war between the US and China in 2018. Compared to the previous US-EU trade war, the US-China trade war spreads more and affects the economy because of higher media

coverage. Notably, the former president (Donald Trump) frequently posted political news on the US-China trade war on Twitter (Burggraf et al., 2020).

2.3.2 Trade War and Reasons for the Trade War of 2018

The trade war between US-China was initiated on 22 January 2018 by initially imposing 10% tariffs on Chinese exports ($200 billion) to the US and retaliating 10% tariffs on American exports ($65 billion) items to China (Van Aaken et al., 2019; Bhandari et al., 2019; Archana, 2020; Kumagai et al., 2019; Bekkers and Teh, 2019; Lai, 2019; Liu, T. and Woo, 2018). The trade war happened only for political win over each other. China wants to make the term 'Made in China' word (Chen, A.W. et al., 2020; Bhandari et al., 2019) by creating the world's manufacturing powerhouse by 2025 (Liu, T. and Woo, 2018) to seek the challenge of US strategic industries such as robotics, semiconductors and artificial intelligence – even to remove foreign-manufactured computer equipment (Buckley, 2022). The Chinese government has already changed the policy from a demand-side economy to a supply-side economy (Liu, K., 2020). According to Liu, K. (2020), the Chinese government also increased infrastructure investment during 2018-19. China reduced the Value Added Tax from 17% to 16% in manufacturing industries and 11% to 10% in the domestic economy for transportation, construction, telecommunication, and farm productions. Moreover, the tariff on some mechanical and electrical equipment was reduced to 8.8%, textiles and building materials to 8.4%, and paper products to 5.4%. Social security expenditure also decreased in China. China has also inaugurated a new stock market to improve the Chinese manufacturing industry's competition to become the world's manufacturing powerhouse.

The US trade deficit with China is 42% of its total trade deficit. The US government wants to reduce the massive trade deficit with China (Steinbock, 2018; Carataș and Spătariu, 2019). US President Donald Trump claimed that the vast deficit was initiated due to China's unfair trade practices (Carvalho et al., 2019). However, the bilateral trade deficit claim may not be relevant. Every country may reach a trade equilibrium position because the third country's trade surplus counterbalances it. In this way, every country balances domestic trade (Kraneveld, 2019). In addition, Bhandari et al. (2019) state that the

US-China trade is imbalanced because of the Chinese government's massive investment in American ventures and bonds.

However, the US trade balance has been in a deficit position since the Vietnam War. It was long before the economic rise of China. The exchange rate is the most important tool to manipulate the trade balance. In modern times, developing countries devaluate their currencies to keep the trade surplus. Similarly, in China, the home currency has been devaluated to maintain the US trade surplus even if US consumers can purchase Chinese goods cheaply (Kraneveld, 2019).

The US government was unsatisfied with China's unfair policies and practices for market-distorting to protect their domestic industries (Zhou and Gao, 2020). Chen, A.W. et al. (2020) say that the US counters to disrupt China by making a new superpower in the world and the world divides (Steinbock, 2018) into two parts by boycotting China. Meanwhile, it's the nationalised Americans' border strategy to stop the challenges of supremacy in China's rise (Lai, 2019). On the other hand, France, Germany, Britain, Australia, the European Union, Canada, and Japan also limit the Chinese capital, causing security issues (Bhandari et al., 2019). In the 1929 crisis, the world received unforgiving learning from mishandling that crisis. Many countries closed their borders and shifted production to their countries. That policy impaired trade and deepened the crisis (Kraneveld, 2019).

2.3.3 Effects of Trade War

Van Aaken et al. (2019) find that the impact of the US-China trade war on global businesses is higher than the trade war of 1930 when the US imposed Smoot–Hawley tariffs. Chen, A.W. et al. (2020) say that the US-China trade war is for technological dominance globally (Liu, T. and Woo, 2018), which is now a more dominant factor than military and economic advancement. On the other hand, the US trade policy uncertainty negatively impacts Mexico's production because Mexico exports more than 80% of its total exports to the US (Alam and Istiak, 2020). Crowley, M.A. et al. (2019) state that the new import restrictions by the European Union on Chinese exports hurt private-sector firms. Uncertainty of tariff policy implies that Chinese firms exit from the existing foreign market and enter new foreign markets (Crowley, M. et al., 2018). According to Francois and Baughman (2003), 200,000 American workers lost their jobs in 2002 because of the higher price of steel products. However, the American employment

rate cannot be increased because of decreasing Chinese exports to the US (Bhandari et al., 2019). The US-China trade war impacts American industry and employment differently from Japan's shock in the 1996-2000 period, and Chinese firms are also affected by this trade war (Lee, J.W., 2020). According to York (2018), escalating tariff slows the economic growth of the US.

According to Semin et al. (2019), the US-China trade war reduced the world and Chinese economic growth by 0.1% and 0.2%, respectively. The producers and consumers bear the maximum burden of the US-China trade war in China (Carvalho et al., 2019). Although, Lai (2019) says that imposing tariffs only increases consumer costs. The US-China trade war makes the global value chain more costly, increases the suppliers' expenses, and negatively impacts workers' jobs (Charbonneau and Landry, 2018). Semin et al. (2019) also found that crude oil price was reduced to $73 from $79 per barrel after China's retaliation tariff policy, negatively impacting the Russian economy because crude oil was Russia's most important export item. Chinese GDP declined by 1.41% (Carataș and Spătariu, 2019), and the US GDP was reduced by 1.35% (Itakura, 2020) because of the escalating trade war between the US and China. The imports in both countries were also reduced for the same reason. Additionally, global investment declined to 1.7% in 2019-20 compared to 3.50% in 2017-18a, and the real GDP growth was also reduced to 3.3% in 2019 (Carataș and Spătariu, 2019). Similarly, Kumagai et al. (2019) found that the US-China trade war affected the US and China's economies by -0.4% and -0.6%, respectively. The tit-for-tat tariff policies reduced the world economy by 0.5% in 2020 (Archana, 2020), although Kumagai et al. (2019) argued that the world economy declined by 1.7%. The trade war increased the US's annual loss to $51 billion because of higher import prices (Fajgelbaum et al., 2020). Notably, the US-China trade war reduces the welfare (Itakura, 2020) and allocation efficiency of both countries and the world (Carvalho et al., 2019).

Alternatively, the US-China trade war strengthens the industrial production of Poland, Turkey, Russia, Thailand, Taiwan, and South Africa (Semin et al., 2019). A few emerging countries, such as Argentina, Brazil, Mexico, and India, also benefit from economic giants' protectionism policy (Carvalho et al., 2019). Although Abiad et al. (2018); Carataș and Spătariu (2019) state that the advanced economies, such as the EU and Japan, also gained from the trade war between the US and China's good business

relationship with the US. Furthermore, Archana (2020) finds that China gains from consumer, industrial, and agricultural goods. In contrast, the US gains only from consumer and industrial goods from the trade war in 2018. Chang et al. (2019) say that Japanese companies get more advantages from the escalating and retaliating tariff rate because they face less US competition in China, which helps the Japanese companies increase their total sales.

2.4 Trade War and Insider Trading

Since the trade war declaration negatively affects stock prices immediately (Jensen, N.M., 2007). The investors may suffer from this sudden negative change in stock prices. However, they have a chance to save their investment from the risk of losses or earn more if they have material non-public information on the trade war declaration and its effects on stock markets. Importantly, the insiders may get the non-public information through their currently or previously employed government agencies, and they may opportunistically use that information.

Insiders can generate higher returns from opportunistic trading because of asymmetric information in the market that can be created from uncertainty. The uncertainty increases the information advantage for insiders and insider trading (Li, X., 2020), which comes from private information. Private information is more valuable when the market is deficient in the information environment (Aboody and Lev, 2000). The atmosphere of information asymmetry between insiders and outsiders is higher during high uncertainty periods, and insiders benefit from non-public information trading. In addition, insiders reduce their risk of loss by applying their confidential information to the stock market during uncertainty. The trade war created asymmetric information in the market (Nagar et al., 2019) creating the possibility for the stock market investors to use this information opportunistically as a key earnings indicator (Verrecchia, 2001).

2.5 Political Connection and Insider Trading

In the first empirical chapter, we consider the political connections to define the opportunism of the insiders to be involved in informed trading during the trade war. Hence, political connection indicates the close relationship between insiders and government officials, politicians, and political parties (see, (Peng et al., 2017)). You and Du (2012) find that the political ties or good relations between the

government and the firm's manager help to gain competitive advantages for the firm. Similarly, insiders may get prior non-public information regarding the trade war announcement and firm performance through their personal connections. The connection may influence the insiders to behave opportunistically to exploit the information advantages. According to Jagolinzer et al. (2020), politically connected insiders had a significant information advantage during the financial crisis, and they traded opportunistically.

Furthermore, political lobbying increases the total number of insider trading (Brodmann et al., 2019). Green et al. (2020); Crudele (2020) report that a few US senators (e.g. Richard Burr of North Carolina and Dianne Feinstein of California) sold their holding shares significantly after a specific secret briefing on COVID-19 updates by government authorised committee. They earned higher returns from their opportunistic trading during the coronavirus pandemic. Following Jagolinzer et al. (2020), we examine whether political connections facilitate the insiders in informed trading - opportunistic behaviour.

2.6 Opportunistic and Routine Trading

Prior studies explore insider trades by exploiting their information advantage around specific corporate events, such as earning announcements (Ke et al., 2003), equity offerings (Lee, I., 1997), stock buybacks (Lee, D.S. et al., 1992), and dividend initiations (John and Lang, 1991). The insiders may generate higher returns from opportunistic trading because the opportunistic insiders do not participate in routine trading. Opportunistic insiders may participate in informed trading on prior material inside information regarding the upcoming government's announcement (see, Ali and Hirshleifer (2017)). Specifically, opportunistic insiders may involve in informed trading on non-public information regarding the declaration of the trade war. Opportunistic trading is more likely profitable because opportunistic insiders have an information advantage, and they may exploit their information advantage. According to Ali and Hirshleifer (2017); Cohen et al. (2012), opportunistic insiders have a significant information advantage in insider trading. Opportunistic insiders earned higher returns by informed trading during the financial crisis (Jagolinzer et al., 2020). Following Cohen et al. (2012); Ali and Hirshleifer (2017), in the second empirical chapter, we examine whether opportunistic insiders of US firms earn higher returns by informed trading compared to routine insiders during the trade war.

2.7 Social Connection and Insider Trading

In the third empirical chapter, we consider the social connections to define the opportunism of the insiders to sell their shares opportunistically during the trade war. We use the different network centralities to determine the insiders' social connections. Following the graph theory (e.g., Bonacich (1972); Freeman (1977)), we use degree, closeness and eigenvector to measure the network centralities (Afzali et al., 2021). Hence, we consider insiders' employment records and education backgrounds to calculate the network centralities. Through social connections, insiders may have access to non-public information and influence to behave opportunistically. Since well-connected insiders would have more access to private information (Burt, 1997; Nahapiet and Ghoshal, 1998) and participate in illegal insider trading (Ahern, 2017). Therefore, social connections can make the insiders opportunistic to generate greater returns by selling their shares because socially connected insiders may have prior access to non-public information regarding the trade war announcement and firm performance. Therefore, we examine whether social connections facilitate opportunistic insiders in informed trading during the trade war.

Chapter 3

3.1 Data

This section focuses on the data sources and consists of a few sub-sections.

3.1.1 Insider trading

In the thesis, we primarily focus on the insider trades in US stock markets between 22 July 2017 to 21 January 2019, inclusive. This range provides a balanced six-month window before and after the trade war. We collect the insider trading data from the Thomson/Refinitiv (Table 1 from insider data) database. Consistent with Jagolinzer et al. (2020), the thesis is restricted to open market transactions (purchases and sales) of common stocks and ignores option exercises, grants, and gifts. We aggregate the daily transactions to monthly by each insider of 2,992 US firms to keep the consistency with Jagolinzer et al. (2020), given the monthly transactions.

Primarily, we dropped the unnecessary variables like fdate, cdate, secid, ownership, sharesheld, amend, secdate, sigdate, maintdate, cleanse, trancode_ar, acqdisp_ar, tprice_ar, trandate_ar, optionsell, shares_adj, sharesheld_adj, tprice_adj, address1, address2, city, state, zipcode, country, and phone from the insider data. Consistent with prior research (Jagolinzer et al., 2020), we keep only those transactions which contain the security title "ORD" or "COM" or "PFD". We consider the P–Open market or private purchase of securities and S–Open market or private sale of securities, transaction codes and again we drop those transactions, which contain Transaction Code 8 or no information on insider tracsactions such as tprice, shares, A -Grant, award, or other acquisition, C-Conversion of derivative security, D–Sale (or disposition) back to the issuer of the securities, F–Payment of tax liability or exercise price by delivering or withholding securities, G–Bona fide gift, I–Discretionary transactions, which are an order to the brokers for executing the transactions at the best possible prices, J–Other acquisition or disposition (transaction described in footnotes), L – Small Acquisition, M–Exercise of conversion of derivative security, Unrecognized code: N(1 observation), O–Exercise of out-of-the-money derivative securities, U–Disposition due to a tender of shares in a change of control transaction, X–Exercise of in-the-money or at-the-money derivatives securities, Z–Deposit into or withdrawal from voting trust. We generate a dummy variable to define the transaction codes, 1 for purchase (P) and 0 for Sale (S). After

that, we sort the data by rolecode1, rolecode2, rolecode3 and rolecode4 to identify the officers, directors or CEOs.

Following Jagolinzer et al. (2020), we denote the rolecodes CEO, OD, AV, H, CFO, CI, CO, CT, EVP, O, OP, OB, OS, OT, O , P, S, SVP, VP, H, and OX as officers. The directors are defined by rolecodes CB, D, DO, and VC and CEOs are defined by rolecodes CEO. We create eight-digit CUSIP (Committee on Uniform Security Identification Procedures) number by merging cusip6 (six-digit CUSIP) and cusip2 (two-digit CUSIP). Then, we calculate the total market value of transactions by multiplying tprice (transaction price) and shares (total shares). We separate the total market value of purchases (P) and sells (S) by using the trancode P & S. Afterward, we create a duplicate variable of trandate to define tranmonth (calculation: trandate/100) to collapse the daily transactions (tprice shares tprice_buy, shares_buy, tmktvalu_buy, tprice_sell, shares_sell, tmktvalu_sell, and tmktvalu) to monthly transactions by CUSIP8, PERSONID (id of officers, directors, or CEOs), tranmonth, or dtrancode (dummy of trancode). Finally, the downloaded data contain the CUSIP8 (company identification number), company name, company ticker, security title, personal identification number, number of shares, transaction price, and transaction date. We calculate the total shares by adding the shares_buy and shares_sell, and all share numbers are divided by 1000 to express the share numbers in thousands. We also express the total market value of shares and the total market value of buy and sell in a million by dividing the market values by 1,000,000.

3.1.2 Security and Financials

We use the CRSP (WRDS) database for collecting the holding period return data and the Compustat – Capital IQ (WRDS) database for accounting data such as total assets, market value and common equity. Hence, we consider month-ending holding period return and quarter (fiscal) ending accounting data.

3.1.3 Political connection of insiders

Following prior studies (e.g., Duchin and Sosyura (2012); Jagolinzer et al. (2020); Akin et al. (2019)), we define the political connections of insiders based on whether any of the officers or directors or both have current or previous work experience at Federal Reserve, Treasury Department, Congress or House, or bank regulator (e.g. Office of Comptroller of Currency, Office of Thrift Supervision, and Federal

Deposit Insurance Corporation). We retrieve the political connections data by analysing each person's biographical data as provided in the company's proxy statement.

3.1.4 Opportunistic and Routine insiders (trades)

We define the opportunistic and routine insiders along with trades by using three years back trading algorithm (see, (Cohen et al., 2012)). As we mentioned before, we have collected the insider trading data from the Thomson/Refinitiv (Table 1 from insider data) database.

3.1.5 Social connection of insiders

We consider the insiders' educational background and employment records (prior and current) of all employees of all US firms for defining social connections. We collect the education background and employment records data from the BoardEx database (Afzali et al., 2021).

3.2 Methodology of the Thesis

In the first empirical chapter, we investigate whether politically connected insiders trade opportunistically by using material non-public information during the trade war in 2018. To find the potential results, we use cross-sectional regression (e.g., Lee, E. and Piqueira (2019); Akbulut (2013); Akbulut and Ucar (2023)) with the multi-level fixed effect as the baseline model. We also use the event studies for the different time windows surrounding the trade war announcement date to support the baseline results. In addition, we use the difference-in-difference specification to support the prior results. Hence, fixed effects control any time-invariant and cross-sectional differences between firms for insiders (e.g., corporate governance). The fixed effects help to mitigate the concerns of omitted firm-level characteristics, which might be associated with future performance and trading activity. Precisely, the month-fixed effects control the change in market conditions, which affect all firms in a given period. This approach controls the possibility that the market conditions differentially affect the firms for insiders. We separately consider the direct, recent and stale connections of insiders and run cross-sectional regressions with fixed effects to find the robustness of our baseline findings. Importantly, we use the IV-2SLS (Xie et al., 2023; Rahman et al., 2020; Cheng, Lin et al., 2023), where the purchase ratio (see, (Rahman et al., 2020)) is used as the instrumental variable, to mitigate the potential

endogeneity concerns (e.g., omitted variable bias and measurement error from manually collected political connection data).

The second empirical chapter examines whether opportunistic insiders generate higher returns than routine insiders during the trade war. Similar to the first empirical chapter, we use cross-sectional regression (e.g., Lee, E. and Piqueira (2019); Akbulut (2013); Akbulut and Ucar (2023)) with the fixed effect and the event studies for the different time windows to find the potential results. We also use the difference-in-difference specification to support the prior results. We classify the insiders by gender, age, board position, compensation and sectors and run cross-sectional regression with fixed effects to test the robustness of prior findings. In addition, we consider the IV-2SLS (Xie et al., 2023; Rahman et al., 2020; Cheng, Lin et al., 2023), where the purchase and sell ratios (See, Lee, E. and Piqueira (2019)) are used as the instrumental variables, to mitigate the potential endogeneity concerns (e.g., omitted variable bias and measurement error).

In the final empirical chapter, we investigate whether socially connected opportunistic insiders earn higher returns by using material inside information than socially connected routine insiders during the trade war. Similar to the previous chapters, we use the cross-sectional regression (e.g., Lee, E. and Piqueira (2019); Akbulut (2013); Akbulut and Ucar (2023)) with the fixed effect as the baseline model and event studies for the different time windows surrounding the trade war announcement date to support the baseline results. We even use the difference-in-difference specification to support the prior results. We consider the different alternative measurements of social connections and insiders from China-connected firms to test the robustness of the potential findings. Finally, we use the IV-2SLS (Xie et al., 2023; Rahman et al., 2020; Cheng, Lin et al., 2023), where the selling ratio (See, Lee, E. and Piqueira (2019)) is used as the instrumental variable, to mitigate the potential endogeneity concerns (e.g., omitted variable bias and measurement error).

Chapter 4

4. Political Connections and Opportunism of Insider Trading

Abstract: *This chapter analyses the short-term profit making behaviour of politically connected insiders at all US companies during the trade war in 2018. The baseline result refers to the positive relation between political connections and informed trading during the trade war. These relations are stronger among insiders with recent direct political links than stale ones. Additionally, event studies and difference-in-differences results indicate that the politically connected insiders generated higher abnormal returns at event windows surrounding the announcement date of the trade war. Notably, the robustness tests help to mitigate the endogeneity concerns. All results suggest that politically connected insiders can have a significant information advantage during the trade war and that connections can facilitate them to behave opportunistically.*

Keywords: Insider Trading, Political Connections, Asymmetric Information, Trade War and Holding Period Returns.

4.1 Introduction

4.1.1 Background and Contributions

Former US President Donald Trump announced the trade war in 2018 for the political win over China (Fetzer and Schwarz, 2020). This announcement had an exogenous effect on the whole markets of US partner countries and the US itself, depending on their business transaction types. The impact was positive when any partner country could act as an alternative source of Chinese exports to the US. However, this exogenous event, the trade war, affected the US economy mainly because of being directly involved in the war. In addition, the instant reaction in the stock markets was obvious after announcing that event. Usually, stock market investors react positively to positive news and react negatively to negative news. However, the investors have a greater chance of more earnings on this news if they are better informed than other investors. Generally, the information advantage is more remarkable for the firms' insiders because of the direct connection with the firm's operations. However, politically connected insiders have a significant information advantage in insider trading (Jagolinzer et

al., 2020), and that connection can facilitate the insiders to behave opportunistically during exogenous events or policy uncertainty. In this chapter, we investigate whether the political connections facilitate the politically connected insiders in a particular form of opportunism-informed trading during the trade war of 2018. We expect that politically connected insiders may inform the political agenda of the US government through their current or previous connections with government agencies before being available to the public. The uniqueness of this chapter is to focus on politically connected insiders' trades during an exogenous political event like a trade war rather than the financial crisis.

The political connection is more likely influential in informed trading when government plays an active role in the economy during a financial crisis or policy uncertainty. Economic policy uncertainty increases the information advantage for insiders and insider trading (Li, X., 2020). Accordingly, the politically connected insiders had a significant information advantage during the financial crisis in insider trading – opportunistic behaviour (Jagolinzer et al., 2020). Notably, there is no doubt that the politically connected insiders had access to private information during the crisis period. However, it is not clearly identified that insiders would trade on that information, and insiders have the scope to behave opportunistically because of information asymmetry. Insiders' opportunistic behaviour may cause significant risks, such as information disclosure and abstaining from trading. We consider the joint tests of political connections and insiders' trading based on the information advantage. In this regard, we use alternative measurements of event studies and consider the recent direct links of insiders. Importantly, we find consistency with the baseline results.

Notably, the politically connected officers had more information regarding the upcoming financial crisis and information advantage (Jagolinzer et al., 2020; Cziraki, 2018), and they generated greater abnormal returns (Gangopadhyay et al., 2019; Van Geyt et al., 2013). The financial crisis is mainly an exogenous event but not a political one like a trade war. From this consideration, we expect insider trading by politically connected CEOs, directors and officers during the trade war to be more pronounced than in other periods. The political connection advantage may influence the insiders to behave opportunistically to exploit the information advantages (Ziobrowski et al., 2004). This information advantage may come from their current or previous work experiences at the Federal Reserve, Treasury Department, Congress

or house, or bank regulator (e.g., Office of Comptroller of Currency, Office of Thrift Supervision, and Federal Deposit Insurance Corporation). In this chapter, we measure the informativeness of insiders' trades based on the predictive ability for future performance.

Following Jagolinzer et al. (2020), we contribute to this literature by examining whether political connections facilitate opportunistic behaviour in informed trading of insiders at all US companies using a sample of all open market purchases and sales between 2017 and 2019.

We begin the analysis by examining the trades with and without political connections of insiders in the pre-trade war, trade war and post-trade war periods. Notably, we find the predictive ability of insider trades for holding performance during the trade war's first three months (TradewarF3M) is higher than in the next three months and pre-trade war periods. Although the differences in holding period returns are positive in the pre-trade war and last three months of trade war periods, more returns are associated with purchases. We find that the difference in one-month holding period returns between purchases and sales during the first three months of the trade war is 0.032 for insiders with political connections, which is greater than the pre-trade war and post-trade war period in the sample. The difference in these differences (politically connected and non-politically connected), 0.023, is both economically and statistically significant (t-statistic of 2.71).

Additionally, we find that the coefficients of Buyers are positive and significant across the event windows for the politically connected insiders. Event studies results indicate that the politically connected insiders generated higher abnormal stock returns from net purchases at all event windows surrounding the announcement date of the trade war. This inference is consistent with the outcome of baseline regression that political connections can facilitate insiders during the trade war. The uniqueness is to use the difference-in-difference approach with different event windows and find evidence that politically connected insiders earn higher abnormal returns than non-connected insiders.

Notably, there was no other major political event (e.g., an election) during the trade war period in 2018. Thus, considering trade war time is free from other exogenous events like the interim election on 06 November 2018. Considering all the factors, the findings of this chapter are robust. The alternative measurements of event studies and instrumental variable-2SLS results support to make more substantial

evidence in favour of politically connected insiders. These findings suggest that political connections have the information advantage that insiders trade to exploit their advantages. To strengthen this finding, we consider the insiders' trades which are reported to US SEC timely. Thus, this consideration is not subject to checking the legal issues of insider trades. The findings from this chapter are remarkable in the current stock market environment, where the government plays an active role in US capital markets. Therefore, we encourage other investors and capital market regulators to monitor insider trades with political connections.

4.1.2 Significance and Research Question of this Study

Following the prior studies (e.g., (Jagolinzer et al., 2020); Cziraki (2018); Abumustafa and Nusair (2011)) on insider trades and earning abnormal returns (e.g. Gangopadhyay et al. (2019); Van Geyt et al. (2013)) during the financial crisis, we expect that insider trades by politically connected insiders during the trade war to be more pronounced than other periods (pre and post-trade war). Specifically, we expect that the political connection advantage may influence the insiders to behave opportunistically during that period. The politically connected insiders may get the information, through their current or previous connection with the government agencies, regarding the announcement of a trade war before spreading it publicly. This prior information may help them predict the stock market trend and generate more returns. In this chapter, we measure the opportunism or informativeness of insiders' trades based on the predictive ability for future performance.

As mentioned earlier, prior research focuses on the political connection advantage by insiders during the financial crisis. In addition, politically connected insiders generated higher holding period returns than non-politically connected insiders during that period, although the financial crisis was not an exogenous political event. On the other hand, the considerable period (Trade War) in this chapter is an exogenous political event. Consequently, there is a good association between trade war and political connections. This political connection advantage may influence the insiders to behave opportunistically, and they may generate higher holding period returns than non-connected insiders during the trade war. Thus, we have an opportunity to contribute to this literature by examining whether political connections facilitate opportunistic behaviour in informed trading by insiders of all publicly traded companies using a sample of all open market purchases and sales of common stock between 22 July 2017 and 21 January

2019. This chapter examines of the research question "how political connection influences the insiders in informed trading – opportunistic behaviour during the trade war?"

We measure the analysis by examining the trades with and without political connections of insiders in the pre-trade war, trade war (first three months and last three months) and post-trade war periods. Consistent with Jagolinzer et al. (2020), the findings suggest that insiders with political connections likely earn more than insiders without political connections during the trade war (TradewarF3M). The unique contribution of this chapter is to focus on politically connected insiders' trades during a political event like a trade war rather than the financial crisis. The overall findings from the results suggest that political connections provided insiders with asymmetric information and that insiders traded to exploit their advantage.

4.1.3 Structure

The remainder of the study is organised as follows. The following section explains the literature review on insider trading, trade war and political connections. Section 4.3 provides the data and method. Section 4.4 describes the summary statistics and the main findings. The final section concludes the chapter.

4.2 Literature Review

From this section, the readers can get an idea of the central themes of the chapter with prior studies. Primarily, the section is started with trade war and insider trading. The readers can get a idea of insider trading during the uncertainty that may help insiders trade opportunistically. Finally, this section ends with opportunistic trades, explaining how the political connection helps gain more information opportunistically.

4.2.1 Trade War of 2018

The US-China trade war was initiated in 2018 by initially imposing 10% tariffs (later escalating to 25%) on Chinese exports ($200 billion) to the US and retaliating 10% tariffs on American exports ($65 billion) items to China (Van Aaken et al., 2019; Bhandari et al., 2019; Archana, 2020; Kumagai et al., 2019; Bekkers and Teh, 2019; Lai, 2019; Liu, T. and Woo, 2018). The American government claimed that the Chinese government unfairly subsidised their domestic manufacturers (Bhandari et al., 2019).

The US government also argued that China acquired US technology by discounting rates illegally and using unfair means, and WTO failed to hold the US's interest with China (Fatma and Bharti, 2019). Furthermore, the US authority is concerned about Chinese cyber economic spying on US firms, innovative biased policies, and influencing their currency's devaluation (Liu, K., 2020).

4.2.2 Trade War and Stock Market

The Chinese economy was shocked by the trade war in 2018, which also negatively shook the Chinese stock market (Liu, K., 2020). The trade war, particularly the escalating tariffs, negatively impacted the stock prices of non-state firms in the Chinese stock market (Wang, X. et al., 2020).

The adverse reaction to the trade war declaration on stock prices is not current news in the US. In 2002, the former US president, George Walker Bush, declared an increase in the tariff rate on steel imports from 8% to 30%. It negatively impacted the stock prices, and the removal of tariff escalation reacted positively to stock prices in the US stock markets (Jensen, N.M., 2007). Similarly, the US stock markets reacted immediately to the news of the trade war declaration against China in 2018. Even former US President Donald Trump's political information on the US and China trade war on social media (Twitter) primarily affected the stock prices and positively on VIX of the S&P 500 (Burggraf et al., 2020).

4.2.3 Trade War and Insider Trading

Since the trade war declaration negatively affects stock prices immediately (Jensen, N.M., 2007). The investors suffer from this sudden negative change in stock prices. Consequently, the insiders may also suffer from that declaration. However, they have a chance to save their investment from the risk of losses or earn more if they have material non-public information on the trade war declaration. Notably, insiders are in a better opportunistic position than outsiders to make more holding period returns because the insiders are more informed on non-public information before it is available to the outsiders. The insider may use the non-public information on trade war declarations through their currently or previously employed government agencies, and they may participate in trading, buying, or selling their own firm’s shares to earn more holding period returns. Following this expectation, this chapter first contributes to the literature on the trade war’s effect on insider trades and returns from that trading, broadly on stock returns.

Insider trading on material inside information adjusts the stock prices to reflect the news (Carlton and Fischel, 1983). Insiders can profit from insider trading because of asymmetric information in the market that can be created from economic policy uncertainty (EPU). The economic policy uncertainty was clearly spiked around several political events such as Gulf Wars, presidential elections, the 9/11 terrorist attack and Trade War[7]. In addition, the economic uncertainty deteriorates the information environment in the market (Nagar et al., 2019). Significantly, this uncertainty increases the information advantage for insiders and insider trading (Li, X., 2020). This advantage comes from private information. Private information is more valuable when the market is deficient in the information environment (Aboody and Lev, 2000). The atmosphere of information asymmetry between insiders and outsiders is higher during high uncertainty periods, and insiders benefit from non-public information trading. In addition, insiders reduce their risk of loss by applying their confidential information to the stock market during uncertainty. In asymmetric information environments, insiders can profit more by purchasing the stocks or avoiding sales (Skaife et al., 2013). We use a unique setting to account for economic uncertainty by considering the trade war between the US and China contributing to the recent studies by Yung and Root (2019); Phan et al. (2019); Nguyen and Phan (2017); Gulen and Ion (2016) on the economic policy uncertainty index.

The escalating of the tariff rate from 8% to 30% by former US president, George Walker Bush in 2002 negatively impacted the stock prices in the US stock markets (Jensen, N.M., 2007). Similarly, the US stock markets reacted immediately to the news of the trade war declaration against China in 2018. Even former US President Donald Trump's tweeted information on the US and China trade war on social media (Twitter) primarily affected the stock prices and positively on VIX of the S&P 500 (Burggraf et al., 2020). Trade war created asymmetric information in the market (Nagar et al., 2019) creating the possibility for the stock market investors to use this information opportunistically as a key earnings indicator (Verrecchia, 2001).

[7] The US-China trade war was initiated in 2018 by initially imposing 10% tariffs (later escalating to 25%) on Chinese exports ($200 billion) to the US and retaliating 10% tariffs on American exports ($65 billion) items to China.

The insiders may use the material non-public information on trade war declarations through their currently or previously employed government agencies. It is, therefore, possible that they participate in trading their own firm's shares to earn more returns. Therefore, we propose the following hypothesis.

Hypothesis 1: The trade war reinforces the positive relationship between insider's purchases (net) and holding period returns.

4.2.4 Political Connection and Insider Trading

The advantage of political connection may influence the insiders to behave opportunistically to exploit the information advantages. Political links are more likely influential in insider trading when government plays an active role in the economy during a trade war or financial crisis. According to Jagolinzer et al. (2020), politically connected insiders had a significant information advantage during the financial crisis in insider trading – opportunistic behaviour. During the financial crisis of 2008, politically connected corporate insiders engaged in abnormal share trading before publicly announcing the corporate information, creating a vulnerability in the stock market (Jagolinzer et al., 2020). Osborne (2004) states that an individual competes for personal interest in any country's economic condition. Following Jagolinzer et al. (2020), we examine whether political connections facilitate the insiders in the US in informed trading - opportunistic behaviour.

Furthermore, political lobbying increases the total number of insider trading, and firms get more government contracts, expanding the firm value (Brodmann et al., 2019). Green et al. (2020); Crudele (2020) report that a few US senators (e.g. Richard Burr of North Carolina and Dianne Feinstein of California) sold their holding shares significantly after a specific secret briefing on COVID-19 updates by government authorised committee. They traded opportunistically and saved themselves from significant losses from the downward stock market because of the coronavirus pandemic. Opportunistic traders reduce their trading when the plausible loss from illegal insider trading increases (Cohen et al., 2012). However, according to the Stop Trading on Congressional Knowledge (STOCK) Act of 2012, a security transaction based on non-public information will be illegal if this information is derived by a person who is a congressman, government official, judiciary, and staff of Congress (Green et al., 2020; Crudele, 2020). Ahern (2017) finds that insider information generally moves through strong social

bonds such as family, friends, and geographical preference, making illegal insider trading networks illegal. A higher number of insiders indicates higher insider trading (Acharya and Johnson, 2010).

Insider trading collaborates more information regarding the stock of the companies (Fidrmuc, J.P. et al., 2006). Biggerstaff et al. (2020); Esen et al. (2019); Gangopadhyay et al. (2019) find that both insider purchases and sales direct the abnormal stock returns. Esen et al. (2019); Gangopadhyay et al. (2019); Fidrmuc, J.P. et al. (2006) find a positive relationship between insider trading and abnormal stock returns of the firm. Gangopadhyay et al. (2019) also find that insider purchases are highly profitable at non-financial firms, but it is insignificantly profitable for banks one month after the purchase. Insider trading increases stock market volatility (Du and Wei, 2004; Chiang et al., 2017). Insider trading during the financial crisis 2008-09 impacted inversely on the stock market (Jagolinzer et al., 2020; Cziraki, 2018). However, insider trade was not profitable for all financial firms during the post-Dodd-Frank period. Insider sales are less informative if the sellers sell the shares to meet their liquidity needs. Cheng, Louis et al. (2006) find that the higher insider trading by directors makes a broader spread. Dai et al. (2016) find the inverse relationship between governance quality and profitability from insider sales.

As mentioned earlier, insiders are more informed about the material non-public information of their firms than outsiders. However, the politically connected insiders have additional access to the government declaration and their firms' non-public information before being available to the general insiders and outsiders. The politically connected insiders' information is reliable because they get this information through their reliable current and previous connections with government agencies. This reliable information helps to predict the movement of stock prices accurately. The politically connected insiders may use this information opportunistically and earn more holding period returns than non-connected insiders.

Notably, politically connected insiders get this reliable information before being available to other insiders and outsiders. This advanced information is quicker, and it helps politically connected insiders make the immediate purchase or sale decision for their shares before increasing or decreasing the prices in the market. This decision helps to increase the possibility of earning more holding period returns than non-connected insiders.

In summary, the political connections may influence the insiders to behave opportunistically during the trade war, particularly during the first three months of the trade war. They may earn more holding period returns than the non-politically connected insiders during the same period of the trade war. Since politically connected insiders traded to exploit their information advantages during the financial crisis (Jagolinzer et al., 2020). Politically connected insiders are expected to earn more holding period returns to exploit their information advantages during the trade war period. This expectation is perfect because the trade war is an exogenous political event, but the financial crisis is not political. Thus, we can easily connect the trade war and insider trades. On the other hand, insider buyers are more opportunistic than insider sellers. Similarly, in this chapter, it is considered that the buyers are more opportunistic than sellers because the buyer has more chance to observe the market before holding the shares. However, sellers do not have the opportunity for more earnings if the stock price is downward. Although in the downward stock markets, the buyers can earn more returns if they make buying decisions. Moreover, the buyers are more opportunistic if they have political connections or they have prior news on government declarations, which may affect the stock prices. We expect the politically connected insiders to have an information advantage and earn greater returns.

We also expect that direct connection is more substantial than indirect connection. The directly connected insiders get the information in advance than indirectly connected insiders. Notably, the indirectly connected insiders do not have direct access to the information. They do not know about future stock market movements on sudden government declaration of significant policy change if directly connected insiders do not share the non-public information of government declaration with them. Therefore, directly connected insiders can quickly execute the transactions before sharing the information with indirectly connected insiders. Accordingly, the directly connected insiders have more opportunities to earn greater holding period returns from the advanced and reliable information from their direct connections with government agencies. Even, our expectation is obvious that the recent direct connection is stronger than stale connections because the recently directly connected insiders have recent connections with government agencies and have more chances to get reliable material inside government information than stale directly politically connected insiders. The recent connections are

stronger because the stale connections may not exist currently, and they do not get the proper or reliable information from their previously worked government agencies. Based on this information, they may misjudge the movement of stock prices. However, recent connections have more chance of getting reliable and quick information than stale connections. Notably, the recent direct politically connected insider can quickly execute the transactions before going this information to the stale directly connected insiders. Accordingly, the recently directly connected insiders have more opportunities to earn higher returns from reliable and quick information from their recent connections with government agencies.

Moreover, from the thinking of a better relationship between female colleagues and government agencies, there may have more possibility of sharing non-public information with female colleagues before the male colleagues. If the female colleagues prioritise sharing the information, they can use this private information opportunistically to earn more holding period returns during the trade war. Furthermore, the politically connected young insiders (Aged: Below 55 years) may use their connections to get more information for more earnings to secure their future. They may have more intention to earn more returns to maintain a luxurious life than the old insiders. These intentions may push them to collect material inside information aggressively through their connections with government agencies. More and quick information helps them understand the movement of stock markets and execute the transactions to earn greater returns. Even, from the thinking of a better relationship between CEOs and government agencies than with directors and officers, there may have more possibility of sharing private information with the CEOs before the others. If the CEOs have the priority of sharing the information, they have the chance to use this non-public information opportunistically to earn more returns during the trade war.

Considering the prior discussions, we propose the following hypotheses.

Hypothesis 2: Insider's political connections reinforce the relationship between insiders' trades and greater holding period returns during the trade war.

Hypothesis 2a: The direct recent political connections more reinforce the relationship between insiders' trades and greater holding period returns than direct stale politically connected insiders.

Hypothesis 2b: The political connection reinforces the relationship between female insiders' trades and greater holding period returns than politically connected male insiders.

Hypothesis 2c: The political connection reinforces the relationship between young insiders' (Age: Below 55 Years) trades and greater holding period returns than politically connected old insiders (Age: Above 55 Years).

Hypothesis 2d: The political connection reinforces the relationship between CEO's trades and greater holding period returns than politically connected directors and officers.

Hypothesis 2-2d imply that the politically connected insiders earn higher returns than the non-politically connected insiders during the trade war's first three months; other things remain the same. We test these hypotheses by using cross-sectional regression with the month and firm fixed effects. We also use the event studies for the different short time windows ((0, 30), (0, 20) and (0, 60)) and difference-in-difference specification. We account for the potential heterogeneity concerns using the time and firm fixed effects and difference-in-difference approaches. Hence, firm fixed effects control any time-invariant and cross-sectional differences between firms with and without political connections (e.g., corporate governance). These fixed effects help to mitigate the concerns of omitted firm-level characteristics, which might be associated with future performance, trading activity and political connections. The month-fixed effects control the change in market conditions, which affect all firms in a given period. We consider the month fixed effect separately as a different model to allow the period effects to differ between the models. This approach controls the possibility that the market conditions differentially affect the firms with and without politically connected insiders. Month fixed effect considers the period indicator variables in the first and the last three months of the trade war. In addition, to account for the potential endogeneity issues (e.g., measurement error biases from political connection data), we consider the IV-2SLS, where the purchase ratio is used as an instrument. Once we use the instrumental variable approach, the endogeneity issue (e.g., measurement error) is mitigated, and the coefficient estimates increase, becoming more positive and statistically significant. We perform the Hausman test to reject the null hypothesis that 2SLS and baseline coefficients on the politically connected trades are the same.

In previous studies, the effect of trade wars on the economy is common, but it is rarely focused on the impact on the stock market and insider trades. To the best of my knowledge, there are barely any studies on the trade war's effect on insider trades' returns to date. However, the trade war's political intention

is rare in recent studies. Previous scholars barely used microeconomic and finance theories to explain the stock return effects of economic uncertainty, e.g. trade war. Moreover, in this chapter, we create a link between the trade war and the insider maximising self-interest by using asymmetric information. We also build a tie with these insiders, who have a political connection, insider trading, and the effect on insider trades. The uniqueness of this chapter is that it focuses on the recent trade war and the informed trading by insiders within the extension of political connections. We will, therefore, reflect on these issues in the whole chapter.

4.3 Data and Method

Section 4.3 intends to lead the readers from the related literature to research data and methods used for the investigation in this chapter. The research data of this empirical study show insider trades of all US firms, political connections of insiders and firm-level stock and financial data from 22 July 2017 to 21 January 2019, inclusive. Specifically, the first empirical study focuses on the political connections and insider trades in US during the trade war in 2018. Subsequent to research data, methods intended to provide the overall results of the research question "how does political connection influence the insiders in informed trading – opportunistic behaviour during the trade war?" This chapter also intends to provide the data management or cleaning to make the final dataset for applying the empirical models.

4.3.1 Data Sources and Sample Selection

This section focuses on the data sources and appropriate steps to derive the final samples. Since this study focuses on insider trading, e.g. political connections of insiders of US firms in the pre-trade war, trade war and post-trade war, this section is divided and discussed into three sub-sections.

4.3.1.1 Insider trading

Notably, the trade war between US and China started on 22 January 2018 when former US President Donald Trump announced tariffs on imported goods such as solar panels and washing machines (section 201). Accordingly, this chapter primarily intends to focus on the insider trades between 22 July 2017 to 21 January 2019, inclusive. This range provides a balanced six-month window before and after the trade war. In this chapter, we collect the data of insiders' trades from the Thomson/Refinitiv (Table 1 from insider data) database. This database contains all information on insiders' trades in their company's share. Consistent with a prior study (Jagolinzer et al., 2020), this empirical study is restricted to open

market transactions (purchases and sales) of common stocks and ignores option exercises, grants, and gifts. This study looks closely at daily transactions aggregated monthly by each insider of 2,992 US firms as consistent with Jagolinzer et al. (2020), given the monthly transactions. It refers to the six months from 22 July 2017 to 21 January 2018 as the 'pre-trade-war period', from 22 January 2018 to 21 April 2018 as the 'trade war first three months (TradewarF3M) period', from 22 April 2018 to 21 July 2018 as the 'trade war last three months (TradewarL3M) period' and from 22 July 2018 to 21 January 2019 as the 'post-trade-war period'. In the total time horizon, there were 98,591 daily insider transactions (buy and sell). After collapsing from daily transactions to monthly transactions, the number of transactions reduced to 34,922.

Sequentially, we calculate the explanatory variable, Buyer. Buyer is an indicator variable equal to "1" if the number of shares bought by insider *i* in firm *j* and month *t* exceeds the number of shares sold by insider *i* in firm *j* and month *t*. Here, we consider the dummy "0" if the total number of shares bought by insider i in firm j and month t equals the number of shares sold by insider *i* in firm *j* and month *t.* Afterwards, we generate the dummy variables for pre-trade war, trade war and post-trade war depending on the previously defined tranmonth. We also create two separate dummy variables for the trade war's first and last three months. Here, the pre-trade war refers to the six months from 22 July 2017 to 21 January 2018 as the 'pre-trade-war period', from 22 January 2018 to 21 April 2018 as the 'trade war first three months (TradewarF3M) period', from 22 April 2018 to 21 July 2018 as the 'trade war last three months (TradewarL3M) period' and from 22 July 2018 to 21 January 2019 as the 'post-trade-war period'. In the robustness test, we use the purchase ratio as an instrumental variable to test the endogeneity and consistency with the baseline results.

4.3.1.2 Political connection of insiders

Following prior research (e.g. Duchin and Sosyura (2012); Jagolinzer et al. (2020); Akin et al. (2019)), we consider the political connections based on whether any of the directors or at least one of the top-level officers has current or previous work experience at Federal Reserve, Treasury Department, Congress or house, or bank regulator (e.g. Office of Comptroller of Currency, Office of Thrift Supervision, and Federal Deposit Insurance Corporation). All directors and top-level officers at

companies in which one or more have such experience are considered politically connected. We indicate that the political connections may be direct, indirect, or both connections of officers, directors, and/or CEOs. Connections are defined as direct when officers, directors and/or CEOs have such work experience, and the connections are defined as indirect when the directors, officers and/or CEOs are connected through the directly connected directors, officers and/or CEOs.

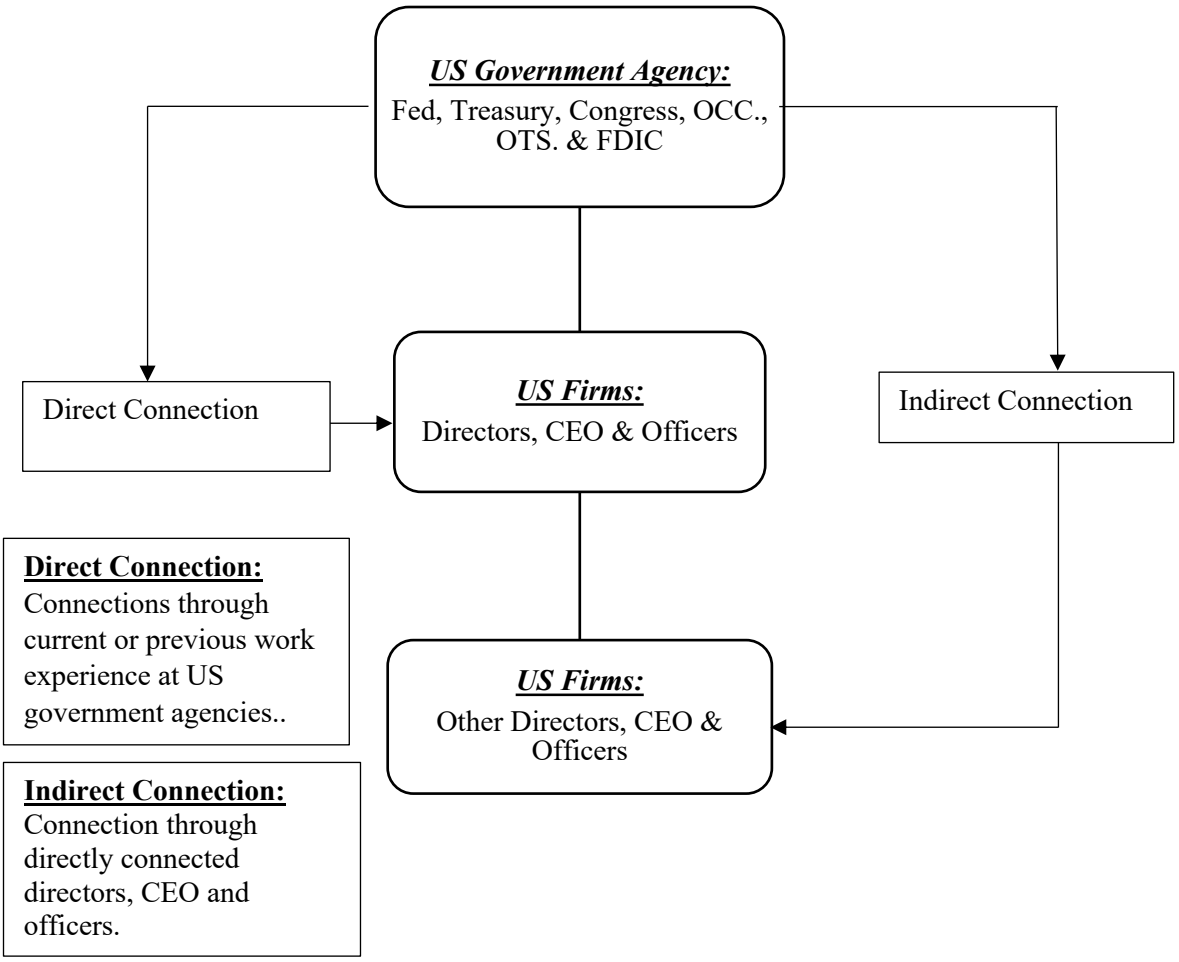


Figure 4.1: Political connection map

Figure 4.1 presents the political connections of directors, officers and CEOs used to test for information sharing among the other US firms' directors, officers and CEOs. We use the company's proxy statement to determine whether a particular director, officer and CEO have work experience at the Federal Reserve, U.S. Treasury Department, Congress, Office of Comptroller of Currency (OCC), Office of Thrift Supervision (OTS), or Federal Deposit Insurance Corporation (FDIC). Connections are defined

as direct when the director, officer or CEO has such experience. All other directors, officers, and CEOs are classified as indirectly connected.

We connect the professional network to political connections to measure the benefits of informed trading. According to Sorkin (2010); Cao et al. (2015); Kim, S. (2016), private information is shared among the directors, and it is difficult to verify without direct observations. Accordingly, we focus on direct or indirect connections, considering shared inside information with directors and officers.

The work experience of the CEO or any director or top-level officer is determined by analysing each person's biographical data as provided in the company's proxy statement. We have manually collected such experience data from the official website of the US Securities and Exchange Commission (EDGAR | Company Filings) using the CIK number of an individual company. We click on view filings and select proxy statements from the dropdown menu of Exclude insider transactions. Then, we collect such experience data from the proxy statements. The unique contribution of the political connection data is using the firms' proxy statements for insider trading research.

We generate a dummy variable for political connections if the director and/or officer and/or both have worked at the government agency. We denote the political connections as the 'PolConnection' variable. PolConnection equals 1 if the director and/or officer and/or both have worked at the government agency and 0 otherwise. We also generate the dummy variable for the direct connections of directors, officers and CEOs. We create the separated indicator variables for director direct connections, officer direct connections and CEO direct connections. Here, director, officer and CEO direct connections are indicated by 1 if they are directly related to government agency employment. The direct connections are defined as recent if the work experience in a government agency is within the last three years. For example, if any officer, director, or CEO stepped down from the government agency in 2014, Recency = 3. If work experience continues through 2017, the connection is considered the current and the Recency is indicated as 0. We consider a connection "recent direct connection" if Recency ≤ 3 and a "stale direct connection" if Recency > 3. Here, a recent direct connection is coded as 1 if Recency ≤ 3 and a stale direct connection is coded as 1 if Recency > 3.

4.3.1.3 Security and Financials

We collect the holding period return data from CRSP (WRDS) and accounting data such as total assets, market value and common equity from Compustat – Capital IQ (WRDS). To appear in the sample, we require the holding period return at the end of the month and total assets, market value and common equity at the end of the fiscal quarter.

We calculate size by log of market value (mkvaltq) and BM by common equity and market value (ceqq / mkvaltq). We denote the quarterly accounting data as monthly data based on tranmonth (convert quarter data to month data). We consider the past month's return as a control variable and we generate this variable by considering the previous month's return. We also consider the one-month holding period return as a dependent variable, and we generate this variable by considering the one-month's holding period return. We use the CUSIP number as a company identifier in the existing dataset. We merged the Compustat – Capital IQ dataset with the insider trading dataset (including political data) by tranmonth and CUSIP. We drop the observations that have missing values in insider trading data.

4.3.1.4 Gender and age

In this empirical chapter, we consider the politically connected insiders' gender and age. We collect the gender and age of directors, officers and CEOs data from the Execucomp (WRDS) database. We generate two indicator variables for males (GENDER_MALE) and females (GENDER_FEMALE). The Male is coded as 1 if the gender is male, and the female is coded as 1 if the gender is female. We also generate two indicator variables for age above (AGE_A55) and below (AGE_B55) 55. Here, we also use the CUSIP number as a company identifier. We merge the Execucomp dataset with the existing dataset (including security and financial data) by tranmonth and CUSIP. We drop the observations which have missing values in existing data.

At the final stage of the data cleaning process, we identify and drop the duplicate observations by CUSIP, individual id and transaction month. All the continuous variables are winsorized at the 1st and 99th percentiles, and all the insider trades (aggregated by month) of $100 million or more are excluded from this analysis. We exclude all the missing values' observations of all-important variables. After applying all the data cleaning techniques, the final sample for cross-sectional tests consists of trades by

13,211 insiders at 2,992 companies from 22 July 2017 to 21 January 2019, for a total of 24,011 insider months.

4.3.2 Variable definition and construction

This section focuses on the definition and construction of variables in the sample. We include one dependent, independent, and control variables in the dataset.

Table 4.1: Definitions of dependent, independent, control and other variables

Variable	Abbreviation	Definition and construction	Data source
PolConnection	Political Connections	Following Jagolinzer et al. (2020); Akin et al. (2019); Harvison (2019), this variable defines the political connection (direct or indirect) of insiders and measures a dummy variable taking value 1 if an insider has the political connection, and 0 otherwise. This variable provides the scenario of informed trading- opportunistic behaviour by politically connected insiders.	Proxy statement
Buyer	Net Purchases (Buy minus Sell)	Following Cohen et al. (2012); Jagolinzer et al. (2020), we use a dummy taking value 1 if the transaction type net purchases, 0 otherwise. This variable is considered an independent variable as the primary measure.	Thomson/Refinitiv (WRDS) database
One-month Holding period returns (HPR_{t+1})	Buy and Hold Returns	Holding period returns of firms on a monthly basis. Jagolinzer et al. (2020); Harvison (2019); Akin et al. (2019) find that the return is associated with the profitability from insider trading during the last financial crisis.	CRSP (WRDS)
Size	Size	Following Jagolinzer et al. (2020); Harvison (2019); Akin et al. (2019), we consider the size as a control variable to control the effect on holding period returns. Here, size is the natural log of market value at the end of quarter *t*.	Compustat – Capital IQ (WRDS)

BM	Book-to-Market	The book-to-market ratio at the end of quarter *t* where book value is from the prior quarter-end. Following Jagolinzer et al. (2020); Harvison (2019); Akin et al. (2019); Cziraki (2018), we consider the book-to-market value as a control variable to control the effect of market value on holding period returns .	Compustat – Capital IQ (WRDS)
Past-month Holding period returns (HPR_{t-1})	Buy and Hold Returns	Holding period returns of firms on a monthly basis. Jagolinzer et al. (2020); Harvison (2019); Akin et al. (2019) find that the return is associated with the profitability from insider trading during the last financial crisis.	CRSP (WRDS)

In summary, we consider HPR_{t+1} as a dependent variable, Buyer as an independent variable, and size, BM and PastMonRet as control variables to run the regressions to find the answer to the research question.

4.3.3 Method

Following the prior studies (Jagolinzer et al., 2020; Akin et al., 2019; Cohen et al., 2012), we estimate the cross-section regression form to assess how the political connection influences insiders to behave opportunistically – informed trading – during the trade war.

$$HPR_{t+1} = \alpha + \delta_1 Buyer_t + \vartheta\ Controls_t + \varepsilon_{t+1} \quad (1)$$

Where HPR_{t+s} is holding period returns for the next month (s=1), $Buyer_t$ is an indicator variable equal to 1 if the total shares bought amount by insider *i* in firm *j* and month *t* exceeds the total shares sold amount by insider *i* in firm *j* and month *t* (all trades are aggregated to the insider-firm-month level), and $Controls_t$ is a vector of control variables that includes firm size ($Size_t$), book-to-market ratio (BM_t), and returns over the past month ($PastMoRet_t$). All variables are defined in Table 4.1. In this specification, δ_1 represents the coefficient of Buyer for defining the opportunism or informativeness of insider trade. To examine whether the predictive ability of insider trading activity increases during the trade war, we

include the indicator variables TradewarF3M$_t$ and TradewarL3M$_t$ for the first three months of a trade war (22 January 2018 to 21 April 2018) and the last three months of a trade war (22 April 2018 to 21 July 2018), respectively, and interact these variables with Buyer$_t$:

$$HPR_{t+1} = \alpha + \delta_1 Buyer_t + \delta_2 Buyer_t * tradewarF3M_t + \delta_3 Buyer_t * tradewarL3M_t + \beta_1\, tradewarF3M_t + \beta_2\, tradewarL3M_t + \vartheta\, Controls_t + \varepsilon_{t+1} \quad (2)$$

In this specification, δ_2 and δ_3 measure the incremental informativeness of insider trades during the pre-trade war, the first three months of the trade war, the last three months of the first three months of the trade war and the post-trade war, respectively. Throughout this analysis, we base inferences on standard errors clustered by firm. Clustering by firm allows for both arbitrary time-series correlation within a firm and arbitrary cross-sectional correlation across insiders within a given firm.

We next use the event study methodology to examine the stock performance around the trade war announcement (day 0). For the event studies, we have generated the Cumulative Abnormal Return (CAR) from WRDS (Wharton Research Data Services) by using market adjusted model.

$$\mathrm{CAR}_{t_1,t_2} = \alpha + \delta_1 Buyer_t + \vartheta\, Controls_t + \varepsilon_{t+1} \quad (3)$$

where CAR_{t_1,t_2} is Cumulative Abnormal Return for firm *i* over days (t_1, t_2), $Buyer_t$ is an indicator variable equal to 1 if the total shares bought amount by insider *i* in firm *j* and month *t* exceeds the total shares sold amount by insider *i* in firm *j* and month *t*, and $Controls_t$ is a vector of control variables that includes firm size ($Size_t$), book-to-market ratio (BM_t), and returns over the past month ($PastMoRet_t$). In this specification, δ_1 represents the coefficient of Buyer for defining the opportunism or informativeness of insider trade.

To examine how these attributes relate to the informativeness of insider trades, we estimate

$$HPR_{t+1} = \alpha + \delta_1 Buyer_t + \delta_2 Buyer_t * Recent\ Direct\ Connection + \delta_3 Buyer_t * Stale\ Direct\ Connection + \delta_4 Buyer_t * \mathrm{Director} + \delta_5 Buyer_t * CEO + \delta_6 Buyer_t * Officer + \vartheta\, Controls_t + \varepsilon_{t+1} \quad (4)$$

Where HPR_{t+1} is the holding period returns for the next month (s=1), Buyer$_t$ is an indicator variable equal to 1 if the total shares bought amount by insider *i* in firm *j* and month *t* exceeds the total shares sold amount by insider *i* in firm *j* and month *t* (all trades are aggregated to the insider-firm-month level), and $Controls_t$ is a vector of control variables that includes all the main effects of the interaction terms

in addition to the control variables from equation (2), Firm Effects is a vector of firm fixed effects, and Month Effects$_t$ is a vector of month fixed effects. In this specification, δ_1 represents the coefficient of Buyer for defining the opportunism or informativeness of insider trade.

In this specification, δ_2 and δ_3 measure the incremental informativeness of insider trades during the first three months of the trade war. Throughout this analysis (for $HPR_{i,t+1}$), we base inferences on standard errors clustered by firm and month. Recent Direct Connection, Stale Direct Connection, Director, CEO and Officer are insider attributes defined in the analysis.

The cross-sectional regressions with firm and month-fixed effects (e.g., (Jagolinzer et al., 2020; Akin et al., 2019; Cziraki, 2018)) are used as baseline models, event studies (Alldredge and Cicero, 2015) and difference-in-differences approach (Alldredge and Cicero, 2015) are considered to support the baseline results, and instrumental variable approach (2SLS) (Rahman et al., 2021) and fixed effects (e.g., (Jagolinzer et al., 2020; Akin et al., 2019; Cziraki, 2018)) are used to address the endogeneity and heterogeneity concerns.

4.4 Summary Statistics and Findings

4.4.1 Summary Statistics

Table 4.2 presents the descriptive statistics for all samples. Panel A presents the insiders' political connections and firm-level characteristics such as size, BM, and past-month return. It shows that the mean size of firms in the sample is approximately 7.74, the book-to-market ratio is about 0.39, and the mean of the past month's returns is 0.02. Panel A also shows that the director, officer and CEO of the average firm in the sample has 0.218 directors, officers and CEOs with political connections (mean NumPolConn of 0.218) and 14.80 percent of firms have at least one director, officer or CEO with political connections (mean PolConnection is 0.148).

Panel A also presents that the sample's standard deviation of the size of firms is approximately 1.91, the book-to-market ratio is about 0.546, the past month's returns is about 0.122, and political connection is about 0.355. The maximum value of size, BM, PastMoRet and PolConnection are 13.886, 12.823, 2.577 and 1, respectively. We also find that the median size, BM, PastMoRet and PolConnection are 7.705, 0.308, 0.017 and 0, respectively.

Panel B presents the trade-level characteristics. It shows that the mean of Buyer and holding period returns of all samples are 0.23 and 0.022, and the median of Buyer and holding period returns of all samples are 0 and 0.016, respectively. The number of firms is 2,992, and the insiders are 13,211. The total dollar volume of insider purchases (sales) is just over $5.4 billion ($40 billion). It means that the dollar volume of insider sales is much larger than that of purchases. This finding is consistent with prior studies on insider trading (Jagolinzer et al., 2020; Ravina and Sapienza, 2010). Thus, the dollar volume of sales is substantially larger than purchases.

Table 4.2: Summary statistics

This table presents the summary statistics. Panel A presents descriptive statistics for firm-level characteristics. Panel B presents descriptive statistics for insider trades. *Size* is a natural log of market value at the end of quarter *t*. *BM* is the book-to-market ratio at the end of quarter *t. PastMoRet* is the return in month *t*-1. *NumPolConn* is the number of members of the company's directors, officers and/or CEOs with current or previous work experience at the Fed, FDIC, OTS, OCC, Congress, or the US Treasury. *PolConnection* is an indicator variable equal to 1 if at least one member has such experience. $Buyer_t$ is an indicator variable equal to 1 if the number of shares brought by insider *i* in companies *j* and month *t* exceed the number of shares sold by insider *i* in companies *j* and month *t*. Holding period returns (HPR_{t+1}) are the future returns over the one month after the trades. Unique companies (unique insiders) are the number of unique companies (insiders) in the respective sample. Total purchases (total sales) are the total dollar value of insider purchases (sales) in the respective sample.

Panel A. Firm-Level Characteristics

Variable	Mean	Std. Dev.	max	P25	P50
Size	7.738	1.911	13.886	6.513	7.705
BM	.392	.546	12.823	.144	.308
PastMoRet	.02	.122	2.577	-.035	.017
NumPolConn	.218	.611	6.000	0	0
PolConnection	.148	.355	1.000	0	0

Panel B. Trade-Level Characteristics

	All Observations N= 24,011		Insiders with Political Connections N= 3,554		Insiders without Political Connections N= 20,457	
Variable	Mean	Median	Mean	Median	Mean	Median
Buyer	.23	0	.258	0	.225	0
Holding period returns (*HPRt+1)*	.022	.016	.023	.021	.022	.015
Number of Firms	2,992		418		2,574	
Number of Insiders	13,211		2,150		11,061	
Total Purchases ($ millions)	5,472.70		3,59.75		5,112.95	
Total Sales ($ millions)	40,403.37		5,842.53		34,560.84	

Panel B reports the mean and median of insider trades for politically connected insiders and without politically connected insiders. Based on insiders' political connections, the mean of Buyer and holding

period returns of all samples are 0.258 and 0.023, and the median of Buyer and holding period returns of all samples are 0 and 0.021, respectively. The number of firms is 418, and the insiders are 2,150. The total dollar volume of insider purchases (sales) is just over $0.36 billion ($5.84 billion). It means that the dollar volume of insider sales is much larger than that of purchases. These statistics suggest that politically connected insiders are more likely to sell shares in greater volume. The sample based on insiders without political connections shows that the mean of Buyer and holding period returns of all samples are 0.225 and 0.022, and the median of Buyer and holding period returns of all samples are 0 and 0.015, respectively. The number of firms is 2,574, and the insiders are 11,061. The total dollar volume of insider purchases (sales) is just over $5.11 billion ($34.56 billion). It means that the dollar volume of insider sales is much larger than that of purchases. These statistics suggest that those without politically connected insiders are more likely to sell shares in greater volume. These statistics also indicate that those without politically connected insiders are more likely to buy and sell shares in greater volume than those with politically connected insiders.

4.4.2 Correlation Matrix

Table 4.3: Matrix of correlations

This table presents the Pearson correlation matrix. Holding period returns (HPR_{t+1}) is the future return over the one month subsequent to the trades. $Buyer_t$ is an indicator variable equal to 1 if the number of shares bought by insider *i* in companies *j* and month t exceed the number of shares sold by insider *i* in companies *j* and month *t*. *Size* is a natural log of market value at the end of quarter *t*. *BM* is the book-to-market ratio at the end of quarter *t*. *PastMoRet* is the return in month *t*-1. *t*-Statistics (two-tailed *p*-values) based on standard errors clustered by firm appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail), respectively.

Variables	(1)	(2)	(3)	(4)	(5)
(1) Holding Period Returns(*HPRt+1)*	1.000				
(2) Buyer	0.0291*	1.000			
(3) Size	-0.0094	-0.4170*	1.000		
(4) BM	-0.0332*	0.2427*	-0.2024*	1.000	
(5) PastMoRet	-0.0117	-0.1443*	0.0940*	-0.0660*	1.000

Following Rahman et al. (2021); Lee, E. and Piqueira (2019), we consider the Pearson correlation matrix for the main variables used in the chapter. We use the Pearson correlation matrix to measure the strength and direction of association between two variables. The Pearson correlation matrix generates the Pearson correlation coefficient, denoted as r. Pearson's correlation attempts to find the best-fitted line through the data of two variables and the Pearson correlation coefficient indicates how far away

the data points are from the line of best fit. The value range of the Pearson correlation coefficient is from -1 to +1, -1 indicates a perfect negative linear relationship, and +1 indicates a perfect positive linear relationship, and 0 indicates no relationship between the two variables. From the above Pearson correlation matrix, the one-month holding period returns and net purchase (Buyer) are positively correlated (0.0291). This correlation value is statistically significant at the 10% level. The control variables such as size (-0.0094), BM (-0.0332) and past month returns (-0.0117) are negatively correlated with one-month future holding period returns.

Notably, we do not find a significant correlation between holding period returns and Buyers. Moreover, we do not find any significant correlation between the holding period returns and control variables (Size*, BM and* PastMoRet). Although we still have an interest in investigating whether a causal relationship exists between the variables. The bivariate correlations between the various control variables range from -0.417 to 0.2427. According to Berry et al. (1985), bivariate correlations (not exceeding 0.80) between two independent variables are benchmarked to test the multicollinearity problem in the regression. Hence, each of the bivariate correlations is below that benchmark. Additionally, the Variance Inflation Factors (VIF) values are too low and do not exceed the critical value of 10. VIF of variables, Buyer, Size, BM and PastMoRet, are 1.27, 1.23, 1.08 and 1.02, respectively. Therefore, multicollinearity does not seem to be a problem in the regressions.

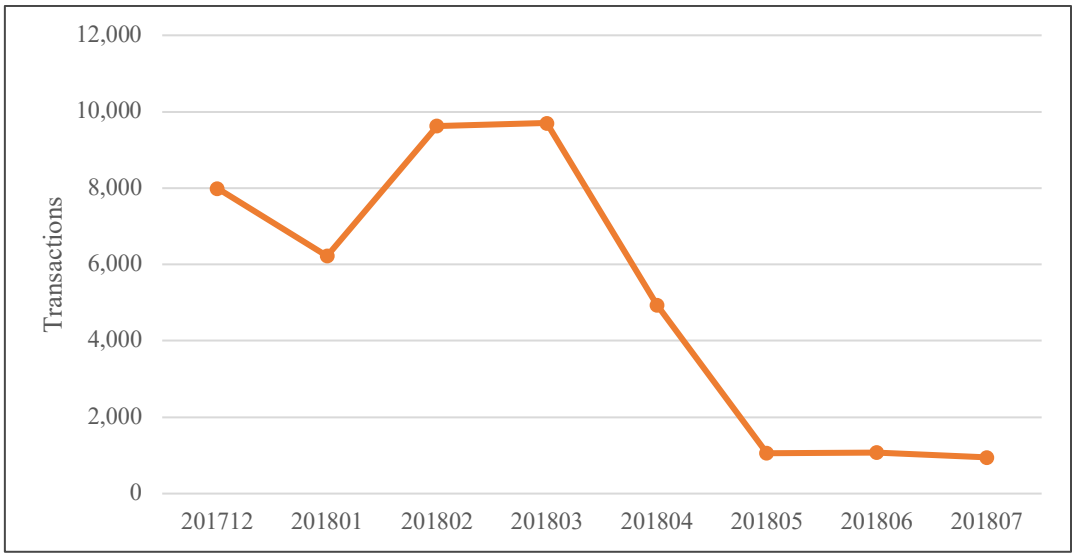


Figure 4.2: Number of Transactions by Months

Figure 4.2 plots the total number of transactions (buy and sell) over the months. This figure suggests that insider transactions peak at the start of the trade war but drop after two months. However, the number of transactions in the last three months of the trade war is lower. This chapter denotes all the insider transactions of the first three months of the trade war as TradewarF3M. We focus on the insider transactions of this period in the analysis because of the more significant number of insider transactions.

Table 4.4 presents the average values of the measurements of trading activity in each period of the trade war. This table also presents the political connections and insider trading activity. These trades are partitioned based on insiders' political connections. Table 4.4 shows the per insider's dollar value of purchases and sales using a formula (total purchases or sales divided by the total number of insiders in different periods) for politically connected and non-connected insiders. Table 4.4 also reports the politically connected insider's total dollar value of purchases and sales are $0.10 million and $1.59 million during the pre-trade war, $0.07 million and $0.69 million during the first three months of the trade war, $0.003 million and $0.11 million during the last three months of the trade war and $0.03 million and $0.33 million during the post-trade war periods, respectively.

Moreover, Table 4.4 also reports the politically non-connected insider's total dollar value of purchases and sales are $0.20 million and $1.72 million during the pre-trade war, $0.17 million and $0.91 million during the first three months of the trade war, $0.03 million and $0.17 million during the last three months of the trade war and $0.07 million and $0.32 million during the post-trade war periods, respectively. This table suggests that politically connected insiders' total dollar value of purchases and sales is not higher in all the trading periods. However, there is significant cross-sectional variation in the trading activities within each period of the trade war. This within-period variation is the basis of the following tests on the predictive ability of insider trades for the cross-section of holding period returns.

Table 4.4: Per Insider's Trading Activity by Period

This table presents the descriptive statistics for insider trading activity by period. It shows the political connections and insider trading activity by period. Each sample partition reports each insider's total purchases and sales in a million. An insider is coded as politically connected if any director, officer and/or CEO has current or previous work experience at the US government agency.

		Insiders with Political Connections		Insiders without Political Connections	
Time Period	Date Range	Per Insider's Total Purchases ($ millions)	Per Insider's Total Sales ($ millions)	Per Insider's Total Purchases ($ millions)	Per Insider's Total Sales ($ millions)
PreTradeWar	22 July 2017 to 21 January 2018	0.10	1.59	0.20	1.72
TradewarF3M	22 January 2018 to 21 April 2018	0.07	0.69	0.17	0.91
TradewarL3M	22 April 2018 to 21 July 2018	0.003	0.11	0.03	0.17
PostTradeWar	22 July 2018 to 21 January 2019	0.03	0.33	0.07	0.32

4.4.3 Predictive Ability of Insider Trades

A. Difference in holding period's returns between insiders' purchases and sales

The evidence indicates the patterns in the trading behaviour of insiders, but it does not speak to the evidence to which those trades are informed, that is, anticipate holding performance. The primary tests examine insider trades' informativeness and how they relate to political connections. Following the prior literature on insider trading, we focus on the informativeness of insider trades depending on the predictive ability of the trades for holding period returns. If insider trades are based on private information, holding period returns should be higher (lower) among companies in which insiders buy (sell) (e.g., Jagolinzer et al. (2020); Cohen et al. (2012); Aboody and Lev (2000); Jeng et al. (2003); Lakonishok and Lee (2001)). Thus, we measure the advantage of private information relative to the information already impounded in the prices.

Table 4.5: Average Holding Period Returns

This table presents the average holding period returns following insiders. Panel A reports average one-month holding period returns separately for net purchases (Buyer=1) and net sales (Buyer=0). Panel B presents average holding period returns separately for each of the four groups (2 x 2) according to whether the insider is politically connected and whether the trade was a net purchase or net sale. All transactions are aggregated to the insider-month level. The insiders are coded as politically connected if any director, CEO, or officer has current or previous work experience in the Federal Reserve, FDIC, OTS, OCC, Congress or the US Treasury. *t*-statistics appear in the parentheses and test for the difference in means. ***, ** and * denote statistical significance at 0.01, 0.05, and 0.10 levels (two-tail), respectively.

Panel A: Average One-Month Holding period returns by Period				
Time Period	Date Range	HPR_{t+1}	HPR_{t+1}	Difference in HPR_{t+1}

		Following Purchases	Following Sales		
Full Sample	22 July 2017 to 21 January 2019	0.028	0.020	0.008***	(4.52)
PreTradeWar	22 July 2017 to 21 January 2018	0.027	0.022	0.005**	(2.22)
TradewarF3M	22 January 2018 to 21 April 2018	0.030	0.018	0.012***	(4.16)
TradewarL3M	22 April 2018 to 21 July 2018	0.013	0.054	-0.041***	(-3.34)
PostTradeWar	22 July 2018 to 21 January 2019	0.029	-0.0007	0.030***	(3.82)

Panel B. Political Connections and Average Holding period returns by Period

		Insiders with Political Connections				Insiders without Political Connections					
Time Period	Date Range	*HPRt+1* (Purchases)	*HPRt+1* (Sales)	Difference in *HPRt+1*		*HPRt+1* (Purchases)	*HPRt+1* (Sales)	Difference in *HPRt+1*		Difference-in-Differences	
Full Sample	22 July 2017 to 21 January 2019	.030	.021	0.009***	(2.99)	.027	.020	0.007***	(3.79)	0.002	(0.47)
PreTradeWar	22 July 2017 to 21 January 2018	.021	.028	-0.007	(-1.54)	.028	.021	0.007***	(2.75)	-0.014**	(-2.10)
TradewarF3M	22 January 2018 to 21 April 2018	.040	.008	0.032***	(6.30)	.029	.020	0.009***	(2.68)	0.023***	(2.71)
TradewarL3M	22 April 2018 to 21 July 2018	.018	.063	-0.045	(-1.45)	.012	.053	-0.041***	(-3.06)	-0.004	(-0.11)
PostTradeWar	22 July 2018 to 21 January 2019	.035	.016	0.019	(1.35)	.027	-0.003	0.030***	(3.15)	-0.011	(-0.51)

Panel A of Table 4.5 presents the average one-month holding period returns following the purchases and sales separately for the different periods of the trade war. Consistent with prior literature, we find that the direction of insider trades is associated with the sign of subsequent stock returns. Panel A consists of the average holding period returns from purchases and sales, the difference in holding period returns with t statistics, date range and period based on the sample.

For the entire sample period, purchases and sales predict positive holding period returns (0.028 and 0.020, respectively). The difference in returns following purchases and sales is economically and statistically significant, at 0.008 per month over the entire sample period (t-statistic of 4.52). During the pre-trade war period, the average one-month holding period return following purchases (sales) is 0.027 (0.022), a difference of 0.005. During the first three months of the trade war, the average one-month holding period return following purchases (sales) is 0.030 (0.018), a difference of 0.012. During the last three months of the trade war, the average one-month holding period return following purchases (sales) is 0.013 (0.054), a difference of -0.041. During the post-trade war, the average one-month holding period return following purchases (sales) is 0.029 (-0.0007), a difference of 0.030. Notably, we find the predictive ability of insider trades for holding performance during the first three months of a trade war (TradewarF3M) is more significant than during the pre-trade war period. The differences in holding period returns are positive in both periods; more returns are associated with purchases. Although, the predictive ability of insider sales during the next three months of the trade war (TradewarL3M) is more significant than during the other periods. The average one-month holding period returns during the trade war (tradewarF3M and tradewarL3M) are economically and statistically significant at 1% level. We also find that the average one-month holding period returns from purchases are higher than the returns from sales in the periods of pre-trade war, first three months of the trade war and post-trade war. It means that the holding period returns are higher for insiders' purchases. In Panel A, the holding period returns and insider trades are positively correlated except for post-trade war sales; all differences are statistically significant. Notably, we find that the predictive ability of insider trades for holding performance is higher during the first three months of the trade war than during the pre-trade war and the last three months of the trade war. The predictive ability of insider purchases increases during the

first three months of the trade war. The holding period returns from purchases are greater during the first three months of the trade war than during any other period in the sample. We find the difference in holding period returns in the post-trade war period is higher than in other periods. Subsequently, we test whether politically connected receive higher holding period returns (difference between purchases and sales) during the post-trade war or the first three months of the trade war.

Panel B of Table 4.5 presents the average one-month holding period returns after separating the sample with political and without political connections. It consists of the average holding period returns from purchases and sales with (without) politically connected insiders, the difference in holding period returns with *t* statistics, the difference in differences of average holding period returns between with and without insider trades, date range and period based on the sample.

In addition, panel B reveals that the average one-month holding period return for a total sample on purchases (sales) is 0.030 (0.021) for insiders with political connections. The difference in one-month holding period returns between purchases and sales for the entire sample is 0.009 (t-statistics of 2.99) for insiders with political connections. The difference is statistically significant (<0.01). The average one-month holding period return for a total sample on purchases (sales) is 0.027 (0.020) for insiders without political connections. The difference in one-month holding period returns between purchases and sales for the entire sample is 0.007 (t-statistics of 3.79) for insiders without political connections. The difference is statistically significant (<0.01). The difference in differences in average holding period returns with and without political is 0.002 (t-statistics of 0.47), which is statistically insignificant.

The average one-month holding period return for the pre-trade war period on purchases (sales) is 0.021 (0.028) for insiders with political connections. The difference in one-month holding period returns between purchases and sales for the entire sample is -0.007 (t-statistics of -1.54) for insiders with political connections. The difference is statistically insignificant. The average one-month holding period return for a total sample on purchases (sales) is 0.028 (0.021) for insiders without political connections. The difference in one-month holding period returns between purchases and sales for the total sample is 0.007 (t-statistics of 2.75) for insiders without political connections. The difference is statistically significant (<0.01). The difference in differences in average holding period returns with and

without political is -0.014 (t-statistics of -2.10), statistically significant (0.05).

The average one-month holding period return for the first three months of the trade war period on purchases (sales) is 0.040 (0.008) for insiders with political connections. The difference in one-month holding period returns between purchases and sales for the entire sample is 0.032 (t-statistics of 6.30) for insiders with political connections. The difference is statistically significant (<0.01). The average one-month holding period return for a total sample on purchases (sales) is 0.029 (0.020) for insiders without political connections. The difference in one-month holding period returns between purchases and sales for the entire sample is 0.009 (t-statistics of 2.68) for insiders without political connections. The difference is statistically significant (<0.01). The difference in differences in average holding period returns with and without political is 0.023 (t-statistics of 2.71), statistically significant (<0.01).

The average one-month holding period return for the last three months of the trade war period on purchases (sales) is 0.018 (0.063) for insiders with political connections. The difference in one-month holding period returns between purchases and sales for the entire sample is -0.045 (t-statistics of -1.45) for insiders with political connections. The difference is statistically insignificant. The average one-month holding period return for a total sample on purchases (sales) is 0.012 (0.053) for insiders without political connections. The difference in one-month holding period returns between purchases and sales for the entire sample is -0.041 (t-statistics of -3.06) for insiders without political connections. The difference is statistically significant (<0.01). The difference in differences in average holding period returns with and without political is -0.004 (t-statistics of -0.11), statistically insignificant. This difference in differences (last three months of trade war) in average holding period returns is lower than the first three months of a trade war but higher than in pre-trade war and post-trade war periods.

The average one-month holding period return for the post-trade war period on purchases (sales) is 0.035 (0.016) for insiders with political connections. The difference in one-month holding period returns between purchases and sales for the entire sample is 0.019 (t-statistics of 1.35) for insiders with political connections. The difference is statistically insignificant. The average one-month holding period return for a total sample on purchases (sales) is 0.027 (-0.003) for insiders without political connections. The difference in one-month holding period returns between purchases and sales for the entire sample is

0.030 (t-statistics of 3.15) for insiders without political connections. The difference is statistically significant (<0.01). The difference in differences in average holding period returns with and without political is -0.011 (t-statistics of -0.51), statistically insignificant.

Panel B reveals that the difference in one-month holding period returns between purchases and sales during the first three months of the trade war is 0.032 for insiders with political connections, which is greater than the pre-trade war and post-trade war period in the sample. However, the difference between purchases and sales during the first three months of the trade war is 0.009 for insiders without political connections- only larger than the pre-trade war period. The difference in these differences, 0.023, is both economically and statistically significant (t-statistic of 2.71). Importantly, in all periods except the first three months of the trade war and pre-trade war, the difference in returns between purchases and sales seems unrelated to insiders' political connections (difference-in-differences t-statistic of -0.11 and -0.51 during the next three months of high time of trade war and post-trade war period). The difference-in-differences are significant at 1% level for the first three months of the trade war but 5% for the pre-trade war period. Although, the difference between purchases and sales during the pre-trade war for insiders with political connections is statistically insignificant.

After considering the political connections of insiders in Panel B, both differences in insider purchases and sales are statistically significant (< 0.01) in the first three months of the trade war, and the full sample but difference-in-differences show a significant result in the first three months of trade war only. Subsequently, we run the cross-section regressions to test whether politically connected insiders had a significant information advantage during the first three months of the trade war.

B. Event Study

We next use the event study methodology to examine the stock performance around the trade war announcement (day 0). For the event studies, we have generated the Cumulative Abnormal Return (CAR) from WRDS (Wharton Research Data Services) by using market adjusted model.

$$\mathrm{CAR}_{t_1,t_2} = \alpha + \delta_1 Buyer_t + \vartheta\ Controls_t + \varepsilon_{t+1} \qquad (3)$$

where CAR_{t_1,t_2} is Cumulative Abnormal Return for firm *i* over days *(t_1, t_2)*, *$Buyer_t$* is an indicator variable equal to 1 if the total shares bought amount by insider *i* in firm *j* and month *t* exceeds the total shares sold amount by insider *i* in firm *j* and month *t*, and *$Controls_t$* is a vector of control variables that includes firm size (*$Size_t$*), book-to-market ratio (*BM_t*), and returns over the past month (*$PastMoRet_t$*). We use cumulative abnormal stock returns as the dependent variable and regress it on Buyer (net purchase) and other control variables. The table reports the CARs for the three different windows surrounding the announcement date of a trade war (day 0), i.e., 31 (0, +30), 21 (0, +20) and 61 (0, +60) days, for the politically connected and non-connected insiders' transactions.

Table 4.6: Political Connections and Insider Trades (Cumulative Abnormal Returns (0, 30))

This table presents results from cross-sectional regressions of the cumulative abnormal returns around the trade war announcement date. We consider the window surrounding the trade war announcement date (day 0), i.e., *CAR (0, 30)*. Columns (2) and (3) estimate the regression separately for insiders with and without political connections. Columns (4) and (5) present the fixed effects for insiders with and without political ties. $Buyer_t$ is an indicator variable equal to 1 if the total shares bought amount by insider *i* in firm *j* and month *t* exceeds the total shares sold amount by insider *i* in firm *j* and month *t* (all trades are aggregated to the insider-firm-month level). The coefficients on *Buyer* represent the informativeness of insiders trades for *CAR (0, 30)*. *t*-Statistics (two-tailed p-values) based on standard errors clustered by firm appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

		Political Connection		Political Connection	
	(1)	(2)	(3)	(4)	(5)
Variables	All Obs	Yes	No	Yes	No
Buyer (0, 30)	0.013**	0.021*	0.001	0.061***	0.007
	(0.005)	(0.013)	(0.005)	(0.014)	(0.005)
Controls	Yes	Yes	Yes	Yes	Yes
Fixed Effects	No	No	No	Yes	Yes
N (Insiders-Days)	1783	271	1519	271	1519
N (Firms)	773	119	655	119	655

Table 4.6 reports results from estimating equations (3). It presents the event study results using Ordinary Least Squares regression (OLS) and fixed effect. This table shows results when cumulative abnormal returns are measured at the window (0, 30). The dependent variable is cumulative abnormal returns (CARs) of the event (0, 30). The independent variable is the Buyer. The coefficients on *Buyer* represent the informativeness of Buyer (net insider purchase) for CAR (0, 30). Following Jagolinzer et al. (2020), we consider the size, BM and PastMoRet as control variables in these regressions. Column (1) presents

the cross-sectional regression for the entire sample. We find the coefficient on Buyer is positive (0.013), which is economically and statistically significant after using control variables and without fixed effects. The total number of observations (insiders-days) is 1783, and the number of firms is 773.

From columns (2) to (5), we partition the regression results into with and without political connections. Columns (2) and (3) estimate the cross-section regression (between-group analysis). Columns (4) and (5) present the fixed effect (within-firm analysis). In columns (2) and (3), the coefficient of Buyer with (without) political connections is 0.021 (0.001). The coefficient with political connections is economically and statistically significant, but the coefficient without political connections is statistically insignificant after using control variables and without fixed effects. The total number of observations (insiders-days) with (without) political connections is 271 (1519), and the number of firms is 119 (655). Columns (4) and (5) estimate the cross-section regression with a fixed effect (between-group analysis). In columns (4) and (5), the coefficient of Buyer with (without) political connections is 0.061 (0.007). The coefficient with political connections is economically and statistically significant, but the coefficient without political connections is statistically insignificant after using control variables and with a date-fixed effect. The total number of observations (insiders-days) with (without) political connections is 271 (1519), and the number of firms is 119 (655).

The coefficients of Buyer are economically and statistically significant across this window for the politically connected insiders. The politically connected insiders' net purchases are associated with positive abnormal stock returns. These findings are also consistent with Jagolinzer et al. (2020); Cohen et al. (2012); Jeng et al. (2003); Lakonishok and Lee (2001); Aboody and Lev (2000), insider trades are based on non-public information, holding period returns should be higher among companies in which insiders buy. In particular, we continue to find strong evidence of an increase in the informativeness of insider trades during the trade war, concentrating on politically connected insiders. The above results suggest that politically connected insiders had a significant information advantage during the announcement date (day 0), i.e., CAR (0, 30), of the trade war and opportunistically traded to exploit this advantage.

C. Pooled Regression Tests

Following the prior studies (Jagolinzer et al., 2020; Cohen et al., 2012; Akin et al., 2019), we estimate the regression form to assess how the political connection influences insiders to behave opportunistically – informed trading – during the trade war.

$$HPR_{t+1} = \alpha + \delta_1 Buyer_t + \vartheta\ Controls_t + \varepsilon_{t+1} \quad (1)$$

where HPR_{t+s} is holding period returns for the next month (s=1), $Buyer_t$ is an indicator variable equal to 1 if the total shares bought amount by insider *i* in firm *j* and month *t* exceeds the total shares sold amount by insider *i* in firm *j* and month *t* (all trades are aggregated to the insider-firm-month level), and $Controls_t$ is a vector of control variables that includes firm size ($Size_t$), book-to-market ratio (BM_t), and returns over the past month ($PastMoRet_t$). All variables are defined in Table 5.1.

To examine whether the predictive ability of insider trading activity increases during the trade war, we include the indicator variables $TradewarF3M_t$ and $TradewarL3M_t$ for the first three months of the trade war (22 January 2018 to 21 April 2018) and the last three months of a trade war (22 April 2018 to 21 July 2018), respectively, and interact these variables with $Buyer_t$:

$$HPR_{t+1} = \alpha + \delta_1 Buyer_t + \delta_2 Buyer_t * tradewarF3M_t + \delta_3 Buyer_t * tradewarL3M_t + \beta_1\ tradewarF3M_t + \beta_2\ tradewarL3M_t + \vartheta\ Controls_t + \varepsilon_{t+1} \quad (2)$$

In this specification, δ_2 and δ_3 measure the incremental informativeness of insider trades during the pre-trade war, the first three months of the trade war, the last three months of the first three months of the trade war and the post-trade war, respectively. Throughout this analysis, we base inferences on standard errors clustered by firm. Clustering by firm allows for both arbitrary time-series correlation within a firm and arbitrary cross-sectional correlation across insiders within a given firm.

Table 4.7: Baseline Regressions (Political Connections and the Insider Trades)

This table presents results from estimating equations (1) and (2). Table 4.7 measures the holding period returns over the subsequent month (*s* = 1). Column (1) estimates the regression specification pooling overall observations, and columns (2) to (7) estimate the regression separately for insiders with and without political connections. Columns (2) and (3) estimate the pooled regression (between-group analysis). Columns (4) and (5) present the firm fixed effects (within-firm analysis). Columns (6) and (7) present the month-fixed effects (within-firm analysis). $Buyer_t$ is an indicator variable equal to 1 if the total shares bought amount by insider *i* in firm *j* and month *t* exceeds the total shares sold amount by insider *i* in firm *j* and month *t* (all trades are aggregated to the insider-firm-month level). The coefficient on *Buyer* represents the informativeness of insiders trades for holding performance, and the coefficient on *Buyer*tradewarF3M* represents the change in the trade informativeness during the first three months of the trade war. *TradewarF3M* is an indicator variable equal to 1 for the period from

February 2018 to April 2018. *TradewarL3M* is an indicator variable equal to 1 for the period from May 2018 to July 2018. *t*-Statistics (two-tailed *p*-values) based on standard errors clustered by firm appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

One-Month Holding period returns							
	Dependent Variable: $HPR_{i,t+1}$						
		Pooled OLS		Firm Fixed Effects		Time Fixed Effects	
		Political Connections		***Political Connections***		***Political Connections***	
Variables	All Obs	Yes	No	Yes	No	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Buyer	0.010***	0.010**	0.010***	0.007	0.018***	-0.002	0.005
	(0.002)	(0.004)	(0.003)	(0.007)	(0.005)	(0.010)	(0.004)
Buyer*TradewarF3M		0.013**	0.001	0.017*	0.000	0.040***	0.007
		(0.006)	(0.004)	(0.009)	(0.005)	(0.012)	(0.006)
Buyer*TradewarL3M		-0.017	-0.017	0.013	-0.001	-0.047	-0.041**
		(0.023)	(0.012)	(0.020)	(0.014)	(0.030)	(0.020)
Size	-0.000	-0.002	0.000	0.002	0.021**	-0.003	0.000
	(0.001)	(0.002)	(0.001)	(0.021)	(0.009)	(0.002)	(0.001)
BM	-0.009***	-0.042**	-0.008***	-0.009	0.023	-0.043**	-0.007**
	(0.003)	(0.017)	(0.002)	(0.025)	(0.018)	(0.017)	(0.004)
PastMoret	-0.008	-0.058	-0.004	-0.077	-0.054***	-0.118**	-0.021
	(0.011)	(0.036)	(0.011)	(0.051)	(0.020)	(0.053)	(0.018)
Observations	24,011	3,554	20,457	3,509	20,103	3,554	20,457
F	7.913	5.168	4.391	2.603	5.451	6.379	2.442
Firm Fixed Effects	No	No	No	Yes	Yes	No	No
Month Fixed Effects	No	No	No	No	No	Yes	Yes

Table 4.7 reports results from estimating equations (1) and (2). It presents the baseline cross-sectional regression results using Ordinary Least Squares regression (OLS), firm and month-fixed effects. This table shows results when holding period returns are measured at the one-month horizon. The dependent variable is one-month holding period returns. The independent variables are the interaction variables between Buyer (Jagolinzer et al., 2020), TradewarF3M and TradewarL3M from columns (2) to (7). The coefficient on *Buyer*TradewarF3M (Buyer*TradewarL3M)* represents the change in the trade informativeness during the first (last) three months of the trade war. *TradewarF3M* is an indicator variable equal to 1 for the period from February 2018 to April 2018. *TradewarL3M* is an indicator variable equal to 1 for the period from May 2018 to July 2018. Following Jagolinzer et al. (2020), we consider the size, BM and PastMoRet as control variables in these regressions. Column (1) presents the cross-sectional regression for the entire sample. Here, the Buyer is the independent variable. We find the coefficient on Buyer is positive (0.010), which is economically and statistically significant (<0.01) after using control variables. The coefficients of size and pastmonret are negative and statistically

insignificant. Although, the BM shows statistically significant (<0.01) negative coefficient. The total number of observations is 24,011.

From columns (2) to (7), we partition the regression results into with and without political connections. Columns (2) and (3) estimate the pooled regression (between-group analysis). Columns (4) and (5) present the firm fixed effects (within-firm analysis). Columns (6) and (7) show the month-fixed effects (within-firm analysis). In columns (2) and (3), the coefficient of Buyer with (without) political connections is 0.010 (0.010), and it is statistically significant at 0.05 (0.01). The coefficient of Buyer*TradewarF3M with (without) political connections is 0.013 (0.001). The coefficient with political connections is economically and statistically significant. However, the coefficient without political connections is statistically insignificant. The coefficient of Buyer*TradewarL3M with (without) political connections is -0.017(-0.017), and is economically and statistically insignificant. The coefficient of size with (without) political connections is -0.002(0.000) and statistically insignificant. The coefficient of pastmoret with (without) political connections is -0.058(-0.004) and statistically insignificant. Although, the coefficient of BM with (without) political connections is -0.042(-0.008) and statistically significant at 0.05(0.01). The total number of observations with (without) political connections is 3,554 (20,457). These coefficient results are without considering the firm and month-fixed effects. Columns (2) and (3) suggest that politically connected insiders get higher one-month holding period returns during the first three months of the trade war than without politically connected insiders and the last three months of the trade war.

As previously mentioned, columns (4) and (5) present the firm fixed effects (within-firm analysis). In columns (4) and (5), the coefficient of Buyer with (without) political connections is 0.007 (0.018). The coefficient with political connections is statistically insignificant, but the coefficient without political connections is statistically significant at 0.01. The coefficient of Buyer*TradewarF3M with (without) political connections is 0.017 (0.000). The coefficient with political connections is economically and statistically significant. However, the coefficient without political connections is statistically insignificant. The coefficient of Buyer*TradewarL3M with (without) political connections is 0.013(-0.001), and it is economically and statistically insignificant. The coefficient of size with (without)

political connections is 0.002(0.021). The coefficient with political connections is statistically insignificant, but without political connections is statistically significant. The coefficient of BM with (without) political connections is -0.009(0.023) and statistically insignificant. The coefficient of pastmoret with (without) political connections is -0.077(-0.054). The coefficient with political connections is statistically insignificant, but without political connections is statistically significant. The total number of observations with (without) political connections is 3,509(20,103). These coefficient results are with considering the firm fixed effects. Columns (4) and (5) suggest that the politically connected insiders get higher one-month holding period returns during the first three months of the trade war than without politically connected insiders and the last three months of the trade war.

Columns (6) and (7) present the month-fixed effects (within-firm analysis). In columns (6) and (5), the coefficient of Buyer with (without) political connections is -0.002 (0.005), and it is statistically insignificant. The coefficient of Buyer*TradewarF3M with (without) political connections is 0.040 (0.007). The coefficient with political connections is economically and statistically significant (<0.01). However, the coefficient without political connections is statistically insignificant. The coefficient of Buyer*TradewarL3M with (without) political connections is -0.047(-0.041), but the coefficient is economically and statistically insignificant. The coefficient of size with (without) political connections is -0.003(0.000). The coefficient with and without political connections is statistically insignificant. The coefficient of BM with (without) political connections is -0.043(-0.007) and statistically significant. The coefficient of pastmoret with (without) political connections is -0.118(-0.021). The coefficient with political connections is statistically significant, but without political connections is statistically insignificant. The total number of observations with (without) political connections is 3,554 (20,457). These coefficient results are with considering the month-fixed effects. Columns (6) and (7) suggest that the politically connected insiders get higher one-month holding period returns during the first three months of the trade war than those without politically connected insiders during the last three months of the trade war.

In summary, across the entire sample period, the results in column (1) suggest that insider trades are related to one-month holding period returns (Buyer, t-statistic of 5.17, p-value <0.01). To examine the

nexus between political connections and the informativeness of insider trades, we estimate equation (2) separately for the sample of insiders with political connections (Connected = 1) and without political connections (Connected = 0). Columns (2), (4) and (6) present results for the sample of insiders with political connections, and columns (3), (5) and (7) present results for the sample of insiders without political connections. Importantly, the coefficients on Buyer*TradewarF3M are economically and statistically significant only for the trades of politically connected insiders in columns (2), (4) and (6). The inference on political connections and informativeness is the same if we use the firm and month-fixed effects. However, the coefficients on Buyer*TradewarL3M are statistically insignificant for the trades of politically connected insiders in columns (2), (4) and (6).

The findings are consistent with Jagolinzer et al. (2020); Cohen et al. (2012); Jeng et al. (2003); Lakonishok and Lee (2001); Aboody and Lev (2000), insider trades are based on private information, holding period returns should be higher among companies in which insiders buy. In particular, we continue to find strong evidence of an increase in the informativeness of insider trades during the trade war, concentrating on politically connected insiders. The results above suggest that politically connected insiders had a significant information advantage during the first three months of the trade war and opportunistically traded to exploit the advantage. Afterwards, we test the different dimensions of insiders' political connections to support the baseline findings.

D. Difference-in-Difference (DiD) Specification: Event Study

The second part of the event studies focuses on the difference-in-difference specification of the politically connected insiders and post-event of the trade war. The difference-in-differences technique is a simple cross-sectional data method applied to set two groups means in cases when certain groups are exposed to the causing variable of interest and others are not. This approach is well-suited to estimating the effect of sharp changes in government policy (Angrist and Krueger, 1999). The DiD approach has been used in various studies in finance, especially in an early example of insider trading (e.g., (Jagolinzer et al., 2020)), who used the DiD approach to study political connection effects on insider trading during the financial crisis. Similarly, in this empirical chapter, at the difference-in-difference specification, we consider the insiders who traded before and after the announcement date of

the trade war. We exclude the insider who traded only before or after the trade war's announcement date (day 0). Using the difference-in-difference approach is a significant contribution to examining politically connected insiders' trades.

Table 4.8: Political Connections and Insider Trades (Difference-in-difference specifications)

This table presents results from difference-in-differences approach for comparing the cumulative abnormal returns around the trade war announcement date between the politically connected and non-connected insiders. We consider two windows surrounding the trade war announcement date (day 0), i.e., *CAR (-30, -1)* and *CAR (0, 30)*. Column (1) estimates the regression results without fixed effects. Column (2) presents the regression results with firm and time-fixed effects. Buyer_t is an indicator variable equal to 1 if the total shares bought amount by insider *i* in firm *j* and month *t* exceeds the total shares sold amount by insider *i* in firm *j* and month *t* (all trades are aggregated to the insider-firm-month level). The coefficients on *Buyer_Connected_Post* represent the informativeness of insiders trades for *CAR (-30, -1)* and *CAR (0, 30). t*-Statistics (two-tailed p-values) based on standard errors clustered by firm appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

Dependent variable: CAR (-30, -1) & (0, 30)		
	Diff-in-diff	
Variables	Model (1)	Model (2)
Buyer_Connected_Post	10.237***	7.713***
	(2.276)	(1.994)
Buyer	0.113*	2.160
	(0.060)	(1.395)
Connected	1.107***	18.653
	(0.429)	(12.281)
Post	-0.765***	-0.997***
	(0.235)	(0.219)
Observations	1,303	1,303
Control Variables	Yes	Yes
Firm & Time Fixed Effects	No	Yes

To examine whether the politically connected insiders generate higher abnormal returns during the first 30 days of the trading window of the trade war, we consider two windows surrounding the trade war announcement date (day 0), i.e., *CAR (-30, -1)* and *CAR (0, 30).* We include the indicator variables for pre-trade war and post-trade war trading days and interact these variables with $Buyer_t$.

$$\text{CAR}_{t_1,t_2} = \alpha + \delta_1 Buyer_t + \delta_2 \ Buyer * Connected_t * Post_t + \beta_1 Connected_t + \beta_2 Post_t + \vartheta \ Controls_t + \varepsilon_{t+1} \quad (5)$$

where CAR_{t_1,t_2} is Cumulative Abnormal Return for firm *i* over days (t_1, t_2), $Buyer_t$ is an indicator variable equal to 1 if the total shares bought amount by insider *i* in firm *j* and month *t* exceeds the total

shares sold amount by insider *i* in firm *j* and month *t*, and $Controls_t$ is a vector of control variables that includes firm size ($Size_t$), book-to-market ratio (BM_t), and returns over the past month ($PastMoRet_t$). *Connected* is an indicator variable equal to 1 if insiders are politically connected. *Post* is a dummy variable to indicate the pre and during the trade war period. In this specification, δ_2 represents the difference in cumulative abnormal returns between politically connected and non-connected insiders after controlling for size, book-to-market, and past returns. In this specification, δ_2 measures the incremental informativeness of insider trades by comparing the pre and post-trade war periods.

Table 4.8 compares CARs for the politically connected and non-connected insiders 30 days before and 30 days after the trade war announcement. This table presents results from the difference-in-differences approach for comparing the cumulative abnormal returns around the trade war announcement date between the politically connected and non-connected insiders. We consider two windows surrounding the trade war announcement date (day 0), i.e., *CAR (-30, -1)* and *CAR (0, 30)*. We have created indicator variables for the post-trade war (0, 30) and pre-trade war period (-30, -1). We find the positive and statistically significant coefficient in column (1) for politically connected insiders' trades during the event (0, 30) (difference-in-differences *p*-value < 0.01). This leads to a significantly higher difference-in-differences (the difference in politically connected and non-connected insiders' CARs during the event (-30, -1) minus the difference in politically connected and non-connected insiders' CARs during the event (0, 30)) of 10.237 CAR for the politically connected insiders versus non-connected insiders. The coefficient of the Buyer is 0.113, and statistically significant. The coefficient of connection (indicator variable of political connections) is 1.107, and statistically significant. The coefficient of the post (indicator variable of post-trade war window (0,30)) is -0.765, which is statistically significant. We find these results after using control variables and without fixed effects. The total number of observations (insiders-days) is 1303.

We also find the positive and statistically significant coefficient in column (2) after applying the firm and time-fixed effects (difference-in-differences *p*-value < 0.01). This also leads to a significantly higher difference-in-differences (the difference in politically connected and non-connected insiders' CARs during the event (-30, -1) minus the difference in politically connected and non-connected

insiders' CARs during the event (0, 30)) of 7.713 CAR for the politically connected insiders versus non-connected insiders. The coefficient of the Buyer is 2.160, and statistically insignificant. The coefficient of connection (indicator variable of political connections) is 18.653, which is statistically insignificant. The coefficient of the post (indicator variable of post-trade war window (0,30)) is -0.997, which is statistically significant. We find these results using control variables and firm and time-fixed effects. The total number of observations (insiders-days) is 1303.

Comparing the results between pre (politically connected versus non-connected) and post (politically connected versus non-connected) event studies enables us to support the baseline results. We find that the relation between political connections and the informativeness of insider trades is statistically and economically more significant for politically connected insiders during the event (0, 30) than non-politically connected insiders. This finding interprets that politically connected insiders are more likely to use material inside information when they trade their shares. Politically connected insiders generate higher abnormal returns than non-connected insiders.

All findings of political connections and returns from insider trades are consistent with the findings of Jagolinzer et al. (2020); Akin et al. (2019). The findings suggest that the political connection facilitates the insiders to engage in more informed trading using asymmetric information. This is consistent with the prior work suggesting that politicians exploit the information advantage to earn more returns (e.g.,Ziobrowski et al. (2004)).

4.4.4 Direct Connection Analysis

The primary tests use data on firm-level insiders' political connections collected manually from the firm's proxy statement. The assumption of firm-level connection measures the direct and indirect connections of all the firm insiders that privileged information is shared among directors and officers. While this assumption is consistent with the empirical evidence (e.g., (Kim, S., 2016; Cao et al., 2015; Sorkin, 2010)), private information sharing among directors and officers is difficult to verify without direct connections. The network map and sharing information are measured in Figure 4.1, presenting insiders' direct and indirect connections. In this section, we differ from Duchin and Sosyura (2012) and we measure the individual-level political connections from firm's proxy statement. We also measure

the individual connections with recent and stale connections.

Table 4.9: Direct Connection Analysis

This table presents the attributes of individual insiders and their connections. Officers and board members with work experience at the Federal Reserve, the U.S. Treasury, Congress, Office of Comptroller of Currency (OCC), Office of Thrift Supervision (OTS), or Federal Deposit Insurance Corporation (FDIC) before 2018 are classified as "directly connected" (*Political Connections* = 1, *Direct Connection* = 1). All other officers and directors at the same firm are classified as "indirectly connected" (*Political Connections* = 1, *Direct Connection* = 0). Among those with direct connections, we measure the connection's age or "recency" relative to 2018. For example, if a director stepped down from the Federal Reserve Board in 2015, then *Recency* = 3. The connection is current if the work experience continues through 2018, and *Recency* = 0. We consider a direct link "recent" (*Direct Recent Connection* = 1) if *Recency*≤ 3 and "stale" (*Direct Stale Connection* = 1) if *Recency* > 3. Panel B reports the number of insiders with direct connections who are directors, CEOs and officers. *The director* is an indicator equal to 1 if the individual is a director of the Firm*, CEO* is an indicator equal to 1 if the individual is the CEO of the Firm, *and Officer* is an indicator equal to 1 if the individual is an officer of the firm. Panel C reports results from estimating equation (5) on the sample of trades placed during the first three months of the trade war by insiders with political connections (*Connected* = 1 and *tradewarF3M* = 1), distinguishing trades of indirect and direct connections, trade of recent and stale connections, trades of CEOs, directors, and officers. *t*-Statistics (two-tailed *p*-values) based on standard errors clustered by firm appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

Panel A: Sample of Politically Connected Insiders Trading during the trade war

Number of Firms with ≥1 politically connected insider trading during the first three months of trade war	303 firms
Number of connected insiders trading during the first three months of trade war	966 insiders
Number of CEOs (within connected sample)	94 insiders
Number of Directors (within connected sample)	339 insiders
Number of Officers (within connected sample)	658 insiders
Number of insiders with *recent* direct connections (*Recency*≤3 years)	34 insiders
Number of insiders with *recent* direct connections (*Recency*>3 years)	90 insiders

Panel B. Separating Connections from Positions

		Directors			CEOs			Officers		
		Yes	No	Total	Yes	No	Total	Yes	No	Total
Direct Connection	Yes	61	63	124	17	107	124	46	78	124
	No	118	221	339	33	306	339	188	151	339

Panel C. Within-Political-Connected Insider Analysis

Dependent Variable: $HPR_{i,t+1}$

Variables	Base Model (1)	Direct vs. Indirect Connections (2)	Recent vs Stale Direct Connections (3)	Controlling for Board Position (4)
Buyer	0.022***	0.022***	0.017**	0.018
	(0.007)	(0.007)	(0.007)	(0.011)
*Buyer*Direct Connection*		0.00032		
		(0.012)		
*Buyer*Recent Direct Connection*			0.013*	0.012*
			(0.007)	(0.007)
*Buyer*Stale Direct Connection*			0.007	0.009
			(0.014)	(0.014)
*Buyer*CEO*				-0.013
				(0.015)

*Buyer*Director*				0.001
				(0.012)
*Buyer*Officer*				-0.000
				(0.016)
Controls				
Size	0.049	0.050	0.058	0.056
	(0.100)	(0.099)	(0.098)	(0.098)
BM	0.035	0.036	0.053	0.051
	(0.123)	(0.122)	(0.120)	(0.120)
PastMoret	-0.058	-0.059	-0.066	-0.068
	(0.067)	(0.067)	(0.067)	(0.066)
Direct Connection		0.002		
		(0.005)		
Recent Direct Connection			-0.052***	-0.052***
			(0.016)	(0.016)
Stale Direct Connection			0.000	0.000
			(0.005)	(0.005)
CEO				0.001
				(0.005)
Director				0.004
				(0.005)
Officer				0.003
				(0.007)
Firm Fixed Effects	Yes	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes	Yes
Observations	1,073	1,073	1,073	1,073
F	7.884	5.329	5.297	3.212
N(insider-months)	966	966	966	966
N(firms)	303	303	303	303

Table 4.9 presents the attributes of individual insiders and their connections. Officers and board members with work experience at the Federal Reserve, the U.S. Treasury, Congress, Office of Comptroller of Currency (OCC), Office of Thrift Supervision (OTS), or Federal Deposit Insurance Corporation (FDIC) prior to 2018 are classified as "directly connected" (*Political Connections* = 1, *Direct Connection* = 1). All other officers and directors at the same firm are classified as "indirectly connected" (*Political Connections* = 1, *Direct Connection* = 0). We measure the connection's age or "recency" relative to 2018 among those with direct connections. For example, if an officer stepped down from the Federal Reserve Board in 2015, then *Recency* = 3. The connection is current if the work experience continues through 2018, and *Recency* = 0. We consider a direct connection "recent" (*Direct Recent Connection* = 1) if *Recency*≤ 3 and "stale" (*Direct Stale Connection* = 1) if *Recency* > 3. Panel B reports the number of insiders with direct connections who are directors, CEOs and officers. *The director* is an indicator equal to 1 if the individual is a director of the Firm*, CEO* is an indicator equal to 1 if the individual is the CEO of the Firm, *and Officer* is an indicator equal to 1 if the individual is

an officer of the firm. Panel C reports results from estimating equation (5) on the sample of trades placed during the first three months of the trade war by insiders with political connections (*Connected* = 1 and *tradewarF3M* = 1), distinguishing trades of indirect and direct connections, trade of recent and stale connections, transactions of CEOs, directors, and officers.

Panel A reports the number of politically connected insiders who traded during the first three months of the trade war (pconnection=1 and TradewarF3M=1). The number of firms with more than 1 politically connected insider during the first three months of the trade war is 303. There are 966 insiders in this sample, of which 94 are CEOs (CEO=1), 339 are directors, and 658 are officers. Notably, 124 of the 966 insiders are directly connected through current or prior work experience at the Federal Reserve, US Treasury, Congress, or bank regulator (for example, OCC, OTS, or FDIC) during the first three months of the trade war (Direct Connection = 1) and the remaining insiders connected (Direct Connection = 0) through the directly connected insiders.

Focusing on the 124 directly connected insiders, we identify the end of the work experience and use the end date of work experience relative to 2018 as a proxy for the recency of the political connection. For example, if an officer stepped down from the US treasury in 2015, Recency = 3. If the work experience continues to 2018, the political connection is considered current, and Recency is coded as zero. We consider a political connection 'recent' (Recent Direct Connection = 1) if Recency ≤3 and 'stale' (Stale Direct Connection = 1) if Recency > 3. Panel A shows that 34 out of 124 directly connected insiders have recent political connections.

Panel B shows that of the 124 directly connected insiders, 61 are directors, 17 are CEOs, and 46 are officers. We continue to drill down on specific attributes of the political connection and insider, and the sample size becomes considerably smaller.

To examine how these attributes relate to the informativeness of insider trades, we estimate

$$HPR_{t+1} = \alpha + \delta_1 Buyer_t + \delta_2 Buyer_t * Recent\ Direct\ Connection + \delta_3 Buyer_t * Stale\ Direct\ Connection + \delta_4 Buyer_t * \text{Director} + \delta_5 Buyer_t * CEO + \delta_6 Buyer_t * Officer + \vartheta\ Controls_t + \varepsilon_{t+1} \quad (4)$$

where HPR_{t+1} is the holding period returns for the next month (s=1), $Buyer_t$ is an indicator variable equal to 1 if the total shares bought amount by insider *i* in firm *j* and month *t* exceeds the total shares

sold amount by insider *i* in firm *j* and month *t* (all trades are aggregated to the insider-firm-month level), and $Controls_t$ is a vector of control variables that includes all the main effects of the interaction terms in addition to the control variables from equation (1), Firm Effects is a vector of firm fixed effects, and Month Effects$_t$ is a vector of month fixed effects.

In this specification, δ_2 and δ_3 measure insider trades' incremental informativeness during the trade war's first three months. Throughout this analysis (for $HPR_{i,t+1)}$, we base inferences on standard errors clustered by firm and month. Recent Direct Connection, Recent Stale Connection, Director, CEO and Officer are insider attributes defined in the analysis.

Panel C estimates equation (4) results when holding period returns are measured at the one-month horizon. Column (1) presents the regression with a fixed effect for the entire sample. Here, the Buyer is the independent variable. We find the coefficient on Buyer is positive (0.022), which is economically and statistically significant (<0.01) after using control variables and firm and month fixed effects. The coefficients of size and BM are positive and statistically insignificant. Although, the PastMoret shows a negative and statistically insignificant coefficient. The total number of observations is 1073, the insider months are 966, and the number of firms is 303.

Column (2) estimates the regression (between-group analysis) for direct and indirect connections. The coefficient of the Buyer is 0.022, and it is statistically significant at 0.01. The coefficient of Buyer*Direct Connection is 0.00032, positive, after using control variables and fixed effects. The coefficients of size and BM are positive and statistically insignificant. Although, the PastMoret shows a negative and statistically insignificant coefficient. The coefficient of direct connection is 0.002 and statistically insignificant. The total number of observations is 1073, the insider months are 966, and the number of firms is 303.

Column (3) estimates the regression (between-group analysis) for recent and stale direct connections. The coefficient of the Buyer is 0.017, and it is statistically significant at 0.05. The coefficient of Buyer*Recent Direct Connection is 0.013, positive and statistically significant, after using control variables and fixed effects. The coefficient of Buyer*Stale Direct Connection is 0.007, positive but statistically insignificant. The coefficient of the recent direct connection is -0.052, and the stale direct

link is 0.000. The coefficients of size and BM are positive and statistically insignificant. Although, the PastMoret shows a negative and statistically insignificant coefficient. The total number of observations is 1073, the insider months are 966, and the number of firms is 303.

Column (4) also estimates the regression (between-group analysis) for recent and stale direct connections. The coefficient of the Buyer is 0.018, but it is statistically insignificant. The coefficient of Buyer*Recent Direct Connection is 0.012, positive and statistically significant, after using control variables and fixed effects. The coefficient of Buyer*Stale Direct Connection is 0.009, positive but statistically insignificant. Buyer*CEO, Buyer*Director and Buyer*Officer coefficients are -0.013, 0.001 and -0.000, respectively. The coefficient of the recent direct connection is -0.052, and the stale direct connection is 0.000. The CEO, director, and officer coefficients are 0.001, 0.004 and 0.003, respectively. The coefficients of size and BM are positive and statistically insignificant. Although, the PastMoret shows a negative and statistically insignificant coefficient. The total number of observations is 1073, the insider months are 966, and the number of firms is 303.

Overall, we find that direct connections (Buyer*Direct Connection) have a positive coefficient. We also find that recent direct connections have more informed trades ($\delta 1 + \delta 2 = 0.030$) than the informed trades of direct stale connections ($\delta 1 + \delta 3 = 0.024$). These findings suggest that the recent direct connection is stronger than the stale direct connection. Finally, we find that recent direct connections have more informed trades ($\delta 1 + \delta 2 = 0.030$) than the informed trades of direct stale connections ($\delta 1 + \delta 3 = 0.027$). These findings also suggest that the recent direct connection is stronger than the stale one after controlling directors, CEOs and officers.

4.4.5 Attributes of demographic and within the position Analysis

This table reports results from estimating equation (1) on the sample of trades placed during the first three months of the trade war by insiders with political connections (*Political Connections* = 1 and *tradewarF3M* = 1), distinguishing trades by gender (male and female) and age (above 55 and below 55). This table also estimates the regression separately for insiders who are directors, CEOs and officers with political connections and reports results from estimating equation (1) on the sample of trades

placed during the first three months of the trade war by insiders with political connections (*Connected* = 1 and *tradewarF3M* = 1).

Table 4.10: Demographic and within the position Analysis

Table 4.10 measures the holding period returns over the subsequent month (*s* = 1). In Panel A, columns (1) and (2) estimate the regression separately for gender, and columns (3) to (4) estimate the regression separately for age with political connections. Columns (1) to (4) present the firm and date fixed effects (within-group analysis). This table reports results from estimating equation (1) on the sample of trades placed during the first three months of the trade war by insiders with political connections (*Political Connections* = 1 and *tradewarF3M* = 1), distinguishing trades by gender (male and female) and trades by age (above 55 and below 55). Panel B estimates the regression separately for insiders who are directors, CEOs and officers with political connections, and reports result from estimating equation (1) on the sample of trades placed during the first three months of the trade war by insiders with political connections (*Connected* = 1 and *tradewarF3M* = 1). *The director* is an indicator equal to 1 if the individual is a director of the Firm*, CEO* is an indicator equal to 1 if the individual is the CEO of the Firm, and *Officer* is an indicator equal to 1 if the individual is an officer of the firm. $Buyer_t$ is an indicator variable equal to 1 if the total shares bought amount by insider *i* in firm *j* and month *t* exceeds the total shares sold amount by insider *i* in firm *j* and month *t* (all trades are aggregated to the insider-firm-month level). The coefficient on *Buyer* represents the informativeness of insider trade for holding performance during the high time of trade war (first three months of trade war). *t*-Statistics (two-tailed *p*-values) based on standard errors clustered by firm appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

Panel A. Within Demographic Analysis

Dependent Variable: $HPR_{i,t+1}$

Variables	Gender		Age	
	Male	Female	Above 55	Below 55
	(1)	(2)	(3)	(4)
Buyer	0.020	0.131**	0.008	0.024***
	(0.014)	(0.052)	(0.012)	(0.007)
Controls				
Size	-0.222	0.321**	0.382	0.046
	(0.364)	(0.128)	(0.506)	(0.104)
BM	-0.256	0.960	0.823	0.031
	(0.958)	(0.888)	(1.135)	(0.127)
PastMoret	-0.164	-0.240*	-0.136	-0.067
	(0.143)	(0.103)	(0.149)	(0.072)
FirmFixedEffects	Yes	Yes	Yes	Yes
MonthFixedEffects	Yes	Yes	Yes	Yes
F	1.627	37.19	0.639	10.21
Observations	295	24	171	849

Panel B. Within the Positions

Dependent Variable: $HPR_{i,t+1}$

Variables	CEO	Director	Officer
	(1)	(2)	(3)
Buyer	0.061**	0.015	0.024*
	(0.023)	(0.011)	(0.013)
Controls			

Size	0.205	-0.109	0.340*
	(0.269)	(0.181)	(0.183)
BM	1.581***	-0.325	1.017**
	(0.515)	(0.470)	(0.506)
PastMoret	-0.071	-0.073	-0.027
	(0.111)	(0.060)	(0.097)
Firm Fixed Effects	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes
F	18.57	0.913	2.684
Observations	54	293	723

Table 4.10 presents the results from estimating equation (1) when holding period returns are measured at the one-month horizon on the sample of trades placed during the first three months of the trade war by insiders with political connections (Political Connections = 1 and tradewarF3M = 1). In Panel A, columns (1) and (2) estimate the regression separately for gender, and columns (3) to (4) estimate the regression separately for age (above 55 and below 55) with political connections. Considering columns (1) and (2), the coefficient (p-value < 0.05) of Buyer for females (0.131) is higher than the coefficient of Buyer for males (0.020) after using control variables and firm and month fixed effects. The coefficient for a female is statistically significant, but the coefficient for a male is statistically insignificant. In Column (1), the size, BM, and PastMoret coefficients are negative and statistically insignificant. In Column (2), the coefficients of size and BM are positive. Although the PastMoret shows a negative coefficient. In columns (3) and (4), the coefficient (p-value < 0.01) for insiders below 55 years old is (0.024) higher than the coefficient for insiders above 55 years old (0.008) after using control variables and firm and month-fixed effects. The coefficient of insiders below 55 years old is statistically significant, but the coefficient of insiders above 55 years old is statistically insignificant. In Column (3), the coefficients of size and BM are positive and statistically insignificant. The coefficient of PastMoret is -0.136 and is also statistically insignificant. In Column (4), the coefficients of size and BM are positive and statistically insignificant. The coefficient of PastMoret is -0.067 and is also statistically insignificant. The findings suggest that female insiders generated higher holding period returns than male insiders[8]. These findings also suggest that below 55 years old insiders generated

[8] Female insiders (CEO or CFO) generate higher profits from insider sales than male insiders, suggesting female insiders have an information advantage when they trade on bad news . Ideally, female insiders should have more access to informal networks, overconfident and risk-taking than male insiders in such firms (Sila et al., 2016).

higher holding period returns and had a significant information advantage during the first three months of the trade war than above 55 years old insiders.

Panel B reports results from estimating equation (1) on the sample of trades placed by insiders who are directors, CEOs and officers with political connections (Connected = 1 and tradewarF3M = 1). Column (1) suggests that insider trades by CEOs are positively related to one-month holding period returns (Buyer, t-statistic of 2.59, p-value <0.05) if we use firm and month-fixed effects. However, columns (2) and (3) suggest that insider trades by directors and officers are positively associated with one-month holding period returns (Buyer, t-statistic of 1.36 and 1.83, respectively). Importantly, in column (1), the coefficient suggests that politically connected CEOs generated higher holding period returns and had a significant information advantage during the first three months of the trade war than directors and officers. In Column (1), the coefficients of size (0.205) and BM (1.581) are positive, and PastMoret (-0.071) is negative. In Column (2), the coefficients of size (-0.109), BM (-0.325) and PastMoret (-0.073) are negative and statistically insignificant. Column (3), the coefficients of size (0.340) and BM (1.017) are positive, and PastMoret (-0.027) is negative.

4.4.6 Robustness Tests

A. Alternative Measurement: Event Study

For the robustness test, we use the alternative measurement of event studies by using the cumulative abnormal stock returns as the dependent variable and regressing it on Buyer and other control variables. This table reports the CARs for the two different windows surrounding the announcement date of a trade war (day 0), i.e., 21 (0, +20) and 61 (0, +60) days, for the politically connected and non-connected insiders' transactions.

Table 4.11: Political Connections and Insider Trades (Cumulative Abnormal Returns)

This table presents results from cross-sectional regressions of the cumulative abnormal returns around the trade war announcement date. We consider two windows surrounding the trade war announcement date (day 0), i.e., *CAR (0, 20)* and *CAR (0, 60)*. Columns (1) and (2) estimate the regression separately for insiders with and without political connections for *CAR (0, 20)*. Columns (3) and (4) present the regression separately for insiders with and without political connections for *CAR (0, 60)*. $Buyer_t$ is an indicator variable equal to 1 if the total shares bought amount by insider *i* in firm *j* and month *t* exceeds the total shares sold amount by insider *i* in firm *j* and month *t* (all trades are aggregated to the insider-firm-month level). The coefficients on *Buyer* represent the informativeness of insider trades for *CAR (0, 20)* and *CAR (0, 60)*. *t*-statistics (two-tailed p-values) based on standard errors clustered by firm appear in parentheses (brackets). ***, **, and * denote statistical

significance at the 0.01, 0.05, and 0.10 levels (two-tail).				
	CAR (0, 20)		CAR (0, 60)	
	Political Connection		Political Connection	
Variables	(1) Yes	(2) No	(3) Yes	(4) No
Buyer	0.044** (0.018)	-0.010** (0.005)	0.031** (0.013)	-0.006 (0.004)
Controls	Yes	Yes	Yes	Yes
N (Insiders-Days)	149	857	442	2340
N (Firms)	78	392	173	928

Table 4.11 reports results from estimating equations (3). It presents the event study results using Ordinary Least Squares regression (OLS). This table shows results when cumulative abnormal returns are measured at the window (0, 20) and (0, 60). The dependent variable is cumulative abnormal returns (CARs) of the event (0, 20) and (0, 60). The independent variable is the Buyer. The coefficients on *Buyer* represent the informativeness of insider trades for CAR (0, 20) and (0, 60). Following Jagolinzer et al. (2020), we consider the size, BM and PastMoRet as control variables in these regressions.

From columns (1) to (2), we partition the regression results into with and without political connections. The coefficient of Buyers with (without) political connections is 0.044 (-0.010) after using the control variables. The coefficient with political connections is economically and statistically significant, but the coefficient without political connections is also statistically significant with a negative coefficient. The total number of observations (insiders-days) with (without) political connections is 149 (857), and the number of firms is 78 (392). This finding suggests that politically connected insiders get higher abnormal returns than non-connected insiders. From columns (3) to (4), we also partition the regression results into with and without political connections. The coefficient of Buyers with (without) political connections is 0.031 (-0.006) after using the control variables. The coefficient with political connections is economically and statistically significant, but the coefficient without political connections is statistically insignificant. The total number of observations (insiders-days) with (without) political connections is 442 (2340), and the number of firms is 173 (928). This finding suggests that politically connected insiders get higher abnormal returns than non-connected insiders.

The coefficients of Buyers are economically and statistically significant across the windows for the politically connected insiders. We find that the politically connected insiders' trades are associated with

positive abnormal stock returns. The above results suggest that politically connected insiders had a significant information advantage during the announcement date (day 0), i.e., CAR (0, 20) and (0, 60), of the trade war and opportunistically traded to exploit this advantage. These findings are consistent with Jagolinzer et al. (2020); Cohen et al. (2012); Jeng et al. (2003); Lakonishok and Lee (2001); Aboody and Lev (2000), insider trades are based on private information, holding period returns should be higher among companies in which insiders buy. This means that these findings support the baseline regression results.

B. Instrumental variables approach

This table presents the estimation of the instrumental variable approach. Panel A presents the first-stage regression results in which the dependent variable is the Buyer. The instrumental variable is the purchase ratio. Panel B reports the second-stage regression results. In the second stage, the dependent variable is one-month holding period returns *($HPR_{i,t+1}$)*. Models (1) and (2) estimate the pooled regression. Models (3) and (5) present the firm and month-fixed effects for the politically connected insiders' purchase ratio. Models (4) and (6) show the firm and month fixed effects for purchase ratio without political connections.

Table 4.12: Instrumental variables approach (Two-stage least squares (2SLS))

This table presents the estimation of using the instrumental variable approach based on two-stage least squares (2SLS) cross-section regressions. Panel A presents the first-stage regression results in which the dependent variable is the Buyer. The instrumental variable is the purchase ratio. Purchase Ratio is the number of shares purchased by insider *i* in firm *j* and month *t*, scaled by the total share volume of insider *i* in firm *j* and month *t*. Panel B reports the second-stage regression results. In the second stage, the dependent variable is one-month holding period returns ($HPR_{i,t+1}$). Models (1) and (2) estimate the pooled regression (between-group analysis). Models (3) and (5) present the firm and month fixed effects (within-firm analysis) for the politically connected insiders' purchase ratio. Models (4) and (6) show the firm and month fixed effects (within-firm analysis) for purchase ratio without political connections. $Buyer_t$ is an indicator variable equal to 1 if the total shares bought amount by insider *i* in firm *j* and month *t* exceeds the total shares sold amount by insider *i* in firm *j* and month *t* (all trades are aggregated to the insider-firm-month level). The coefficient on *Buyer* represents the informativeness of insider trade for holding performance. *t*-Statistics (two-tailed *p*-values) based on standard errors clustered by firm appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

Panel A. First-stage regressions						
Dependent variable: *Buyer*						
Variables	Political Connections		Political Connections		Political Connections	
	Yes	Yes	Yes	No	Yes	No
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)

Purchase Ratio	0.729***	0.723***	1.011***	1.00***	1.012***	1.00***
	(0.012)	(0.024)	(0.007)	(0.002)	(0.008)	(0.002)
Observations	7793	7793	7240	6167	7240	6167
Number of clusters (Firm)			1436	1221	1436	1221
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	No	No	Yes	Yes	Yes	Yes
Month Fixed Effects	No	Yes	No	No	Yes	Yes
Panel B. Second-stage regressions						
Dependent variable: $HPR_{i,t+1}$						
	Political Connections		Political Connections		Political Connections	
	Yes	Yes	Yes	No	Yes	No
Variables	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)
Buyer	0.025***	0.030***	0.018***	.003	0.021***	.001
	(0.010)	(0.010)	(0.007)	(0.006)	(0.007)	(0.006)
Observations	7793	7793	7240	6167	7240	6167
Number of clusters (Firm)			1436	1221	1436	1221
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	No	No	Yes	Yes	Yes	Yes
Month Fixed Effects	No	Yes	No	No	Yes	Yes
Wu-Hausman test *p*-value	0.04	0.01				

Since, we have manually collected the political connection data from the proxy statement of each firm, and we have executed the regressions to test the relation between politically connected insiders' trades and holding period returns. It may have the possibility to make errors from data entry and/or wrong information in the proxy statement. Data entry and/or wrong information in proxy statement error indicates measurement error, which may force to do the wrong estimations in regressions. Measurement error leads to errors-in-variables bias, which may force the wrong estimation to be performed in baseline regressions.

Table 4.12 presents the estimation of using the instrumental variable approach based on two-stage least squares (2SLS) cross-section regressions. We present the regression results with political connections from columns (1) to (2). From Columns (3) to (6), we partition the regression results into with and without political connections. Columns (1) and (2) estimate the pooled regression (between-group analysis). Columns (3) and (4) present the firm fixed effects (within-firm analysis). Columns (5) and (6) present the firm and month fixed effects (within-firm analysis). We use size, BM and PastMoret as control variables in all the models. In the first stage, in column (1), the coefficient of Purchase Ratio with political connections is positive (0.729) and statistically significant (<0.01). In the second stage,

the coefficient of Buyers with political connections is 0.025, and it is statistically significant (<0.01). We also find that the Wu-Hausman test *p*-value is 0.04. The total number of observations is 7,793.

In the first stage, in column (2), the coefficient of Purchase Ratio with political connections is positive (0.723) and statistically significant (<0.01) after using the month-fixed effect. In the second stage, the coefficient of Buyers with political connections is 0.030, which is statistically significant (<0.01). We also find that the Wu-Hausman test *p*-value is 0.01. The total number of observations is 7,793. In the first stage, in columns (3) and (4), the coefficient of Purchase Ratio with (without) political connections is 1.011 (1.00) and statistically significant (<0.01) after using the firm fixed effect. In the second stage, the coefficient of Buyer with (without) political connections is 0.018 (0.003), and it is statistically significant (insignificant). The total number of observations is 7,240 (6,167), and the number of clusters (firms) is 1,436 (1,221). In the first stage, in columns (5) and (6), the coefficient of Purchase Ratio with (without) political connections is 1.012 (1.00) and statistically significant (<0.01) after using the firm and month fixed effect. In the second stage, the coefficient of Buyer with (without) political connections is 0.021 (0.001), and it is statistically significant (insignificant). The total number of observations is 7,240 (6,167), and the number of clusters (firms) is 1,436 (1,221). These coefficient results suggest that the politically connected insiders get higher one-month holding period returns during the first three months of the trade war than those without politically connected insiders.

We test the robustness of the results by using the instrumental variable approach to address endogeneity concerns. Comparing the results obtained from baseline regressions with those obtained from the above two-stage least square (2SLS) regressions (Table 4.12), it is clearly observed that the magnitudes of 2SLS coefficients are more significant than those of the baseline coefficient estimators (although the coefficients from both approaches are statistically significant and positive). This observation is consistent with the previous discussions that the holding period returns and insider trades are politically connected and positively related. However, the errors-in-variable and/or omitted variable biases are the main driving forces that bias the coefficient estimates of politically connected trades downward the baseline regressions. Once we use the instrument, the endogeneity of the political connections is mitigated, and the coefficient estimates increase, that is, become more positive and statistically

significant. Substantiating the attenuation bias in baseline regressions, we perform the Hausman test, and it rejects the null hypothesis that 2SLS and baseline coefficients on the politically connected trades are the same.

We use the purchase ratio (including politically connected insiders' purchase ratio) as an instrument. This instrument meets the relevance conditions at first-stage and second-stage regressions. In the first stage, the instrument is highly statistically significant and associated with the Buyer. In the second stage, we find that the coefficients of Buyer (connected only) are statistically significant and positive (Model 1-3 and 5), which supports the baseline regression results. We also find statistically insignificant coefficient estimates in the Model (4) and (6), which are driven by purchase ratio without political connections. We find that the Wu-Hausman endogeneity test has a significant result, which supports the appropriateness of the instrument and model. We also find that Kleibergen-Paap Wald rk F statistic and Kleibergen-Paap rk LM statistics are statistically significant in the models (3) and (5), which implies that the instrument is neither under nor weakly identified. Overall, mitigating endogeneity concerns through instrumental variable approaches specifies results consistent with the baseline results.

4.4.7 Heterogeneity

We use multi-way fixed effects that perform well with large and complex datasets. It is denoted by a high-dimensional fixed effect (Correia, 2016). We absorb the firm id (CUSIP) and transaction month with clustering firm id (CUSIP) in multi-way fixed effects. These techniques allow me to control the unobserved heterogeneity specific to an individual or group, and they also prevent causal inference due to omitted variable biases (Gormley and Matsa, 2014). Specifically, in the baseline regression, we include firm and month fixed effects with cross-sectional regressions to account for potential heterogeneity in Buyer (net purchases) across the firms in a given month. We find consistent results with baseline results. We also use the difference-in-differences approach to measure the pre and post-trade war effects on politically connected insiders, and we find a positive relation between Cumulative Abnormal Returns (-30, -1 & 0, 30) and net purchase (Buyer). Moreover, we consider the multi-way fixed effect in the instrumental variable-2SLS method to retain the consistency with other methods (e.g., baseline regression and difference-in-difference specification). Notably, we find the same results from

all the methods.

4.5 Conclusion

In this chapter, we investigate whether the political connections facilitate the politically connected insiders in a particular form of opportunism-informed trading during the trade war in 2018. We consider the joint tests of political connections and insiders' trading based on the information advantage. In this regard, we use alternative measurements of event studies and consider the recent direct connections of insiders. Importantly, we find consistent results with the baseline results.

From the findings of the average holding period returns, both differences in insider purchases and sales are statistically significant (< 0.01) in the first three months of the trade war (0.023), and the entire sample (0.002), but difference-in-differences shows a significant result at the first three months of the trade war only. After that, we ran the regressions to test whether politically connected insiders had a significant information advantage during the first three months of the trade war. We find that the politically connected coefficients are statistically significant. These coefficients are higher for politically connected insiders than for non-politically connected insiders. The inference on politically connected insiders is consistent with the previous literature. After that, we also test the different dimensions of insiders' political connections.

We also find that direct connections (Buyer*Direct Connection) have a positive coefficient. The coefficient of Buyer*Recent Direct Connections is statistically significant (p-value <0.10) and higher than Buyer*Stale Direct Connections. These findings indicate that the recent direct connection is stronger than the stale direct connection after controlling directors, CEO and officers. We also find that female insiders generated higher holding period returns than male insiders. The coefficient (p-value < 0.01) for insiders below 55 years old is higher than those for insiders above 55 years old. This finding indicates that below 55 years old insiders generated higher holding period returns and had a significant information advantage during the first three months of the trade war than above 55 years old insiders. We find that insider trades by CEOs are positively related to one-month holding period returns (Buyer, t-statistic of 2.59, p-value <0.05) after using firm and month fixed effects. However, we also find that

insider trades by directors and officers are positively associated with one-month holding period returns (Buyer, t-statistic of 1.36 and 1.83, respectively). Importantly, these findings suggest that politically connected CEOs generated higher holding period returns and had a significant information advantage during the first three months of the trade war than directors and officers.

The coefficients of Buyer are positive and significant across the different windows ((0, 30), (0, 20) and (0, 60)) for the politically connected insiders. The purchase transactions by politically connected insiders generated significantly higher abnormal returns than trades of non-politically connected insiders. We use the difference-in-difference specification on the politically connected insiders and post-event of the trade war. We find the positive and statistically significant coefficient after applying the firm and time-fixed effects (difference-in-differences p-value < 0.01). This leads to a significantly higher difference-in-differences (the difference in politically connected and non-connected insiders' CARs during the event (-30, -1) minus the difference in politically connected and non-connected insiders' CARs during the event (0, 30)) of 7.713 CAR for the politically connected insiders versus non-connected insiders. Comparing the results between pre (politically connected versus non-connected) and post (politically connected versus non-connected) event studies enables us to support the baseline results. Event studies results indicate that the politically connected insiders generated higher abnormal stock returns from net purchases at all event windows surrounding the announcement date of the trade war. This inference is consistent with the outcome of baseline regression that political connections can facilitate insiders during the trade war. This finding interprets that politically connected insiders are more likely to use non-public information when they are in a net buying position. Politically connected insiders generate higher abnormal returns than non-connected insiders. Overall, mitigating endogeneity concerns through alternative measurement and instrumental variable approaches specifies results consistent with the baseline results. We also use the fixed effects and difference-in-difference to account for potential heterogeneity in net purchases across the firms in a given month.

Comparing the results between pre (politically connected versus non-connected) and post (politically connected versus non-connected) event studies support the baseline results. We find that the relationship between political connections and the informativeness of insider trades is statistically and economically

much larger for politically connected insiders during the event than non-politically connected insiders. This finding interprets that politically connected insiders are more likely to use non-public information when they are in a net buying position. Politically connected insiders generate higher abnormal returns than non-connected insiders. All findings suggest that political connections provided asymmetric information that insiders traded to exploit their advantages. In particular, the findings provide strong evidence of an increase in the informativeness of insider trades during the trade war, with these results concentrating on politically connected insiders. The results suggest that political connections can facilitate the insiders during the trade war, politically connected insiders had a significant information advantage during the first three months of the trade war and opportunistically traded to exploit this advantage.

Notably, the findings are remarkable in the current economic climate, where the government plays an active role in U.S. capital markets. We expect the politically connected insiders to be an information advantage if the government plays more active roles in influencing bank-level outcomes. Therefore, we encourage other investors and capital market regulators to monitor insider trades by insiders with political connections. Further research can proceed in two different directions. First, considering the insiders of Chinese firms, it is relevant to the trade war in 2018. It may find whether political connection exploits the information advantage to earn more holding period returns at that time. Second, the insights provided in the chapter can be used to focus on opportunistic trades (Cohen et al., 2012) instead of political connections. We leave these issues for further research.

Appendix:

A.4.1 Officers' identification (e.g., (Jagolinzer et al., 2020)):

Identification	Role codes

Officer	"CEO","OD","AV","H","CFO","CI","CO","CT","EVP","O","OP","OB","OS","OT","O ","P","S","SVP","VP", and "OX".
Director	"CB","D","DO", and "VC".
CEO	"CEO".

A.4.2 Instrumental variable definition and construction

Variable	**Definition and construction**	**Data source**
Purchase Ratio	The number of shares purchased by insider *i* in the firm *j* and month *t*, scaled by the total share volume (number of shares purchased plus the number of shares sold) of insider *i* in firm *j* and month *t* (e.g., (Jagolinzer et al., 2020; Piotroski and Roulstone, 2005; Lakonishok and Lee, 2001)).	Thomson/Refinitiv (WRDS) database

Chapter 5

5. Opportunistic Insider Trading during the Trade War

Abstract: *This chapter examines whether opportunistic insiders earn higher short-term returns compared to routine insiders in US during the trade war in 2018. Importantly, our findings provide evidence that opportunistic insiders receive higher returns compared to routine insiders during the trade war. This evidence is also pronounced when opportunistic insiders are politically connected. Furthermore, we interestingly find that opportunistic CEOs and female insiders receive higher returns compared to routine CEOs and female insiders. Our results are robust to various model specifications, alternative measures, and endogeneity concerns. Overall, our findings suggest that opportunistic insiders can have a significant information advantage and that information can facilitate them to be involved in informed trading during the trade war.*

Keywords: Opportunistic Insider Buy (Sell), Routine Insider Buy (Sell), Political Connection, Trade War, Asymmetric Information and Holding Period Returns.

5.1 Introduction

5.1.1 Background and Contributions

Opportunistic insiders are non-routine traders because they do not participate in seasonal trading over the years. These insiders may have prior access to important information regarding the declaration of the trade war and its impact on the stock market and firm performance. This earning possibility increases due to some exogenous events, such as the financial crisis (e.g., Jagolinzer et al. (2020); Cziraki (2018)). The trade war is also an exogenous event that may create economic uncertainty. The trade war or economic policy uncertainty increases information advantage and significantly impacts financial markets (El Ghoul et al., 2022).

Consequently, opportunistic insiders can take information advantage during the trade war because regular or routine insiders are more distracted at that time. Generally, routine insiders may trade for a piece of reasons such as liquidity demand or diversification reasons (e.g., they sell their shares to fulfil their liquidity needs) (Cohen et al., 2012) which signals that the routine insider is not trading on information (e.g., Drummond David of Alphabet Inc). Additionally, routine insiders buy the shares after receiving the bonus from the firms since bonuses are generally paid in the same month each year, and they often get discount plans on their firm's stock. The routine insiders buy in the same calendar month

of each year, which is common and often uninformative. However, non-routine insiders trade opportunistically and are truly informative (Cohen et al., 2012) and they can participate in informed trading during the trade war. By considering the importance of information advantage, in this chapter, we investigate whether opportunistic insiders are truly informative and more profitable by a particular form of opportunism-informed trading during the trade war in 2018. The uniqueness of this chapter is to focus on opportunistic and routine insider trades during an exogenous event like a trade war.

Notably, the insiders of public limited companies generally have information advantages over the outsiders when they trade their company's shares (White, 2020). Consequently, insiders possess privileged information about their firms (Cline et al., 2017). They may increase their trades for larger returns at any economic uncertainty. Additionally, Ma et al. (2022) find a material increase in insider trading during the climate disasters, such as hurricanes and floods. Notably, the opportunistic insiders had a significant information advantage during the financial crisis in insider trading – opportunistic behaviour (Jagolinzer et al., 2020) and generated higher abnormal returns (Gangopadhyay et al., 2019; Van Geyt et al., 2013). It means that the exogenous events induce the level of insider trading, and routine insiders are more distracted at that time. Notably, it is not clearly identified that opportunistic insiders would trade on information advantage, but these insiders can behave opportunistically because of information advantage. We apply the cross-sectional tests for opportunistic and routine insiders or trades to check larger benefits on information advantage. In this regard, we use the measurements of event studies, consider the tests on all insiders and trades separately, and find that opportunistic insiders and trades generate higher returns than routine insiders and trades during the trade war period. We also find that the opportunistic insiders by gender, age, board position, compensation, and sector classifications generate higher returns which support the baseline results. All results indicate that opportunistic insiders have information advantages and they have predictive ability for future performance of stocks due to trade war. By considering the information advantage, we measure the informativeness of insiders' trades based on the predictive ability for future performance in this chapter.

We analyse whether opportunistic insiders may generate more returns during the trade war, which is opposed to routine insiders. Cohen et al. (2012) exhibit that routine insiders make cyclical trading that

is not driven by prior information about their firms. Hence, in my setting, we follow the strategy of Cohen et al. (2012) classifying the routine insiders who trade in the same calendar months over three consecutive years and opportunistic insiders as everyone else. Ali and Hirshleifer (2017); Cohen et al. (2012) find that opportunistic or non-routine insider trades are informative and beneficial. We contribute to this literature by examining whether opportunistic insiders are truly informative regarding the trade war announcement, stock market reactions and firm performance due to this war and whether their trading was more profitable during the trade war period. We consider all USA companies using a sample of all open market equity purchases and sales of 2017 and 2018.

We first use the event study methodology to examine the stock performance for opportunistic and routine insiders around the trade war announcement (day 0), i.e., 31 (0, 30) and 31 (-30, -1) days. We find that opportunistic insiders hold (earn) higher abnormal returns from buying (selling) during the trade war period (0, 30) than the pre-trade war period (-30, -1), which is also truly informative. Although, we run the regressions for the insider trades for the pre-trade war and trade war period and the first and last three-month of the trade war. We find that the coefficients on opportunistic insider trading are more profitable than routine insider trading, which are economically and statistically significant during the trade war and the first three-month of the trade war period only. These findings suggest that opportunistic insider transactions are more beneficial and truly informative during the trade war compared to the pre-trade war and the last three-month of the trade war. These findings support the prior literature (e.g., Ali and Hirshleifer (2017); Cohen et al. (2012)), which mainly focuses on opportunistic and routine insider transactions but not on this war. In addition, the difference-in-difference approaches suggest that opportunistic insider buys (0.01929) and sells (-0.018) are more profitable than routine insider buys and sells, which is truly informative. We then investigate whether all opportunistic and routine trades instead of routine insiders impact holding period returns measured at the one-month horizon. We find the same results that opportunistic trades are more beneficial and truly informative.

We next examine how these attributes relate to the informativeness of insider trades; we estimate to assess how the politically connected insiders behave opportunistically – informed trading during the

trade war. We find that politically connected insiders' opportunistic transactions are more beneficial and truly informative than routine insider transactions. Additionally, we add political connections with insiders to test whether opportunistic insiders were really informative during the trade war. Since, the politically connected insiders may get reliable information in advance regarding the declaration of a trade war through their current and previously employed organizations, and they can predict the firm's performance before trade war information is available to the other insiders and outsiders. We also investigate whether opportunistic insiders with different characteristics (e.g., gender, age, compensation, board position and sector classifications) are more beneficial during the trade war. We find that opportunistic female insider buys and sells are more profitable than male insider buys and sells.

Moreover, we find that the old opportunistic insiders' buys and sells are more profitable than young insider buys and sells. In addition, we find that opportunistic insiders (CEO) buy and sell are more beneficial than opportunistic insider (directors) buys and sells. We also find that the opportunistic insiders (high compensation) buy (0.020) hold larger returns than opportunistic insiders (low compensation) buys (0.004), but the opportunistic insider (low compensation) sells are more profitable than opportunistic insiders (high compensation) sells. We finally found that the opportunistic insiders' buys (0.031) of the technology sector hold larger returns than opportunistic insiders' buys of other sectors, and the opportunistic insider sells (-0.033) of the financial sector are more profitable than opportunistic insider sells of other sectors. The inferences from all tests are consistent with the outcome of baseline regressions that opportunistic insiders are profitable and informative during the trade war. Notably, there was no other major event (e.g., economic uncertainty) during the trade war period in 2018. Thus, trade war time is free from other exogenous events such as the financial crisis, the interim election, or a pandemic like COVID-19. Considering all the factors, the findings of this chapter are robust. The measurements of event studies, alternative tests on opportunistic and routine insider trades, and instrumental variable-2SLS results support making more substantial evidence in favour of opportunistic insiders. The findings are robust to various alternative method specifications and classification windows for identifying an insider as opportunistic and informative. Overall, these

findings suggest that opportunistic insiders have the information advantage that they generate larger returns. To strengthen this finding, we consider the insider trades which are reported to US SEC timely. The conclusions of this chapter are remarkable in the current stock market environment, where the government plays an active role in USA capital markets. However, insider trades are less informative in the presence of more robust incentives to monitor (Fidrmuc, J.P. et al., 2006), while poor external governance is associated with more profitable trades (Ravina and Sapienza, 2010). Therefore, we encourage other investors and capital market regulators to monitor opportunistic insider trades.

5.1.2 Research Question and Significance of the Study

Prior research focuses on the corporate insiders' position in the company, the size, and the sequence of insider trades and diversification motives (Cohen et al., 2012; Wang, W. et al., 2012; Ravina and Sapienza, 2010; Kallunki, J.-P. et al., 2009; Cheng, Louis et al., 2006). Other research provides insights into firm-level characteristics, including governance, and informativeness of insider trades (Jagolinzer et al., 2020; Skaife et al., 2013; Jagolinzer et al., 2011). Few studies explore insider trades by exploiting their information advantage around specific corporate events, such as earnings announcements (Ke et al., 2003), equity offerings (Lee, I., 1997), stock buybacks (Lee, D.S. et al., 1992), dividend initiations (John and Lang, 1991) and mergers and acquisitions (M&A) (Seyhun, 1990). We contribute to the literature by investigating an essential attribute of insider trading that has received no attention in prior studies, opportunistic insider trading and profitability during the trade war in 2018.

As mentioned earlier, prior research focuses on non-routine and routine insider trades during the financial crisis or other events rather than the trade war and they provide evidence that the non-routine insiders generated higher returns than routine insiders and were truly informative (e.g., (Ali and Hirshleifer, 2017; Cohen et al., 2012)). Prior findings also provide evidence that non-routine insiders have information advantage and non-routine or opportunistic insiders can involve in informed trading to generate higher returns than routine insiders during the trade war. Thus, we have an opportunity to contribute to this literature by examining whether opportunism facilitates the opportunistic insiders of all public limited companies in informed trading using a sample of all open market transactions of common stock between 22 July 2017 and 21 July 2018. We examine the profitability of insiders more

likely to generate returns from their transactions during the trade war. This chapter examines of the research question "how does opportunism behaviour influence the opportunistic insiders to be involved in informed trading during the trade war?"

5.1.3 Structure

The remainder of the study is organized as follows. The following section explains the literature review on insider trading, trade war, opportunistic trading and profitability. Section 5.3 provides the data and method. Section 5.4 describes the summary statistics and the main findings. The final section concludes the chapter.

5.2 Literature Review

In this section, we present an idea of the central themes of this chapter with prior studies. Primarily, the section is started with insider trading and trade war, where we explain the insider trading and information advantages during policy uncertainty, e.g., trade war. The readers can get a broader idea of insider trading during the uncertainty that may help insiders trade opportunistically. Finally, this section ends with opportunistic trading and profitability, explaining how opportunistic insiders gain more using information opportunistically.

5.2.1. Insider Trading and Trade War

As we discussed in the earlier chapter on the several issues of insider trades and trade war, with the continuation of the previous chapter, we highlight the area to link with the hypotheses of the current chapter. In this chapter, we again consider the legal insider trades that are reported to SEC timely, ignoring the illegal insider trades. We also consider the US-China trade war that was initiated in 2018 by initially imposing 10% tariffs (later escalating to 25%) on Chinese exports ($200 billion) to the US and retaliating 10% tariffs on American exports ($65 billion) items to China (Archana, 2020; Van Aaken et al., 2019; Bhandari et al., 2019; Kumagai et al., 2019; Bekkers and Teh, 2019; Lai, 2019; Liu, T. and Woo, 2018).

The insiders of public limited companies generally have information advantages over the outsiders when they trade their company's shares (White, 2020). Consequently, corporate insiders exploit monopolistic access to non-public information to gain personal gains (Smith, 1941). Notably, insiders' trade using private information for greater earnings addresses the desirability of insider trading. This

desirability may create a conflict of interest within the firm between the manager and the shareholder. Especially, the agency theory of insider trading emphasizes the effect of insider trading on the corporate agency problem, which analyses the manager-shareholder conflict of interest (Jensen, M.C. and Meckling, 1976). This theory explains whether insider trading worsens or ameliorates this conflict. If insider trading decreases (increases) the divergence between the managers' and shareholders' interests, the agency cost decreases (increases). Significantly, a few proponents of law and economics on unregulated insider trading state that insider trading increases the manager-shareholder conflict of interest. Alternatively, few proponents argue that insider trading reduces the insider-shareholder conflict of interest and it reduces agency costs (Carlton and Fischel, 1983). This insider trading on information might incentivise managers to take on too much risk (Klock, 1994).

On the other hand, the market theory of insider trading focuses on the broader market implication of insider trading. This approach to insider trading indicates the effect on market integrity (Bhattacharya et al., 2000), referred to as market efficiency, reflecting the stock market liquidity and stock price accuracy. Insider trading on material non-public information adjusts the stock prices to reflect the news (Carlton and Fischel, 1983). Insiders can profit from insider trading due to asymmetric information among insiders and outsiders. In detail, an insider can sell the firm's shares for more than the true value of shares, and an insider can buy the firm's shares at less than the true value of shares (Manove, 1989). The premium of having superior information from insider trades is the difference between the insider purchase or sell price and the true value of shares. However, information advantage makes the stock market illiquid because of the existence of asymmetric information between the potential buyers and sellers. If buyers are concerned that sellers have an information advantage, they will be reluctant to purchase the shares unless this asymmetry can be overcome (Kearns and Lowe, 2007).

In addition, uncertainty has a huge effect on the stock market and produces risks for the outcome of investments (Bloom et al., 2007). For example, the stock market investors in Greece made a significant loss when the Greece prime minister announced a referendum after the announcement of European politicians to cut the debt in half in October 2011. However, the stock price rose after the announcement of Greece politicians to stand against that initiative. These uncertainties seem to destroy or create

millions of dollars for investors. Policy uncertainty is not only common in Europe but also common in the US economy. The uncertainty makes shocks associated with the cost of the likely new policies. These shocks create different rumours in the markets, which leads the investors to revise their decisions on investment with the changing government policies. Investors want to offset their potential losses from the uncertainty of future decisions. This uncertainty creates asymmetric information in the market (Nagar et al., 2019). Stock market investors use this information opportunistically as a key earnings indicator (Verrecchia, 2001). The market reactions are more significant when the uncertainty increases (Pan et al., 2015).

As mentioned above, policy uncertainty carries asymmetric information to insiders (Durnev, 2010) and increases the bid-ask spread (Nagar et al., 2019) for opportunistic insiders. According to Li, X. (2020), insiders' decisions on trading their company's stock contain non-public information from outside investors. Insiders engage in insider trading using this confidential information (Leland, 1992). However, insider trades on asymmetric information make the capital market less efficient (Bhattacharya and Daouk, 2002) but provide valuable inside information (Chiang et al., 2017; Du and Wei, 2004) to outsiders. The possibility of arbitrating personal information status increases with higher information asymmetry. The outside investors could interpret these trades as a form of forfeiture and participate less in the stock trading, which may negatively impact the firm's performance and positively impact the firm's risk (Li, X., 2020).

Significantly, policy uncertainty is associated positively with the frequency and volume of insider trades. However, insider trading is negatively correlated with future firm performance during high economic policy uncertainty. In addition, the high economic uncertainty deteriorates the information environment in the market (Nagar et al., 2019). Significantly, this uncertainty increases the information advantage for insiders and insider trading (Li, X., 2020). This advantage comes from material non-public information. Material non-public information is more valuable when the market is deficient in the information environment (Aboody and Lev, 2000). In a deficient market, the information gap between insiders and outsiders is greater during high uncertainty periods, and insiders benefit from this information advantage by trading opportunistically. In addition, insiders reduce their risk of loss by

applying their non-public information to the stock market during high economic policy uncertainty. The profitability from insider trading is significantly higher in firms with less information disclosure. Dissimilar to recent studies by Yung and Root (2019); Phan et al. (2019); Nguyen and Phan (2017); Gulen and Ion (2016) on the economic policy uncertainty index who studied the 1986-2015 period, we consider the period of the trade war between the US and China in 2018 to measure the economic uncertainty.

As policy uncertainty increases information asymmetry in financial markets (El Ghoul et al., 2022), the trade war declaration is expected to negatively affect stock prices immediately. The investors suffer from this sudden negative change in stock prices. Consequently, the insiders may also suffer from that declaration. However, they can save their investment from the risk of losses or earn more if they have private information on the trade war declaration. Notably, insiders are in a better opportunistic position than outsiders to make more returns because they are more informed on non-public information before it is available to outsiders. The insider may use non-public information on trade war declarations and participate in trading their own firm's shares to get more returns.

5.2.2 Opportunistic Trading and Profitability

Insiders possess privileged information about their firms. Prior studies show that insiders earn abnormal returns of this information advantage about their firms (Jagolinzer et al., 2020; Cline et al., 2017; He and Rui, 2016b; Rogers et al., 2016b; Cohen et al., 2012; Tavakoli et al., 2012; Ravina and Sapienza, 2010; Fidrmuc, J. et al., 2008; Marin and Olivier, 2008; Fidrmuc, J.P. et al., 2006). In addition, insider trades are positively associated with stock price changes (Chakravarty and McConnell, 1999). Few studies explore insider trades by exploiting their information advantage around specific corporate events, such as earnings (Ke et al., 2003), equity offerings (Lee, I., 1997), stock buybacks (Lee, D.S. et al., 1992), dividend initiations (John and Lang, 1991) and mergers and acquisitions (M&A) (Seyhun, 1990).

In this chapter, we focus on the opportunism of non-routine or opportunistic and routine insider trading. The insiders may generate higher profitability from opportunistic trading because the opportunistic insiders do not participate in regular trading. In order to, there is a chance to participate in opportunistic

trading on prior information regarding the upcoming firm's or government's announcement (see, Ali and Hirshleifer (2017)). Similarly, opportunistic insiders may have prior information regarding the declaration of the trade war and their firm performance during that period, and they may behave opportunistically to exploit the information advantages. Opportunistic trading is more likely profitable when the government plays an active role in the economy during a trade war or financial crisis. According to Ali and Hirshleifer (2017); Cohen et al. (2012), opportunistic insiders had a significant information advantage in insider trading – opportunistically. During the financial crisis, opportunistic corporate insiders engaged in abnormal share trading before publicly announcing the corporate information, which created a vulnerability in the stock market (Jagolinzer et al., 2020). Bank insiders also sold many shares just before starting the financial crisis of 2008 (Cziraki, 2018). Osborne (2004) states that an individual competes for personal interest in any country's economic condition. Following Cohen et al. (2012); Ali and Hirshleifer (2017), we examine whether opportunistic insiders of the USA firms are profitable in informed trading - opportunistic behaviour.

Insider trading collaborates more information regarding the companies' stock (Fidrmuc, J.P. et al., 2006). Biggerstaff et al. (2020); Esen et al. (2019); Gangopadhyay et al. (2019) find that both insider purchases and sales are positively associated with abnormal stock returns. Esen et al. (2019); Gangopadhyay et al. (2019); Fidrmuc, J.P. et al. (2006) find a positive relationship between insider trading and abnormal stock returns of the firm. However, Cheng, Louis et al. (2006) find that the negative relationship between insider trading and liquidity weakens the firms' liquidity. Gangopadhyay et al. (2019) also find that insider purchases are highly profitable for non-financial firms, but it is insignificantly profitable for banks one month after the purchase. Insider trading increases stock market volatility (Du and Wei, 2004; Chiang et al., 2017). Insider trading during the financial crisis of 2008-09 impacted the stock market inversely (Jagolinzer et al., 2020; Cziraki, 2018). However, insider trade is not profitable for all financial firms during the post Dodd-Frank period[9]. Insider sales are less informative if the seller sells the shares to meet their liquidity needs. Cheng, Louis et al. (2006) find

[9] Following Akhigbe et al. (2019), the Dodd-Frank Act is to put more strict regulations on financial institutions to provide financial incentives and protection for reporting securities fraud like insider trading violations, which signed into law in 2010. Post is after the enactment of the Dodd-Frank Act.

that the higher insider trading by directors makes a broader spread. Dai et al. (2016) find the inverse relationship between governance quality and profitability from insider sales.

Prior studies also find that information advantage helps insiders to behave opportunistically to generate higher abnormal returns. Consequently, we are examining whether opportunistic insiders may generate higher abnormal returns than routine insiders. Moreover, Li, X. (2020) finds that insider trades generate negative returns during a period of high uncertainty. However, we expect that insiders may behave opportunistically during the trade war period and generate higher returns. On the other hand, Kallunki, J. et al. (2018) find that less wealthy insiders sell more shares than more wealthy insiders based on non-public information before radically declining the stock prices in the market. Low risk-averse fewer wealthy insiders intending to get more returns to sell their shares to avoid the declines of stock prices. In this chapter, we consider the different opportunistic insiders based on age, gender and compensation (high or low) to measure the benefits of insider trading on material non-public information during the trade war. Firm insiders of highly competitive industries generate more insider trading profit, maintaining a high level of trade secrecy, a high level of R&D, optimistic financial disclosure, and low management voluntary disclosures (Rahman et al., 2021). Similarly, in this chapter, we measure the profitability of insider (opportunistic and routine) trading by different sectors, which may be affected more by the trade war.

Non-routine insiders may behave opportunistically during the trade war. They may earn more returns than the routine insiders during the same period of the trade war since opportunistic insiders traded to exploit their information advantages (Cohen et al., 2012; Ali and Hirshleifer, 2017). Opportunistic insiders are expected to earn more returns to exploit their information advantages during the trade war period. This chapter considers that non-routine insiders are more opportunistic than routine insiders because they have more chances to observe the firm's future before holding the shares. The opportunistic insiders may generate higher returns than routine insiders if they take buying or selling decisions. We expect opportunistic insider trading to have an information advantage and generate more returns during the trade war. These discussions lead to the following hypotheses:

Hypothesis 1: The trade war reinforces the relationship between opportunistic insiders and higher holding period returns.

Primarily, we use cross-sectional regression with the month-fixed effect to test the hypothesis. We also use the event studies for the time window (0, 30) and compared them with the other time window (-30, -1). In addition, we use the difference-in-difference specification for opportunistic buy and sell separately to support the baseline regression results. We account for the potential heterogeneity concerns using the fixed effect and difference-in-difference approaches. Hence, fixed effects control any time-invariant and cross-sectional differences between firms for opportunistic and routine insiders (e.g., corporate governance). Precisely, the month-fixed effects control the change in market conditions, which affect all firms in a given period. This approach controls the possibility that the market conditions differentially affect the firms for opportunistic and routine insiders. The month-fixed effect considers the period indicator variables in the first three months of the trade war and the last three months. In addition, we consider the IV-2SLS, where the purchase and sell ratios are used as the instrumental variable to account for the potential endogeneity issues. Once we use the instrumental variable approach, the endogeneity (e.g., omitted variable bias and measurement error) is mitigated, and the coefficient estimates increase, becoming more positive and statistically significant.

In addition, political connection may more facilitate opportunistic insiders to participate in informed trading during the trade war. We also exhibit the findings for the opportunistic insider by considering the insiders' gender, age, board position, compensation, and sector classifications. The opportunistic insiders, including politically connected opportunistic insiders, may generate higher holding period returns than other insiders during the first three months of the trade war, with other things remaining the same. It is obvious that political connections may be stronger for opportunistic insiders than routine insiders. In addition, opportunistic insiders such as politically connected, female, old opportunistic insiders, including opportunistic CEOs, get the information in advance than routine insiders. Notably, opportunistic insiders have a chance to generate higher returns than routine insiders. The routine insiders may not know about future stock market movements on sudden government declaration of a

trade war if opportunistic insiders do not share their movement regarding their trading. Although, opportunistic insiders have more opportunity to earn more returns from the information advantage.

Furthermore, from the thinking of a better relationship between female colleagues and opportunistic insiders than with males, there may have more possibility of sharing inside information with female colleagues before the male colleagues. If the female colleagues prioritise sharing the information, they can use this personal information opportunistically to earn more returns during the trade war. In addition, the old opportunistic insiders may get more information for more earnings to secure their future. They may intend to earn more returns to maintain a luxurious life than the young insiders. These intentions may push them to be aggressive in collecting information. More and quick information helps them understand the movement of stock markets and execute the transactions to earn more returns.

Moreover, from the thinking of a better relationship between the CEO and other parties within (outside) the firm than with directors, there may have more possibility of sharing inside information with the CEO before the others. If the CEO prioritises sharing the information, they can use this personal information opportunistically to earn more returns during the trade war. In addition, CEO may be better informed about the firm as they are involved in the day-to-day operation of the business (Goergen et al., 2019), and they may trade opportunistically to generate larger abnormal returns (Seyhun, 1986).

Furthermore, highly compensated opportunistic insiders have more financial strength and they can buy opportunistically during the trade war. On the other hand, lowly compensated opportunistic insiders have less financial strength than highly compensated opportunistic insiders, and they can sell opportunistically during the trade war. Therefore, we also expect that the highly compensated opportunistic insiders generate higher returns from insider buys than lowly compensated opportunistic insiders. Additionally, we expect that the lowly compensated opportunistic insiders generate more returns from insider sells than highly compensated opportunistic insiders. Notably, the technology sector is affected more by the trade war with China because of more manufacturing dependency on China, and the opportunistic insiders of the technology sector may take advantage of this situation for higher returns. On the other hand, insiders from the financial sector traded opportunistically during the financial crisis (Jagolinzer et al., 2020). Therefore, we also expect that the opportunistic insiders from

the technology sector generate higher returns from insider buys than opportunistic insiders from the financial sector generate higher returns from insider sells. This chapter also proposes the following hypotheses:

Hypothesis 2: The political connection reinforces the relationship between opportunistic insiders and higher holding period returns during the trade war.

Hypothesis 3: The trade war reinforces the relationship between opportunistic female insiders and higher holding period returns.

Hypothesis 4: The trade war reinforces the relationship between opportunistic CEOs and higher holding period returns.

Hypothesis 5a: The trade war reinforces the relationship between highly compensated opportunistic insiders' buys and higher holding period returns.

Hypothesis 5b: The trade war reinforces the relationship between lowly compensated opportunistic insiders' sells and higher holding period returns.

Hypothesis 6: The trade war reinforces the relationship between opportunistic insiders (from technology and financial sector) and higher holding period returns.

Similarly, opportunistic trades may generate higher holding period returns than routine trades during the first three-month of the trade war, while other things remain the same. Notably, opportunistic trades, instead of insiders, have the opportunity for more earnings during the trade war than routine trades. We use cross-sectional regression with fixed effects to test these hypotheses. Hence, the fixed effects control any time-invariant and cross-sectional differences between firms. The month-fixed effects control the change in market conditions, which affect all firms in a given period. We consider the month fixed effect separately as a different model to allow the period effects to differ between the models. This approach controls the possibility that the market conditions differentially affect the firms. Month fixed effect considers the period indicator variables for the first three months of the trade war.

In the previous studies, the effects of trade wars on any economy are common, but it is rarely focused on the impact on the stock market and insider trades. To the best of my knowledge, there are barely any studies on the opportunistic insiders' benefits during the trade war's to date. However, opportunistic and routine insider trades during the trade war are rare in recent studies. Previous scholars barely used microeconomic and finance theories to explain the stock return effects of economic uncertainty, e.g. trade war. Moreover, in this chapter, we create a link between the trade war time and the insider maximising self-interest by using asymmetric information. We also build a tie with these insiders, who have a political connection, and the effect on insider trades. The uniqueness of this chapter is that it focuses on the recent trade war and the opportunistic and routine trading by insiders within the extension of political connections and different specifications, such as gender, age, board position, compensation and sector classifications. We will, therefore, reflect on these issues in the whole analysis.

5.3 Data and Method

Section 5.3 draws the readers' attention from the related literature to research data and methods used for the investigation in this chapter. In the empirical study of this chapter, we consider the insider trades of all US firms by partitioning the opportunistic and routine insiders (Cohen et al., 2012) based on the historical transactions and financial and firm-level stock data from 22 July 2017 to 21 July 2018, inclusive. Specifically, the second empirical study focuses on opportunistic insider trading during the trade war between USA and China. Following research data, the method intends to provide the regression results of the research question, "how opportunistic insiders are beneficial during the trade war"? In addition, this chapter provides the details of the data cleaning to make the final dataset for applying the econometrics models.

5.3.1 Data Sources and Sample Selection

This section focuses on the data sources and appropriate steps to make the final samples. Since this study focuses on opportunistic and routine insider trading of US firms in the pre-trade war and trade war of 2018, this section is divided and discussed into several sub-sections.

5.3.1.1 Insider Trading

Following the trade war announcement date (22 January 2018) and the previous empirical chapter, this chapter focuses on insider trading between 22 July 2017 to 21 July 2018, inclusive. The time range

provides a balanced six-month period before and after the trade war period. For this chapter, we also collect the insider trading data from the same source (Thomson/Refinitiv (Table 1 from insider data) database). Consistent with prior studies (Jagolinzer et al., 2020; Cohen et al., 2012), this empirical analysis is restricted to open market transactions (purchases and sales) of common stocks and ignores option exercises, grants, and gifts. This study looks closely at daily transactions aggregated monthly by each insider of 2,843 US firms as consistent with Jagolinzer et al. (2020), given the monthly transactions. It refers to the six months from 22 July 2017 to 21 January 2018 as the 'pre-trade war period' and from 22 January 2018 to 21 July 2018 as the 'trade war period'. Although we classify the trade war period into two periods, from 22 January 2018 to 21 April 2018 as the 'first three months of trade war (First-3M) period', from 22 April 2018 to 21 July 2018 as the 'last three months of trade war (Last-3M) period'. In the total time horizon, there were 75,761 daily insider transactions (buy and sell). After collapsing from daily transactions to monthly transactions, the number of transactions was reduced to 24,116.

5.3.1.2 Opportunistic and Routine insiders (trades)

We next calculate the explanatory variables, opportunistic and routine insider buy and sell. Opportunistic Insider Buys (Sells) are the indicator variable equal to 1 if the shares bought (sold) the amount by opportunistic insider *i* in firm *j* and month *t* (insider trades are aggregated to the insider-month level), and Routine Insider Buys (Sells) are the indicator variable equal to 1 if the shares bought (sold) the amount by routine insider *i* in firm *j* and month *t* (insider trades are aggregated to the insider-month level).

Following Cohen et al. (2012), in Figure 5.1, we assume that Jam was an insider who traded in March of 2014, 2015, and 2016 (and no other trades in those years). Here are his trades for 2017 and 2018:

1. January 2017
2. March 2017
3. December 2017
4. January 2018

"In all tables of the analysis (i.e., except Table 5.9), the "routine" trades are trades made by an insider who has had three consecutive calendar years (see, Neupane et al. (2021)) with trades in the same month in the past. In the example above, insider Jam is routine. We would classify all his trades (1 through 4) as those made by a routine insider, and they would enter the tests as routine. In Table 5.9, we took a slightly different approach to the trade-level analysis. We wanted to differentiate trades made in the same month as the month that established an insider as routine from trades made in other (non-routine or opportunistic) months. In the example above, Jam is routine because he traded for three consecutive years in March. In Table 5.9, all his subsequent March trades (i.e., trade 2) would be classified as routine. However, trades that Jam makes in months other than March (i.e., trades 1, 3, and 4) would be opportunistic in the context of Table 5.9.

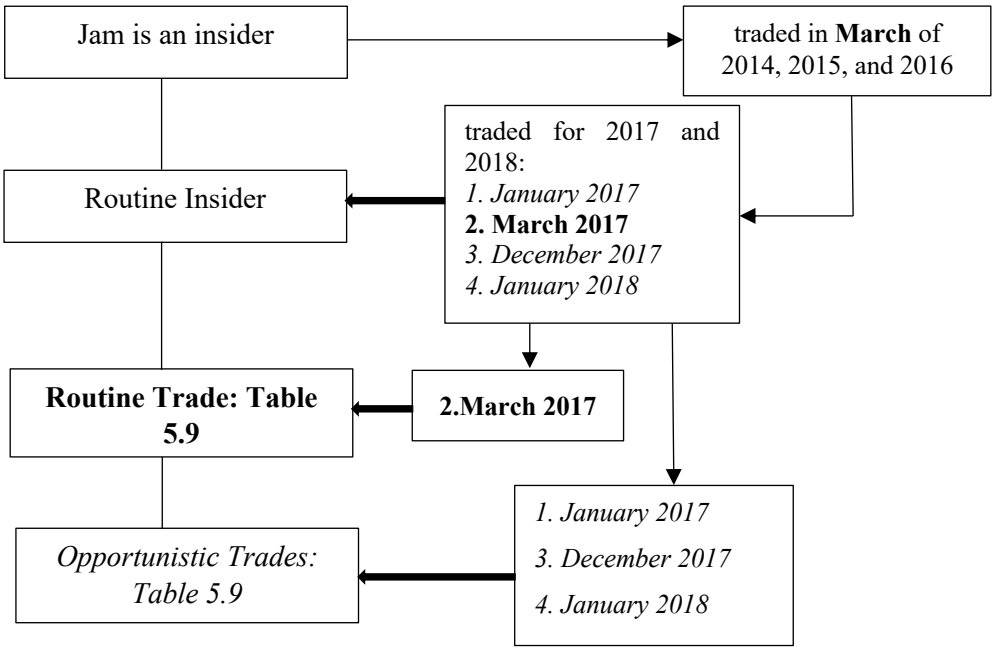


Figure 5.1: Identifying Opportunistic and Routine Insider (Trades)

Some other notes about the classification scheme are as follows. In the results we report in the main tables (e.g., Table 5.5), once a trader becomes routine, he is classified as routine for all of his subsequent trades, regardless of what trading behaviour (or lack of trading behaviour) takes place after his initial three-year classification period. We have experimented with different permutations here, e.g., only using the most recent three-year lagged trading behaviour to define routine traders each year. Finally, in all the main results, we check the past three years of trading for all opportunistic traders each year,

so they can "become" routine traders at any point. In which case, the opportunistic trader would become a routine trader if he traded in the same calendar month in the past three years and then stay as a routine trader from that point onward as mentioned above."

Afterwards, we generate the dummy variables for pre-trade war and trade war depending on the previously defined tranmonth. We also create two separate dummy variables for the trade war's first and last three months. Here, the pre-trade war refers to the six months from 22 July 2017 to 21 January 2018 as the 'pre-trade war period', from 22 January 2018 to 21 April 2018 as the 'first three months of trade war (First-3M) period', and from 22 April 2018 to 21 July 2018 as the 'last three months of trade war (Last-3M) period'. In the robustness test, we use the purchase (sell) ratio as an instrumental variable to test the endogeneity and consistency with the baseline results. We calculate the purchase (sell) ratio from shares_buy (sell) divided by total shares.

5.3.1.3 Security and Financials

We use CRSP (WRDS) database for collecting the monthly and daily ending holding period return data and Compustat – Capital IQ (WRDS) database for collecting the quarter (fiscal) ending accounting data such as market value and common equity. We consider the past month's holding period return as a control variable and generate this variable by considering the previous month's holding period return. We also consider the one-month holding period return as a dependent variable, and we generate this variable by considering the one-month ahead or future return. We use the CUSIP number as a company identifier in the existing dataset. We merged the Compustat – Capital IQ dataset with the insider trading dataset (including opportunistic and routine insider (trades) data) by tranmonth and CUSIP. We drop the observations that have missing values in insider trading data.

5.3.1.4 Gender, Age, Board Position, Stock Markets, Compensation and Sector

This is a significant contribution in insider trading literature where we consider the opportunistic and routine insider (trades) by gender, age, board position, compensation, and sector classifications. We collect the gender and age of directors, officers and CEOs data from the Execucomp (WRDS) database. We generate two indicator variables for males (GENDER_MALE) and females (GENDER_FEMALE). The Male is coded as 1 if the gender is male, and the female is coded as 1 if the gender is female. We also generate two indicator variables for age above (AGE_A55) and below (AGE_B55) 55. We also

collect the board position (directors and CEO) data from Thomson/Refinitiv (Table 1 from Insiders data) database. We generate two indicator variables for directors and CEO. The Director is coded as 1 if the board position is director, and the CEO is coded as 1 if the board position is CEO. Next, we collect the sector data from the Compustat database. We generate the sector (Energy, Manufacturing, Technology and Finance). We also collect the compensation data from the BoardEx database. We develop two indicator variables for lower and higher-compensated insiders by depending on the median of insiders' compensation. The Low Compensation is coded as 1 if the compensation is low, and the high compensation is coded as 1 if the compensation is high.

At the final stage of the data cleaning process, we identify and drop the duplicate observations by CUSIP, individual id and transaction month. The continuous variables are winsorized at the 1st and 99th percentiles, and all the insider trades (aggregated by month) of $100 million or more are excluded from this analysis. We exclude all the missing values' observations of all-important variables. After applying all the data cleaning techniques, the final sample for cross-sectional tests consists of trades by 12,408 insiders at 2,843 companies from 22 July 2017 to 21 July 2018, for a total of 24,116 insider months.

5.3.2 Variable definitions

In this section, we focus on the definition of variables including one dependent variable, two independent, two control, and two instrumental variables in the dataset.

Table 5.1: Definitions of dependent, independent, control and other variables

Variable	Abbreviation	Definition and construction	Data source
One-month Holding Period Returns(HPR_{t+1})	One-month Buy and Hold (ahead/future) Returns	Holding period returns of firms on a monthly basis. Jagolinzer et al. (2020); Harvison (2019); Akin et al. (2019); Cohen et al. (2012) find that the return is associated with the profitability from insider trading during the last financial crisis and others.	CRSP (WRDS)
Opportunistic Insider Buy (Sell)	Opportunistic Insider Trades	Following Ali and Hirshleifer (2017); Cohen et al. (2012), we use a dummy taking value 1 if the transaction type is opportunistic insider buy(sell) defined by	Thomson/Refinitiv (WRDS) database

		historical transactions, 0 otherwise. This variable is considered an independent variable as the primary measure.	
Routine Insider Buy (Sell)	Routine Insider Trades	Following Ali and Hirshleifer (2017); Cohen et al. (2012), we use a dummy taking value 1 if the transaction type is routine insider buy(sell) defined by historical transactions, 0 otherwise. This variable is considered an independent variable as the primary measure.	Thomson/Refinitiv (WRDS) database
BM	Book-to-Market	The book-to-market ratio (common equity and market value (ceqq / mkvaltq)) at the end of quarter *t* where book value is from the prior quarter-end. Following Jagolinzer et al. (2020); Harvison (2019); Akin et al. (2019); Cziraki (2018); Cohen et al. (2012), we consider the book-to-market value as a control variable to control the effect of market value on holding period returns .	Compustat – Capital IQ (WRDS)
Past-month Holding period returns (HPR_{t-1})	Buy and Hold Returns	Holding period returns of firms on a monthly basis. Jagolinzer et al. (2020); Harvison (2019); Akin et al. (2019); Cohen et al. (2012) find that the return is associated with the profitability from insider trading during the last financial crisis and others.	CRSP (WRDS)
Purchase (Sell) Ratio	Routine and opportunistic insider buys (sells) ratio	The number of shares purchased (sold) by insider *i* in the firm *j* and month *t*, scaled by the total share volume (number of shares purchased plus the number of shares sold) of insider *i* in firm *j* and month *t* (e.g., (Jagolinzer et al., 2020; Piotroski and Roulstone, 2005; Lakonishok and Lee, 2001)).	Thomson/Refinitiv (WRDS) database

In summary, we consider HPR_{t+1} as a dependent variable, *Opportunistic Insider Buy (Sell) and Routine Insider Buy (Sell)* as independent variables, and BM and PastMonRet as control variables to run the regressions to find the potential answer to the research question. The purchase (sell) ratio is used as an instrumental variable in the 2SLS approach to mitigate the endogeneity concerns.

5.3.3 Method

We use the event study methodology to examine the stock performance for opportunistic and routine insiders around the trade war announcement (day 0). We find the Cumulative Abnormal Return (CAR) from the Event Study by WRDS. Hence, we use the Market-Adjusted Model as a Risk Model to calculate CAR.

$$\mathrm{CAR}_{t_1,t_2} = \alpha + \delta_1 Opportunistic\ Insider\ Buy\ (Sell)_t + \delta_2 Routine\ Insider\ Buy\ (Sell)_t + \vartheta\ Controls_t + \varepsilon_{t+1} \quad (1)$$

where CAR_{t_1,t_2} is Cumulative Abnormal Return for firm *i* over days (t_1, t_2), *Opportunistic Insider Buy*$_t$ *(Sell*$_t$*)* is the indicator variable equal to 1 if the shares bought (sold) the amount by opportunistic insider *i* in firm *j* and month *t, Routine Insider Buy*$_t$ *(Sell*$_t$*)* is an indicator variable equal to 1 if the shares bought (sold) the amount by routine insider *i* in firm *j* and month *t* (insider trades are aggregated to the insider-month level) and *Controls*$_t$ is a vector of control variables that includes firm book-to-market ratio (BM_t), and returns over the past month ($PastMoRet_t$). In this specification, δ_1 and δ_2 represent the coefficients for opportunistic insider buys (sells) and routine insider buys (sells) after controlling for BM, and $PastMoRet_t$.

Following the prior studies (e.g., (Jagolinzer et al., 2020; Akin et al., 2019; Cohen et al., 2012)), we estimate the cross-section regression form to assess how the insiders behave opportunistically – informed trading – during the trade war.

$$HPR_{t+1} = \alpha + \delta_1 Opportunistic\ Insider\ Buy\ (Sell)_t + \delta_2 Routine\ Insider\ Buy\ (Sell)_t + \vartheta\ Controls_t + \varepsilon_{t+1} \quad (2)$$

where HPR_{t+s} is holding period returns for the next month (s=1), *Opportunistic Insider Buy*$_t$ *(Sell*$_t$ *)* is the indicator variable equal to 1 if the shares bought (sold) the amount by opportunistic insider *i* in firm

j and month *t, Routine Insider Buys$_t$ (Sells$_t$)* are the indicator variable equal to 1 if the shares bought (sold) the amount by routine insider *i* in firm *j* and month *t* (insider trades are aggregated to the insider-month level) and *Controls$_t$* are the vector of control variables that includes firm book-to-market ratio (*BM$_t$*), and returns over the past month (*PastMoRet$_t$*). In this specification, δ_1 and δ_2 represent the coefficients for opportunistic insider buys (sells) and routine insider buys (sells) after controlling for BM, and *PastMoRet$_t$*.

We also examine whether the predictive ability of insider trading activity increases during the trade war; we include the indicator variables First-3M$_t$ and Last-3M$_t$ for the first three months of the trade war (22 January 2018 to 21 April 2018) and the last three months of a trade war (22 April 2018 to 21 July 2018), respectively, and interact these variables with Opportunistic Insider Buy$_t$ (Sell$_t$) and Routine Insider Buy$_t$ (Sell$_t$).

To examine whether the opportunistic insiders generate higher holding period returns than routine insiders during the trade war compared to the Pre-trade war period, we consider four months before and two months after the trade war announcement. We include the indictor variables for the Pre-trade war and trade war period (post) and interact these variables with *Insider Buy (Sell)$_t$*.

$$HPR_{t_1,t_2} = \alpha + \delta_1 Insider\ Buy(Sell)_t + \delta_2\ \ opportunistic_t * Post_t + \beta_1\, Opportunistic_t + \beta_2\, Post_t + \vartheta\, Controls_t + \varepsilon_{t+1} \quad (3)$$

where HPR_{t_1,t_2} is Holding Period Returns for firm *i* over days *(t$_1$, t$_2$)*, *Insider Buy$_t$ (Sell$_t$)* is an indicator variable equal to 1 if the shares bought (sold) the amount by opportunistic insider *i* in firm *j* and month *t,* and *Controls$_t$* is a vector of control variables that includes book-to-market ratio (*BM$_t$*), and the past month returns (*PastMoRet$_t$*). δ_2 measures the incremental informativeness of insider trades by comparing the pre and post-trade war periods.

Throughout the analysis, we base inferences on standard errors clustered by firm. Clustering by firm allows for both arbitrary time-series correlation within a firm and arbitrary cross-sectional correlation across insiders within a given firm. The cross-sectional regressions with fixed-effect (e.g., (Jagolinzer et al., 2020; Akin et al., 2019; Cziraki, 2018; Cohen et al., 2012)) are used as baseline models, event studies (Alldredge and Cicero, 2015) and difference-in-differences approach (Alldredge and Cicero,

2015) are considered to support the baseline results, and instrumental variable approach (2SLS) (El Ghoul et al., 2022; Rahman et al., 2021) and fixed effects (e.g., (Jagolinzer et al., 2020; Akin et al., 2019; Cziraki, 2018; Cohen et al., 2012)) are used to address the endogeneity and heterogeneity concerns.

5.4 Summary Statistics and Findings

5.4.1 Summary Statistics

Table 5.2 presents the summary statistics. This table presents the firm and trade-level data for the routine and opportunistic insiders that feature in the analysis. Before going to the analysis of this table, we explain the few issues of insiders. Generally, there is a variety of reasons for routine trades. Following Cohen et al. (2012), routine insiders sell the shares for liquidity or diversification, which signals that the insider is not trading on information (e.g., Drummond David of Alphabet Inc). Additionally, routine insiders buy the shares after receiving the bonus from the firms since bonuses are generally paid in the same month each year, and insiders often get discount plans on their firm's stock. The routine insiders buy in the same calendar month of each year, which is common and often uninformative.

Importantly, we require the insiders to make at least one trade in each of the three preceding years to define their trades as routine traders. The insiders are defined as routine traders who place a trade in the same calendar month for at least three consecutive years. We experiment with the back-windows (past) trading in the same calendar month in the past three, four and five years trading to identify the routine or opportunistic insiders. We find significant results for all windows. We present the results using a three-year back window throughout the study.

On the other hand, insiders are defined as opportunistic who cannot be detected an obvious pattern in the past timing of their trades. Thus, we define all insiders as either routine or opportunistic traders at the beginning of each calendar year based on historical trades and then look to see how insiders trade from that point onward. Based on all subsequent trades, we classify each insider as either routine or opportunistic and place them into one of two buckets: 1) routine trades (trades made by routine insiders) and 2) opportunistic trades (trades made by opportunistic insiders). We present these approaches more specifically in Figure 5.1.

Notably, this simple algorithm to identify insiders' routine (opportunistic) trades is clearly a noise proxy for actual routine (opportunistic) trading; our strategy will not perfectly and correctly classify each insider trade. However, the essence of our approach is that, on average, trades made for information reasons are less likely to be regular in their timing, and trades made for liquidity and diversification reasons are more likely to be regular in their timing. Consequently, we use different approaches to test opportunistic and routine insider transactions and find similar results. We experiment with various alternative measures (including appendix A.5.1) for opportunistic and routine insiders around the likely trade war and test whether opportunistic insiders earn more returns than routine insiders' transactions.

Panel A of Table 5.2 presents the firm-level characteristics such as one-month holding period returns (HPR), routine insider buy (sell), opportunistic insider buy (sell), BM and past-month returns (past1ret). It shows that the mean HPR (one-month holding period returns) of firms in the sample is approximately 0.022, the mean of routine insider buy (sell) is 0.016 (0.047), the mean of opportunistic insider buy (sell) is 0.141 (0.667), the mean of BM is 0.383 and the mean of the past month's returns (past1ret) is 0.02. Panel A also presents that the standard deviation of the one-month holding period returns (HPR) in the sample is 0.108, routine insider buy (sell) is 0.124 (0.211), opportunistic insider buy (sell) is 0.348 (0.471), BM of the firm is 0.535 and past-month returns (Past1ret) is 0.125. It shows that the sample's median of HPR (one-month holding period returns) is approximately 0.015, BM is 0.290, and past1ret is 0.011. The maximum value of HPR, BM, and PastMoRet are 2.164, 12.823 and 2.577, respectively.

Panel B of Table 5.2 presents the trade-level characteristics such as routine and opportunistic buy (sell), and the number of unique firms and insiders before and during the trade war. It reports that the opportunistic buy (sell) is $1,111.815 million ($10,995.240 million) during the trade war period. The routine buy (sell) is $31.073 million ($899.984 million) during the trade war period. We find the opportunistic buy (sell) is higher than routine buy (sell) during the trade war. Alternatively, the opportunistic buy (sell) is $1,820.524 million ($18,589.44 million) during the pre-trade war period. These statistics suggest that the opportunistic buy (sell) during the pre-trade war period is larger than the amount in the trade war period. However, the routine buy (sell) is $52.384 ($1,081.053) million

during the pre-trade war period. Notably, 6,361 (8,983) insiders of 2,061 (2,504) firms trade during the trade war (pre-trade war) period. This finding is consistent with prior studies on insider trading (Cohen et al., 2012).

Thus, the dollar volume of sales is substantially larger than purchases. It means that the dollar volume of insider sales is much larger than that of purchases. These statistics suggest that opportunistic insiders are more likely to buy and sell shares in greater volume than routine insiders.

Table 5.2: Summary Statistics

This table presents the summary statistics. Panel A presents descriptive statistics for firm-level characteristics. Panel B presents descriptive statistics for trade-level characteristics. $HPR_{t1, t2}$ is the one-month holding period returns (future) for firm *i* over days (t_1, t_2), Routine Insider Buy_t ($Sell_t$) is an indicator variable equal to 1 if the shares bought (sold) the amount by routine insider *i* in firm *j* and month *t* (insider trades are aggregated to the insider-month level) and Opportunistic Insider Buy_t ($Sell_t$) is an indicator variable equal to 1 if the shares bought (sold) the amount by opportunistic insider *i* in firm *j* and month *t. BM* is the book-to-market ratio at the end of quarter *t. PastMoRet*$_t$ is the return in month *t*-1. Unique companies (unique insiders) are the number of unique companies (insiders) in the respective sample. Purchases (Sales) are the total dollar value of insider purchases (sales) in the respective sample.

Panel A. Firm-Level Characteristics

Variables	Mean	Std. Dev.	max	p25	Median
HPR_{t+1}	.022	.108	2.164	-.026	.015
Opportunistic Insider Buy	.141	.348	1.000	0	0
Routine Insider Buy	.016	.124	1.000	0	0
Opportunistic Insider Sell	.667	.471	1.000	0	1
Routine Insider Sell	.047	.211	1.000	0	0
BM	.383	.535	12.823	.132	.29
Past1ret	.02	.125	2.577	-.044	.011

Panel B. Trade-Level Characteristics

Variable	Trade War (Trade War)		Trade War (Pre-Trade War)	
	Routine	Opportunistic	Routine	Opportunistic
Buy ($ millions)	31.073	1,111.815	52.384	1,820.524
Sell ($ millions)	899.984	10,995.240	1,081.053	18,589.44
Total ($ millions)	932.460	12,162.760	1133.437	20,409.960
Number of Firms		2,061		2,504
Number of Insiders		6,361		8,983

5.4.2 Correlation Matrix

Table 5.3: Pairwise correlations

This table presents the Pearson correlation matrix. *Holding Period Returns* (HPR_{t+1}) is the future return over the one month subsequent to the trades. *Routine Insider Buys*$_t$ *(Sells*$_t$*)* are the indicator variable equal to 1 if the shares bought (sold) the amount by routine insider *i* in firm *j* and month *t* (insider trades are aggregated to the insider-month level) and *Opportunistic Insider Buys*$_t$ *(Sells*$_t$ *)* are the indicator variable equal to 1 if the shares bought (sold) the amount by opportunistic insider *i* in firm *j* and month *t. BM* is the book-to-market ratio at the end of quarter *t. PastMoRet* is the return in month *t*-1. *t*-Statistics (two-tailed *p*-values) based on standard errors clustered by firm appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) HPR_{t+1}	1.000						

(2) Opportunistic Insider Buy	0.025	1.000					
	(0.023)						
(3) Routine Insider Buy	0.006	-0.051*	1.000				
	(0.597)	(0.000)					
(4) Opportunistic Insider Sell	-0.045*	-0.559*	-0.178*	1.000			
	(0.000)	(0.000)	(0.000)				
(5) Routine Insider Sell	0.021	-0.090*	-0.019	-0.314*	1.000		
	(0.053)	(0.000)	(0.085)	(0.000)			
(6) BM	-0.055*	0.226*	0.044*	-0.185*	-0.048*	1.000	
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		
(7) Past1ret	-0.029*	-0.074*	-0.007	0.080*	0.003	-0.090*	1.000
	(0.009)	(0.000)	(0.532)	(0.000)	(0.766)	(0.000)	

Following Rahman et al. (2021); Lee, E. and Piqueira (2019), we consider the Pearson correlation matrix for the main variables used in this chapter. We use the Pearson correlation matrix to measure the strength and direction between two variables. The Pearson correlation matrix generates the Pearson correlation coefficient, denoted as r. Pearson's correlation attempts to find the best-fitted line by the data of two variables and the Pearson correlation coefficient indicates how far away the data points are from the line of best fit. The value range of the Pearson correlation coefficient is from -1 to +1, -1 indicates the perfect negative linear relationship and +1 indicates the perfect positive linear relationship, and 0 indicates no relationship between the variables. The above Pearson correlation matrix shows a positive correlation (0.025) between one-month holding period returns (HPR) and opportunistic insider buys. We also find a negative correlation (-0.045) between one-month holding period returns (HPR) and opportunistic insider sell. This correlation value is statistically significant at the 10% level. Alternatively, the routine insider buy (sell) is positively correlated (0.006 (0.021)) with one-month holding period returns (HPR), and the correlation value is lower than opportunistic trades. It indicates the more significant benefits for opportunistic insiders during the trade war. These findings are consistent with the previous literature (Cohen et al., 2012). Although, the control variables, such as BM (-0.055) and past month returns (-0.029), are negatively correlated with one-month holding period returns (HPR).

Notably, we do not find a significant correlation (at 1% or 5% level) between holding period returns and opportunistic buy (sell). Although we still have an interest in investigating whether a causal relationship exists between the variables. The bivariate correlations between the various variables range

from -0.559 to 0.226. According to Berry et al. (1985), bivariate correlations (not exceeding 0.80) between two variables are benchmarked to test the multicollinearity problem in the regression. Hence, each of the bivariate correlations is below that benchmark.

Additionally, the Variance Inflation Factors (VIF) values are too low and do not exceed the critical value of 10. VIF of variables, opportunistic insider buy, routine insider buy, opportunistic insider sell, routine insider sell, BM and PastMoRet, are 1.06, 1.01, 1.17, 1.12, 1.06 and 1.01, respectively. Accordingly, multicollinearity does not seem to be a problem in the regressions.

5.4.3 Event Study

We next use the event study methodology to examine the stock performance for opportunistic and routine insiders around the trade war announcement (day 0). We find the Cumulative Abnormal Return (CAR) from the Event Study by WRDS. Hence, we use the Market-Adjusted Model as a Risk Model to calculate CAR.

$$\mathrm{CAR}_{t_1,t_2} = \alpha + \delta_1 Opportunistic\ Insider\ Buy\ (Sell)_t + \delta_2 Routine\ Insider\ Buy\ (Sell)_t + \vartheta\ Controls_t + \varepsilon_{t+1} \quad (1)$$

where CAR_{t_1,t_2} is Cumulative Abnormal Return for firm *i* over days *(t_1, t_2)*, *Opportunistic Insider Buy$_t$ (Sell$_t$)* is the indicator variable equal to 1 if the shares bought (sold) the amount by opportunistic insider *i* in firm *j* and month *t, Routine Insider Buy$_t$ (Sell$_t$)* is an indicator variable equal to 1 if the shares bought (sold) the amount by routine insider *i* in firm *j* and month *t* (insider trades are aggregated to the insider-month level) and *Controls$_t$* is a vector of control variables that includes firm book-to-market ratio (*BM$_t$*), and returns over the past month (*PastMoRet$_t$*). In this specification, δ_1 and δ_2 represent the coefficients for opportunistic insider buys (sells) and routine insider buys (sells) after controlling for BM, and *PastMoRet$_t$*.

We use cumulative abnormal stock returns as the dependent variable and regress it on routine and opportunistic insider buy (sell) and control variables. Table 5.4 reports the CARs for the two different windows surrounding the announcement date of a trade war (day 0), i.e., 31 (0, 30) and 31 (-30, -1)

days, for the routine and opportunistic insider transactions.

Table 5.4: Performance of Opportunistic and Routine Insiders (Cumulative Abnormal Returns)

This table presents results from cross-sectional regressions of the Cumulative Abnormal Returns (CAR) before and during the trade war. *CAR (0, 30)* indicates the first 30 days of Cumulative Abnormal Returns of insiders (opportunistic and routine) during the trade war and *CAR (-30, -1)* indicates the first 30 days of Cumulative Abnormal Returns of insiders (opportunistic and routine) during the trade war. $CAR_{t1, t2}$ is the cumulative abnormal returns for firm *i* over days (t_1, t_2), *Routine Insider* Buy_t $(Sell_t)$ is an indicator variable equal to 1 if the shares bought (sold) the amount by routine insider *i* in firm *j* and month *t* (insider trades are aggregated to the insider-month level) and *Opportunistic Insider* Buy_t $(Sell_t)$ is an indicator variable equal to 1 if the shares bought (sold) the amount by opportunistic insider *i* in firm *j* and month *t*. *BM* is the book-to-market ratio at the end of quarter *t*. $PastMoRet_t$ is the return in month *t*-1. *t*-Statistics (two-tailed *p*-values) based on robust standard errors appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

Dependent Variable: CAR (0, 30) & (-30, -1)				
	(1)	(2)	(3)	(4)
Variables	CAR (0 30)	CAR (0 30)	CAR (-30 -1)	CAR (-30 -1)
Opportunistic Insider Buy	0.017***		-0.233	
	(0.006)		(0.341)	
Routine Insider Buy	-0.010		1.100*	
	(0.034)		(0.604)	
Opportunistic Insider Sell		-0.016***		0.415
		(0.006)		(0.263)
Routine Insider Sell		-0.013		1.356**
		(0.008)		(0.585)
Observations (Insider-Day)	2,958	2,958	1,516	1,516
ControlVariables	Yes	Yes	Yes	Yes

Table 5.4 reports results from estimating equation (1). We partition this table into two windows, i.e., (0, +30) and (-30, -1). Column 1 of CAR (0, 30) presents the cross-sectional regression (between-group analysis) for routine and opportunistic insider buys. We find that both coefficients on routine (-0.010) and opportunistic (0.017) insider buy carry different signs. Notably, the coefficient of opportunistic insider buy is higher than routine insider buy, which is economically and statistically significant (0.01) after using control variables. In addition, column 2 of CAR (0, 30) presents the cross-sectional regression (between-group analysis) for routine and opportunistic insider sells. We find that both coefficients on routine (-0.013) and opportunistic (-0.016) insider sell are negative. Notably, the coefficient of opportunistic insider sell is more beneficial than routine insider sell, which is economically and statistically significant (0.01) after using control variables. It indicates insider sells were a better decision than holding that shares. However, the coefficient of opportunistic insider sells

is lower than routine insider sells, which means the opportunistic insider is more beneficial than routine insiders.

Column 3 of CAR (-30, -1) presents the cross-sectional regression (between-group analysis) for routine and opportunistic insider buys. We find both coefficients on routine (1.100) and opportunistic (-0.233) insider buy carry different signs. Notably, the coefficient of routine insider buy is higher than opportunistic insider buy, which is economically and statistically significant (0.01) after using control variables. In addition, column 4 of CAR (-30, -1) presents the cross-sectional regression (between-group analysis) for routine and opportunistic insider sells. We find that both coefficients on routine (1.356) and opportunistic (0.415) insider sell are positive. It indicates insider sells were not a better decision.

Comparing columns 1 (CAR (0, 30)) and 3 of CAR (-30, -1) present the cross-sectional regression for routine and opportunistic insider buys. We find that the coefficient on opportunistic insiders buy during the first 31 days of the trade war is positive and higher than the coefficient for the pre-trade war period. It indicates that opportunistic insiders hold higher abnormal returns from buy during the trade war period (Clacher et al., 2021; Rahman et al., 2020) than the pre-trade war period, which is also truly informative. In addition, comparing columns 2 (CAR (0, 30)) and 4 of CAR (-30, -1) present the cross-sectional regression for routine and opportunistic insider sells. We find that opportunistic insiders earn higher abnormal returns from sells during the first 31 days of the trade war period than the pre-trade war period, which is also truly informative.

5.4.4 Performance of Opportunistic and Routine Insiders

Following the prior studies (e.g., (Jagolinzer et al., 2020; Akin et al., 2019; Cohen et al., 2012)), we estimate the cross-section regression form to assess how the insiders behave opportunistically – informed trading – during the trade war.

$$HPR_{t+1} = \alpha + \delta_1 Opportunistic\ Insider\ Buy\ (Sell)_t + \delta_2 Routine\ Insider\ Buy\ (Sell)_t + \vartheta\ Controls_t + \varepsilon_{t+1} \quad (2)$$

Where HPR_{t+s} is holding period returns for the next month (s=1), *Opportunistic Insider Buy$_t$ (Sell$_t$)* is

the indicator variable equal to 1 if the shares bought (sold) the amount by opportunistic insider *i* in firm *j* and month *t, Routine Insider Buys$_t$ (Sells$_t$)* are the indicator variable equal to 1 if the shares bought (sold) the amount by routine insider *i* in firm *j* and month *t* (insider trades are aggregated to the insider-month level) and *Controls$_t$* are the vector of control variables that includes firm book-to-market ratio (*BM$_t$*), and returns over the past month (*PastMoRet$_t$*). In this specification, δ_1 and δ_2 represent the coefficients for opportunistic insider buys (sells) and routine insider buys (sells) after controlling for BM, and *PastMoRet$_t$*.

Table 5.5: Performance of Opportunistic and Routine Insiders (Trade War)

This table presents results from estimating equation (2). $HPR_{t1,\ t2}$ is the one-month future returns (future) for firm *i* over days *(t_1, t_2)*, Routine Insider Buy$_t$ (Sell$_t$) is an indicator variable equal to 1 if the shares bought (sold) the amount by routine insider *i* in firm *j* and month *t* (insider trades are aggregated to the insider-month level) and Opportunistic Insider Buy$_t$ (Sell$_t$) is an indicator variable equal to 1 if the shares bought (sold) the amount by opportunistic insider *i* in firm *j* and month *t. BM* is the book-to-market ratio at the end of quarter *t. PastMoRet$_t$* is the return in month *t*-1. *t*-Statistics (two-tailed *p*-values) based on robust standard errors clustered by firm appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

	One-Month Future Returns							
	Dependent Variable: $HPR_{i,t+1}$							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables	Trade War	Pre-Trade War	Trade War	Pre-Trade War	Trade War	Pre-Trade War	Trade War	Pre-Trade War
Opportunistic Insider Buy	0.012***	0.007***	0.013***	0.005				
	(0.003)	(0.003)	(0.005)	(0.004)				
Routine Insider Buy	0.009	0.008	-0.002	0.007				
	(0.010)	(0.007)	(0.009)	(0.005)				
Opportunistic Insider Sell					-0.012***	-0.006***	-0.014***	-0.004
					(0.003)	(0.002)	(0.005)	(0.003)
Routine Insider Sell					0.000	-0.010**	0.000	-0.011*
					(0.006)	(0.005)	(0.008)	(0.006)
BM	-0.013***	-0.011***	-0.013***	-0.010**	-0.014***	-0.011***	-0.013***	-0.010**
	(0.002)	(0.002)	(0.003)	(0.005)	(0.002)	(0.002)	(0.003)	(0.005)
PastMoret	-0.027***	-0.016**	-0.037	-0.018	-0.026***	-0.016**	-0.036	-0.018
	(0.009)	(0.008)	(0.029)	(0.023)	(0.009)	(0.008)	(0.029)	(0.023)
Observations(Insider-Month)	8,353	13,439	8,353	13,439	8,353	13,439	8,353	13,439
Month-Effects[10]	No	No	Yes	Yes	No	No	Yes	Yes

Table 5.5 reports results from estimating equation (2). It presents the cross-sectional regression results by using Ordinary Least Squares regression (OLS) and fixed effects before and during the trade war. The pre-trade war means the six-month duration before starting the trade war (from 22 July 2017 to 21 January 2018), and the trade war means the six-month duration after starting the trade war (from 22

[10] We do not estimate a firm fixed-effects model given that a few insiders trade in the stock of more than one firm (Goergen et al., 2019).

January to 21 July 2018). This table presents results when future return is measured at the one-month horizon. The dependent variable is one-month holding period returns. The independent variables are the opportunistic and routine insider buy (sell) (Cohen et al., 2012) from columns (1) to (8). Following Jagolinzer et al. (2020); (Cohen et al., 2012), we consider the BM and PastMoRet as control variables in these regressions. Columns (1), (3), (5), and (7) estimate the results for the trade war period, and columns (2), (4), (6) and (8) estimate the results for the pre-trade war period. In addition, columns (1) to (4) indicate the results for insiders' buys, and columns (5) to (8) show the results for insiders' sells.

Column (1) of Table 5.5 presents the performance of opportunistic and routine insider buy-by-regression results during the trade war. We find the coefficient on opportunistic insider buy (0.012) is positive and higher than routine insider buy (0.009), which is economically and statistically significant (0.01) after using the control variables. This finding suggests that opportunistic insiders hold more returns from insider buys than routine insiders. In addition, the coefficients of BM (-0.013) and PastMoRet (-0.027) are negative and statistically significant. The total number of observations is 8,353. Column (2) presents the performance of opportunistic and routine buy-by-regression results during the pre-trade war. We find the coefficient on opportunistic insider buy (0.007) is positive and higher than routine insider buy (0.008), which is economically and statistically significant (0.01) after using the control variables. This finding suggests that opportunistic insiders hold less returns from insider buys than routine insiders. In addition, the coefficients of BM (-0.011) and PastMoRet (-0.016) are negative and statistically significant. The total number of observations is 13,439. Notably, compared between the results of columns (1) and (2), the opportunistic insiders hold larger returns from buys (opportunistic insider buy: 0.012 and routine insider buy: 0.009) during the trade war than the pre-trade war period (opportunistic insider buy: 0.007 and routine insider buy: 0.008).

Column (3) presents the performance of opportunistic and routine insider buy by regression (with fixed effects) results during the trade war. Here, the opportunistic and routine insider buys are the independent variables with BM and PastMoRet. We find the coefficient on opportunistic insider buy (0.013) is positive and higher than routine insider buy (-0.002), which is economically and statistically significant (0.01) after using the fixed effects clustered by the firm. This finding suggests that opportunistic insiders

hold more returns from insider buys than routine insiders. In addition, the coefficients of BM (-0.013) and PastMoRet (-0.037) are negative, but the coefficient of BM is only statistically significant. The total number of observations is 8,353. Column (4) presents the performance of opportunistic and routine buy-by regression (with fixed effects) results during the pre-trade war. We find the coefficient on opportunistic insider buy (0.005) is positive and higher than routine insider buy (0.007), which is statistically insignificant after using the fixed effects clustered by the firm. This finding suggests that routine insiders hold more returns from insider buys than opportunistic insiders. In addition, the coefficients of BM (-0.010) and PastMoRet (-0.018) are negative, but the coefficient of BM is only statistically significant (0.05). The total number of observations is 13,439. Notably, compared between the results of columns (3) and (4), the opportunistic insiders hold larger returns from buys (opportunistic insider buy: 0.013 and routine insider buy: -0.002) during the trade war than the pre-trade war period (opportunistic insider buy: 0.005 and routine insider buy: 0.007).

Column (5) of Table 5.5 presents the performance of opportunistic and routine insider sell-by regression results during the trade war. Here, the opportunistic and routine insider sells are the independent variables with BM and PastMoRet. We find that the coefficient on opportunistic insider sell (-0.012) is negative and more beneficial than routine insider sell (0.000), which is economically and statistically significant (0.01) after using the control variables. This finding suggests that opportunistic insiders earn more returns from insider sells than routine insiders during the trade war period. In addition, the coefficients of BM (-0.014) and PastMoRet (-0.026) are negative and statistically significant (0.01). The total number of observations is 8,353. Column (6) presents the performance of opportunistic and routine insider sell-by regression results during the pre-trade war. The coefficient on routine insider sell (-0.010) is negative and more beneficial than opportunistic insider sell (-0.006), which is statistically significant. This finding suggests that routine insiders earn more returns from insider sells than opportunistic insiders during the pre-trade war period. In addition, the coefficients of BM (-0.011) and PastMoRet (-0.016) are negative and statistically significant. The total number of observations is 13,439. Notably, compared between the results of columns (5) and (6), the opportunistic insiders earned larger returns from sells (opportunistic insider sell: -0.012 and routine insider sell: 0.000) during the

trade war than the pre-trade war period (opportunistic insider sell: -0.006 and routine insider sell: -0.010).

Column (7) presents the performance of opportunistic and routine insider sell by regression (with fixed effects) results during the trade war. Here, the opportunistic and routine insider sells are the independent variables with BM and PastMoRet. We find the coefficient on opportunistic insider sell (-0.014) is negative and more beneficial than routine insider sell (0.000), which is economically and statistically significant (0.01) after using the fixed effects. This finding suggests that opportunistic insiders earn more returns from insider sells than routine insiders during the trade war period. In addition, the coefficients of BM (-0.013) and PastMoRet (-0.036) are negative, but the coefficient of BM is only statistically significant (0.01). The total number of observations is 8,353. In addition, column (8) presents the performance of opportunistic and routine insider sell-by regression (with fixed effects) results during the pre-trade war. We find the coefficient on routine insider sell (-0.011) is negative and more beneficial than opportunistic insider sell (-0.004), which is statistically significant (0.10). This finding suggests that routine insiders earn more returns from insider sells than opportunistic insiders during the pre-trade war period. Moreover, the coefficients of BM (-0.010) and PastMoRet (-0.018) are negative, but the coefficient of BM is only statistically significant. The total number of observations is 13,439. Notably, compared between the results of columns (7) and (8), the opportunistic insiders earned larger returns from sells (opportunistic insider sell: -0.014 and routine insider sell: 0.000) during the trade war than the pre-trade war period (opportunistic insider sell: -0.004 and routine insider sell: -0.011).

In summary, columns (1), (3), (5) and (7) present results for the sample of insiders' trading during the trade war, and columns (2), (4), (6) and (8) present results for the sample of insiders' trading during the pre-trade war period. Notably, the coefficients on opportunistic insider buy and sell are more economically and statistically significant than routine insider buys and sell. These findings suggest that opportunistic insider transactions are more beneficial and truly informative during the trade war. These findings support the prior literature (e.g., (Goergen et al., 2019; Ali and Hirshleifer, 2017; He and Rui, 2016b; Rogers et al., 2016b; Cohen et al., 2012; Tavakoli et al., 2012; Ravina and Sapienza, 2010;

Marin and Olivier, 2008; Fidrmuc, J.P. et al., 2006)), which mainly focuses on opportunistic and routine insider transactions but not on this war.

We next experiment whether the predictive ability of insider trading activity increases during the trade war; we include the indicator variables for the Trade war of First-3M$_t$ and Last-3M$_t$ for the first three months of the trade war (22 January 2018 to 21 April 2018) and the last three months of a trade war (22 April 2018 to 21 July 2018), respectively, and interact these variables with Opportunistic Insider Buy$_t$ (Sell$_t$) and Routine Insider Buy$_t$ (Sell$_t$).

Table 5.6: Performance of Opportunistic and Routine Insiders (Baseline Regressions)

This table presents results from estimating equation (2). $HPR_{t1, t2}$ is the one-month future returns (buy-and-hold) for firm *i* over days (t_1, t_2), Routine Insider Buy$_t$ (Sell$_t$) is an indicator variable equal to 1 if the shares bought (sold) the amount by routine insider *i* in firm *j* and month *t* (insider trades are aggregated to the insider-month level) and Opportunistic Insider Buy$_t$ (Sell$_t$) is an indicator variable equal to 1 if the shares bought (sold) the amount by opportunistic insider *i* in firm *j* and month *t*. *BM* is the book-to-market ratio at the end of quarter *t*. $PastMoRet_t$ is the return in month *t*-1. *t*-Statistics (two-tailed *p*-values) based on robust standard errors clustered by firm appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

	One-Month Future Returns							
	Dependent Variable: $HPR_{i,t+1}$							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables	First-3M	Last-3M	First-3M	Last-3M	First-3M	Last-3M	First-3M	Last-3M
Opportunistic Insider Buy	0.015***	-0.016	0.017***	-0.016				
	(0.004)	(0.014)	(0.005)	(0.016)				
Routine Insider Buy	0.007	0.007	-0.005	-0.007				
	(0.009)	(0.048)	(0.009)	(0.078)				
Opportunistic Insider Sell					-0.015***	0.022*	-0.017***	0.016
					(0.003)	(0.012)	(0.005)	(0.015)
Routine Insider Sell					-0.000	0.015	-0.001	0.008
					(0.006)	(0.048)	(0.009)	(0.023)
BM	-0.012***	-0.076***	-0.012***	-0.074***	-0.012***	-0.070***	-0.012***	-0.071***
	(0.002)	(0.019)	(0.003)	(0.024)	(0.002)	(0.020)	(0.003)	(0.025)
PastMoret	-0.023**	-0.062**	-0.035	-0.035	-0.021**	-0.060**	-0.033	-0.034
	(0.011)	(0.025)	(0.032)	(0.062)	(0.011)	(0.025)	(0.032)	(0.062)
Observations(Insider-Month)	7,761	640	7,761	640	7,761	640	7,761	640
Month-Effects	No	No	Yes	Yes	No	No	Yes	Yes

Similar to the previous table, Table 5.6 also reports results from estimating equation (2). It presents the baseline cross-sectional regression results by using Ordinary Least Squares regression (OLS) and fixed effects for the first three months (First-3M) and the last three months (Last-3M) of a trade war. This table presents results when future return is measured at the one-month horizon. The dependent variable is one-month holding period returns. The independent variables are the opportunistic and routine buy

(sell) (Cohen et al., 2012) from columns (1) to (8). Following Jagolinzer et al. (2020); (Cohen et al., 2012), we consider the BM and PastMoRet as control variables in these regressions. Columns (1), (3), (5), and (7) estimate the results for the first three months (First-3M), and columns (2), (4), (6) and (8) estimate the results for the last three months (Last-3M). In addition, columns (1) to (4) indicate the results for insiders' buys, and columns (5) to (8) show the results for insiders' sells.

Column (1) of Table 5.6 presents the performance of opportunistic and routine insider buy-by regression results during the first three-month of the trade war period. Here, the opportunistic and routine insider buys are the independent variables with BM and PastMoRet. We find the coefficient on opportunistic insider buy (0.015) is positive and higher than routine insider buy (0.007), which is economically and statistically significant (0.01) after using the control variables. This finding suggests that opportunistic insiders generate greater returns from insider buys than routine insiders. In addition, the coefficients of BM (-0.012) and PastMoRet (-0.023) are negative and statistically significant. The total number of observations is 7,761. Column (2) presents the performance of opportunistic and routine buy by regression results during the last three-month of the trade war period. We find the coefficient on routine insider buy (0.007) is positive and higher than opportunistic insider buy (-0.016), which is economically and statistically insignificant after using the control variables. This finding suggests that routine insiders generate more returns from insider buys than opportunistic insiders. In addition, the coefficients of BM (-0.076) and PastMoRet (-0.062) are negative and statistically significant. The total number of observations is 640. Notably, compared between the results of columns (1) and (2), the opportunistic insiders generate higher returns from buys (opportunistic insider buy: 0.015 and routine insider buy: 0.007) during the first three-months of the trade war than the last three-months of trade war period (opportunistic insider buy: -0.016 and routine insider buy: 0.007).

Column (3) presents the performance of opportunistic and routine insider buy by regression (with fixed effects) results during the trade war. Here, the opportunistic and routine insider buys are the independent variables with BM and PastMoRet. We find the coefficient on opportunistic insider buy (0.017) is positive and higher than routine insider buy (-0.005), which is economically and statistically significant (0.01) after using the fixed effects clustered by the firm. This finding suggests that opportunistic insiders

generate higher returns from insider buys than routine insiders. In addition, the coefficients of BM (-0.012) and PastMoRet (-0.035) are negative, but the coefficient of BM is only statistically significant. The total number of observations is 7,761. Column (4) presents the performance of opportunistic and routine buy-by regression (with fixed effects) results during the last three-month of the trade war. We find the coefficient on routine insider buy (-0.007) is negative and higher than opportunistic insider buy (-0.016), which is statistically insignificant after using the fixed effects clustered by firm. This finding suggests that routine insiders generate higher returns from insider buys than opportunistic insiders. In addition, the coefficients of BM (-0.074) and PastMoRet (-0.035) are negative, but the coefficient of BM is only statistically significant (0.01). The total number of observations is 640. Notably, compared between the results of columns (3) and (4), the opportunistic insiders generate greater returns from buys (opportunistic insider buy: 0.017 and routine insider buy: -0.005) during the first three-month of the trade war than the last three-month of trade war period (opportunistic insider buy: -0.016 and routine insider buy: -0.007).

Column (5) of Table 5.6 presents the performance of opportunistic and routine insider sell-by regression results during the first three-month of the trade war. Here, the opportunistic and routine insider sells are the independent variables with BM and PastMoRet. We find the coefficient on opportunistic insider sell (-0.015) is negative and more beneficial than routine insider sell (-0.000), which is economically and statistically significant (0.01) after using the control variables. This finding suggests that opportunistic insiders earn more returns from insider sells than routine insiders during the first three-month of the trade war. In addition, the coefficients of BM (-0.012) and PastMoRet (-0.021) are negative and statistically significant. The total number of observations is 7,761. Column (6) presents the performance of opportunistic and routine insider sell-by regression results during the last three-month of the trade war. We find the coefficients on opportunistic (0.022) and routine insider sell (0.015) are positive but not beneficial. This finding suggests that opportunistic and routine insiders are not beneficial to sell their shares rather than holding during the last three-month of the trade war. In addition, the coefficients of BM (-0.070) and PastMoRet (-0.060) are negative and statistically significant. The total number of observations is 640. Notably, compared between the results of columns (5) and (6), the opportunistic

insiders earn larger returns from sells (opportunistic insider sell: -0.015 and routine insider sell: -0.000) during the first three-month of the trade war than the last three-months of a trade war (opportunistic insider sell: 0.022 and routine insider sell: 0.015).

Column (7) presents the performance of opportunistic and routine insider sell by regression (with fixed effects) results during the first three-month of the trade war. Here, the opportunistic and routine insider sells are the independent variables with BM and PastMoRet. We find the coefficient on opportunistic insider sell (-0.017) is negative and more beneficial than routine insider sell (-0.001), which is economically and statistically significant (0.01) after using the fixed effects. This finding suggests that opportunistic insiders earn more returns from insider sells than routine insiders during the first three-month of the trade war. In addition, the coefficients of BM (-0.012) and PastMoRet (-0.033) are negative, but the coefficient of BM is only statistically significant (0.01). The total number of observations is 7,761. In addition, column (8) presents the performance of opportunistic and routine insider sell by regression (with fixed effects) results during the last three-month of the trade war. We find the coefficient on opportunistic (0.016) and routine insider sell (0.008) is positive and is not beneficial. Moreover, the coefficients of BM (-0.071) and PastMoRet (-0.034) are negative, but the coefficient of BM is only statistically significant. The total number of observations is 640. Notably, compared between the results of columns (7) and (8), the opportunistic insiders earn larger returns from sells (opportunistic insider sell: -0.017 and routine insider sell: -0.001) during the first three-month of the trade war than the last three-months of a trade war (opportunistic insider sell: 0.016 and routine insider sell: 0.008).

In summary, columns (1), (3), (5) and (7) present results for the sample of insiders transactions during the first three-month of the trade war, and columns (2), (4), (6) and (8) present results for the sample of insiders transactions during the last three-month of the trade war. Notably, the coefficients on opportunistic insider buys and sells are more economically and statistically significant than routine insider buys and sells. These findings suggest that opportunistic insider transactions are more beneficial and truly informative during the first three months of the trade war. These findings support the prior

literature (e.g., (Ali and Hirshleifer, 2017; Cohen et al., 2012)), which mainly focuses on opportunistic and routine insider transactions but not on this war.

We next focus on difference-in-difference (DiD) specification to test whether opportunistic insiders are beneficial and truly informative. The DiD approach is a simple cross-sectional model applied to set two groups means in cases when certain groups are exposed to the causing variable of interest, and others are not. This approach is well-suited to estimating the effect of sharp changes in government policy (Angrist and Krueger, 1999). The DiD approach has been used in various studies in finance, especially in an early example of insider trading (e.g., (Jagolinzer et al., 2020)), who used the DiD approach to study political connection effects on insider trading during the financial crisis. Similarly, in this empirical chapter, at the difference-in-difference specification, we consider the insiders who traded four-month before and two-month after starting the trade war period. Table 5.7 reports results from estimating equation (3). It presents the difference-in-difference specification results during the trade war compared to the pre-trade war period by opportunistic insiders (buys) compared to the routine insiders (buys). This table presents results when holding period return is measured at the one-month horizon. Column (1) estimates the results without control variables, column (2) estimates the results considering the control variables, and column (3) estimates the results with month-fixed effects.

To examine whether the opportunistic insiders generate higher holding period returns than routine insiders during the trade war compared to the Pre-trade war period, we consider four months before and two months after the trade war announcement. We include the indicator variables for the Pre-trade war and trade war period (post) and interact these variables with *Opportunistic Buy (Sell)*$_t$:

$$HPR_{t_1,t_2} = \alpha + \delta_1 Opportunistic\ Buy(Sell)_t * Post_t + \beta_1 Opportunistic_t + \beta_2 Post_t + \vartheta Controls_t + \varepsilon_{t+1} \quad (3)$$

where HPR_{t_1,t_2} is Holding Period Returns for firm *i* over days *(t_1, t_2)*, *Opportunstic Buy$_t$ (Sell$_t$)* is an indicator variable equal to 1 if the shares bought (sold) the amount by opportunistic insider *i* in firm *j* and month *t,* and *Controls$_t$* is a vector of control variables that includes book-to-market ratio (*BM$_t$*), and the past month returns (*PastMoRet$_t$*). In this specification, δ_2 represents the difference in holding period

returns between opportunistic and routine insiders after controlling for BM, and $PastMoRet_t$. δ_2 measures the incremental informativeness of insider trades by comparing the pre and post-trade war periods.

Table 5.7: Performance of Opportunistic versus Routine Insiders (Difference-in-Difference Specifications (Buy))

This table presents results from estimating equation (3). $HPR_{t1, t2}$ is the one-month future returns (buy-and-hold) for firm *i* over days (t_1, t_2), $Inisder\ Buy\_Opportunistic\_Post_t$ is an indicator variable (interaction) equal to 1 if the shares bought amount by opportunistic insiders *i* in firm *j* and month *t*, *Post* is a dummy variable to indicate the pre and during the trade war period, and $Opportunistic\ Buy_t$ is the indicator variable equal to 1 if the shares bought amount by opportunistic insider *i* in firm *j* and month *t*. *BM* is the book-to-market ratio at the end of quarter *t*. $PastMoret_t$ is the return in month *t*-1. *t*-Statistics (two-tailed *p*-values) based on robust standard errors clustered by firm appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

One-Month Future Returns			
Dependent Variable: $HPR_{i,t+1}$			
Variables	Model 1	Model 2	Model 3
Opportunistic Buy_Post	0.01895***	0.01891***	0.01929***
	(0.004)	(0.004)	(0.007)
Post	-0.023***	-0.023***	0.000
	(0.002)	(0.002)	(0.000)
Opportunistic Buy	0.001	0.003	0.003
	(0.002)	(0.002)	(0.004)
BM		-0.010***	-0.010***
		(0.001)	(0.003)
PastMoret		-0.019***	-0.019
		(0.006)	(0.018)
Observations(Insider-Month)	22,812	22,812	22,812
Fixed Effects	No	No	Yes

Table 5.7 compares one-month holding period returns for the opportunistic and routine insiders before and after starting the trade war. We find the positive and statistically significant coefficient in model (1) for opportunistic insider buys during the trade war (difference-in-differences *p*-value < 0.01) without control variables. It leads to a statistically higher difference-in-differences (the difference in opportunistic and routine insiders' one-month holding period returns before starting the trade war minus the difference in opportunistic and routine insiders' one-month holding period returns after starting the trade war) of 0.01895 holding period returns for the opportunistic versus routine insiders. The total number of observations (insiders-months) is 22,812. We also find the positive and statistically significant coefficient in model (2) for opportunistic insider buys during the trade war (difference-in-differences *p*-value < 0.01) with control variables. It leads to a statistically higher difference-in-

differences (the difference in opportunistic and routine insiders' one-month holding period returns before starting the trade war minus the difference in opportunistic and routine insiders' one-month holding period returns after starting the trade war) of 0.01891 holding period returns for the opportunistic versus routine insiders. The total number of observations (insiders-months) is 22,812.

We also find the positive and statistically significant coefficient in the model (3) for opportunistic insider buys during the trade war (difference-in-differences p-value < 0.01) with month-fixed effects. It leads to a statistically higher difference-in-differences (the difference in opportunistic and routine insiders' one-month holding period returns before starting the trade war minus the difference in opportunistic and routine insiders' one-month holding period returns after starting the trade war) of 0.01929 holding period returns for the opportunistic versus routine insiders. The total number of observations (insiders-months) is 22,812.

All findings suggest that opportunistic insider buys hold more significant returns than routine insider buys, which is truly informative. These results support the baseline regressions results and prior literature (Cohen et al., 2012).

Table 5.8 also reports results from estimating equation (3). It presents the difference-in-difference specification results during the trade war compared to the pre-trade war period by opportunistic insiders (sells) compared to the routine insiders (sells). This table presents results when holding period return is measured at the one-month horizon. Column (1) estimates the results without control variables, column (2) estimates the results considering the control variables, and column (3) estimates the results with month-fixed effects.

Table 5.8: Performance of Opportunistic versus Routine Insiders (Difference-in-Difference Specifications (Sell))

This table presents results from estimating equation (3). $HPR_{t1, t2}$ is the one-month future returns (buy-and-hold) for firm *i* over days (t_1, t_2), $Inisder\ Sell\_Opportunistic\_Post_t$ is an indicator variable (interaction) equal to 1 if the shares sold amount by opportunistic insiders *i* in firm *j* and month *t*, *Post* is a dummy variable to indicate the pre and during the trade war period, and $Opportunistic\ Sell_t$ is the indicator variable equal to 1 if the shares sold amount by opportunistic insider *i* in firm *j* and month *t*. *BM* is the book-to-market ratio at the end of quarter *t*. $PastMoret_t$ is the return in month *t*-1. *t*-Statistics (two-tailed *p*-values) based on robust standard errors clustered by firm appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

One-Month Future Returns			
Dependent Variable: $HPR_{i,t+1}$			
Variables	Model 1	Model 2	Model 3
Opportunistic Sell_Post	-0.017***	-0.016***	-0.018***
	(0.003)	(0.003)	(0.005)
Post	-0.010***	-0.010***	0.000
	(0.003)	(0.003)	(0.000)
Opportunistic Sell	-0.002	-0.004**	-0.002
	(0.002)	(0.002)	(0.003)
BM		-0.010***	-0.010***
		(0.001)	(0.003)
PastMoret		-0.017***	-0.018
		(0.006)	(0.018)
Observations(Insider-Month)	22,812	22,812	22,812
Fixed Effects	No	No	Yes

Table 5.8 compares one-month holding period returns for the opportunistic and routine insiders before and after starting the trade war. We find the negative and statistically significant coefficient in the model (1) for opportunistic insider sells during the trade war (difference-in-differences *p*-value < 0.01) without control variables. It leads to a statistically lower difference-in-differences (the difference in opportunistic and routine insiders' one-month holding period returns before starting the trade war minus the difference in opportunistic and routine insiders' one-month holding period returns after starting the trade war) of -0.017 holding period returns for the opportunistic versus routine insiders. The total number of observations (insiders-months) is 22,812. We also find the negative and statistically significant coefficient in the model (2) for opportunistic insider sells during the pandemic (difference-in-differences *p*-value < 0.01) with control variables. It leads to a statistically lower difference-in-differences (the difference in opportunistic and routine insiders' one-month holding period returns before starting the trade war minus the difference in opportunistic and routine insiders' one-month holding period returns after starting the trade war) of -0.016 holding period returns for the opportunistic versus routine insiders. The total number of observations (insiders-months) is 22,812.

We also find the negative and statistically significant coefficient in the model (3) for opportunistic insider sells during the trade war (difference-in-differences p-value < 0.01) with month-fixed effects. It leads to a statistically lower difference-in-differences (the difference in opportunistic and routine insiders' one-month holding period returns before starting the trade war minus the difference in opportunistic and routine insiders' one-month holding period returns during the trade war) of -0.018 holding period returns for the opportunistic versus routine insiders. The total number of observations (insiders-months) is 22,812.

All findings suggest that opportunistic insider sells are more beneficial than routine insider sells, which is truly informative. These results support the baseline regressions results and prior literature (Cohen et al., 2012).

5.4.5 Performance of Opportunistic and Routine Trades

Following the prior studies (e.g., (Jagolinzer et al., 2020; Akin et al., 2019; Cohen et al., 2012)), we estimate the cross-section regression form to assess how the insiders behave opportunistically – informed trading – during the trade war.

$$HPR_{t+1} = \alpha + \delta_1 Opportunistic\ Buy\ (Sell)_t + \delta_2 Routine\ Buy\ (Sell)_t + \vartheta\ Controls_t + \varepsilon_{t+1} \quad (4)$$

Where HPR_{t+s} is holding period returns for the next month (s=1), $Opportunistic\ Buy_t\ (Sell_t)$, an indicator variable, equals to 1 if the shares bought (sold) in amount by opportunistic insiders *i* in firm *j* and month *t and* $Routine\ Buy_t\ (Sell_t)$, also an indicator variable, equals to 1 if the shares bought (sold) in amount by routine insiders *i* in firm *j* and month *t.* Importantly, insider trades are aggregated to the insider-month level. $Controls_t$ is a vector of control variables that includes firm book-to-market ratio (BM_t), and returns over the past month ($PastMoRet_t$). In this specification, δ_1 and δ_2 represent the coefficients for opportunistic buys (sells) and routine buys (sells) after controlling for BM, and $PastMoRet_t$.

In Table 5.9, we then investigate whether all opportunistic and routine trades instead of routine insiders impact holding period returns measured at the one-month horizon. Columns (1), (3), (5), and (7)

estimate the results for the first three-month of the trade war period, and columns (2), (4), (6) and (8) estimate the results for the last three-month of the trade war period. In addition, columns (1) to (4) indicate the results for buys and columns (5) to (8) show the results for sells.

Table 5.9: Performance of Opportunistic and Routine Trades (Trade War)

This table presents results from estimating equation (4). $HPR_{t1, t2}$ is the one-month future returns (buy-and-hold) for firm *i* over days (t_1, t_2), Routine Buy_t ($Sell_t$) is an indicator variable equal to 1 if the shares bought (sold) the amount by routine insider *i* in firm *j* and month *t* (insider trades are aggregated to the insider-month level) and Opportunistic Buy_t ($Sell_t$) is an indicator variable equal to 1 if the shares bought (sold) the amount by opportunistic insider *i* in firm *j* and month *t. BM* is the book-to-market ratio at the end of quarter *t. PastMoRet*$_t$ is the return in month *t*-1. *t*-Statistics (two-tailed *p*-values) based on robust standard errors clustered by firm appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

	One-Month Future Returns							
	Dependent Variable: $HPR_{i,t+1}$							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables	First-3M	Last-3M	First-3M	Last-3M	First-3M	Last-3M	First-3M	Last-3M
Opportunistic Buy	0.016***	-0.015	0.018***	-0.014				
	(0.004)	(0.014)	(0.005)	(0.017)				
Routine Buy	0.005	-0.016	-0.005	-0.026				
	(0.008)	(0.040)	(0.007)	(0.064)				
Opportunistic Sell					-0.017***	0.024**	-0.018***	0.018
					(0.003)	(0.012)	(0.005)	(0.015)
Routine Sell					-0.001	-0.016	-0.004	-0.019
					(0.004)	(0.031)	(0.007)	(0.025)
BM	-0.012***	-0.075***	-0.012***	-0.073***	-0.012***	-0.069***	-0.012***	-0.071***
	(0.002)	(0.019)	(0.003)	(0.024)	(0.002)	(0.020)	(0.003)	(0.025)
PastMoret	-0.023**	-0.061**	-0.035	-0.035	-0.021**	-0.060**	-0.033	-0.034
	(0.011)	(0.025)	(0.032)	(0.062)	(0.011)	(0.025)	(0.032)	(0.062)
Observations (Insiders-Months)	7,761	640	7,761	640	7,761	640	7,761	640
Month-Effects	No	No	Yes	Yes	No	No	Yes	Yes

Column (1) of Table 5.9 presents the performance of opportunistic and routine buys by regression results during the first three-month of the trade war period. Here, the opportunistic and routine buys are the independent variables with BM and PastMoRet. We find the coefficient on the opportunistic buy (0.016) is positive and higher than the routine buy (0.005), which is economically and statistically significant (0.01) after using the control variables. This finding suggests that opportunistic buys are more beneficial than routine buys. In addition, the coefficients of BM (-0.012) and PastMoRet (-0.023) are negative and statistically significant. The total number of observations is 7,761. Column (2) presents the performance of opportunistic and routine buys by regression results during the last three-month of the trade war period. We find the coefficients on opportunistic (-0.015) and routine (-0.016) buys are negative and statistically insignificant after using the control variables. This finding suggests that opportunistic and routine buys are not profitable for the last three-month of the trade war. In addition,

the coefficients of BM (-0.075) and PastMoRet (-0.061) are negative and statistically significant. The total number of observations is 640. Notably, compared between the results of columns (1) and (2), the opportunistic buys hold larger holding period returns (opportunistic buy: 0.016 and routine buy: 0.005) during the first three-month of the trade war than the last three-month of the trade war period (opportunistic buy: -0.015 and routine buy: -0.016).

Column (3) presents the performance of opportunistic and routine buy-by regression (with fixed effect) results during the trade war. Here, the opportunistic and routine buys are the independent variables with BM and PastMoRet. We find the coefficient on the opportunistic buy (0.018) is positive and higher than routine insider buy (-0.005), which is economically and statistically significant (0.01) after using the fixed effects clustered by firm. This finding suggests that opportunistic buys are more beneficial than routine buys. In addition, the coefficients of BM (-0.012) and PastMoRet (-0.035) are negative, but the coefficient of BM is only statistically significant. The total number of observations is 7,761. Column (4) presents the performance of opportunistic and routine buys by regression (with fixed effect) results during the last three-month of the trade war. We find the coefficients on opportunistic (-0.014) and routine (-0.026) buys are negative and statistically insignificant after using the fixed effects clustered by firm. This finding suggests that opportunistic and routine buys are not profitable for the last three-month of the trade war. In addition, the coefficients of BM (-0.073) and PastMoRet (-0.035) are negative, but the coefficient of BM is only statistically significant (0.01). The total number of observations is 640. Notably, compared between the results of columns (3) and (4), the opportunistic buys are more beneficial (opportunistic buy: 0.018 and routine buy: -0.005) during the first three-month of the trade war than the last three-months of the trade war period (opportunistic buy: -0.014 and routine buy: -0.026).

Column (5) of Table 5.9 presents the performance of opportunistic and routine sells by regression results during the first three-month of the trade war. Here, the opportunistic and routine sells are the independent variables with BM and PastMoRet. We find the coefficient on opportunistic sell (-0.017) is negative and more beneficial than routine insider sell (-0.001), which is economically and statistically significant (0.01) after using the control variables. This finding suggests that opportunistic sells are

more beneficial than routine sells during the first three-month of the trade war. In addition, the coefficients of BM (-0.012) and PastMoRet (-0.021) are negative and statistically significant. The total number of observations is 7,761. Column (6) presents the performance of opportunistic and routine sells by regression results during the last three-month of the trade war. The coefficient on opportunistic sell (0.024) is positive, while routine sell (-0.016) is negative. This finding suggests that opportunistic sells are not beneficial, but routine sells are beneficial during the last three-month of the trade war. In addition, the coefficients of BM (-0.069) and PastMoRet (-0.060) are negative and statistically significant. The total number of observations is 640. Notably, compared between the results of columns (5) and (6), the opportunistic sells are more profitable (opportunistic sell: -0.017 and routine sell: -0.001) during the first three-month of the trade war than the last three-month of the trade war (opportunistic sell: 0.024 and routine sell: -0.016).

Column (7) presents the performance of opportunistic and routine sells by regression (with fixed effect) results during the first three-month of the trade war. Here, the opportunistic and routine sells are the independent variables with BM and PastMoRet. We find the coefficients on opportunistic (-0.018) and routine (-0.004) sells are negative, but the opportunistic sells are more beneficial than routine sells, which is economically and statistically significant (0.01) after using the fixed effects. This finding suggests that opportunistic sells are more beneficial than routine sells during the first three-month of the trade war. In addition, the coefficients of BM (-0.012) and PastMoRet (-0.033) are negative, but the coefficient of BM is only statistically significant (0.01). The total number of observations is 7,761. In addition, column (8) presents the performance of opportunistic and routine sells by regression (with fixed effect) results during the last three-month of the trade war. We find the coefficient on opportunistic sell (0.018) is positive and routine sell (-0.019) is negative. It suggests that routine sells are beneficial during the last three-month of the trade war. Moreover, the coefficients of BM (-0.071) and PastMoRet (-0.034) are negative, but the coefficient of BM is only statistically significant. The total number of observations is 640. Notably, compared between the results of columns (7) and (8), the opportunistic sells are more profitable (opportunistic sell: -0.018 and routine sell: -0.001) during the first three-month of the trade war than the last three-month of the trade war (opportunistic sell: 0.024).

In summary, columns (1), (3), (5) and (7) present results for the sample of opportunistic and routine buys during the first three-month of the trade war, and columns (2), (4), (6) and (8) present results for the sample of opportunistic and routine sells during the last three-month of the trade war. Notably, the coefficients on opportunistic buys and sells are more economically and statistically significant than routine buys and sells. These findings suggest that opportunistic transactions are more beneficial and truly informative during the first three months of the trade war. These findings support the prior results and literature (e.g., (Goergen et al., 2019; Ali and Hirshleifer, 2017; He and Rui, 2016b; Rogers et al., 2016b; Cohen et al., 2012; Tavakoli et al., 2012; Ravina and Sapienza, 2010; Marin and Olivier, 2008; Fidrmuc, J.P. et al., 2006)).

5.4.6 Politically Connected Opportunistic and Routine Insiders

To examine how these attributes relate to the informativeness of insider trades, we estimate the cross-section regression form to assess how the politically connected insiders behave opportunistically – informed trading – during the trade war.

$$HPR_{t+1} = \alpha + \delta_1 Opportunistic\ Buy\ (Sell)_t + \delta_2 Routine\ Buy\ (Sell)_t + \delta_3 Opportunistic\ Buy\ (Sell)_t * Connected + \delta_4 Routine\ Buy\ (Sell)_t * Connected + \vartheta\ Controls_t + \varepsilon_{t+1} \quad (5)$$

Where HPR_{t+1} is the holding period returns for the next month (s=1), *Opportunistic Insider Buy$_t$ (Sell$_t$)* is the indicator variable equal to 1 if the shares bought (sold) the amount by opportunistic insider *i* in firm *j* and month *t, Routine Insider Buys$_t$ (Sells$_t$)* are the indicator variable equal to 1 if the shares bought (sold) the amount by routine insider *i* in firm *j* and month *t* (insider trades are aggregated to the insider-month level) and *Controls$_t$* is a vector of control variables that includes firm book-to-market ratio (*BM$_t$*), and returns over the past month (*PastMoRet$_t$*). In this specification, δ_1 and δ_2 represent the coefficients for opportunistic insider buys (sells) and routine insider buys (sells) after controlling for *BM*, and *PastMoRet$_t$*.

In this specification, δ_3 and δ_4 measure the incremental informativeness of insider buys and sells during the trade war. Throughout this analysis (for $HPR_{i,t+1}$), we base inferences on robust standard errors clustered by firm. Political connection is the insider's attribute defined in the analysis.

In Table 5.10, we then investigate whether all opportunistic and routine insiders impact holding period returns measured at the one-month horizon. This table presents results from estimating equation (5). Models (1) to (4) estimate the results for the first three-month of the trade war period. In addition, models (1) and (2) indicate the results for insider buys and models (3) and (4) indicate the results for insider sells.

Table 5.10: Performance of Opportunistic and Routine Insiders (Political Connection)

This table presents results from estimating equation (5). $HPR_{t1, t2}$ is the one-month future returns (buy-and-hold) for firm *i* over days (t_1, t_2), Routine Insider Buy_t ($Sell_t$) is the indicator variable equal to 1 if the shares bought (sold) the amount by routine insider *i* in firm *j* and month *t* (insider trades are aggregated to the insider-month level) and Opportunistic Insider Buy_t ($Sell_t$) is the indicator variable equal to 1 if the shares bought (sold) the amount by opportunistic insider *i* in firm *j* and month *t. Connected* is an indicator variable equal to 1 if the insider *i* in firm j is politically connected if any director, officer and/or CEO has current or previous work experience at the US government agency such as in Federal Reserve, FDIC, OTS, OCC, Congress or the US Treasury. *BM* is the book-to-market ratio at the end of quarter *t. PastMoRet*$_t$ is the return in month *t*-1. *t*-Statistics (two-tailed *p*-values) based on robust standard errors clustered by firm appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

One-Month Future Returns				
Dependent Variable: $HPR_{i,t+1}$				
Variables	Model (1)	Model (2)	Model (3)	Model (4)
Opportunistic Insider Buy	0.017*	0.022*		
	(0.009)	(0.011)		
Routine Insider Buy	-0.017	-0.033**		
	(0.033)	(0.013)		
Routine Insider Buy*Connected	0.008	-0.002		
	(0.010)	(0.009)		
Opportunistic Insider Buy*Connected	0.012***	0.014***		
	(0.004)	(0.006)		
Opportunistic Insider Sell			-0.008**	-0.006
			(0.004)	(0.005)
Routine Insider Sell			-0.006	-0.002
			(0.015)	(0.023)
Routine Insider Sell*Connected			0.000	-0.001
			(0.006)	(0.009)
Opportunistic Insider Sell*Connected			-0.014***	-0.016***
			(0.003)	(0.005)
BM	-0.012***	-0.012***	-0.012***	-0.012***
	(0.002)	(0.003)	(0.002)	(0.003)
PastMoret	-0.024**	-0.035	-0.022**	-0.033

	(0.011)	(0.032)	(0.011)	(0.032)
Observations (Insider-Month)	7,803	7,803	7,803	7,803
Month-Effects	No	Yes	No	Yes

Column (1) of Table 5.10 presents the performance of politically connected opportunistic and routine insiders by regression results during the first three-month of the trade war period. Here, opportunistic insider buy*connected and routine insider buy*connected is the independent variables with opportunistic and routine insider buys, BM and PastMoRet. We find the coefficient on opportunistic insider buy*connected (0.012) is positive, which is economically and statistically significant (0.01) after using the control variables. This finding suggests that opportunistic insider (politically connected) buys are more beneficial than routine insider (politically connected) buys. However, the coefficient on routine insider buy*connected (0.008) is statistically insignificant. In addition, the coefficients of BM (-0.012) and PastMoRet (-0.024) are negative and statistically significant. The total number of observations is 7,803.

Column (2) presents the performance of politically connected opportunistic and routine insiders by regression results with fixed effect during the first three-month of the trade war period. Here, opportunistic insider buy*connected and routine insider buy*connected is the independent variables with opportunistic and routine insider buys, BM and PastMoRet. We find the coefficient on opportunistic insider buy*connected (0.014) is positive, which is economically and statistically significant (0.01) after using the control variables. This finding also suggests that opportunistic insider (politically connected) buys are more beneficial than routine insider (politically connected) buys. However, the coefficient on routine insider buy*connected (-0.002) is statistically insignificant. In addition, the coefficient of BM (-0.012) and PastMoRet (-0.024) are negative, but the coefficients of BM are statistically significant. The total number of observations is 7,803. Notably, compared between the results of columns (1) and (2), the opportunistic insider (politically connected) buys are more beneficial during the first three-month of the trade war.

Column (3) of Table 5.10 presents the performance of opportunistic and routine insider (politically connected) sells by regression results during the first three-month of the trade war. Here, the

opportunistic and routine insider sells*connected are the independent variables with opportunistic and routine insider sells, BM and PastMoRet. We find the coefficient on opportunistic insider sell*connected (-0.014) is negative, which is economically and statistically significant (0.01) after using the control variables. This finding suggests that opportunistic insider (politically connected) sells are more beneficial than routine insider (politically connected) sells during the first three-month of the trade war. However, the coefficient on routine insider sell*connected (0.000) is statistically insignificant. In addition, the coefficients of BM (-0.012) and PastMoRet (-0.021) are negative and statistically significant. The total number of observations is 7,803.

Column (4) presents the performance of opportunistic and routine insider (politically connected) sells by regression results with fixed effect during the first three-month of the trade war. Here, the opportunistic and routine insider sells*connected are the independent variables with opportunistic and routine insider sells, BM and PastMoRet. We find the coefficient on opportunistic insider sell*connected (-0.016) is negative and economically significant (0.01) after using the fixed effect. This finding also suggests that opportunistic insider (politically connected) sells are more beneficial than routine insider (politically connected) sells during the first three-month of the trade war. However, the coefficient on routine insider sell*connected (-0.001) is statistically insignificant. In addition, the coefficients of BM (-0.012) and PastMoRet (-0.021) are negative, but BM is statistically significant. The total number of observations is 7,803. Notably, compared between the results of columns (3) and (4), the opportunistic insider (politically connected) sells are more profitable than routine insider (politically connected) sells during the first three-month of the trade war.

These findings suggest that politically connected insiders' opportunistic transactions are more beneficial and truly informative. The politically connected insiders get reliable information in advance regarding the declaration of trade war through their current and previously employed organizations before being available to the other insiders and outsiders.

5.4.7 Opportunistic Insiders

In Table 5.11, we next investigate whether opportunistic and routine insiders (male or female) impact holding period returns measured at the one-month horizon. This table presents results from estimating

equation (2). Columns (1) and (2) evaluate the results for male and female insider buys for the first three-month of the trade war period. Columns (3) and (4) indicate the results for male and female insider sells for the first three-month of the trade war period.

Table 5.11: Attributes of the Connected Individual (Gender)

This table presents results from estimating equation (2). $HPR_{t1, t2}$ is the one-month future returns (buy-and-hold) for firm *i* over days (t_1, t_2), Routine Insider Buy_t ($Sell_t$) is the indicator variable equal to 1 if the shares bought (sold) the amount by routine insider *i* in firm *j* and month *t* (insider trades are aggregated to the insider-month level) and Opportunistic Insider Buy_t ($Sell_t$) is the indicator variable equal to 1 if the shares bought (sold) the amount by opportunistic insider *i* in firm *j* and month *t*. *BM* is the book-to-market ratio at the end of quarter *t*. $PastMoRet_t$ is the return in month *t*-1. *t*-Statistics (two-tailed *p*-values) based on robust standard errors clustered by firm appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

One-Month Future Returns				
Dependent Variable: $HPR_{i,t+1}$				
	(1)	(2)	(3)	(4)
Variables	Male: Buy	Female: Buy	Male: Sell	Female: Sell
Opportunistic Insider Buy	0.008	0.049**		
	(0.011)	(0.020)		
Routine Insider Buy	0.007	0.003		
	(0.010)	(0.009)		
Opportunistic Insider Sell			-0.013**	-0.019
			(0.006)	(0.012)
Routine Insider Sell			-0.000	-0.015
			(0.013)	(0.015)
BM	-0.006	-0.008	-0.006	-0.005
	(0.007)	(0.019)	(0.006)	(0.020)
PastMoret	-0.075	0.051	-0.072	0.047
	(0.050)	(0.072)	(0.049)	(0.071)
Observations (Insider-Month)	2,181	260	2,181	260
Month-Effects	Yes	Yes	Yes	Yes

Columns (1) and (2) of Table 5.11 present the performance of opportunistic and routine insiders (male and female) by regression results during the first three-month of the trade war period. Here, opportunistic and routine insider buy are the independent variables with BM and PastMoRet. In column (1), we find the coefficient on opportunistic insider (male) buy (0.008) is positive and higher than routine insider (male) buy (0.007). In column (2), we also find the coefficient on opportunistic insider (female) buy (0.049) is positive and higher than routine insider (female) buy (0.003), which is economically and statistically significant (0.05) after using the month fixed effect and clustered by firm. This finding suggests that opportunistic insider (female) buys are more beneficial than male insider buys. The total number of observations is 2,181 and 260. Notably, compared between the results of columns (1) and (2), the opportunistic female insider buys are more beneficial during the first three-month of the trade war.

Columns (3) and (4) present the performance of opportunistic and routine insider (male and female) sells by regression results during the first three-month of the trade war. Here, the opportunistic and routine insider sells are the independent variables with BM and PastMoRet. In column (3), we find the coefficient on opportunistic insider (male) sell (-0.013) is negative and more beneficial than routine insider (male) sell (-0.000), which is economically and statistically significant (0.05) after using the month fixed effect and clustered by firm. In column (4), we also find the coefficient on opportunistic insider (female) sell (-0.019) is negative and more beneficial than routine insider (female) sell (-0.015) after using the month fixed effect and clustered by firm. This finding suggests that opportunistic insider (female) sells are more beneficial than insider (male) sells during the first three-month of the trade war. The total number of observations is 2,181 and 260. Notably, compared between the results of columns (3) and (4), the opportunistic insider (female) sells are more profitable than male insider sells during the first three-month of the trade war.

Overall, these findings suggest that female insiders' opportunistic transactions are more beneficial and truly informative than male insiders' opportunistic transactions.

In Table 5.12, we next investigate whether opportunistic and routine insiders (old or young) impact holding period returns measured at the one-month horizon. This table presents results from estimating equation (2). Columns (1) and (2) assess the results for old and young insider buys for the first three-month of the trade war period. Columns (3) and (4) indicate the results for old and young insider sells for the first three-month of the trade war period.

Table 5.12: Attributes of the Connected Individual (Age)

This table presents results from estimating equation (2). $HPR_{t1, t2}$ is the one-month future returns (buy-and-hold) for firm *i* over days (t_1, t_2), Routine Insider Buy_t ($Sell_t$) is the indicator variable equal to 1 if the shares bought (sold) the amount by routine insider *i* in firm *j* and month *t* (insider trades are aggregated to the insider-month level) and Opportunistic Insider Buy_t ($Sell_t$) is the indicator variable equal to 1 if the shares bought (sold) the amount by opportunistic insider *i* in firm *j* and month *t. BM* is the book-to-market ratio at the end of quarter *t. PastMoRet*$_t$ is the return in month *t*-1. *t*-Statistics (two-tailed *p*-values) based on robust standard errors clustered by firm appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

	One-Month Future Returns			
	Dependent Variable: $HPR_{i,t+1}$			
	(1)	(2)	(3)	(4)
Variables	Above 55years	Below 55years	Above 55years	Below 55years
Opportunistic Insider Buy	0.018	0.008		
	(0.014)	(0.014)		

Routine Insider Buy	0.018*	-0.002		
	(0.010)	(0.005)		
Opportunistic Insider Sell			-0.016*	-0.012
			(0.008)	(0.008)
Routine Insider Sell			-0.004	0.001
			(0.019)	(0.011)
BM	-0.011	-0.004	-0.012	-0.005
	(0.012)	(0.009)	(0.012)	(0.007)
PastMoret	-0.065	-0.057	-0.062	-0.054
	(0.065)	(0.053)	(0.064)	(0.051)
Observations (Insider-Month)	1,159	1,280	1,159	1,280
Month-Effects	Yes	Yes	Yes	Yes

Columns (1) and (2) of Table 5.12 present the performance of opportunistic and routine insiders (old and young) by regression results during the first three-month of the trade war period. Here, opportunistic and routine insider buys are the independent variables with BM and PastMoRet. In column (1), we find the coefficients on opportunistic and routine insider (old) buy (0.018) are positive and equal. In column (2), we also find the coefficient on opportunistic insider (young) buy (0.008) is positive and higher than routine insider (young) buy (-0.002) after using the month fixed effect and clustered by firm. This finding suggests that young insiders generate higher returns from opportunistic buys than routine buys. The total number of observations is 1,159 and 1,280. Compared to the results of columns (1) and (2), the old opportunistic insider buys are beneficial than young opportunistic insider buys during the first three-months of the trade war.

Columns (3) and (4) present the performance of opportunistic and routine insider (old and young) sells by regression results during the first three-months of the trade war. Here, the opportunistic and routine insider sells are the independent variables with BM and PastMoRet. In column (3), we find the coefficient on opportunistic insider (old) sell (-0.016) is negative and more beneficial than routine insider (old) sell (-0.004), which is economically and statistically significant (0.10) after using the month fixed effect and clustered by firm. In column (4), we also find the coefficient on opportunistic insider (young) sell (-0.012) is negative and more beneficial than routine insider (young) sell (0.001) after using the month fixed effect and clustered by firm. This finding suggests that young insiders benefit more from opportunistic sells than routine sells during the first three-month of the trade war. The total number of observations is 1,159 and 1,280. Notably, compared to the results of columns (3) and (4), the old insiders are more profitable than young insiders from opportunistic sales during the first

three months of the trade war.

These findings suggest that old insiders' opportunistic transactions are more beneficial and truly informative than young insiders' opportunistic transactions.

In Table 5.13, we then investigate whether opportunistic and routine insiders (CEO or directors) impact holding period returns measured at the one-month horizon. This table presents results from estimating equation (2). Columns (1) and (2) estimate the results for insiders' (CEO and directors) buys for the first three-month of the trade war period. Columns (3) and (4) indicate the results for insider (CEO and directors) sells for the first three-month of the trade war period.

Table 5.13: Attributes of the Connected Individual (Within Board Position)

This table presents results from estimating equation (2). $HPR_{t1, t2}$ is the one-month future returns (buy-and-hold) for firm *i* over days (t_1, t_2), Routine Insider Buy_t ($Sell_t$) is the indicator variable equal to 1 if the shares bought (sold) the amount by routine insider *i* in firm *j* and month *t* (insider trades are aggregated to the insider-month level) and Opportunistic Insider Buy_t ($Sell_t$) is the indicator variable equal to 1 if the shares bought (sold) the amount by opportunistic insider *i* in firm *j* and month *t*. *BM* is the book-to-market ratio at the end of quarter *t*. $PastMoRet_t$ is the return in month *t*-1. *t*-Statistics (two-tailed *p*-values) based on robust standard errors clustered by firm appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

	One-Month Future Returns			
	Dependent Variable: $HPR_{i,t+1}$			
	(1)	(2)	(3)	(4)
Variables	CEO	Directors	CEO	Directors
Opportunistic Insider Buy	0.025**	0.022***		
	(0.011)	(0.005)		
Routine Insider Buy	-0.018	0.007		
	(0.021)	(0.006)		
Opportunistic Insider Sell			-0.022***	-0.015
			(0.005)	(0.009)
Routine Insider Sell			-0.019**	0.002
			(0.008)	(0.014)
BM	-0.004	-0.012***	-0.012***	-0.001
	(0.014)	(0.002)	(0.002)	(0.013)
PastMoret	-0.040	-0.035	-0.026	-0.037
	(0.041)	(0.033)	(0.035)	(0.041)
Observations (Insider-Month)	973	2,578	973	2,578
Month-Effects	Yes	Yes	Yes	Yes

Columns (1) and (2) of Table 5.13 present the performance of opportunistic and routine insiders (CEO and directors) by regression results during the first three-month of the trade war period. Here, opportunistic and routine insider buy are the independent variables with BM and PastMoRet. In column

(1), we find the coefficient on opportunistic insider (CEO) buy (0.025) is positive and higher than routine insider (CEO) buy (-0.018), which is economically and statistically significant (0.05) after using the month fixed effect and clustered by firm. In column (2), we also find the coefficient on opportunistic insider (directors) buy (0.022) is positive and higher than routine insider (directors) buy (0.007), which is economically and statistically significant (0.01) after using the month fixed effect and clustered by firm. This finding suggests that opportunistic insider (CEO) buys are more beneficial than insider (directors) buys. The total number of observations are 973 and 2,578. Notably, compared between the results of columns (1) and (2), the opportunistic insider (CEO) buys (0.025) hold larger holding period returns than opportunistic insiders (directors) buys (0.022) during the first three-month of the trade war.

Columns (3) and (4) present the performance of opportunistic and routine insider (CEO and directors) sells by regression results during the first three-month of the trade war. Here, the opportunistic and routine insider sells are the independent variables with BM and PastMoRet. In column (3), we find the coefficient on opportunistic insider (CEO) sell (-0.022) is negative and more beneficial than routine insider (CEO) sell (-0.019), which is economically and statistically significant (0.01) after using the month fixed effect and clustered by firm. In column (4), we also find the coefficient on opportunistic insider (directors) sell (-0.015) is negative and more beneficial than routine insider (directors) sell (0.002) after using the month fixed effect and clustered by firm. This finding suggests that opportunistic insider (CEO) sells are more beneficial than insider (directors) sells during the first three-month of the trade war. The total number of observations is 973 and 2,578. Notably, compared between the results of columns (3) and (4), the opportunistic insider (CEO) sells are more profitable than opportunistic insider (directors) sells during the first three-month of the trade war.

CEO are better informed about the firm as they are involved in the day-to-day operation of the business (e.g., (Goergen et al., 2019)) and they trade opportunistically to generate larger abnormal returns (e.g., (Seyhun, 1986)). These findings suggest that opportunistic insiders' (CEO) transactions are more beneficial and truly informative than insiders' (directors) opportunistic transactions.

In Table 5.14, we then investigate whether opportunistic and routine insiders (low or high compensation) impact holding period returns measured at the one-month horizon. This table presents

results from estimating equation (2). Columns (1) and (2) estimate the results for insider (low and high compensation) buys for the first three-month of the trade war period. Columns (3) and (4) indicate the results for insider (low and high compensation) sells for the first three-month of the trade war period.

Table 5.14: Within Financial Benefits

This table presents results from estimating equation (2). $HPR_{t1, t2}$ is the one-month future returns (buy-and-hold) for firm *i* over days (t_1, t_2), Routine Insider Buy_t ($Sell_t$) is the indicator variable equal to 1 if the shares bought (sold) the amount by routine insider *i* in firm *j* and month *t* (insider trades are aggregated to the insider-month level) and Opportunistic Insider Buy_t ($Sell_t$) is the indicator variable equal to 1 if the shares bought (sold) the amount by opportunistic insider *i* in firm *j* and month *t*. *BM* is the book-to-market ratio at the end of quarter *t*. $PastMoRet_t$ is the return in month *t*-1. *t*-Statistics (two-tailed *p*-values) based on robust standard errors clustered by firm appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

	One-Month Future Returns			
	Dependent Variable: $HPR_{i,t+1}$			
	(1)	(2)	(3)	(4)
Variables	High Compensation	Low Compensation	High Compensation	Low Compensation
Opportunistic Insider Buy	0.020**	0.004		
	(0.010)	(0.013)		
Routine Insider Buy	0.027**	-0.009		
	(0.013)	(0.009)		
Opportunistic Insider Sell			-0.007	-0.013*
			(0.007)	(0.008)
Routine Insider Sell			0.000	0.012
			(0.014)	(0.015)
BM	-0.013***	0.014	-0.012***	0.012
	(0.003)	(0.020)	(0.003)	(0.019)
PastMoret	-0.022	-0.077	-0.024	-0.074
	(0.061)	(0.059)	(0.060)	(0.057)
Observations (Insider-Month)	1,291	1,161	1,291	1,161
Month-Effects	Yes	Yes	Yes	Yes

Columns (1) and (2) of Table 5.14 present the performance of opportunistic and routine insiders (low and high compensation) by regression results during the first three-month of the trade war period. Here, opportunistic and routine insider buys are the independent variables with BM and PastMoRet. In column (1), we find the coefficient on opportunistic insider (high compensation) buy (0.020) is positive and lower than routine insider (high compensation) buy (0.027), which is economically and statistically significant (0.05) after using the month fixed effect and clustered by firm. In column (2), we also find the coefficient on opportunistic insider (low compensation) buy (0.004) is positive and higher than routine insider (low compensation) buy (-0.009) after using the month fixed effect and clustered by firm. This finding suggests that opportunistic insider (high compensation) buys are more beneficial

than insider (low compensation) buys. The total number of observations is 1,291 and 1,161. Notably, compared between the results of columns (1) and (2), the opportunistic insider (high compensation) buys (0.020) hold larger holding period returns than opportunistic insiders (low compensation) buys (0.004) during the first three-month of the trade war.

Columns (3) and (4) present the performance of opportunistic and routine insider (low and high compensation) sells by regression results during the first three-month of the trade war. Here, the opportunistic and routine insider sells are the independent variables with BM and PastMoRet. In column (3), we find the coefficient on opportunistic insider (high compensation) sell (-0.007) is negative and more beneficial than routine insider (high compensation) sell (0.000) after using the month fixed effect and clustered by firm. In column (4), we also find the coefficient on opportunistic insider (low compensation) sell (-0.013) is negative and more beneficial than routine insider (low compensation) sell (0.012), which is economically and statistically significant (0.10) after using the month fixed effect and clustered by firm. This finding suggests that opportunistic insider (low compensation) sells are more beneficial than insider (high compensation) sells during the first three-month of the trade war. The total number of observations is 1,291 and 1,161. Notably, compared between the results of columns (3) and (4), the opportunistic insider (low compensation) sells are more profitable than opportunistic insider (high compensation) sells during the first three-month of the trade war.

These findings suggest that highly compensated opportunistic insiders are more beneficial from buys, but lowly compensated opportunistic insiders are more beneficial from sells and truly informative.

In Table 5.15, we next investigate whether opportunistic and routine insiders (by sector classifications) impact holding period returns measured at the one-month horizon. This table presents results from estimating equation (2). Columns (1) to (4) estimate the results for insider buys from energy, manufacturing, technology and financial sectors for the first three-month of the trade war period. Columns (5) and (8) indicate the results for insider sells from the same sectors and for the same time period.

Table 5.15: Sector Classifications

This table presents results from estimating equation (2). $HPR_{t1, t2}$ is the one-month future returns (buy-and-hold) for firm *i* over days (t_1, t_2), Routine Insider Buy_t ($Sell_t$) is the indicator variable equal to 1 if the shares bought (sold) the amount by routine insider *i* in firm *j* and month *t* (insider trades are aggregated to the insider-month level) and Opportunistic Insider Buy_t ($Sell_t$) is the indicator variable equal to 1 if the shares bought (sold) the amount by opportunistic insider *i* in firm *j* and month *t. BM* is the book-to-market ratio at the end of quarter *t. PastMoRet*$_t$ is the return in month *t*-1. *t*-Statistics (two-tailed *p*-values) based on robust standard errors clustered by firm appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

One-Month Future Returns								
Dependent Variable: $HPR_{i,t+1}$								
Variables	Energy	Manufacturing	Technology	Financial	Energy	Manufacturing	Technology	Financial
Opportunistic Insider Buy	-0.004	0.008	0.031**	0.021***				
	(0.011)	(0.030)	(0.013)	(0.008)				
Routine Insider Buy	-0.010	0.041	-0.050	0.028**				
	(0.009)	(0.037)	(0.032)	(0.009)				
Opportunistic Insider Sell					-0.006	0.003	-0.016	-0.033***
					(0.010)	(0.014)	(0.012)	(0.010)
Routine Insider Sell					0.037	0.003	0.017	-0.011
					(0.026)	(0.024)	(0.021)	(0.016)
BM	0.017	-0.009	-0.027	-0.014***	0.017*	-0.005	-0.024	-0.015***
	(0.011)	(0.025)	(0.017)	(0.003)	(0.010)	(0.023)	(0.018)	(0.003)
PastMoret	-0.206***	-0.124	-0.146**	0.026	-0.195***	-0.123	-0.146**	0.036
	(0.062)	(0.098)	(0.058)	(0.061)	(0.058)	(0.097)	(0.058)	(0.064)
Observations(Insider-Month)	995	566	765	2,738	995	566	765	2,738
Month-Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Columns (1) to (4) of Table 5.15 present the performance of opportunistic and routine insiders (by sector classifications) by regression results during the first three-month of the trade war period. Here, opportunistic and routine insider buys are the independent variables with BM and PastMoRet. In column (1), we find the coefficients on opportunistic (-0.004) and routine (-0.010) insider buys are negative and are not profitable for the energy sector after using the month fixed effect and clustered by firm. The total number of observations is 995. In column (2), we also find the coefficient on routine insider buy (0.041) is positive and higher than opportunistic insider buy (0.008) after using the month fixed effect and clustered by firm. This finding suggests that routine insider buys of the manufacturing sector hold more holding period returns than opportunistic insider buys. The total number of observations is 566. In column (3), we also find the coefficient on opportunistic insider buy (0.031) is positive and higher than routine insider buy (-0.050), which is economically and statistically significant (0.05) after using the month fixed effect and clustered by firm. This finding suggests that opportunistic insider buys of the technology sector are more beneficial than routine insider buys. The total number of observations is 765. In column (4), we also find the coefficient on routine insider buy (0.028) is

positive and higher than opportunistic insider buy (0.021), which is economically and statistically significant (0.01) after using the month fixed effect and clustered by firm. This finding suggests that routine insider buys of the financial sector are more beneficial than opportunistic insider buys. The total number of observations is 2,738. Notably, comparing the results from columns (1) to (4), the opportunistic insider buys (0.031) of the technology sector are more beneficial than opportunistic insider buys of other sectors during the first three-month of the trade war.

Columns (5) to (8) present the performance of opportunistic and routine insider (by sector classifications) sells by regression results during the first three-month of the trade war. Here, the opportunistic and routine insider sells are the independent variables with BM and PastMoRet. In column (5), we find the coefficient on opportunistic insider sell (-0.006) is negative and more beneficial than routine insider sell (0.037) after using the month fixed effect and clustered by firm. This finding suggests that opportunistic insider sells of the energy sector are more beneficial than routine insider sells during the first three-month of the trade war. The total number of observations is 995. In column (6), we also find the coefficients on opportunistic (0.003) and routine (0.003) insider sell are equal and positive after using the month-fixed effect and clustered by firm. This finding suggests that opportunistic and routine insider sells of the manufacturing sector are the same benefits like routine insider sells during the first three-month of the trade war. The total number of observations is 566. In column (7), we also find the coefficient on opportunistic insider sell (-0.016) is negative and more beneficial than routine insider sell (0.017) after using the month fixed effect and clustered by firm. This finding suggests that opportunistic insider sells of the technology sector are more beneficial than routine insider sells during the first three-month of the trade war. The total number of observations is 765. In column (8), we also find the coefficient on opportunistic insider sell (-0.033) is negative and more beneficial than routine insider sell (-0.011), which is economically and statistically significant (0.01) after using the month fixed effect and clustered by firm. This finding suggests that opportunistic insider sells of the financial sector are more beneficial than routine insider sells during the first three-month of the trade war. The total number of observations is 2,738. Notably, comparing the results from columns (5) to (8), the opportunistic insider sells (-0.033) of the financial sector are more profitable than

opportunistic insider sells of other sectors during the first three-month of the trade war.

Overall, these findings suggest that opportunistic insiders from the technology sector are more beneficial from buys, but opportunistic insiders from the financial sector are more beneficial from sells and truly informative.

5.4.8 Instrumental Variables Approach

Table 5.16 presents the estimation of the instrumental variable approach. The results of this table are associated with endogeneity concerns that might influence the findings. In this chapter, we use one-month holding period returns as a dependent variable and opportunistic and routine traders as independent variables, but we consider three-years back trading algorithm (e.g., (Cohen et al., 2012)) to identify the opportunistic and routine traders (trades) because we only consider the six-month insider trading performance during the trade war. Nevertheless, this back trading policy might be considered by a five or four-years back trading policy to identify the opportunistic and routine traders (trades) to measure the insider trading performances. Therefore, there is a scope of arising measurement error from calculating opportunistic and routine traders (trades), which may correlate with the error term (ε_{t+1}). Moreover, the omitted variable bias can also cause of endogeneity issues because of the unavailability and unobservability of monthly firm-level variables (e.g., BM). The measurement errors and omitted variable bias can increase the endogeneity concerns in our findings.

To account for these concerns, we estimate equation (2) by using the instrumental variable-2SLS (Baum et al., 2007). Column (1) estimates the regression for opportunistic and routine insider buys with purchase ratio as an instrumental variable for the first three-month of the trade war. Column (2) estimates the regression for opportunistic and routine insider buys with purchase ratio as an instrumental variable for the last three-month of the trade war. Column (3) estimates the regression for opportunistic and routine insider sells with sell ratio as an instrumental variable for the first three-month of the trade war. Column (4) estimates the regression for opportunistic and routine insider sells with sell ratio as an instrumental variable for the last three-month of the trade war.

Table 5.16: Instrumental variables approach (Two-stage least squares (2SLS))

This table presents the equation (2) estimation of using the instrumental variable approach based on two-stage least squares (2SLS) cross-section regressions. $HPR_{t1, t2}$ is the one-month future returns (buy-and-hold) for firm *i* over days (t_1, t_2), Routine Insider Buy_t ($Sell_t$) is the indicator variable equal to 1 if the shares bought (sold) the amount by routine insider *i* in firm *j* and month *t* (insider trades are aggregated to the insider-month level) and Opportunistic Insider Buy_t ($Sell_t$) is the indicator variable equal to 1 if the shares bought (sold) the amount by opportunistic insider *i* in firm *j* and month *t. BM* is the book-to-market ratio at the end of quarter *t. PastMoRet*$_t$ is the return in month *t*-1. Purchase Ratio is the number of shares purchased by insider *i* in firm *j* and month *t*, scaled by the total share volume of insider *i* in firm *j* and month *t*. Sell Ratio is the number of shares sold by insider *i* in firm *j* and month *t*, scaled by the total share volume of insider *i* in firm *j* and month *t*. *t*-Statistics (two-tailed *p*-values) based on robust standard errors clustered by firm appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

Panel A: First Stage Regression				
Dependent Variable: *Routine (Opportunistic) Buy (Sell)*				
	(1)	(2)	(3)	(4)
	First-3M	Last-3M	First-3M	Last-3M
Purchase Ratio (Routine)	0.999***	1.002***		
	(0.000)	(0.002)		
Purchase Ratio (Opportunistic)	1.002***	1.000***		
	(0.001)	(0.001)		
Sell Ratio (Routine)			1.000***	1.001***
			(0.007)	(0.001)
Sell Ratio (Opportunistic)			1.001***	1.002***
			(0.003)	(0.002)
Panel B: Second Stage Regression				
Dependent Variable: $HPR_{i,t+1}$				
Opportunistic Insider Buy	0.017***	-0.016		
	(0.005)	(0.016)		
Routine Insider Buy	-0.007	-0.002		
	(0.009)	(0.077)		
Opportunistic Insider Sell			-0.017***	0.015
			(0.004)	(0.015)
Routine Insider Sell			-0.010***	0.005
			(0.003)	(0.022)
BM	-0.010***	-0.079***	-0.010***	-0.079***
	(0.003)	(0.024)	(0.003)	(0.025)
PastMoret	-0.039	-0.036	-0.039	-0.036
	(0.032)	(0.063)	(0.032)	(0.063)
Observations (Insider-Month)	7,803	641	7,803	641
Month-Effects	Yes	Yes	Yes	Yes
F	4.417	3.552	6.599	3.931

Columns (1) to (4) of Table 5.16 present the performance of opportunistic and routine insider buys and sells by regression results during the first three-month of the trade war period. Here, opportunistic and

routine insider buy and sell are the independent variables with BM and PastMoRet. The instrumental variables are the purchase and sell ratio and the purchase ratio for the insider buys and sell ratio for the insider sells. Column (1) presents the regression results for insider buys during the first three-month of the trade war. We find the coefficient on opportunistic insider buys (0.017) is positive and higher than routine insider buys (-0.007), which is economically and statistically significant (<0.01). This finding suggests that opportunistic insider buys are more beneficial than routine insider buys during the first three-month of the trade war. Column (2) presents the regression results for insider buys during the last three-month of the trade war. We find the coefficient on opportunistic (-0.016) and routine (-0.010) insider buys is negative and is not profitable. Comparing the results from columns (1) and (2), the opportunistic insider buys during the first three-month of the trade war are more beneficial than insider buys during the last three-month of the trade war.

Column (3) presents the regression results for the insider sells during the first three-month of the trade war. We find the coefficient on opportunistic insider sells (-0.017) is negative and higher beneficial than routine insider sells (-0.010), which is economically and statistically significant (<0.01). This finding suggests that opportunistic insider sells earn more returns when they sell their shares during that times. Column (4) presents the regression results for insider sells during the last three-month of the trade war. We find the coefficient on opportunistic (0.015) and routine (0.005) insider sells is positive and is not profitable. Comparing the results from columns (3) and (4), the opportunistic insider sells during the first three-month of trade war are more profitable than insider sells during the last three-month of the trade war.

Overall, the above findings suggest that opportunistic insider transactions are beneficial and truly informative during the first three-month of the trade war. This finding supports the baseline regression results by mitigating endogeneity concerns through instrumental variable approaches.

5.4.9 Heterogeneity

In this chapter, we also use multi-way fixed effects that perform well with large and complex datasets, which are denoted by high-dimensional fixed effects (Correia, 2016). We absorb the time (transaction month) and clustering firm id (CUSIP) in multi-way fixed effects. These techniques allow us to control

the unobserved heterogeneity specific to an individual or group, and they also prevent causal inference due to omitted variable biases (Gormley and Matsa, 2014). Specifically, in the baseline regression, we include month-fixed effects clustered by firm id with cross-sectional regressions to account for potential heterogeneity in opportunistic and routine transactions (buys and sells) across the firms in a given month. At the overall results, we find consistent results with baseline results. We also use the difference-in-differences approach to measure the pre and post-trade war effects on opportunistic and routine insiders' transactions, and we find a positive association between Cumulative Abnormal Returns (-30, -1 & 0, 30) and opportunistic insider buy. We also find a negative association between Cumulative Abnormal Returns (-30, -1 & 0, 30) and opportunistic insider sell. Moreover, we consider the multi-way fixed effect in the instrumental variable-2SLS method to retain consistency with other methods (e.g., baseline regression and difference-in-difference specification). Notably, all results indicate the same findings throughout the whole analysis.

5.5 Conclusion

In this chapter, we investigate whether opportunistic insiders earn higher returns compared to routine insiders during the trade war in 2018. Since, opportunistic insiders are not regular traders, whereas routine traders participate in seasonal trading over the years. The opportunistic insiders may have an information advantage, and they may participate in informed trading by using this advantage. The trade war may pronounce the information advantage and significantly encourage opportunistic insiders to be involved in informed trading. We employ a simple empirical strategy to form opportunism-informed trading. We consider the different tests for opportunistic insider trading based on the information advantage. In this regard, we use alternative measurements of event studies and interact with opportunistic and routine insider transactions with political connections to find the results for opportunism-informed trading. We also consider several tests for opportunistic insiders, e.g., gender, age, board position, compensation, and sector classifications. Using the simple definition of routine insiders, we can systematically identify the traders as either opportunistic or routine throughout the sample. We show that routine insiders' transactions carry uninformative signals, and opportunistic insiders' transactions are powerful predictors of future firm returns during the trade war.

We first use the CARs for the two different windows surrounding the announcement date of a trade war (day 0), i.e., 31 (0, 30) and 31 (-30, -1) days, for the routine and opportunistic insider transactions. We find that opportunistic insiders generate higher abnormal returns from buy during the trade war period than the pre-trade war period, which is also truly informative. We also find that opportunistic insider sell is more beneficial than routine insider sell during the trade war period than pre-trade war period, which is economically and statistically significant (0.01). It indicates insider sells were a better decision than holding that shares.

We then present the baseline cross-sectional regression results, and we find the coefficient on opportunistic insider buy is positive and higher than routine insider buy. We also find the coefficient on opportunistic insider sell is negative and more beneficial than routine insider sell (-0.004) during the trade war period. Overall, these findings suggest that opportunistic insider transactions are more beneficial and truly informative during the trade war than during the other period. These findings support the prior literature (e.g., (Cohen et al., 2012)), which mainly focuses on opportunistic and routine insider transactions but not on this war.

We next find the coefficient on opportunistic insider buy is positive and higher than routine insider buy during the first three-month of the trade war. However, the opportunistic insider buy does not generate more returns from insider buys than routine insiders during the last three-month of the trade war. Notably, we find the coefficient on opportunistic insider sell is negative and more beneficial than routine insider sell during the first three-month of the trade war. However, opportunistic insiders do not earn more returns from insider sells than routine insiders. These findings suggest that opportunistic insider transactions are more beneficial and truly informative during the first three months of the trade war. These findings also support the prior literature (e.g., (Goergen et al., 2019; Ali and Hirshleifer, 2017; He and Rui, 2016b; Rogers et al., 2016b; Cohen et al., 2012; Tavakoli et al., 2012; Ravina and Sapienza, 2010; Marin and Olivier, 2008; Fidrmuc, J.P. et al., 2006)), which mainly focuses on opportunistic and routine insider transactions but not on this trade war.

We next focus on difference-in-difference specification to test whether opportunistic insiders are beneficial and truly informative during the trade war compared to the Pre-trade war period. We find the

positive and statistically significant coefficient for opportunistic insider buys during the trade war. We also find a negative and statistically significant coefficient for opportunistic insider sells during the trade war. Both findings suggest that opportunistic insiders are more beneficial than routine insiders, and it is truly informative. These findings support the baseline regressions results and prior literature (Cohen et al., 2012).

We then investigate whether all opportunistic and routine trades instead of routine insiders impact holding period returns. We find the coefficient on opportunistic buy is positive and higher than routine buy during the first three-month of the trade war. We also find the coefficient on opportunistic sell is negative and more beneficial than routine sell during the same period. However, we do not find the same results during the last three-month of the trade war period. These findings suggest that opportunistic transactions are more beneficial and truly informative during the first three months of the trade war. These findings also support the baseline regression results and prior literature (e.g., (Cohen et al., 2012)), which mainly focuses on opportunistic and routine insider transactions but not on this war.

We then examine how these attributes relate to the informativeness of opportunistic insider trades; we estimate the cross-section regression form to assess how the politically connected insiders behave opportunistically – informed trading – during the trade war. We find the coefficient on opportunistic insider buy*connected is positive and higher than routine insider buy*connected, which is economically and statistically significant. We also find the coefficient on opportunistic insider sell*connected is negative and more beneficial than routine insider sell*connected, which is economically and statistically significant. These findings suggest that politically connected insiders' opportunistic transactions are more beneficial and truly informative. The politically connected insiders get this reliable information in advance regarding the declaration of trade war through their current and previously employed organizations before being available to the other insiders and outsiders.

We next investigate whether opportunistic insiders (e.g., gender, age, compensation, board position and sector classifications) are more beneficial during the trade war. We find that the opportunistic female insider buys are more beneficial than the male opportunistic insider buys. We also find that

opportunistic insider (female) sells are more profitable than male insider sells during the same period. We next find that the old opportunistic insider buys are more beneficial than young opportunistic insider buys. In addition, the old insiders are more profitable than young insiders from opportunistic sells. We find that the opportunistic insiders (CEO) buys (0.025) are more beneficial than opportunistic insiders (directors) buys (0.022), and the opportunistic insider (CEO) sells also are more profitable than opportunistic insider (directors) sells during the first three-month of the trade war. We find that the opportunistic insiders' (high compensation) buys (0.020) are more beneficial than opportunistic insiders' (low compensation) buys (0.004), and the opportunistic insider (low compensation) sells are more profitable than opportunistic insiders' (high compensation) sells. We finally find that the technology sector's opportunistic insider buys (0.031) are more beneficial than opportunistic insider buys of other sectors, and the opportunistic insider sells (-0.033) of the financial sector are more profitable than opportunistic insider sells of other sectors.

Collectively, all results suggest that opportunistic insider trades are profitable and truly informative during the trade war period. Notably, the findings are remarkable in the current economic climate, where the government plays an active role in U.S. capital markets. We expect opportunistic insiders to be an information advantage if the government plays more active roles in influencing firm-level outcomes. Therefore, we encourage other investors and capital market regulators to monitor opportunistic insider trades. Further research can proceed in one direction, the insights provided in the chapter can be used to focus on opportunistic insider trades (Cohen et al., 2012) for Chinese firms instead of political connections. We leave these issues for further research.

Appendixes:

Table: A.5.1: Performance of Opportunistic and Routine Trades (Trade and Pre-Trade War Period)

This table presents results from estimating equation (4). $HPR_{t1, t2}$ is the one-month future returns (buy-and-hold) for firm *i* over days (t_1, t_2), Routine Buy_t ($Sell_t$)is an indicator variable equal to 1 if the shares bought (sold) the amount by routine insider *i* in firm *j* and month *t* (insider trades are aggregated to the insider-month level) and Opportunistic Buy_t ($Sell_t$)is an indicator variable equal to 1 if the shares bought (sold) the amount by opportunistic insider *i* in firm *j* and month *t*. *BM* is the book-to-market ratio at the end of quarter *t*. $PastMoRet_t$ is the return in month *t*-1. *t*-Statistics (two-tailed *p*-values) based on robust standard errors clustered by firm appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

	One-Month Future Returns							
	Dependent Variable: $HPR_{i,t+1}$							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables	Trade War	Pre-Trade War	Trade War	Pre-Trade War	Trade War	Pre-Trade War	Trade War	Pre-Trade War
Opportunistic Buy	0.013***	0.007***	0.014***	0.005				
	(0.004)	(0.003)	(0.005)	(0.004)				
Routine Buy	0.005	0.005	-0.005	0.005				
	(0.008)	(0.006)	(0.007)	(0.009)				
Opportunistic Sell					-0.013***	-0.006***	-0.015***	-0.004
					(0.003)	(0.002)	(0.005)	(0.003)
Routine Sell					-0.001	-0.004	-0.003	-0.003
					(0.004)	(0.003)	(0.007)	(0.005)
BM	-0.014***	-0.011***	-0.013***	-0.010**	-0.013***	-0.010***	-0.013***	-0.010**
	(0.002)	(0.002)	(0.003)	(0.005)	(0.002)	(0.002)	(0.003)	(0.005)
PastMoret	-0.027***	-0.016**	-0.037	-0.018	-0.026***	-0.016**	-0.036	-0.017
	(0.009)	(0.008)	(0.029)	(0.023)	(0.009)	(0.008)	(0.029)	(0.023)
Observations(Insiders-Months)	8,353	13,439	8,353	13,439	8,353	13,439	8,353	13,439
Fixed Effects	No	No	Yes	Yes	No	No	Yes	Yes

Chapter 6

6. Social Connections and Opportunism of Insider Trading

Abstract: *This chapter analyses the opportunistic selling by socially connected insiders at all US firms during the trade war in 2018. We find evidence that socially connected opportunistic sellers receive higher returns than socially connected routine sellers. This evidence is more pronounced when opportunistic sellers are more socially connected and belong to firms which have business connections with China. Furthermore, we find supportive evidence that socially connected opportunistic sellers receive more returns compared to politically connected opportunistic sellers. Our finding survives various alternative, robustness and endogeneity tests. Overall, our findings suggest that social connections can facilitate opportunistic sellers to behave opportunistically during the trade war.*

Keywords: Opportunistic, Routine, Social Connections, Political Connections, Trade War and Holding Period (Future) Returns.

6.1 Introduction

6.1.1 Background and Contributions

Corporate insiders usually trade their firm's stocks by balancing several considerations. Insiders have valuable private information about their firms, which provides an opportunity to sell their stocks before bad news and buy stocks before good news becomes public. Informativeness regarding their firms may make them opportunistic. This opportunistic behaviour is the fundamental assumption of opportunism that results from "self-interest seeking with guile" (Baumol, 1986). Therefore, opportunistic insiders may seek an event to trade their firms' stocks; for example, a positive event for firms may come from the declaration of higher dividends, and an adverse event for firms may arise from the statement of quitting a successful CEO. Opportunistic insiders always seek a suitable time to trade opportunistically by using their prior information to become public.

The negative or positive events may also arise from the macroeconomic events, which may impact the economy, capital markets and the firms' performances. For example, the recent macroeconomic events in the USA are the trade war, potential presidential candidate declaration, and COVID-19 pandemic or

vaccine declarations. Notably, the trade war declaration by former US president Donald Trump with another economic super giant, China, was a major exogenous event in the USA in 2018. It created uncertainty in the US economy about their manufacturing and trading with China. That event largely impacted the US capital markets and firms' performances. Basically, it was a political conflict with China. Both countries wanted a political win over each other. During that exogenous event, opportunistic insiders may seek the opportunity to sell their firms' stocks using the prior bad news (trade war declaration). Specifically, opportunistic insiders can exploit the information advantage for greater returns from their opportunistic trading. For example, the CEO, Greg Becker, of Silicon Valley Bank (SVB) sold $3.60 million worth of shares on 27 February 2023, just days before disclosed a large loss that triggered its collapse (Frank, 2023). On the other hand, Green et al. (2020); Crudele (2020) report that a few US senators (e.g. Richard Burr of North Carolina and Dianne Feinstein of California) sold their holding shares significantly after a specific secret briefing on COVID-19 updates by the authorised government committee.

As we mentioned earlier, opportunistic insiders sold their stocks using their prior private information. In this study, we are seeking the informativeness of opportunistic sales based on non-routine or opportunistic sellers' predictive ability for future performance during the trade war. They may get material non-public information about the declaration of the trade war from their different interpersonal connections, such as educational backgrounds and employment records. The interpersonal connections may help the opportunistic sellers to be more informative during the trade war period than in other periods.

In recent finance research, interpersonal ties (network centrality or social connections) among firm employees add significant financial consequences (e.g., El-Khatib et al. (2015); Goergen et al. (2019); El-Khatib et al. (2021)). The connections can be formed through their educational backgrounds, employment records, or both. Personal relationships work as an informal effective channel to transmit non-public information from one to another. It can facilitate the sharing of information to be opportunistic in trading. Importantly, these personal connections facilitate the CEO's insider trading gains (El-Khatib et al., 2021), to manage larger loan amounts with lower interest rates and fewer

restrictions (Engelberg et al., 2012), more risk-adjusted returns (Larcker et al., 2013), easier contracting to improve the analyst performance (Cohen et al., 2010), to enhance IPO performances (Chahine and Goergen, 2013), value-creating acquisition decisions (El-Khatib et al., 2015) and better firm performance (Fracassi, 2017). In this study, we test that social connections provide an information advantage and that opportunistic sellers sell their firms' stocks based on this advantage.

Similarly, we also consider the political connections as an information advantage of the insiders because of thinking of the main motive of starting the trade war. Moreover, prior literature finds that the political connection is more likely influential in informed trading when government plays an active role in the economy during a financial crisis or policy uncertainty (Jagolinzer et al., 2020; Li, X., 2020). We test whether political connections provide more information advantage than social connections that opportunistic sellers sell based on this advantage. However, the political connection is formed only through their employment records in Fed, treasury, congress, OCC, OTS, FDIC, which already belong to social connections. The Consideration of political connections makes our baseline findings robust and concludes that social connections may have an information advantage and that opportunistic sellers sell based on this advantage.

Hence, we use graph theory and network analysis to capture the insiders' access and spread to non-firm-specific information to identify the profitability from opportunistic trades (e.g., Goergen et al. (2019)). Greater connection influences easier access to inside information and facilitates efficient process and transmission of the information (Burt, 2010; Jackson, 2008). More significant network positions generate higher social connections – information and greater gains from those connections (Woolcock, 1998). Overall, these connections support individuals to have information advantages, and information may facilitate them to behave opportunistically. Notably, this chapter examines whether socially connected opportunistic sellers participate in informed trading – opportunistic behaviour during the trade war and generate higher returns.

Unlike the prior studies on social connections, we consider the insiders' social connections (along with political connections) in insider sales during the trade war for all insiders of all US firms. Before using the econometric models, we investigated and found that the total sales were 91 percent ($11,995.24

million) of the total transactions amount ($13038.11 million), and buys were only 9 percent during the trade war period. Hence, buys are much smaller amount than sales during that time (six months after starting the war). It means that opportunistic sellers may sell their stocks to exploit the information advantage for greater returns, and social connections can facilitate them to behave more opportunistically.

To find the informativeness of opportunistic sales, we begin our analysis using different event studies based on the stock market fluctuations surrounding the trade war declaration. The event study methodology examines the stock performance for socially connected opportunistic and routine sellers around the trade war announcement (day 0), i.e., 11 (0, 10), 21 (0 20) and 60 (-30 30) days. We find that socially connected opportunistic sellers earn higher abnormal returns surrounding the trade war declaration date. Hence, social connections may provide an information advantage, and opportunistic sellers sell based on this advantage. We then find the same results with one-month ahead (holding period or future) returns in baseline regressions and difference-in-difference specification that socially connected opportunistic sellers earn higher returns during the trade war period. Therefore, social connections facilitate opportunistic sellers to behave opportunistically.

We next consider the political connections as information advantages and compare them with the benefits of social connections. We find that socially connected opportunistic sellers are more opportunistic and truly informative. At the robustness tests, we use the different regression models for insider sales instead of sellers, strong and weak insider connections and insiders of firms with business connections with China. Importantly, we find the same evidence that socially connected opportunistic sellers earn greater returns during the trade war period. The findings also suggest that insider sales and stronger social connections facilitate opportunistic sellers to behave more opportunistically. We end our analysis using the different alternative measurements of social connections (e.g., Degree and Closeness, Eigenvector from educational backgrounds or employment records), and we find consistent results with the baseline findings.

All results suggest that the socially connected opportunistic sellers earn higher returns (e.g., (El-Khatib et al., 2017)) from opportunistic sales during the trade war period than the socially connected routine

sellers, which are also truly informative. The finding also suggests that socially connected opportunistic sellers had a significant information advantage during the trade war, and they opportunistically sold their shares to exploit that advantage. These findings support the prior literature (e.g., (He and Rui, 2016a; Rogers et al., 2016a; Cohen et al., 2012; Tavakoli et al., 2012; Ravina and Sapienza, 2010; Marin and Olivier, 2008; Fidrmuc, J.P. et al., 2006)). Notably, we address the endogeneity concerns arising from the explanatory variables (opportunistic and routine) as measurement errors and unobservability and unavailability of firm-level data as omitted variable bias. To mitigate the endogeneity concern, we use the instrumental variable approach (2SLS) and find consistency with the results of prior findings.

This chapter makes several significant contributions to insider trading. First, we focus on social connections among insiders and their opportunistic sales during the trade war. Second, we consider political connections between opportunistic and routine sellers during the same period. Third, we also focus on alternative social connections of opportunistic sellers and holding period returns from their sales. Importantly, we find the same results throughout the analyses.

Notably, there was no other major event (e.g., economic uncertainty) during the trade war period in 2018. Therefore, the consideration of the trade war period is free from other exogenous events such as the financial crisis, any war, the interim election or a pandemic like COVID-19. Considering all the factors, the findings of this chapter are robust. The measurements of event studies, robustness and alternative tests, and instrumental variable-2SLS results support to make stronger evidence in favour of socially connected opportunistic sellers. The findings are robust to various alternative method specifications, and socially connected sellers are opportunistic and truly informative. Overall, these findings suggest that socially connected opportunistic sellers have the information advantage that they generate greater returns. To strengthen this finding, we consider the insider sales which are reported to US SEC timely. The findings from this chapter are remarkable in the current stock market environment, where the government plays an active role in USA capital markets. However, insider trades are less informative in the presence of stronger incentives to monitor (Fidrmuc, J.P. et al., 2006), while poor external governance is associated with more profitable trades (Ravina and Sapienza, 2010). Therefore,

we encourage other investors and capital market regulators to monitor socially connected opportunistic insider sales.

6.1.2 Structure

The remainder of the study is organised as follows. The following section explains the literature review on trade war, opportunistic trading, social and political connections and profitability. Section 6.3 provides the data and method. Section 6.4 describes the summary statistics and the main findings. The final section concludes the chapter.

6.2 Literature Review

In this section, we present an idea of the central themes of this chapter with prior studies. Primarily, the section is started with insider trading in uncertainty, where we explain insider trading and information advantages during policy uncertainty, e.g., trade war. The readers can get a broader idea of opportunistic insider trading during the uncertainty that may help insiders to trade opportunistically. Then, we explain the political connections and opportunistic insider trading. Finally, this section ends with social connections and opportunistic trading, explaining how socially connected opportunistic sellers gain more returns using information opportunistically.

6.2.1 Insider Trading and Uncertainty

As we discussed in the earlier chapters on the several issues of insider trades and trade war, with the continuation of the previous chapter, we highlight the area to link with the hypotheses of the current chapter. In this chapter, we again consider the legal insider trades that are reported to SEC timely, ignoring the illegal insider trades. We also consider the US-China trade war as an exogenous macroeconomic event that was initiated in 2018 by initially imposing 10% tariffs (later escalating to 25%) on Chinese exports ($200 billion) to the US and retaliating 10% tariffs on American exports ($65 billion) items to China (Archana, 2020; Van Aaken et al., 2019; Bhandari et al., 2019; Kumagai et al., 2019; Bekkers and Teh, 2019; Lai, 2019; Liu, T. and Woo, 2018).

The trade war affected the capital markets, which may impact the firms' performances. Therefore, the news of the trade war declaration may have information advantages for the insiders if they have that material inside news. Generally, corporate insiders have information advantages over outsiders when

they trade their firm's stocks (White, 2020). They may exploit their monopolistic access to non-public information for personal gains (Smith, 1941). Notably, insiders' trade using inside information for greater earnings address the desirability of insider trading. This desirability may create a conflict of interest between the manager and the shareholder. Significantly, the agency theory of insider trading emphasizes the effect of insider trading on the corporate agency problem, which analyses the manager-shareholder conflict of interest (Jensen, M.C. and Meckling, 1976). This theory explains whether insider trading worsens or ameliorates this conflict. If insider trading decreases (increases) the divergence between the managers' and shareholders' interests, the agency cost decreases (increases). Importantly, a few proponents of law and economics on unregulated insider trading state that insider trading increases the manager-shareholder conflict of interest.

Insiders can profit from insider trading due to asymmetric information among insiders and outsiders. In detail, an insider can sell the firm's shares for more than the true value of the shares (Manove, 1989). In addition, uncertainty has a huge effect on the stock market and produces risks for the outcome of investments (Bloom et al., 2007). For example, the stock market investors in Greece lost their gains when the Greece prime minister announced a referendum after the announcement of European politicians to cut the debt in half in October 2011. However, the stock price rose after the announcement of Greece politicians to stand against that initiative. These uncertainties seem to destroy or create millions of dollars for investors. Policy uncertainty is not only common in Europe but also common in the US economy. The uncertainty makes shocks associated with the cost of the likely new policies. These shocks create the rumours in the stock markets, which leads the investors to revise their decisions on investment with the changing government policies. Investors want to offset their potential losses from the uncertainty of future decisions. This uncertainty creates asymmetric information in the market (Nagar et al., 2019). Stock market investors use this information opportunistically as a key earnings indicator (Verrecchia, 2001). The market reactions are larger when the uncertainty is higher (Pan et al., 2015).

Significantly, policy uncertainty is associated positively with the frequency and volume of insider trades. However, insider trading is negatively correlated with future firm performance during high

economic policy uncertainty. In addition, the high economic uncertainty deteriorates the information environment in the market (Nagar et al., 2019). Significantly, this uncertainty increases the information advantage for insiders and insider trading (Li, X., 2020). This advantage comes from material inside information. Material inside information is more valuable when the market is deficient in the information environment (Aboody and Lev, 2000). In a deficient market, the information gap among insiders is more during high uncertainty periods, and insiders benefit from this information advantage by trading opportunistically. In addition, insiders reduce their risk of loss by applying their private information to the stock market during high economic policy uncertainty. The profitability from insider trading is significantly higher in firms with less information disclosure. Dissimilar to recent studies by Yung and Root (2019); Phan et al. (2019); Nguyen and Phan (2017); Gulen and Ion (2016) on the economic policy uncertainty index who studied the 1986-2015 period, we consider the period of the trade war between the US and China in 2018 to measure the economic uncertainty.

The trade war declaration increases information asymmetry in financial markets (e.g., (El Ghoul et al., 2022)) in the US from the possibility of a negative effect on stock prices. The investors suffer from this sudden negative change in stock prices. Consequently, the insiders may also suffer from that declaration. However, they can use this information opportunistically to earn more returns if they have material non-public information on the trade war declaration. Notably, opportunistic insiders are in an advantageous position to earn more returns than others because they are more informed on confidential information before it is available to others.

6.2.2 Opportunistic Insider Trading

Insiders opportunistically sell their shares after prevailing bad information (Lee, E. and Piqueira, 2019), increasing local policy risk (Akbulut and Ucar, 2023; Antia et al., 2013; Bradley et al., 2016; Kim, C.F. et al., 2012), asymmetry information (Gider and Westheide, 2016), exploiting negative private information (Agrawal and Cooper, 2015; Jagolinzer, 2009; Muller et al., 2012) and weak corporate governance (Liu, X. et al., 2023).

Opportunism comes from the opportunistic behaviour of the insiders who are seeking for self benefits (Baumol, 1986). Similarly, opportunistic insiders may seek an event to sell their firms' stocks. Adverse circumstances may arise from macroeconomic events such as the trade war declaration. The trade war declaration by former US president Donald Trump with another economic super giant, China, was a major exogenous event in the USA in 2018. It created uncertainty in the US economy about their manufacturing and trading with China. That event largely impacted the US capital markets and firms' performances. Basically, it was a political conflict with China. Both countries wanted a political win over each other. During that exogenous event, opportunistic insiders may seek the opportunity to sell their firms' stocks using the prior bad news (trade war declaration). Specifically, opportunistic insiders may have more scope to exploit the information advantage for greater returns from their opportunistic selling.

Opportunistic insiders are non-routine traders because they do not participate in seasonal trading. These insiders may have a piece of important information regarding the declaration of the trade war, the impact of this war on the stock market, and firm performance before available this information is to routine insiders, and that information can facilitate them to behave opportunistically; informed trading to earn more future returns (e.g., (Jagolinzer et al., 2020; Ali and Hirshleifer, 2017; Cohen et al., 2012)). This earning possibility increases due to exogenous events, such as the financial crisis (e.g., (Jagolinzer et al., 2020; Cziraki, 2018)) and trade war. Opportunistic insiders can take advantage of information during a trade war because regular or routine insiders are more distracted at that time. Generally, routine insiders may trade for a piece of reasons such as liquidity demand or diversification reasons (e.g., they sell their shares to fulfil their liquidity needs (Cohen et al., 2012)) which signals that the routine insider is not trading on information (e.g., Drummond David of Alphabet Inc).

Opportunistic sellers (insiders) may behave opportunistically during the trade war. They may earn more returns than the routine sellers during the same period of the trade war since opportunistic sellers trade to exploit their information advantages (e.g., (Cohen et al., 2012; Ali and Hirshleifer, 2017)). For example, the CEO, Greg Becker, of Silicon Valley Bank (SVB) sold $3.60 million worth of shares on 27 February 2023, just days before disclosed a large loss that triggered its collapse (Frank, 2023). In

this chapter, it is considered that opportunistic sellers are more opportunistic than routine sellers because opportunistic sellers have more chances to observe the firm's future before holding the shares. Opportunistic sellers may generate higher returns than routine sellers during the trade war.

According to game theory, opportunism is the behaviour of seeking benefits from asymmetric information where people have unequal access to relevant information. As a result, people who "do know" can take advantage of those who "do not know". As we mentioned earlier, opportunistic insiders sold their stocks using their prior private information. In this study, we seek the informativeness of opportunistic sales based on opportunistic sellers' predictive ability for future performance during the trade war. They may get non-public information about the declaration of the trade war from their different interpersonal connections, such as educational backgrounds and employment records. Interpersonal ties are known as social or political connections. The interpersonal connections may help the opportunistic sellers to be more informative during the trade war than during other periods.

6.2.3 Political Connection and Insider Trading

According to Peng et al. (2017), political connection means the close relationship between firms and government officials, politicians, and political parties. Therefore, following prior research (e.g. Duchin and Sosyura (2012); Jagolinzer et al. (2020); Akin et al. (2019)), we consider the political connections based on whether any of the directors or at least one of the top-level officers has current or previous work experience at the Federal Reserve, Treasury Department, Congress or House, or bank regulator (e.g. Office of Comptroller of Currency, Office of Thrift Supervision, and Federal Deposit Insurance Corporation). Political networking encourages high-level transparency. You and Du (2012) find that the political ties or good relations between the government and the firm's manager help to gain competitive advantages for the firm. Politicians deliver political benefits to all types of firms (Shleifer and Vishny, 1994). Politically connected firms prioritise government debt (Faccio et al., 2006). In addition, politicians with influential positions could positively affect the banks' efficiency (Carretta et al., 2012).

As mentioned, the trade war was started only for the political win over China. It was a political announcement by the former US president. Therefore, the trade war has a relation with politics or

political connections. Moreover, the relationship with the political people may cause easy access to private information about the government's future announcements. This information advantage may influence the sellers to exploit the information advantages opportunistically. Political connection is more likely influential in insider trading when government plays an active role in the economy during a trade war or financial crisis. According to Jagolinzer et al. (2020), politically connected insiders had a significant information advantage during the financial crisis in insider trading – opportunistic behaviour. Moreover, during the financial crisis in 2008, the politically connected corporate insiders engaged in abnormal share trading before publicly announcing the corporate information, creating a vulnerability in the stock market (Jagolinzer et al., 2020). Bank insiders also sold many shares just before starting the financial crisis in 2008 (Cziraki, 2018). Green et al. (2020); Crudele (2020) report that a few US senators (e.g. Richard Burr of North Carolina and Dianne Feinstein of California) sold their holding shares significantly after a specific secret briefing on COVID-19 updates by the government-authorised committee. Moreover, the CEO, Greg Becker, of Silicon Valley Bank (SVB) sold $3.60 million worth of shares on 27 February 2023, just days before disclosed a large loss that triggered its collapse (Frank, 2023). Following prior records, we examine whether political connections facilitate the sellers more in the US in informed trading - opportunistic behaviour.

6.2.4 Social Connection and Insider Trading

Following the graph theory (e.g., Bonacich (1972); Freeman (1977)), we use network centrality to measure the individual positions in the social network, to get access to material non-public information, and to influence behaviour opportunistically. We calculate the insiders' network centrality (social connections) and estimate the impact of social connections on insider trading. Insiders' connections with well-networked insiders would be better positioned to obtain non-public information (Burt, 1997; Nahapiet and Ghoshal, 1998). Ahern (2017) finds that insider information generally moves through strong social bonds such as family, friends, and geographical preference, making illegal insider trading.

We consider network centrality as a social connection where nodes and links form the network, and nodes (individuals) form links to other nodes (individuals) (Jackson, 2008). The position of the nodes indicates the power when individuals link to more individuals, are close to all other individuals and are

linked to other individuals (Padgett and Ansell, 1993). The network's power helps individuals be better positioned for information access because it makes it possible to reach other individuals more efficiently (El-Khatib et al., 2015).

Four common centralities measure the network centrality: degree, closeness, betweenness, and eigenvector centrality (Bonacich, 1972; Freeman, 1977). However, only degree and eigenvector centralities are frequently used in social science network studies (El-Khatib et al., 2021). Nevertheless, this chapter considers degree (size), closeness (fast) and eigenvector (quality) centrality as network centrality to measure social connections (Afzali et al., 2021). According to El-Khatib et al. (2015), degree is the number of direct links an individual has with others in a network. More links with individuals indicate access to more information. Closeness is the inverse of farness, indicating the (shortest) distance between an individual to other individuals in a network. It shows how efficiently an individual can get information from others in a network. Finally, the eigenvector measures the importance of an individual in a network. It accounts for the extension of individual connection with other highly connected individuals.

In this chapter, we study the effect of insiders' social connections (network centralities) on their trading (sales). The relationships with other insiders have a chance to obtain private information to participate in opportunistic trading (sales). Confidential information may facilitate to behave opportunistically. Notably, more earning from opportunistic sales depends not only on the private information of own firms but also on information about the industry or competitors or any government declaration like the trade war announcement in 2018.

The trade war announcement created economic uncertainty in the US about their manufacturing and trading with China. That event largely impacted the US capital markets and firms' performances. Basically, it was a political conflict with China. Both countries wanted a political win over each other. During that exogenous event, opportunistic insiders may seek the opportunity to sell their firms' stocks using the prior bad news (trade war declaration) to earn more returns. Significantly, insiders' interpersonal (social) connections may help them access private information regarding the trade war announcement and make them opportunistic.

Since, opportunistic people always seek their own benefits by using information opportunistically because they have prior access to non-public information regarding the firm or government's announcement. In this study, we seek the informativeness of opportunistic sales based on opportunistic sellers' predictive ability for future performance during the trade war. The socially connected opportunistic insiders have additional access to the government declaration of trade war before going available to the routine insiders and others. The socially connected insiders' information is stronger because they get this information through their reliable current and previous connections through educational backgrounds and employment records. This reliable information helps to predict the movement of stock prices accurately. This reliable information is quicker, and this quick information helps socially connected opportunistic sellers to make a quick selling decision for their stocks before decreasing the prices in the market. Accordingly, socially connected opportunistic sellers have more opportunities to earn more returns from selling firms' stocks based on advanced and reliable information. These discussions lead to the following hypothesis:

Hypothesis 1: Socially connected opportunistic sellers earn more returns than the socially connected routine sellers during the trade war.

Hypothesis 1 implies that the socially connected opportunistic sellers earn more returns than the socially connected routine sellers during the trade war period, with other things remaining the same. To test the hypothesis, we start our analysis with the event studies for the time windows (0 10, 0 20 and -30 30) surrounding the trade war announcement date. For baseline results, we use cross-sectional regression with fixed effects. In addition, we use the difference-in-difference specification for socially connected opportunistic sellers separately to support the baseline regression results. Moreover, our alternative measurements, robustness tests and instrumental variable-2SLS approaches support our baseline results and increase the robustness of our findings.

In addition, we next consider the political connection to measure the benefits of opportunistic sellers during the trade war and compare it with the social connections. As we know, the trade war was started only for a political win over China. Subsequently, there is a possibility that politically connected people

had prior material non-public information regarding the trade war declaration. Thus, the politically connected opportunistic or routine sellers may utilize prior non-public information to sell their shares opportunistically during that time. Although, we define the political connections by considering the employment records of insiders only in the Fed, OCC, OTS, FDIC, congress and Treasury. Therefore, there is a chance to behave opportunistically to exploit their close connection with US governmental authority or political people. On the other hand, we define the social connection of insiders by all current and previous employment records and educational backgrounds. Therefore, political connections belong to employment records and are a part of social connections. The social connection is stronger than the political connection because of broader consideration in defining the social connection of insiders. Therefore, there is a possibility that socially connected opportunistic sellers earn higher returns than politically connected opportunistic sellers during the trade war period. We then test whether socially connected opportunistic sellers are more beneficial and truly informative than politically connected opportunistic and routine sellers. To examine how these attributes relate to the informativeness of opportunistic sales, we estimate the cross-section regression form to assess how the socially connected opportunistic sellers behave opportunistically – informed selling – during the trade war.

These discussions propose the following hypothesis:

Hypothesis 2: The socially connected opportunistic sellers earn more returns than the politically connected opportunistic sellers during the trade war period.

Hypothesis 2 implies that the socially connected opportunistic sellers earn more returns than the politically connected opportunistic sellers during the trade war period, other things remaining the same.

Since, social connection is consisted of employment records and education backgrounds of the insiders. Therefore, the socially connected opportunistic insiders may have additional access to the government's declaration of trade war before going available to the routine insiders and others. Specifically, the socially connected sellers have stronger connections because they may get the material non-public information through their reliable personal links. The reliable information helps to predict the firm's and stock markets' performances. Additionally, the reliable information may insist the insiders to

behave opportunistically. On the other hand, opportunistic insiders usually have opportunistic behaviour and social connections may make them more confident to participate in informed selling-opportunistically. To test the hypothesis, we use cross-sectional regression with month-fixed effects. The month-fixed effects control the change in market conditions, which affect all firms in a given period. This approach controls the possibility that the market conditions differentially affect the firms. Month fixed effect considers the period indicator variables of the trade war period. We do not estimate the firm fixed-effects model, given that a few insiders trade in the stock of more than one firm (Goergen et al., 2019).

6.3 Data and Method

Section 6.3 intends to lead the readers from the related literature to research data and methods used for the investigation in this chapter. The research data of this empirical study show insider (sellers) trades (sales) of all US firms, social and political connections of insiders and firm-level stock and financial data from 22 July 2017 to 21 January 2019, inclusive. Specifically, the first empirical study focuses on the political connections and insider trades during the trade war between US and China. The second empirical study focuses on opportunistic insider trades during the same period. Subsequent to research data, methods intended to provide the overall results of the research question "How do social connections influence the opportunistic sellers in informed trading – opportunistic behaviour during the trade war?" Similarly to the previous chapters, this chapter also intends to provide data management or to clean for getting the final dataset for applying the empirical models.

6.3.1 Data Sources and Sample Selection

This section focuses on the data sources and appropriate steps supporting the final samples. Since this study focuses on insider trading, e.g. social and political connections of insiders of US firms during the trade war of 2018, this section is divided and discussed into three sub-sections.

6.3.1.1 Insider trading

As mentioned in the earlier chapters, the trade war between USA and China started on 22 January 2018 when former US President Donald Trump announced tariffs on imported goods such as solar panels and washing machines (section 201). Following the previous chapters, this chapter includes insider

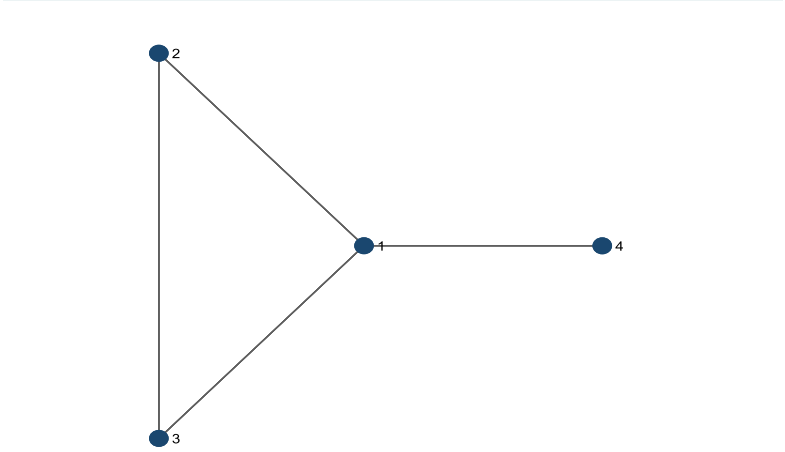
trading between 22 July 2017 to 21 January 2019, inclusive. This range provides a balanced six-month window before, during and after the trade war period. For this chapter, we collect the insider trading data from the Thomson/Refinitiv (Table 1 from insider data) database. This database contains all information on insiders' trades in their company's share. Consistent with a prior study (Jagolinzer et al., 2020; Cohen et al., 2012), this empirical analysis is restricted to open market transactions (purchases and sales) of common stocks and ignores option exercises, grants, and gifts. This study looks closely at daily transactions aggregated monthly by each insider of 2,061 US firms as consistent with Jagolinzer et al. (2020), given the monthly transactions. It refers to the six months from 22 July 2017 to 21 January 2018 as the 'pre-trade war period', from 22 January 2018 to 21 July 2018 as the 'trade war period' and from 22 July 2018 to 21 January 2019 as the 'post-trade war period'. Although we classify the trade war period into two periods, from 22 January 2018 to 21 April 2018 as the 'first three months of trade war (First-3M) period', from 22 April 2018 to 21 July 2018 as the 'last three months of trade war (Last-3M) period'. There are 64,498 daily insider transactions (sales) in the total time horizon. After collapsing from daily transactions to monthly transactions (sales), the number of transactions was reduced to 18,608.

6.3.1.2 Social Connections of Sellers

In this chapter, we consider the educational background and employment records (prior and current) of all employees of all US firms for defining social connections. We collect the education background and employment records data from the BoardEx database (Afzali et al., 2021) by considering the yearly employment history in the listed firms. We utilise the network within the US. Additionally, we consider the overlaps in education and employment of employees to build the entire network (e.g., Jackson (2008)). We consider the employment records and educational backgrounds, which match the records and backgrounds of insiders who participated in insider trading during the trade war period. Consistent with prior literature on network centrality in finance, we assume that the ties between two people last until their deaths once established. As a result, the relationship grows over time. Considering all facts, we finally found 1,20,000 individual connections via millions of links during the trade war period.

Generally, four different centralities are considered to measure the network centrality: degree, closeness, betweenness, and eigenvector centrality (Bonacich, 1972; Freeman, 1977). However, only degree and eigenvector centralities are frequently used in social science network studies (El-Khatib et al., 2021). Nevertheless, we consider degree (size), closeness (fast), and eigenvector (quality) centrality in our research (e.g., Afzali et al., (2021)) because these centralities are more relevant to transmit the quality information from one to another quickly.

Below is a simple network we developed using Stata software with different numbers as node ids (1, 2, 3 and 4).



There are several nodes (1 to 4) in this network. A couple of nodes are more potent than others. We can easily identify which node is the most powerful (1) because it has the most number of links with other nodes. Indeed, 1 is powerful. The number of links that a node (e.g., the degree of 1 is 3 because 1 has links with 2, 3 and 4) can be counted or calculated. It is a type of centrality called Degree centrality.

Following El-Khatib et al. (2015),

$$S_D = \sum_{j \neq D} x_{Dj}$$

where x_{Dj} is 1 for the link between D and j.

There is another centrality called closeness (how fast information is spread out from a starting node) which is considered in this study. Here, 1 has the highest closeness to other nodes (2, 3 and 4). It means that it takes the lowest time to spread the information to other nodes.

$$S_C = \frac{n-1}{\sum_{C \neq j \in N} d_{Cj}} X \frac{n}{N}$$

where d_{Cj} is the shortest distance between nodes *C* and *j*, n is the size of the component *C* belongs to, and N is the size of the yearly network.

Finally, we consider Eigenvector centrality as the primary centrality to measure the social connections in this study. Following Goergen et al. (2019), "Eigenvector centrality of vertex v ($S_E(a)$) is equal to the sum of all adjacent vertices' eigenvector centrality scores":

$$S_E(a) = \frac{1}{\lambda} \sum_{j=1}^{1} B_{a,j} S_E(j)$$

Eigenvector is considered as a superior centrality over other centralities because eigenvector considers not only how many vertices are linked to the target vertex (Degree), but also considers the importance of the linked vertices (degree of all the linked vertices) within the network. High eigenvector scores indicate connections with more vertices. From the above formula, matrix B is an adjacent matrix capturing whether vertex j is adjacent to target vertex a. Following Goergen et al. (2019), in our research, we consider eigenvector centrality as the primary centrality to measure the social connection of insiders and other centralities (degree and closeness) as alternative measurements.

6.3.1.3 Political Connections of Sellers

Following prior research (e.g. Duchin and Sosyura (2012); Jagolinzer et al. (2020); Akin et al. (2019)), we define the insider's political connections if they have current or previous work experience at Federal Reserve, Treasury Department, Congress or house, or bank regulator (e.g. Office of Comptroller of Currency, Office of Thrift Supervision, and Federal Deposit Insurance Corporation). Connections are defined as direct when the director, officer or CEO has such experience and all other directors, officers, and CEOs are classified as indirectly connected.

The work experience of the CEO or directors or officers is determined by analysing each person's biographical data as provided in the company's proxy statement. We have manually collected such experience data from the official website of the US Securities and Exchange Commission (EDGAR |

Company Filings) using the CIK number of an individual company. We click on view filings and select proxy statements from the dropdown menu of Exclude insider transactions. Then we collect such experience data from the proxy statements.

6.3.1.4 Security and Financials

We collect the holding period return data from CRSP (WRDS) and accounting data from Compustat – Capital IQ (WRDS). To appear in the sample, we consider month ending holding period return and quarter (fiscal) ending firm-level data (e.g., BM by common equity and market value (ceqq/mkvaltq)).

We merge the firm-level dataset with the insider trading dataset (including opportunistic and routine insider (trades) data) by tranmonth (transaction on a month basis) and CUSIP. Similar to the previous chapters, we drop the observations that have missing values in insider trading data.

6.3.1.5 Firms doing business with China

We manually collect the list of firms from different online sources which have or do not have direct business connections with China. We confirm the business connection with China by considering exporting or importing or both, manufacturing or servicing or any business link with the USA. Afterwards, we divide the firms with and without direct business connections with China to test the robustness of baseline results. We then check the significance of the social connections of opportunistic sellers of directly connected firms over holding period returns. We use dummy variable 1 for the firms which have direct business connections with China and 0 otherwise. We drop the observations which have missing values in existing data.

At the final stage of the data cleaning process, we identify and drop the duplicate observations by CUSIP, individual id and transaction month and type. The continuous variables are winsorised at the 1st and 99th percentiles, and all the insider trades (aggregated by month) of $100 million or more are excluded from this analysis. We exclude all the missing values' observations of all-important variables. After applying all the data cleaning techniques, the final sample for cross-sectional tests consists of trades at 2,061 companies from 22 July 2017 to 21 January 2019, for a total of 18,608 insider months.

6.3.2 Variable definitions

In this section, we focus on defining variables in the sample. The dataset includes one dependent variable, two independent, two control, and one instrumental variable.

Table 6.1: Definitions of dependent, independent, control and other variables

Variable	Abbreviation	Definition and construction	Data source
One-month Holding Period Returns(HPR_{t+1})	One-month Buy and Hold Returns	Holding period returns of firms on a monthly basis (one-month ahead returns) (e.g., Jagolinzer et al. (2020); Harvison (2019); Akin et al. (2019); Cohen et al. (2012))	CRSP (WRDS)
Opportunistic	Opportunistic Seller (Sales)	Following Ali and Hirshleifer (2017); Cohen et al. (2012), $opportunistic_t$ is the indicator variable equal to 1 if the shares sold amount by the opportunistic seller (insider) i in firm j and month t, 0 otherwise.	Thomson/Refinitiv (WRDS) database
Routine	Routine Seller (Sales)	Following Ali and Hirshleifer (2017); Cohen et al. (2012), $routine_t$ is the indicator variable equal to 1 if the shares sold amount by the routine seller (insider) i in firm j and month t, 0 otherwise.	Thomson/Refinitiv (WRDS) database
BM	Book-to-Market	The book-to-market ratio at the end of quarter *t* where book value is from the prior quarter-end. Following Jagolinzer et al. (2020); Harvison (2019); Akin et al. (2019); Cziraki (2018); Cohen et al. (2012), we consider the book-to-market value as a control variable to control the effect of market value on holding period returns .	Compustat – Capital IQ (WRDS)
Past-month Holding period returns (HPR_{t-1})	Buy and Hold Returns	Holding period returns of firms on a monthly basis (one-month past returns) (e.g., Jagolinzer et al. (2020); Harvison	CRSP (WRDS)

		(2019); Akin et al. (2019); Cohen et al. (2012))	
Selling Ratio	Sell ratio	The number of shares sold by insider *i* in the firm *j* and month *t*, scaled by the total share volume (number of shares purchased plus the number of shares sold) of insider *i* in firm *j* and month *t* (e.g., (Jagolinzer et al., 2020; Piotroski and Roulstone, 2005; Lakonishok and Lee, 2001)).	Thomson/Refinitiv (WRDS) database
Eigenvector	Social Connections	Eigenvector centrality of vertex v ($S_E(a)$) is equal to the sum of all adjacent vertices' eigenvector centrality scores. Eigenvector considers not only how many vertices are linked to target vertex (Degree), but also considers the importance of the linked vertices (degree of all the linked vertices) within the network.	BoardEx database
Political	Political Connections	Following Jagolinzer et al. (2020); Akin et al. (2019); Harvison (2019), this variable defines the political connection (direct or indirect) of insiders and measures a dummy variable taking value 1 if an insider has the political connection, and 0 otherwise. This variable provides the scenario of informed trading- opportunistic behaviour by politically connected insiders.	Proxy Statement

In summary, we consider HPR_{t+1} as a dependent variable, Opportunistic and Routine as independent variables, and BM and PastMonRet as control variables to run the regressions to find the answer to the research question. The selling ratio is used as an instrumental variable in the 2SLS approach to mitigate the endogeneity concerns from measurement errors and omitted variable bias.

6.3.3 Method

In this chapter, we first use the event study methodology to examine the stock performance of socially connected opportunistic and routine sellers around the trade war announcement (day 0). We find the

Cumulative Abnormal Return (CAR) from the Event Study by WRDS. We consider the one-day holding period (future) returns to calculate the Abnormal Return (AR) and CAR for stocks. Hence, we use the Market-Adjusted Model as a Risk Model to calculate CAR.

$$\begin{aligned} \mathrm{CAR}_{t1,t2} = \alpha + \delta_1 \mathrm{Opportunistic}_t * \mathrm{Eigenvector}_t + \delta_2 \mathrm{Routine}_t * \mathrm{Eigenvector}_t \\ + \delta_3 \mathrm{Opportunistic}_t + \delta_4 \mathrm{Routine}_t + \vartheta \mathrm{Controls}_t + \text{Month Effects}_t + \varepsilon_{t+1} \end{aligned} \quad (1)$$

In this specification, δ_1 and δ_2 measure the incremental informativeness of sellers during the different event windows of trade war periods. Where CAR_{t_1,t_2} is Cumulative Abnormal Return for firm i over days (t_1, t_2), $\mathrm{Opportunistic}_t$ is the indicator variable equal to 1 if the shares sold amount by opportunistic seller (insider) i in firm j and month t, $\mathrm{Routine}_t$ is an indicator variable equal to 1 if the shares sold amount by routine seller (insider) i in firm j and month t (insider trades are aggregated to the insider-month level) and $\mathrm{Controls}_t$ is a vector of control variables that includes firm book-to-market ratio (BM_t), and returns over the past month ($\mathrm{PastMoRet}_t$). $\mathrm{Eigenvector}_t$ is the network centrality used to indicate insiders' social connections. Month Effects is a vector of month-fixed effects and ε_{t+1} indicates the error terms. In this specification, we estimate δ_3 and δ_4 by using cross-sectional analysis. They represent the parameters of opportunistic and routine for finding the association with cumulative abnormal returns after controlling for $\mathrm{PastMoRet}_t$ and BM_t. Throughout this analysis, we base inferences on robust standard errors clustered by firm. Clustering by firm allows for both arbitrary time-series correlation within a firm and arbitrary cross-sectional correlation across insiders within a given firm.

Following the prior studies (e.g., (Jagolinzer et al., 2020; Akin et al., 2019; Cohen et al., 2012)), we estimate the cross-section regression form to assess how the socially connected sellers (insiders) behave opportunistically – informed trading – during the trade war.

$$\begin{aligned} HPR_{t+1} = \alpha + \delta_1 \mathrm{Opportunistic}_t * \mathrm{Eigenvector}_t + \delta_2 \mathrm{Routine}_t * \mathrm{Eigenvector}_t \\ + \delta_3 \mathrm{Opportunistic}_t + \delta_4 \mathrm{Routine}_t + \vartheta \mathrm{Controls}_t + \text{Month Effects}_t + \varepsilon_{t+1} \end{aligned} \quad (2)$$

where HPR_{t+s} is holding period returns for the next month (s=1), $\mathrm{opportunistic}_t$ is the indicator variable equal to 1 if the shares sold amount by opportunistic seller (insider) i in firm j and month t, $\mathrm{routine}_t$ is an indicator variable equal to 1 if the shares sold amount by routine seller (insider) i in firm j and month

t (insider trades are aggregated to the insider-month level) and $Controls_t$ is a vector of control variables that includes firm book-to-market ratio (BM_t), and returns over the past month ($PastMoRet_t$). In this specification, δ_1 and δ_2 measure the incremental informativeness of sellers (sales) during the different periods of the trade war. $Eigenvector_t$ is the network centrality used to indicate insiders' social connections. In this specification, we estimate δ_3 and δ_4 by using cross-sectional analysis. They represent the parameters of opportunistic and routine for finding the association with holding period returns after controlling for $PastMoRet_t$ and BM_t. Throughout this analysis, we base inferences on robust standard errors clustered by firm. Clustering by firm allows for both arbitrary time-series correlation within a firm and arbitrary cross-sectional correlation across insiders within a given firm. Month Effects is a vector of month-fixed effects and ε_{t+1} indicates the error terms. The month-fixed effects control the change in market conditions, which affect all firms in a given period. We consider the month fixed effect separately as a different model to allow the time period effects to differ between the models. This approach controls the possibility that the market conditions differentially affect the firms for socially connected opportunistic and routine sellers. We do not use firm fixed effects in this equation, given that a few insiders trade in the stock of more than one firm (Goergen et al., 2019).

To examine whether the socially connected opportunistic sellers generate higher holding period returns than socially connected routine sellers during the trade war compared to the Pre-trade war period, we consider four months before and three months after the trade war announcement. We include the indicator variables for the Pre-trade and trade war period (post) and interact these variables with Opportunistic $Seller_t$.

$$HPR_{t_1,t_2} = \alpha + \delta_1\, Seller_t + \delta_2 \;\; opportunistic_t * \; Post_t + \beta_1\, Opportunistic_t + \beta_2\, Post_t \; + \vartheta\, Controls_t + Firm\, Effects + Month\, Effects_t + \varepsilon_{t+1} \quad (3)$$

where HPR_{t_1,t_2} is Holding Period Returns for firm i over days (t_1, t_2), $Seller_t$ is an indicator variable equal to 1 if the shares sold amount by socially connected opportunistic seller (insider) i in firm j and month t, $Opportunistic_t$ is the indicator variable equal to 1 if the shares sold amount by opportunistic seller (insider) i in firm j and month t, $Post_t$ is the indicator variable for the trade war period, and

$Controls_t$ is a vector of control variables that includes book-to-market ratio (BM_t), and the past month returns ($PastMoRet_t$). In this specification, δ_2 represents the difference in holding period returns between socially connected opportunistic and routine sellers after controlling for BM, and $PastMoRet_t$. δ_2 measures the incremental informativeness of socially connected opportunistic sellers by comparing the pre and post-trade war periods. $\beta_1 \; and \; \beta_2$ are the parameters to be estimated $Opportunistic_t$ and $Post_t$. We use the time and firm fixed effects in difference-in-difference approaches and account for the potential heterogeneity concerns (unobservable effects). Hence, firm fixed effects control any time-invariant and cross-sectional differences between firms for socially connected opportunistic and routine sellers. These fixed effects help to mitigate the concerns of omitted firm-level characteristics, which might be associated with future performance, trading activity, identifying opportunistic sellers and social connections. The month-fixed effects control the change in market conditions, which affect all firms in a given period. We consider the month fixed effect separately as a different model to allow the period effects to differ between the models. This approach controls the possibility that the market conditions differentially affect the firms for socially connected opportunistic and routine sellers.

Throughout the analysis, we draw inferences on robust standard errors clustered by firm. Clustering by firm allows for both arbitrary time-series correlation within a firm and arbitrary cross-sectional correlation across insiders within a given firm. The cross-sectional regressions with firm and month fixed-effect (e.g., (Jagolinzer et al., 2020; Akin et al., 2019; Cziraki, 2018; Cohen et al., 2012)) are used in the models and difference-in-differences approach (Alldredge and Cicero, 2015) are considered to support the baseline findings, and fixed effects (e.g., (Jagolinzer et al., 2020; Akin et al., 2019; Cziraki, 2018; Cohen et al., 2012)) are used to address the heterogeneity concerns. Additionally, endogeneity concerns may arise from the errors in calculating the opportunistic and routine (explanatory variables) and omitted variable biases, which may correlate with the error term (ε_{t+1}). Hence, the instrumental variable approach (2SLS) (El Ghoul et al., 2022; Rahman et al., 2021) helps to mitigate the endogeneity concerns. However, it requires testing whether the opportunistic seller (explanatory variable) is endogenous or not by Wu-Hausman and Durbin (score) chi^2 p values. Moreover, we need to choose an instrumental variable that should not correlate with the error term (ε_{t+1}) but is a good indicator of the

opportunistic seller. It means that the instrumental variable has a sufficient correlation with opportunistic seller (the instrumental variable explains the endogenous variable very well) but is uncorrelated with the error term (ε_{t+1}). Therefore, it demands a few tests to find a valid and strong instrument.

6.4 Summary Statistics and Findings

6.4.1 Summary Statistics and Results

Table 6.2 presents the summary statistics. This table presents the firm and insider-level characteristics, social and political connections, and trade-level characteristics. Before analysing this table, we explain the process to indicate the opportunistic and routine insiders (trades).

Importantly, we require the insiders to make at least one trade in each of the three preceding years to define their trades as routine traders. The insiders are defined as routine traders who place a trade in the same calendar month for at least three consecutive years. We experiment with the back windows (past) trading in the same calendar month in the past three, four and five years trading to identify the routine or opportunistic insiders and find significant results for all windows. Although, we present the results using a three-year back window throughout this study. On the other hand, insiders are defined as opportunists who cannot be detected an obvious pattern in the past timing of their trades. Thus, we define all insiders as either routine or opportunistic traders at the beginning of each calendar year based on historical trades and then look to see how insiders trade from that point onward. Based on all subsequent trades, we classify each insider as either routine or opportunistic and place them into one of two buckets: 1) routine sellers (sales made by routine insiders) and 2) opportunistic sellers (sales made by opportunistic insiders). We present these approaches more specifically in Figure A.6.1.

Notably, this simple algorithm to identify insiders' routine (opportunistic) sales is clearly a noise proxy for actual routine (opportunistic) trading; our strategy will not perfectly and correctly classify each insider sale. However, the essence of our approach is that, on average, sales made for information reasons are less likely to be regular in their timing, and sales made for liquidity and diversification reasons (Cohen et al., 2012) are more likely to be regular in their timing (e.g., Drummond David of Alphabet Inc).

Then, we move on to analysing Table 6.2. Panel A of Table 6.2 presents the firm & insider-level characteristics such as one-month holding period returns (HPR_{t+1}), routine (insiders), opportunistic (insiders), past-month returns ($PastMoRet_{t-1}$) and BM. It shows that the mean HPR_{t+1} (one-month holding period returns) of firms in the sample is approximately 0.022, the mean of routine is 0.0142, the mean of opportunistic is 0.656, the mean of BM is 0.393 and the mean of the past month's returns ($PastMoRet_{t-1}$) is 0.02. Panel A also presents that the standard deviation of the one-month holding period returns (HPR_{t+1}) in the sample is 0.115, routine is 0.200, opportunistic is 0.475, BM of the firm is 0.546, and past-month returns ($PastMoRet_{t-1}$) is 0.122. It shows that the sample's median of HPRt+1 (one-month holding period returns) is approximately 0.016, BM is 0.309, and $PastMoRet_{t-1}$ is 0.017. The maximum values of HPR_{t+1}, BM, and $PastMoRet_{t-1}$ are 2.66, 12.823 and 2.577, respectively.

Panel B of Table 6.2 presents the social (network centralities) connections, which are defined by eigenvector, degree and closeness. It shows that the mean eigenvector of insiders in the sample is approximately 0.046, the mean of degree is 2.203, and the mean of closeness is 0.959. It also presents that the standard deviation of the eigenvector in the sample is 0.008, degree is 0.752, and closeness is 0.130. The maximum values of eigenvector, degree, and closeness are 0.077, 6 and 1.001, respectively. Panel B also presents the political connections with mean (0.148), standard deviation (0.355) and maximum value (1).

Panel C of Table 6.2 presents the trade-level characteristics such as routine and opportunistic buy (sell), and the number of unique firms and insiders during the trade war. It reports that the opportunistic buy (sell) is $1,111.815 million ($10,995.240 million) during the trade war period. The routine buy (sell) is $31.073 million ($899.984 million) during the trade war period. We find that routine and opportunistic selling is higher than routine and opportunistic buying during the trade war. However, opportunistic sellers were more opportunistic in selling their shares during the trade war because they may have prior news to decline the share prices in the future. Importantly, opportunistic sellers may sell their shares before any bad news becomes public if they have prior non-public information regarding any government's declaration or capital market or firm performances. According to Baumol (1986), opportunistic behaviour indicates opportunism as "self-interest seeking with guile." Similarly,

opportunistic sellers may seek the scope to behave opportunistically to earn more returns by using their non-public bad news regarding the trade war and its negative effects on firms and the capital market (e.g., (Ali and Hirshleifer, 2017)).

Table 6.2: Summary Statistics

This table presents the summary statistics. Panel A presents descriptive statistics for firm & insiders-level characteristics. Panel B presents descriptive statistics for network centralities. Panel C presents descriptive statistics for trade-level characteristics. $HPR_{i,t+1}$ is the one-month holding period (future) returns (buy-and-hold) for firm *i* over days $(t+1)$, Opportunistic is an indicator variable equal to 1 if the shares sold amount by opportunistic insider *i* in firm *j* and Routine is an indicator variable equal to 1 if the shares sold amount by routine insider *i* in firm *j* and month *t* (insider trades are aggregated to the insider-month level). *BM* is the book-to-market ratio at the end of quarter *t*. $PastMoRet_t$ is the return in month *t*-1. Eigenvector, Degree and Closeness are the network centralities for measuring the social connections of opportunistic and routine sellers. Buy (Sell) is the total dollar value of insider purchases (sales) in the respective sample. The number of firms (number of insiders) is the number of unique companies (insiders) in the respective sample.

Panel A: Firm & Insider-Level Characteristics

	N	Mean	Std. Dev.	Max	p25	Median
HPR_{t+1}	24116	0.022	0.115	2.66	-0.03	0.016
Opportunistic	24116	0.656	0.475	1	0	1
Routine	24116	0.042	0.200	1	0	0
$PastMoRet_{t-1}$	24116	0.02	0.122	2.577	-0.035	0.017
BM	24116	0.393	0.546	12.823	0.144	0.309

Panel B: Social (Network Centralities) and Political Connections

	Mean	Std. Dev.	Min	p25	Max
Eigenvector	0.046	0.008	0.023	0.046	0.077
Degree	2.203	0.752	0	2	6
Closeness	0.959	0.130	0.499	0.999	1.001
Political	0.148	0.355	0	0	1

Panel C: Trade-Level Characteristics (Trade War)

	Routine	Opportunistic	Total	Percent
Buy ($ millions)	31.073	1,111.815	1,142.888	9%
Sell ($ millions)	899.984	10,995.240	11,895.224	91%
Total ($ millions)	932.460	12,162.760	13,038.112	100%
Number of Firms		2,061		
Number of Insiders		6,361		

Importantly, we found that the total sales were 91 percent ($11,995.24 million) of the total transactions amount ($13,038.11 million), and buys were only 9 percent during the trade war period. Hence, buys are much smaller amount than sales during that time (six months after starting the war). To consider the significance of a larger amount of insider sales during the trade war, we then focus on insider sales rather than buys for further empirical analysis to find whether opportunistic sellers (sales) behaved opportunistically to earn more returns. To find the greater benefits of opportunistic sellers, we use opportunistic and routine sellers as independent variables and a one-month holding period (future) return as a dependent variable. This chapter examines whether the social connection influences the sellers in informed trading – opportunistic behaviour during the trade war.

However, we then present the correlation matrix (Table 6.3) for the main variables used in the chapter before starting the empirical analysis. We use the correlation matrix to measure the strength and direction of association between two variables. Correlation attempts to find the best-fitted line through the data of two variables. The value range of the correlation from -1 to +1, -1 indicates a perfect negative linear relationship and +1 indicates a perfect positive linear relationship, and 0 indicates no relationship between the two variables.

Table 6.3: Correlation Matrix

This table presents the correlation matrix. $HPR_{i,t+1}$ is the one-month holding period returns (future) for firm *i* over days $(t+1)$. Opportunistic is opportunistic seller if the shares sold amount by opportunistic insider *i* in firm *j* and Routine is routine seller if the shares sold amount by routine insider *i* in firm *j* (insider trades are aggregated to the insider-month level). *BM* is the book-to-market ratio at the end of quarter *t*. *PastMoRet* is the return in month *t*-1.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) HPR_{t+1}	1.000						
(2) Opportunistic	-0.029	1.000					
(3) Routine	0.031	-0.302	1.000				
(4) BM	-0.053	-0.244	-0.042	0.271	0.063	1.000	
(5) $PastMoRet_{t-1}$	-0.023	0.096	0.006	-0.069	-0.009	-0.143	1.000

From the above correlation matrix, HPR_{t+1} (one-month holding period returns) and opportunistic are negatively correlated (-0.029), but routine is positively correlated (0.031). The control variables, such as BM (-0.053) and $PastMoRet_{t-1}$ (past month returns) (-0.023), are negatively correlated with HPR_{t+1} (one-month period holding period returns).

The bivariate correlations between the various control variables range from -0.244 to 0.271. According to Berry et al. (1985), bivariate correlations (not exceeding 0.80) between two independent variables are benchmarked to test the multicollinearity problem in the regression. Hence, each of the bivariate correlations is below that benchmark. Additionally, the Variance Inflation Factors (VIF) values are too low and do not exceed the critical value of 10. VIF of opportunistic, routine, BM and PastMoRet variables are 1.19, 1.12, 1.10 and 1.03, respectively. Accordingly, multicollinearity does not seem to be a problem in the regressions.

Before starting the baseline regression findings, we next use the different event studies to test whether socially connected opportunistic sellers earn higher abnormal returns during the different windows surrounding the announcement date of the trade war of 2018. In the event studies (Table 6.4), we use Cumulative Abnormal Returns (CARs) as the dependent variable and regress it on the interaction

variables (eigenvector and routine and opportunistic sellers) after using control variables. We consider the one-day holding period (future) returns to calculate the CAR for stocks. This table reports the CARs for the three different windows surrounding the announcement date of a trade war (day 0), i.e., 11 (0 10), 21 (0 20) and 60 (-30 30) days, for the socially connected routine and opportunistic sellers.

Table 6.4: Event Studies (Social Connections (Eigenvector))

This table presents results from cross-sectional regressions of the Cumulative Abnormal Returns (CAR) during the trade war. *CAR (0, 10)* indicates the first 11 days of Cumulative Abnormal Returns of insiders (Socially Connected opportunistic and routine sellers) during the trade war, *CAR (0, 20)* indicates the first 21 days of Cumulative Abnormal Returns of insiders (Socially Connected opportunistic and routine sellers) during the trade war and *CAR (-30, 30)* indicates the 60 days of Cumulative Abnormal Returns of insiders (opportunistic and routine sellers) prior and during the trade war. $CAR_{t1, t2}$ is the cumulative abnormal returns for firm *i* over days (t_1, t_2). Opportunistic is an opportunistic seller if the shares sold amount by opportunistic insider *i* in firm *j* and Routine is a routine seller if the shares sold amount by routine insider *i* in firm *j* (insider trades are aggregated to the insider-month level). *BM* is the book-to-market ratio at the end of quarter *t*. $PastMoRet_t$ is the return in month *t*-1. The eigenvector centrality of vertex v ($S_E(a)$) is equal to the sum of all adjacent vertices' eigenvector centrality scores used to define the social connections of opportunistic and routine sellers. *t*-Statistics (two-tailed *p*-values) based on robust standard errors appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

Dependent Variable: Cumulative Abnormal Returns ($CAR_{t1, t2}$)						
	1		2		3	
Variables	(0,10)	(0,10)	(0,20)	(0,20)	(-30,30)	(-30,30)
Opportunistic*Eigenvector	-0.674***	-0.674***	-0.983***	-0.983***	-0.988***	-0.967***
	(0.256)	(0.256)	(0.228)	(0.228)	(0.232)	(0.235)
Routine*Eigenvector	0.639	0.639	1.415	1.415	-0.012	-0.044
	(1.100)	(1.100)	(2.177)	(2.177)	(3.109)	(3.113)
Opportunistic	0.024**	0.024**	0.019*	0.019*	-0.005	-0.006
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Routine	0.002	0.002	-0.111	-0.111	-0.003	0.000
	(0.017)	(0.017)	(0.103)	(0.103)	(0.148)	(0.148)
PastMoret	-0.240***	-0.240***	0.053	0.053	0.095**	0.097**
	(0.068)	(0.068)	(0.063)	(0.063)	(0.042)	(0.043)
BM	0.005	0.005	-0.092***	-0.092***	-0.026***	-0.026***
	(0.015)	(0.015)	(0.013)	(0.013)	(0.006)	(0.006)
Observations	160	160	436	436	1,308	1,308
Day-Effects[11]	No	Yes	No	Yes	No	Yes

Table 6.4 reports results from estimating equation (1). We partition this table into three windows, i.e., (0, 10), (0 20) and (-30, 30). Columns (1) and (2) of CAR (0, 10) present the cross-sectional regression (between-group analysis) for routine and opportunistic sellers. We find that the coefficient of opportunistic*eigenvector (socially connected opportunistic sellers) is negative (-0.674), which is economically and statistically significant (<0.01) after using control variables. The coefficients sign,

[11] We do not estimate a firm fixed-effects model given that a few insiders trade in the stock of more than one firm (Goergen et al., 2019).

and significance levels are the same for with (column 2) and without (column 1) fixed effects models. However, the coefficient of routine*eigenvector (socially connected routine sellers) is positive (0.639) and statistically insignificant. Moreover, the coefficient of socially connected opportunistic sellers is lower than that of socially connected routine sellers (-0.674 < 0.639). We consider the one-day holding period (future) returns to calculate the CAR for stocks. Therefore, the negative coefficient indicates the benefits for socially connected opportunistic sellers because they sold their stocks before going down the stock's price in the capital markets. These findings suggest that socially connected opportunistic sellers earn greater abnormal returns during the trade war, and they are truly informative.

Columns (3) and (4) of CAR (0, 20) present the cross-sectional regression (between-group analysis) for routine and opportunistic sellers. We find that the coefficient of opportunistic*eigenvector (socially connected opportunistic sellers) is negative (-0.983), which is economically and statistically significant (<0.01) after using control variables. The coefficient sign and significance level are the same for with (column 4) and without (column 3) fixed effects models. However, the coefficient of routine*eigenvector (socially connected routine sellers) is positive (1.415) and statistically insignificant. Moreover, the coefficient of socially connected opportunistic sellers is lower than that of socially connected routine sellers (-0.983 < 1.415). These results also suggest that socially connected opportunistic sellers earn greater abnormal returns during the trade war, and they are truly informative.

Columns (5) and (6) of CAR (-30, 30) present the cross-sectional regression (between-group analysis) for routine and opportunistic sellers. We find that the coefficient of opportunistic*eigenvector (socially connected opportunistic sellers) is negative (-0.988 and -0.967), which is economically and statistically significant (<0.01) after using control variables. The coefficients sign and significance level are the same for with (column 6) and without (column 5) fixed effects models. Moreover, the coefficient of routine*eigenvector (socially connected routine sellers) is negative (-0.012 and -0.044) but statistically insignificant. Importantly, the coefficient of socially connected opportunistic sellers is lower than the coefficient of socially connected routine sellers for both models. These results also suggest that socially connected opportunistic sellers earn greater abnormal returns during the trade war, and they are truly informative.

All results suggest that the socially connected opportunistic sellers earn higher abnormal returns (e.g., (El-Khatib et al., 2017)) during the trade war period than the socially connected routine sellers, which are also truly informative. This finding also suggests that socially connected opportunistic sellers had a significant information advantage during the trade war, and they involved in informed selling to exploit that advantage. These findings support the prior literature (e.g., (He and Rui, 2016a; Rogers et al., 2016a; Cohen et al., 2012; Tavakoli et al., 2012; Ravina and Sapienza, 2010; Marin and Olivier, 2008; Fidrmuc, J.P. et al., 2006)).

We next conduct the baseline regressions with different sets of tests that strengthen empirical identification and speak to possible sources of information advantage of socially connected opportunistic sellers during the trade war. Firstly, we examine whether the predictive ability of opportunistic selling activity increases during the trade war. To find the predictability of socially connected opportunistic sellers, we consider Trade war (the first six months of the trade war (22 January 2018 to 21 July 2018)), pre-trade war (six months before trade war) and post-trade war (six months after trade war) periods, and find the results for the socially connected opportunistic and routine sellers.

Table 6.5: Socially Connected Sellers (Social Connections (Eigenvector))

This table presents results from estimating equation (2). $HPR_{i,t+1}$ is the one-month holding period returns (future) for firm *i* over days $(t+1)$, Opportunistic is an opportunistic seller if the shares sold amount by opportunistic insider *i* in firm *j* and Routine is a routine seller if the shares sold amount by routine insider *i* in firm *j* (insider trades are aggregated to the insider-month level). *BM* is the book-to-market ratio at the end of quarter *t*. $PastMoRet_t$ is the return in month *t*-1. The eigenvector centrality of vertex v ($S_E(a)$) is equal to the sum of all adjacent vertices' eigenvector centrality scores used to define the social connections of opportunistic and routine sellers. *t*-Statistics (two-tailed *p*-values) based on robust standard errors appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

Dependent Variable: One-Month Future Returns ($\boldsymbol{HPR_{i,t+1}}$)			
	(1)	(2)	(3)
Variables	Pre-Trade War	Trade War	Post-Trade War
Opportunistic*Eigenvector	-0.216	-0.632**	-0.961
	(0.218)	(0.278)	(0.871)
Routine*Eigenvector	0.134	0.045	-0.920*
	(0.564)	(0.657)	(2.548)
Opportunistic	0.016	0.044***	0.051
	(0.011)	(0.014)	(0.038)
Routine	0.008	0.007	0.769***
	(0.026)	(0.030)	(0.105)
PastMoret	-0.008	0.019	-0.030
	(0.032)	(0.030)	(0.054)
BM	0.006	-0.008	-0.007
	(0.007)	(0.007)	(0.010)
Observations	5,156	3,251	816

Month-Effects	Yes	Yes	Yes

Table 6.5 reports results from estimating equation (2). It presents the cross-sectional regression results by using Ordinary Least Squares regression (OLS) and month-fixed effects. This table presents results when the holding period return is measured at the one-month horizon, with the dependent variable being one-month holding period returns ($HPR_{i,t+1}$) and the independent variables being the opportunistic and routine seller from columns (1) to (3). We use eigenvector centrality for defining the social connections of opportunistic and routine sellers. Following Jagolinzer et al. (2020); Cohen et al. (2012), we consider the BM and PastMoRet as control variables in these regressions. Columns (1) to (3) estimate the results with socially connected sellers. Column (1) estimates the results of the pre-trade war period, column (2) estimates the results of the trade war period and column (3) estimates the results of the post-trade war period.

Column (1) (pre-trade war) presents the cross-sectional regression for routine and opportunistic sellers. We find that the coefficient of opportunistic*eigenvector (socially connected opportunistic sellers) is negative (-0.216), which is not statistically significant after using fixed effects. However, the coefficient of routine*eigenvector (socially connected routine sellers) is positive (0.134) and statistically insignificant. Notably, the coefficients of control variables (PastMoret and BM) are statistically insignificant, which indicates that the determinants do not vary with socially connected opportunistic and routine sellers.

Column (2) (trade war) presents the cross-sectional regression (between-group analysis) for routine and opportunistic sellers with social connections. We find that the coefficient of opportunistic*eigenvector (socially connected opportunistic sellers) is negative (-0.632), which is economically and statistically significant (0.05) after using control variables and month-fixed effects[12]. However, the coefficient of routine*eigenvector (socially connected routine sellers) is positive (0.045) and statistically insignificant. Moreover, the coefficient of socially connected opportunistic sellers is lower than the coefficient of socially connected routine sellers for this model. Therefore, the negative coefficient

[12] We do not estimate a firm fixed-effects model given that a few insiders trade in the stock of more than one firm (Goergen et al., 2019).

indicates the benefits for socially connected opportunistic sellers because they sold their stocks before going down the stock's price in the capital markets. This result suggests that socially connected opportunistic sellers earn greater returns during the trade war, and they are truly informative. Notably, the coefficients of PastMoret and BM (control variable) are statistically insignificant, which indicates that the determinant does not vary with socially connected opportunistic and routine sellers.

Column (3) (post-trade war) presents the cross-sectional regression (between-group analysis) for routine and opportunistic sellers. We find that the coefficient of opportunistic*eigenvector (socially connected opportunistic sellers) is negative (-0.961), which is statistically insignificant after using fixed effects. Moreover, the coefficient of routine*eigenvector (socially connected routine sellers) is also negative (-0.920) but statistically insignificant (0.05). Notably, the coefficients of control variables (PastMoret and BM) are statistically insignificant, which indicates that the determinants do not vary with socially connected opportunistic and routine sellers.

Hence, the month-fixed effects control the change in market conditions, which affect all firms in a given period. This approach controls the possibility that the market conditions differentially affect the firms for socially connected opportunistic and routine sellers. We do not use firm fixed effects, given that a few insiders trade in the stock of more than one firm (Goergen et al., 2019).

All results suggest that the socially connected opportunistic sellers earn higher returns (e.g., (El-Khatib et al., 2017)) during the trade war period, and it is greater than the socially connected routine sellers, which are also truly informative. This finding also suggests that socially connected opportunistic sellers had a significant information advantage during the trade war, and they involved in informed selling to exploit that advantage. These findings support the prior literature (e.g., (He and Rui, 2016a; Rogers et al., 2016a; Cohen et al., 2012; Tavakoli et al., 2012; Ravina and Sapienza, 2010; Marin and Olivier, 2008; Fidrmuc, J.P. et al., 2006)).

Finally, we focus on only the trade war period for further analysis to hold our findings consistent on whether socially connected opportunistic sellers had the predictive ability of opportunistic sales and earned higher returns during the trade war. We consider only the trade war period to find whether the

opportunistic sellers involve in informed selling. To find this result, we include the indicator variables for the Trade war of First-3M (for the first three months of the trade war (22 January 2018 to 21 April 2018)) and Last-3M (the last three months of a trade war (22 April 2018 to 21 July 2018)).

Table 6.6: Baseline Regression
Socially Connected Sellers during Trade War (Social Connections (Eigenvector))

This table presents results from estimating equation (2). $HPR_{i,t+1}$ is the one-month holding period returns (future) for firm *i* over days $(t+1)$, Opportunistic is an opportunistic seller if the shares sold amount by opportunistic insider *i* in firm *j* and Routine is a routine seller if the shares sold amount by routine insider *i* in firm *j* (insider trades are aggregated to the insider-month level). *BM* is the book-to-market ratio at the end of quarter *t*. $PastMoRet_t$ is the return in month *t*-1. The eigenvector centrality of vertex v ($S_E(a)$) is equal to the sum of all adjacent vertices' eigenvector centrality scores used to define the social connections of opportunistic and routine sellers. *t*-Statistics (two-tailed *p*-values) based on robust standard errors appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

One-Month Future Returns					
Dependent Variable: $HPR_{i,t+1}$					
	(1)	(2)	(3)	(4)	(5)
Variables	Base Model	First-3M	Last-3M	First-3M	Last-3M
Opportunistic*Eigenvector	-0.632**	-0.612**	0.707	-0.691**	1.017
	(0.278)	(0.265)	(1.626)	(0.274)	(1.657)
Routine*Eigenvector	0.045	-0.017	-1.257	0.053	-3.131
	(0.657)	(0.887)	(3.969)	(0.651)	(1.921)
Opportunistic	0.044***	0.039***	-0.033	0.044***	-0.012
	(0.014)	(0.013)	(0.077)	(0.014)	(0.086)
Routine	0.007	0.011	-0.062	0.006	-0.024
	(0.030)	(0.041)	(0.106)	(0.030)	(0.084)
PastMoret	0.019	0.082***	-0.083*	0.043	-0.063
	(0.030)	(0.017)	(0.046)	(0.029)	(0.047)
BM	-0.008	-0.004	-0.037	-0.006	-0.042
	(0.007)	(0.004)	(0.037)	(0.007)	(0.032)
Observations	3,251	3,044	235	3,044	235
Month-Effects	Yes	No	No	Yes	Yes

Table 6.6 reports the baseline regressions results from estimating equation (2). This table presents results when the holding period return is measured at the one-month horizon. The dependent variable is one-month holding period returns ($HPR_{i,t+1}$). The independent variables are the opportunistic and routine sellers. We use eigenvector centrality for defining the social connections of opportunistic and routine sellers. Following Jagolinzer et al. (2020); Cohen et al. (2012), we consider the BM and PastMoRet as control variables in these regressions.

Column (1) presents the baseline model findings for socially connected opportunistic and routine sellers during the trade war period. We find that the coefficient of opportunistic*eigenvector (socially connected opportunistic sellers) is negative (-0.632), which is economically and statistically significant

(0.05) after using control variables and month-fixed effects. However, the coefficient of routine*eigenvector (socially connected routine sellers) is positive (0.045) and statistically insignificant. Moreover, the coefficient of socially connected opportunistic sellers is lower than the coefficient of socially connected routine sellers for this model. Therefore, the negative coefficient indicates the benefits for socially connected opportunistic sellers because they sold their stocks before going down the stock's price in the capital markets. This result suggests that socially connected opportunistic sellers earn greater returns during the trade war, and they are truly informative. Notably, the coefficients of PastMoret and BM (control variable) are statistically insignificant, which indicates that the determinant does not vary with socially connected opportunistic and routine sellers.

Columns (2) & (4) (first three months of the trade war) present the cross-sectional regression (between-group analysis) for routine and opportunistic sellers with social connections. Column (2) presents the results without month-fixed effects, and column (4) presents the results with month-fixed effects. We find that the coefficients of opportunistic*eigenvector (socially connected opportunistic sellers) are negative (-0.612 and -0.691), which are economically and statistically significant (0.05). However, the coefficient of routine*eigenvector (socially connected routine sellers) is statistically insignificant. Notably, the coefficient of socially connected opportunistic sellers is lower than the coefficient of socially connected routine sellers for this model. Therefore, the negative coefficient indicates the benefits for socially connected opportunistic sellers because they sold their stocks before going down the stock's price in the capital markets. This result suggests that socially connected opportunistic sellers earn greater returns during the trade war, and they are truly informative. Notably, the coefficient of BM (control variable) is statistically insignificant, which indicates that the determinant does not vary with socially connected opportunistic and routine sellers.

Columns (3) & (5) (last three months of trade war) present the cross-sectional regression (between-group analysis) for routine and opportunistic sellers with social connections. Column (3) presents the results without month-fixed effects, and column (5) presents the results with month-fixed effects. We find that the coefficients of opportunistic*eigenvector (socially connected opportunistic sellers) are positive (0.707 and 1.017), which are statistically insignificant. Moreover, the coefficient of

routine*eigenvector (socially connected routine sellers) is also statistically insignificant. Notably, we do not find any significant results for the last three months of the trade war period, indicating that opportunistic and routine sellers were not profitable during the last three months. Although, the coefficients of PastMoret and BM (control variables) are statistically insignificant (0.05), which indicates that the determinant does not vary with socially connected opportunistic and routine sellers.

Hence, the month-fixed effects control the change in market conditions, which affect all firms in a given period. This approach prevents the possibility that the market conditions differentially affect the firms for socially connected opportunistic and routine sellers. We do not use firm fixed effects, given that a few insiders trade in the stock of more than one firm (Goergen et al., 2019).

All results suggest that the socially connected opportunistic sellers earn higher returns (e.g., (El-Khatib et al., 2017)) during the first three months of trade war period than the last three months of trade war and the socially connected routine sellers, which is truly informative. This finding also suggests that socially connected opportunistic sellers had a significant information advantage during the first three months of the trade war, and they involved in informed selling to exploit that advantage. These findings support the prior literature (e.g., (He and Rui, 2016a; Rogers et al., 2016a; Cohen et al., 2012; Tavakoli et al., 2012; Ravina and Sapienza, 2010; Marin and Olivier, 2008; Fidrmuc, J.P. et al., 2006)).

To make more robust our baseline findings, we next use the difference-in-difference specification to test whether socially connected opportunistic sellers are more beneficial and truly informative than socially connected routine sellers. The difference-in-differences technique is a simple cross-sectional data method applied to set two groups means in cases when certain groups are exposed to the causing variable of interest, and others are not. This approach is well-suited to estimating the effect of sharp changes in government policy (Angrist and Krueger, 1999). The DiD approach has been used in various studies in finance, especially in an early example of insider trading (e.g., (Jagolinzer et al., 2020)), who used the DiD approach to study political connection effects on insider trading during the financial crisis. Similarly, in this empirical chapter, at the difference-in-difference specification, we consider the insiders who traded four-month before and two-month after starting the trade war period. Table 6.7 reports results from estimating equation (3). It presents the difference-in-difference specification results

during the trade war compared to the pre-trade war period by socially connected opportunistic sellers compared to the socially connected routine sellers. This table presents results when holding period return is measured at the one-month horizon. The dependent variable is one-month holding period returns ($HPR_{i,t+1}$). Column (1) estimates the results without control variables and fixed effects, column (2) estimates the results considering the control variables but without fixed effects, column (3) estimates the results with month-fixed effects and column (4) estimates the results with firm and month-fixed effects.

Table 6.7: Difference-in-Difference Specifications

This table presents results from estimating equation (3). $HPR_{i,t+1}$ is the one-month holding period returns (future) for firm *i* over days $(t+1)$, $Seller\_Opportunistic\_Post_t$ is an interaction variable for the socially connected opportunistic seller if the shares sold amount by opportunistic insiders *i* in firm *j* and month *t* (insider trades are aggregated to the insider-month level), Seller is a socially connected opportunistic seller if the shares sold amount by socially connected opportunistic insider *i* in firm *j,* Opportunistic is an opportunistic seller if the shares sold amount by opportunistic insider *i* in firm *j* and *Post* is a dummy variable to indicate the pre and during the trade war period. *BM* is the book-to-market ratio at the end of quarter *t.* $PastMoRet_t$ is the return in month *t*-1. All transactions are aggregated to the insider-month level. *t*-Statistics (two-tailed *p*-values) based on robust standard errors appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

	One-Month Future Returns			
	Dependent Variable: $HPR_{i,t+1}$			
	(1)	(2)	(3)	(4)
Variables	Model 1	Model 2	Model 3	Model 4
Seller_Opportunistic_Post	-0.014***	-0.015***	-0.015***	-0.027***
	(0.005)	(0.005)	(0.005)	(0.005)
Post	-0.012***	-0.012***	0.009	-0.004
	(0.004)	(0.004)	(0.015)	(0.017)
Seller	0.034	0.002	0.014	0.129*
	(0.059)	(0.060)	(0.068)	(0.078)
Opportunistic	-0.001	-0.002	-0.001	0.009
	(0.008)	(0.008)	(0.007)	(0.009)
PastMoret		-0.020**	-0.024	-0.091***
		(0.010)	(0.019)	(0.024)
BM		-0.011***	-0.010***	-0.082***
		(0.002)	(0.003)	(0.028)
Observations	8,748	8,748	8,748	8,748
Firm-Effects	No	No	No	Yes
Month-Effects	No	No	Yes	Yes

Table 6.7 compares one-month holding period returns for the socially connected opportunistic and routine sellers before and after starting the trade war. We find the negative (-0.014, -0.015, -0.015 and -0.027) and statistically significant coefficients in all models (1-4) for socially connected opportunistic sellers during the trade war (difference-in-differences *p*-value < 0.01) with (without) control variables and with (without) firm and month fixed effects. It leads to a statistically lower difference-in-differences

(the difference in socially connected opportunistic and routine sellers' one-month holding period returns before starting the trade war minus the difference in socially connected opportunistic and routine sellers' one-month holding period returns after starting the trade war) of -0.014, -0.015, -0.015 and -0.027 holding period returns for the socially connected opportunistic versus routine sellers.

All results suggest that the socially connected opportunistic sellers earn higher returns (e.g., (El-Khatib et al., 2017)) during the trade war period than the socially connected routine sellers compared to the pre-trade war period, which is also truly informative. This finding also suggests that socially connected opportunistic sellers had a significant information advantage during the trade war, and they involved in informed selling to exploit that advantage. All findings from this difference-in-difference specification support the baseline regressions results.

In this specification, we use the time and firm fixed effects in difference-in-difference approaches and account for the potential heterogeneity concerns (unobservable effects). Hence, firm fixed effects control time-invariant and cross-sectional differences between firms for socially connected opportunistic and routine sellers. These fixed effects help to mitigate the concerns of omitted firm-level characteristics, which might be associated with future performance, trading activity, identifying opportunistic sellers and social connections. The month-fixed effects control the change in market conditions, which affect all firms in a given period. We consider the month fixed effect separately as a different model to allow the period effects to differ between the models. This approach controls the possibility that the market conditions differentially affect the firms for socially connected opportunistic and routine sellers.

We then test whether socially connected opportunistic or routine sellers earn higher returns over politically connected opportunistic or routine sellers during the trade war period. As we know, the trade war was started only for a political win over China. Subsequently, there is a possibility that politically connected people had prior non-public information regarding the trade war declaration by the former US president. Thus, the politically connected opportunistic or routine sellers may utilize prior private information to sell their shares opportunistically during that time. Although, we define the political connections by considering the employment records of insiders only in the Fed, OCC, OTS, FDIC,

congress and Treasury. Therefore, there is a chance to behave opportunistically to exploit their close connection with US governmental authority or political people. However, we consider all the employment records and educational backgrounds to define the social connections of insiders. Therefore, socially connected sellers may earn higher returns than politically connected sellers during the trade war period because of the broader connectivity of social connections.

Moreover, we assume that social connection is stronger than political connection because of broader consideration in defining the social connection of insiders. Therefore, we next test whether socially connected opportunistic (routine) sellers are beneficial and truly informative or politically connected opportunistic (routine) sellers are beneficial and truly informative. To examine how these attributes relate to the informativeness of insider sales, we estimate the cross-section regression form to assess how the socially or politically connected sellers behave opportunistically – informed selling – during the trade war.

Table 6.8: Opportunistic and Routine Insiders (Social Connections vs Political Connections)

This table presents results from estimating equation (2). $HPR_{i,t+1}$ is the one-month holding period returns (future) for firm *i* over days $(t+1)$, Opportunistic is an opportunistic seller if the shares sold amount by opportunistic insider *i* in firm *j* and Routine is a routine seller if the shares sold amount by routine insider *i* in firm *j* (insider trades are aggregated to the insider-month level). *BM* is the book-to-market ratio at the end of quarter *t*. $PastMoRet_t$ is the return in month *t*-1. The eigenvector centrality of vertex v ($S_E(a)$) is equal to the sum of all adjacent vertices' eigenvector centrality scores used to define the social connections of opportunistic and routine sellers. The insiders are coded as politically connected if any director, CEO, or officer has current or previous work experience in Federal Reserve, FDIC, OTS, OCC, Congress or the US Treasury. First-3M means the first three months after starting the trade war and Last-3M means the last three months of the trade war period. All transactions are aggregated to the insider-month level. *t*-Statistics (two-tailed *p*-values) based on robust standard errors appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

	One-Month Future Returns							
	Dependent Variable: $HPR_{i,t+1}$							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables	First-3M	Last-3M	Fast-3M	Last-3M	Fast-3M	Last-3M	Fast-3M	Last-3M
Opportunistic*Eigenvector	-0.612**	0.707	-0.691**	1.017				
	(0.265)	(1.626)	(0.274)	(1.657)				
Routine*Eigenvector	-0.017	-1.257	0.053	-3.131				
	(0.887)	(3.969)	(0.651)	(1.921)				
Opportunistic*Political					-0.012***	-0.026	-0.014**	-0.022
					(0.004)	(0.025)	(0.005)	(0.021)
Routine*Political					0.003	0.026	0.005	-0.062
					(0.014)	(0.159)	(0.013)	(0.040)
Opportunistic	0.039***	-0.033	0.044***	-0.012	0.003	0.002	0.005	0.019
	(0.013)	(0.077)	(0.014)	(0.086)	(0.003)	(0.013)	(0.005)	(0.014)
Routine	0.011	-0.062	0.006	-0.024	0.006	0.001	0.004	0.015
	(0.041)	(0.106)	(0.030)	(0.084)	(0.006)	(0.054)	(0.007)	(0.039)
PastMoret	0.082***	-0.083*	0.043	-0.063	0.108***	-0.091***	0.072***	-0.062
	(0.017)	(0.046)	(0.029)	(0.047)	(0.010)	(0.027)	(0.024)	(0.040)

BM	-0.004	-0.037	-0.006	-0.042	-0.005**	-0.038*	-0.006	-0.056***
	(0.004)	(0.037)	(0.007)	(0.032)	(0.002)	(0.021)	(0.004)	(0.021)
Observations	3,044	235	3,044	235	7,803	641	7,803	641
Month-Effects	No	No	Yes	Yes	No	No	Yes	Yes

Table 6.8 reports the regressions results from estimating equation (2). It presents the cross-sectional regression results by using Ordinary Least Squares regression (OLS) and month-fixed effects. This table presents results when the holding period return is measured at the one-month horizon. The dependent variable is one-month holding period returns ($HPR_{i,t+1}$). The independent variables are the opportunistic and routine from columns (1) to (8). We use eigenvector centrality (political) to define opportunistic and routine sellers' social (political) connections. Following Jagolinzer et al. (2020); Cohen et al. (2012), I consider the BM and PastMoRet as control variables in these regressions. Columns (1)-(4) estimate the results with social connections. Columns (5)-(8) estimate the results with political connections.

Columns (1) & (3) (first three months of the trade war) present the cross-sectional regression (between-group analysis) for routine and opportunistic sellers with social connections. Although, we consider the month-fixed effects in column (3). We find that the coefficients of opportunistic*eigenvector (socially connected opportunistic sellers) are negative (-0.612 and -0.691), which are economically and statistically significant (<0.05) after using control variables and month-fixed effects. Therefore, the negative coefficient indicates the benefits for socially connected opportunistic sellers because they sold their stocks before going down the stock's price in the capital markets. However, the coefficients of routine*eigenvector (socially connected routine sellers) are statistically insignificant. The coefficients of BM (control variable) are statistically insignificant, which indicates that the determinant does not vary with socially connected opportunistic and routine sellers. Columns (2) & (4) (last three months of the trade war) also present the cross-sectional regression (between-group analysis) for routine and opportunistic sellers with social connections. Although, we consider the month-fixed effects in column (4). We find that the coefficients of opportunistic*eigenvector (socially connected opportunistic sellers) are positive (0.707 and 1.017), which are statistically insignificant after using control variables and month-fixed effects. Similarly, we find that routine*eigenvector (socially connected routine sellers) coefficients are statistically insignificant after using control variables and month-fixed effects. Notably,

we do not find any significant results for the last three months of the trade war period, indicating that opportunistic and routine sellers are not profitable during the last three months. However, the socially connected opportunistic sellers earn higher returns (e.g., (El-Khatib et al., 2017)) from opportunistic sales during the first three months of the trade war period than the socially connected routine sellers, which is also truly informative.

Columns (5) & (7) (first three months of the trade war) present the cross-sectional regression (between-group analysis) for routine and opportunistic sellers with political connections. Although, we consider the month-fixed effects in column (7). We find that the coefficients of opportunistic*political (politically connected opportunistic sellers) are negative (-0.012 and -0.014), which are economically and statistically significant (<0.01 and <0.05) after using control variables and month-fixed effects. Therefore, the negative coefficient indicates the benefits for socially connected opportunistic sellers because they sold their stocks before going down the stock's price in the capital markets. However, the coefficients of routine*political (politically connected routine sellers) are positive and statistically insignificant. The coefficients of BM (control variable) are statistically insignificant (column 7), which indicates that the determinant does not vary with socially connected opportunistic and routine sellers. Columns (6) & (8) (last three months of the trade war) also present the cross-sectional regression (between-group analysis) for routine and opportunistic sellers with political connections. Although, we consider the month-fixed effects in column (8). We find that the coefficients of opportunistic*political (politically connected opportunistic sellers) are negative (-0.026 and -0.022), which are statistically insignificant after using control variables and month-fixed effects. Similarly, we find that the coefficients of routine*political (politically connected routine sellers) are statistically insignificant after using control variables and month-fixed effects. Notably, we do not find any significant results for the last three months of the trade war period, indicating that opportunistic and routine sellers are not profitable during the last three months. However, the politically connected opportunistic sellers earn higher returns (e.g., (El-Khatib et al., 2017)) from opportunistic sales during the first three months of the trade war period than the politically connected routine sellers, which is also truly informative.

In the models, the month-fixed effects control the change in market conditions, which affect all firms in a given period. We consider the month fixed effect separately as a different model to allow the period effects to differ between the models. This approach controls the possibility that the market conditions differentially affect the firms for socially and politically connected opportunistic and routine sellers. We do not use firm fixed effects, given that a few insiders trade in the stock of more than one firm (Goergen et al., 2019).

The results (Table 6.8) suggest that the coefficients of socially connected opportunistic sellers are lower than those of politically connected opportunistic sellers. However, the coefficient (column (5)) of opportunistic*political (politically connected opportunistic sellers) is statistically significant at 0.01, but the significance level is 0.05 in column (7), which is similar to the significance level of the coefficients (columns (1) and (3)) of opportunistic*eigenvector (socially connected opportunistic sellers). Therefore, we cannot draw any concrete conclusion that social connections are stronger than political connections to sell shares opportunistically during the trade war. To draw the conclusion in favour of opportunistic sellers (social or political connections), we next use the elasticity test to find the explanatory power of independent variables (opportunistic and routine) with social and political connections. This test will indicate whether socially (politically) connected opportunistic sellers are more beneficial and truly informative than politically (socially) connected opportunistic sellers. To examine how these attributes relate to the informativeness of insider sales, we first estimate the cross-section regression form to assess how the socially and politically connected sellers behave opportunistically – informed selling – during the trade war, and then we estimate the elasticity values.

Table 6.9 considers the elasticity test for the explanatory variables (opportunistic and routine) for all observations. Following the elasticity method (e.g., Hillier et al. (2011), we estimate the elasticity to get the homogeneous base for comparison in this study. This test finds the explanatory power of the socially and politically connected opportunistic and routine sellers by indicating whether it is inelastic or elastic. The elasticity is estimated as follows:

$$EL_i = \lambda_i \frac{\bar{X}_i}{\lambda^p \bar{X}} \qquad (4)$$

where EL_i represents the independent variables (*opportunistic and routine*), λ_i indicates its coefficient,

$\bar{X}_i$ is its mean and $\lambda^p \bar{X}$ represents the predicted value of the dependent variable ($HPR_{i,t+1}$) evaluated at the mean of the regressor.

Table 6.9: Elasticity Test

This table presents results from estimating equation (4). Opportunistic is an opportunistic seller if the shares sold amount by opportunistic insider *i* in firm *j* and Routine is a routine seller if the shares sold amount by routine insider *i* in firm *j* (insider trades are aggregated to the insider-month level). The eigenvector centrality of vertex v ($S_E(a)$) is equal to the sum of all adjacent vertices' eigenvector centrality scores used to define the social connections of opportunistic and routine sellers. The insiders are coded as politically connected if any director, CEO, or officer has current or previous work experience in Federal Reserve, FDIC, OTS, OCC, Congress or the US Treasury. First-3M means the first three months after starting the trade war, and Last-3M means the last three months of the trade war period.

	Social Connection		Political Connection	
	(1)	(2)	(3)	(4)
Variables	First-3M	First-3M	First-3M	First-3M
Opportunistic	-0.619	-0.698	-0.043	-0.051
Routine	-0.002	0.022	0.001	0.001

In Table 6.9, columns (1) and (2) indicate the elasticity values for socially connected opportunistic and routine sellers for the first three months of the trade war with and without fixed effects. Columns (3) and (4) indicate the elasticity values for politically connected opportunistic and routine sellers for the first three months of the trade war with and without fixed effects. We do not calculate the elasticity values for the last three months of the trade war because we do not find any significant results in the previous regression models during the trade war.

From this table, we find that opportunistic*eigenvector (socially connected opportunistic seller) in both columns (1) and (3) carry higher explanatory power (-0.619 and -0.698) than the explanatory power (-0.043 and -0.051) of opportunistic*political (politically connected opportunistic seller) and routine sellers (socially and politically connected). This finding suggests that socially connected opportunistic elasticity values have more explanatory power on the dependent variable (one-month holding period returns) than those of politically connected opportunistic sellers and routine sellers.

All results indicate that the socially connected opportunistic sellers earn higher returns (e.g., (El-Khatib et al., 2017)) during the first three months of the trade war than the socially connected routine sellers, which is truly informative. This finding also suggests that socially connected opportunistic sellers had a significant information advantage during the first three months of the trade war, and they involved in informed selling to exploit that advantage. These findings support the prior literature (e.g., (He and Rui,

2016a; Rogers et al., 2016a; Cohen et al., 2012; Tavakoli et al., 2012; Ravina and Sapienza, 2010; Marin and Olivier, 2008; Fidrmuc, J.P. et al., 2006)) and baseline findings.

6.4.2 Robustness Test

We use different techniques to find results consistent with baseline regressions at the robustness tests. Firstly, we test whether socially connected opportunistic sales instead of sellers are more beneficial and truly informative. To examine how these attributes relate to the informativeness of insider sales, we estimate the cross-section regression form to assess how the socially connected insider sales are executed more opportunistically – informed selling – during the trade war.

Following the prior studies (e.g., (Jagolinzer et al., 2020; Akin et al., 2019; Cohen et al., 2012)), we estimate the cross-section regression form to assess how the socially connected sellers (insiders) behave opportunistically – informed trading – during the trade war.

$$HPR_{t+1} = \alpha + \delta_1 \text{Opportunistic}_t * \text{Eigenvector}_t + \delta_2 \text{Routine}_t * \text{Eigenvector}_t + \delta_3 \text{Opportunistic}_t + \delta_4 \text{Routine}_t + \vartheta \text{Controls}_t + \text{Month Effects}_t + \varepsilon_{t+1} \quad (5)$$

where HPR_{t+s} is holding period returns for the next month (s=1), Opportunistic is an opportunistic sales by opportunistic insider *i* in firm *j* and Routine is a routine sales by routine insider *i* in firm *j* (insider trades are aggregated to the insider-month level) and $Controls_t$ is a vector of control variables that includes firm book-to-market ratio (BM_t), and returns over the past month ($PastMoRet_t$). In this specification, δ_1 and δ_2 measure the incremental informativeness of insider sales during the different periods of the trade war. $Eigenvector_t$ is the network centrality used to indicate insiders' social connections. In this specification, we estimate δ_3 and δ_4 by using cross-sectional analysis. They represent the parameters of opportunistic and routine for finding the association with holding period returns after controlling for $PastMoRet_t$ and BM_t. Throughout this analysis, we base inferences on robust standard errors clustered by firm. Clustering by firm allows for both arbitrary time-series correlation within a firm and arbitrary cross-sectional correlation across insiders within a given firm. Month Effects is a vector of month-fixed effects and ε_{t+1} indicates the error terms. The month-fixed effects control the change in market conditions, which affect all firms in a given period. We consider the month fixed

effect separately as a different model to allow the time period effects to differ between the models. This approach controls the possibility that the market conditions differentially affect the firms for socially connected opportunistic and routine sellers. We do not use firm fixed effects in this equation, given that a few insiders trade in the stock of more than one firm (Goergen et al., 2019).

Table 6.10: Opportunistic and Routine Sales (Social Connections vs Political Connections)

This table presents results from estimating equation (5). $HPR_{i,t+1}$ is the one-month holding period returns (future) for firm *i* over days $(t+1)$, Opportunistic is an opportunistic sales by opportunistic insider *i* in firm *j* and Routine is a routine sales by routine insider *i* in firm *j* (insider trades are aggregated to the insider-month level). *BM* is the book-to-market ratio at the end of quarter *t*. $PastMoRet_t$ is the return in month *t*-1. The eigenvector centrality of vertex v ($S_E(a)$) is equal to the sum of all adjacent vertices' eigenvector centrality scores used to define the social connections of opportunistic and routine sellers. The insiders are coded as politically connected if any director, CEO, or officer has current or previous work experience in Federal Reserve, FDIC, OTS, OCC, Congress or the US Treasury. First-3M means the first three months after starting the trade war, and Last-3M means the last three months of the trade war period. All transactions are aggregated to the insider-month level. *t*-Statistics (two-tailed *p*-values) based on robust standard errors appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

One-Month Future Returns								
Dependent Variable: $HPR_{i,t+1}$								
Variables	(1) First-3M	(2) First-3M	(3) Last-3M	(4) Last-3M	(5) First-3M	(6) First-3M	(7) Last-3M	(8) Last-3M
Opportunistic*Eigenvector	-0.663**		0.687		-0.751***		1.001	
	(0.273)		(1.626)		(0.284)		(1.659)	
Routine*Eigenvector	0.074		0.170		0.144		0.286	
	(0.685)		(0.988)		(0.600)		(0.934)	
Opportunistic*Political		-0.010**		-0.026		-0.012**		-0.022
		(0.004)		(0.025)		(0.005)		(0.021)
Routine*Political		-0.015		0.008		-0.016		-0.036
		(0.010)		(0.111)		(0.012)		(0.034)
Opportunistic	0.040***	0.002	-0.032	0.001	0.045***	0.003	-0.012	0.019
	(0.013)	(0.003)	(0.077)	(0.013)	(0.014)	(0.005)	(0.086)	(0.015)
Routine	0.015	0.014***	-2.081	0.015	0.011	0.014*	-1.957	0.025
	(0.032)	(0.004)	(3.068)	(0.034)	(0.033)	(0.008)	(1.814)	(0.023)
PastMoret	0.082***	0.108***	-0.083*	-0.091***	0.043	0.072***	-0.062	-0.062
	(0.017)	(0.010)	(0.046)	(0.027)	(0.029)	(0.024)	(0.047)	(0.040)
BM	-0.004	-0.005**	-0.037	-0.038*	-0.006	-0.006	-0.042	-0.057***
	(0.004)	(0.002)	(0.037)	(0.021)	(0.006)	(0.004)	(0.032)	(0.021)
Observations	3,044	7,803	235	641	3,044	7,803	235	641
Month-Effects	No	No	No	No	Yes	Yes	Yes	Yes

Table 6.10 reports the regressions results from estimating equation (5). It presents the cross-sectional regression results by using Ordinary Least Squares regression (OLS) and month-fixed effects. This table presents results when the holding period return is measured at the one-month horizon. The dependent variable is one-month holding period returns ($HPR_{i,t+1}$). The independent variables are the opportunistic and routine sales instead of sellers from columns (1) to (8). We use eigenvector centrality for defining

the social connections of opportunistic and routine sellers. Following Jagolinzer et al. (2020); Cohen et al. (2012), we consider the BM and PastMoRet as control variables in these regressions. Columns (1), (3), (5) and (7) estimate the results with social connections. Columns (2), (4), (6) and (8) assess the results with political connections.

Columns (1) & (5) (first three months of the trade war) present the cross-sectional regression (between-group analysis) for routine and opportunistic sales instead of sellers with social connections. Although, we consider the month-fixed effects in column (5). We find that the coefficients of opportunistic*eigenvector (socially connected opportunistic sales) are negative (-0.663 and -0.751), which are economically and statistically significant (<0.05 and <0.01) after using control variables and month-fixed effects. Therefore, the negative coefficient indicates the benefits for socially connected opportunistic sellers because they sold their stocks before going down the stock's price in the capital markets. However, the coefficients of routine*eigenvector (socially connected routine sales) are positive (0.074 and 0.144) and statistically insignificant. The coefficients of BM (control variable) are statistically insignificant, which indicates that the determinant does not vary with socially connected opportunistic and routine sales. Columns (3) & (7) (last three months of the trade war) also present the cross-sectional regression (between-group analysis) for routine and opportunistic sales instead of sellers with social connections. Although, we consider the month-fixed effects in column (7). We find that the coefficients of opportunistic*eigenvector (socially connected opportunistic sales) are positive (0.687 and 1.001), which are statistically insignificant after using control variables and month-fixed effects. Similarly, we find that routine*eigenvector (socially connected routine sales) coefficients are statistically insignificant after using control variables and month-fixed effects. Notably, we do not find significant results for the last three months of the trade war period, indicating that opportunistic and routine sellers are not profitable during the last three months. However, the socially connected opportunistic sellers earn higher returns (e.g., (El-Khatib et al., 2017)) during the first three months of the trade war than the socially connected routine sellers, which is truly informative.

Columns (2) & (6) (first three months of the trade war) present the cross-sectional regression (between-group analysis) for routine and opportunistic sales instead of sellers with political connections.

Although, we consider the month-fixed effects in column (6). We find that the coefficients of opportunistic*political (politically connected opportunistic sales) are negative (-0.010 and -0.012), which are economically and statistically significant (<0.05) after using control variables and month-fixed effects. Therefore, the negative coefficient indicates the benefits for socially connected opportunistic sellers because they sold their stocks before going down the stock's price in the capital markets. Moreover, routine*political (politically connected routine sales) coefficients are negative but statistically insignificant. The coefficients of BM (control variable) are statistically insignificant (column 6), which indicates that the determinant does not vary with socially connected opportunistic and routine sales. Columns (4) & (8) (last three months of the trade war) also present the cross-sectional regression (between-group analysis) for routine and opportunistic sales instead of sellers with political connections. Although, we consider the month-fixed effects in column (8). We find that the coefficients of opportunistic*political (politically connected opportunistic sales) are negative (-0.026 and -0.022), which are statistically insignificant after using control variables and month-fixed effects. Similarly, we find that the coefficients of routine*political (politically connected routine sellers) are statistically insignificant. Notably, we do not find any significant results for the last three months of the trade war period, indicating that opportunistic and routine sales are not profitable during the last three months. However, the politically connected opportunistic sellers earn higher returns (e.g., (El-Khatib et al., 2017)) during the first three months of the trade war than the politically connected routine sellers, which is also truly informative.

In the models, the month-fixed effects control the change in market conditions, which affect all firms in a given period. We consider the month fixed effect separately as a different model to allow the period effects to differ between the models. This approach controls the possibility that the market conditions differentially affect the firms for socially and politically connected opportunistic and routine sellers. We do not use firm fixed effects, given that a few insiders trade in the stock of more than one firm (Goergen et al., 2019).

Importantly, the results (Table 6.10) suggest that the coefficients of socially connected opportunistic sellers are lower than those of politically connected opportunistic sellers. Moreover, the coefficient

(column (5)) of opportunistic*eigenvector (socially connected opportunistic sales) is statistically significant at 0.01, which is higher than the significance level (0.05) of opportunistic*political (politically connected opportunistic sales). We can conclude that social connections are stronger than political connections to sell shares opportunistically during the trade war.

All results indicate that the socially connected opportunistic sales earn higher returns (e.g., (El-Khatib et al., 2017)) during the first three months of the trade war than the politically connected opportunistic and routine sales, which is truly informative. This finding also suggests that socially connected opportunistic sales had a significant information advantage during the first three months of the trade war, and they involved in informed selling to exploit that advantage. These findings support the prior results.

We then test whether strongly or weakly socially connected opportunistic sellers are beneficial and truly informative. Here, we consider high centrality (more than the median of the eigenvector value) as strong social connections and low centrality (equal and less than the median of the eigenvector value) as weak social connections. However, we do not consider social and political connections together to make a stronger connection of insiders because the political connection of insiders comes from employment records at Fed, Treasury, Congress, OCC, OTS and FDIC, which is already included in social connections (educational backgrounds and employment records). Therefore, we only consider the eigenvector values to define insiders' strong and weak connections. By this consideration, we avoid the collinearity problem between both connections, which might cause the endogeneity problem in our study.

To examine how these attributes relate to the informativeness of insider sales, we estimate the cross-section regression form to assess how the strong or weak socially connected opportunistic sellers involve in informed selling during the trade war.

Table 6.11: Strong vs Weak Social Connections (Eigenvector)

This table presents results from estimating equation (2). $HPR_{i,t+1}$ is the one-month holding period returns (future) for firm *i* over days $(t+1)$, Opportunistic is an opportunistic seller if the shares sold amount by opportunistic insider *i* in firm *j* and Routine is a routine seller if the shares sold amount by routine insider *i* in firm *j* (insider trades are aggregated to the insider-month level). *BM* is the book-to-market ratio at the end of quarter *t*. $PastMoRet_t$ is the return in month *t*-1. The eigenvector centrality of vertex v ($S_E(a)$) is equal to the sum of all adjacent vertices' eigenvector centrality scores used to define the social connections of opportunistic and routine sellers. First-3M means the first three months after starting the trade war and Last-3M means the last three months of the trade war period. All transactions are aggregated to the insider-month level. *t*-Statistics (two-tailed *p*-values) based on robust standard errors appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

One-Month Future Returns				
Dependent Variable: $HPR_{i,t+1}$				
Variables	(1) High Centrality	(2) High Centrality	(3) Low Centrality	(4) Low Centrality
Opportunistic*Eigenvector	-1.087***	-1.153***	0.131	0.239
	(0.382)	(0.407)	(0.557)	(0.462)
Routine*Eigenvector	-0.053	-0.322	4.743**	3.905*
	(1.294)	(0.743)	(1.888)	(2.051)
Opportunistic	0.060***	0.064***	-0.012	-0.020
	(0.017)	(0.019)	(0.028)	(0.025)
Routine	0.025	0.031	-0.217**	-0.181*
	(0.055)	(0.031)	(0.095)	(0.093)
PastMoret	0.060**	0.018	-0.065**	-0.060
	(0.025)	(0.042)	(0.026)	(0.057)
BM	0.004	0.000	-0.012*	-0.012**
	(0.008)	(0.014)	(0.006)	(0.005)
Observations	1,519	1,519	1,525	1,525
Month-Effects	No	No	Yes	Yes

Table 6.11 reports the regressions results from estimating equation (2) by calculating high and low network centrality depending on the median of the eigenvector. It presents the cross-sectional regression results by using Ordinary Least Squares regression (OLS) and month-fixed effects. This table presents results when the holding period return is measured at the one-month horizon. The dependent variable is one-month holding period returns ($HPR_{i,t+1}$). The independent variables are the opportunistic and routine sellers from columns (1) to (4). Following Jagolinzer et al. (2020); Cohen et al. (2012), we consider the BM and PastMoRet as control variables in these regressions. Columns (1) and (2) estimate the results of high centrality (strong connection), and columns (3) and (4) estimate the results of low centrality (weak connection).

Columns (1) & (2) (first three months of the trade war) present the cross-sectional regression (between-group analysis) for routine and opportunistic sellers with strong social connections. Although, we consider the month-fixed effects in column (2). We find the coefficients of opportunistic*eigenvector

(strongly socially connected opportunistic sellers) are negative (-1.087 and -1.153), which are economically and statistically significant (<0.01) after using control variables and month-fixed effects. Therefore, the negative coefficient indicates the benefits for socially connected opportunistic sellers because they sold their stocks before going down the stock's price in the capital markets. Moreover, the coefficients of routine*eigenvector (socially connected routine sellers) are negative (-0.053 and -0.322) but statistically insignificant. The coefficients of BM (control variable) are statistically insignificant, which indicates that the determinant does not vary with socially connected opportunistic and routine sales. Columns (3) & (4) (first three months of the trade war) present the cross-sectional regression (between-group analysis) for routine and opportunistic sellers with weak social connections. Although, we consider the month-fixed effects in column (4). We find the coefficients of opportunistic*eigenvector (weakly socially connected opportunistic sellers) are positive (0.131 and 0.239), which are statistically insignificant. Notably, we do not find any significant results for the weak connections, indicating that opportunistic sellers are not profitable during the first three months. However, the strongly socially connected opportunistic sellers earn higher returns (e.g., (El-Khatib et al., 2017)) during the first three months of the trade war than the weakly socially connected opportunistic sellers, which is truly informative.

In the models, the month-fixed effects control the change in market conditions, which affect all firms in a given period. We consider the month fixed effect separately as a different model to allow the period effects to differ between the models. This approach controls the possibility that the market conditions differentially affect the firms for socially connected opportunistic and routine sellers. We do not use firm fixed effects, given that a few insiders trade in the stock of more than one firm (Goergen et al., 2019).

All results indicate that the strongly socially connected opportunistic sales earn higher returns (e.g., (El-Khatib et al., 2017)) during the first three months of the trade war than the strongly socially connected routine and weakly socially connected opportunistic sellers, which is truly informative. This finding also suggests that strongly socially connected opportunistic sales had a significant information

advantage during the first three months of the trade war, and they involved in informed selling to exploit that advantage. These findings support the baseline results.

For the further robustness test of our findings, we classify the firms with business connections with China and those without business connections with China to test whether insiders of China-connected firms traded opportunistically to earn higher returns than insiders of China non-connected firms during the trade war. To examine how these attributes relate to the informativeness of insider sales, we estimate the cross-section regression form to assess how the China-connected firms' socially connected opportunistic sellers involve in informed selling – during the trade war.

Table 6.12: Firms which have business connections with (without) China

This table presents results from estimating equation (2). $HPR_{i,t+1}$ is the one-month holding period returns (future) for firm *i* over days $(t+1)$, Opportunistic is an opportunistic seller if the shares sold amount by opportunistic insider *i* in firm *j* and Routine is a routine seller if the shares sold amount by routine insider *i* in firm *j* (insider trades are aggregated to the insider-month level). *BM* is the book-to-market ratio at the end of quarter *t*. $PastMoRet_t$ is the return in month *t*-1. The eigenvector centrality of vertex v ($S_E(a)$) is equal to the sum of all adjacent vertices' eigenvector centrality scores used to define the social connections of opportunistic and routine sellers. First-3M means the first three months after starting the trade war and Last-3M means the last three months of the trade war period. All transactions are aggregated to the insider-month level. *t*-Statistics (two-tailed *p*-values) based on robust standard errors appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

	One-Month Future Returns			
	Dependent Variable: $HPR_{i,t+1}$			
	(1)	(2)	(3)	(4)
Variables	With China	Without China	With China	Without China
Opportunistic*Eigenvector	-1.631***	-0.054	-1.725***	-0.012
	(0.510)	(0.726)	(0.531)	(0.636)
Routine*Eigenvector	0.584	-0.238	0.394	0.168
	(1.965)	(1.649)	(0.713)	(0.811)
Opportunistic	0.078***	0.002	0.082***	0.004
	(0.024)	(0.035)	(0.026)	(0.031)
Routine	-0.015	0.013	-0.007	-0.006
	(0.094)	(0.074)	(0.049)	(0.042)
PastMoret	0.067**	0.089**	0.019	0.058
	(0.031)	(0.035)	(0.049)	(0.056)
BM	-0.031***	0.003	-0.041***	-0.003
	(0.012)	(0.014)	(0.016)	(0.019)
Observations	776	513	776	513
Month-Effects	No	No	Yes	Yes

Table 6.12 reports the regressions results from estimating equation (2) by dividing the firms with and without business with China. Here, with China means the US firms which had business connections with China and without China means the US firms which did not have any business connection with China during the trade war period. This table presents the cross-sectional regression results by using Ordinary Least Squares regression (OLS) and month-fixed effects. This table shows results when the

holding period return is measured at the one-month horizon. The dependent variable is one-month holding period returns ($HPR_{i,t+1}$). The independent variables are the opportunistic and routine sellers from columns (1) to (4). Following Jagolinzer et al. (2020); Cohen et al. (2012), we consider the BM and PastMoRet as control variables in these regressions. Columns (1) and (3) estimate the results with China, and columns (2) and (4) assess the results without China.

Columns (1) & (3) (first three months of the trade war) present the cross-sectional regression (between-group analysis) for routine and opportunistic sellers from firms which have businesses with China. Although, we consider the month-fixed effects in column (3). We find the coefficients of opportunistic*eigenvector (socially connected opportunistic sellers) are negative (-1.631 and -1.725), which are economically and statistically significant (<0.01) after using control variables and month-fixed effects. Therefore, the negative coefficient indicates the benefits for socially connected opportunistic sellers because they sold their stocks before going down the stock's price in the capital markets. However, the coefficients of routine*eigenvector (socially connected routine sellers) are positive (0.584 and 0.394) but statistically insignificant. Columns (2) & (4) (first three months of the trade war) present the cross-sectional regression (between-group analysis) for routine and opportunistic sellers from firms which do not have businesses with China. Although, we consider the month-fixed effects in column (4). We find the coefficients of opportunistic*eigenvector (socially connected opportunistic sellers) are negative (-0.054 and -0.012), which are statistically insignificant after using control variables and month-fixed effects. Moreover, routine*eigenvector (socially connected routine sellers) coefficients are also statistically insignificant.

Notably, we do not find any significant results for the China non-connected firms, indicating that socially connected opportunistic sellers of China non-connected firms are not profitable during the first three months. However, the socially connected opportunistic sellers of China-connected firms earn higher returns (e.g., (El-Khatib et al., 2017)) the first three months of the trade war than the socially connected opportunistic sellers of China non-connected firms, which is truly informative.

In the models, the month-fixed effects control the change in market conditions, which affect all firms in a given period. We consider the month fixed effect separately as a different model to allow the time

period effects to differ between the models. This approach controls the possibility that the market conditions differentially affect the firms for socially connected opportunistic and routine sellers. We do not use firm fixed effects, given that a few insiders trade in the stock of more than one firm (Goergen et al., 2019).

All results indicate that the socially connected opportunistic sellers of China-connected firms earn higher returns (e.g., (El-Khatib et al., 2017)) during the first three months of the trade war than the socially connected opportunistic sellers of China non-connected firms, which is truly informative. This finding also suggests that socially connected opportunistic sellers of China-connected firms had a significant information advantage during the first three months of the trade war, and they involved in informed selling to exploit that advantage. These findings also support the baseline results.

6.4.3 Alternative Measurements

At the alternative measurements, we consider the alternative network centralities such as degree and closeness as social connections of insiders, separate eigenvector values from educational backgrounds and employment records of insiders to check whether we find the same results as baseline regression results. Firstly, we use the alternative network centralities (Degree and Closeness) to define the social connections of the sellers and test whether socially connected opportunistic sellers are beneficial and truly informative. To examine how these attributes relate to the informativeness of insider sales, we estimate the cross-section regression form to assess how the socially connected opportunistic and routine sellers involve in informed selling during the trade war.

Table 6.13: Alternative Measurements (Degree and Closeness)

This table presents results from estimating equation (2). $HPR_{i,t+1}$ is the one-month holding period returns (future) for firm *i* over days $(t+1)$, Opportunistic is an opportunistic seller if the shares sold amount by opportunistic insider *i* in firm *j* and Routine is a routine seller if the shares sold amount by routine insider *i* in firm *j* (insider trades are aggregated to the insider-month level). *BM* is the book-to-market ratio at the end of quarter *t*. $PastMoRet_t$ is the return in month *t*-1. First-3M means the first three months after starting the trade war and Last-3M means the last three months of the trade war period. All transactions are aggregated to the insider-month level. Degree and Closeness centralities are used for defining the social connections of opportunistic and routine sellers. *t*-Statistics (two-tailed *p*-values) based on robust standard errors appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

One-Month Future Returns				
Dependent Variable: $HPR_{i,t+1}$				
Panel A: Alternative Social Connections (Degree)				
	(1)	(2)	(3)	(4)
Variables	First-3M	Last-3M	Fast-3M	Last-3M

Opportunistic*Degree	-0.005**	0.005	-0.005**	0.003
	(0.003)	(0.014)	(0.003)	(0.017)
Routine*Degree	-0.002	0.062	0.001	0.044
	(0.009)	(0.083)	(0.006)	(0.027)
Opportunistic	0.022***	0.008	0.023***	0.007
	(0.008)	(0.040)	(0.008)	(0.049)
Routine	0.015	-0.107	0.006	-0.106*
	(0.023)	(0.078)	(0.018)	(0.057)
PastMoret	0.083***	-0.028	0.044	0.017
	(0.017)	(0.044)	(0.029)	(0.093)
BM	-0.004	-0.097***	-0.006	-0.116***
	(0.004)	(0.036)	(0.007)	(0.028)
Observations	3,044	235	3,044	235
Month-Effects	No	No	Yes	Yes
Panel B: Alternative Social Connections (Closeness)				
	(1)	(2)	(3)	(4)
Variables	First-3M	Last-3M	Fast-3M	Last-3M
Opportunistic*Closeness	-0.037**	-0.014	-0.041**	0.128
	(0.016)	(0.089)	(0.017)	(0.111)
Routine*Closeness	-0.020	-0.106	-0.026	0.208*
	(0.054)	(0.190)	(0.031)	(0.110)
Opportunistic	-0.046***	0.012	-0.051***	-0.107
	(0.016)	(0.087)	(0.017)	(0.110)
Routine	0.030	-0.014	0.033	-0.227*
	(0.052)	(0.115)	(0.029)	(0.116)
PastMoret	0.082***	-0.080*	0.043	0.011
	(0.017)	(0.046)	(0.029)	(0.091)
BM	-0.004	-0.036	-0.006	-0.118***
	(0.004)	(0.037)	(0.006)	(0.028)
Observations	3,044	235	3,044	235
Month-Effects	No	No	Yes	Yes

Table 6.13 reports the regressions results from estimating equation (2) using the alternative network centralities (Degree and Closeness). This table presents the cross-sectional regression results using Ordinary Least Squares regression (OLS) and month-fixed effects. This table also shows the results when the holding period return is measured at the one-month horizon. The dependent variable is one-month holding period returns ($HPR_{i,t+1}$). The independent variables are the opportunistic and routine sellers from columns (1) to (4) for both panels. Following Jagolinzer et al. (2020); Cohen et al. (2012), we consider the BM and PastMoRet as control variables in these regressions. Panel A estimates the results with social connections (Degree). Panel B estimates the results with social connections (Closeness).

In Panel A, columns (1) & (3) (first three months of the trade war) present the cross-sectional regression (between-group analysis) for routine and opportunistic sellers with alternative social connections (Degree). Although, we consider the month-fixed effects in column (3). We find the coefficients of opportunistic*degree (socially connected opportunistic sellers) are negative (-0.005 and -0.005), which are economically and statistically significant (<0.05) after using control variables and month-fixed effects. Therefore, the negative coefficient indicates the benefits for socially connected opportunistic sellers because they sold their stocks before going down the stock's price in the capital markets. However, the coefficients of routine*degree (socially connected routine sellers) are statistically insignificant. The coefficients of BM (control variable) are statistically insignificant, which indicates that the determinant does not vary with socially connected opportunistic and routine sales. Columns (2) & (4) (last three months of trade war) present the cross-sectional regression (between-group analysis) for routine and opportunistic sellers with alternative social connections (Degree). Although, we consider the month-fixed effects in column (4). However, we find the coefficients of opportunistic*degree (socially connected opportunistic sellers) are positive (0.005 and 0.003) and statistically insignificant after using control variables and month-fixed effects. Similarly, the coefficients of routine*degree (socially connected routine sellers) are statistically insignificant.

In Panel B, columns (1) & (3) (first three months of the trade war) present the cross-sectional regression (between-group analysis) for routine and opportunistic sellers with alternative social connections (Closeness). Although, we consider the month-fixed effects in column (4). We find the coefficients of opportunistic*closeness (socially connected opportunistic sellers) are negative (-0.037 and -0.041), which are economically and statistically significant (<0.05) after using control variables and month-fixed effects. Therefore, the negative coefficient indicates the benefits for socially connected opportunistic sellers because they sold their stocks before going down the stock's price in the capital markets. Similarly, the coefficients of routine*degree (socially connected routine sellers) are negative (-0.020 and -0.026) but statistically insignificant. Columns (2) & (4) (last three months of trade war) present the cross-sectional regression (between-group analysis) for routine and opportunistic sellers with alternative social connections (Closeness). Although, we consider the month-fixed effects in

column (4). However, we find the coefficients of opportunistic*closeness (socially connected opportunistic sellers) are statistically insignificant after using control variables and month-fixed effects. Similarly, the coefficients of routine*degree (socially connected routine sellers) are statistically insignificant.

In the models, the month-fixed effects control the change in market conditions, which affect all firms in a given period. We consider the month fixed effect separately as a different model to allow the period effects to differ between the models. This approach controls the possibility that the market conditions differentially affect the firms for socially connected opportunistic and routine sellers. We do not use firm fixed effects, given that a few insiders trade in the stock of more than one firm (Goergen et al., 2019).

All results indicate that the socially connected opportunistic sellers earn higher returns (e.g., (El-Khatib et al., 2017)) during the first three months of the trade war than the socially connected routine sellers, which is truly informative. This finding also suggests that socially connected opportunistic sellers had a significant information advantage during the first three months of the trade war, and they involved in informed selling to exploit that advantage. These findings support the baseline regression results.

We next use the separate social connection (Eigenvector) by considering the educational background and employment records separately for defining the social connections of the sellers. Ultimately, we test whether socially connected opportunistic sellers are beneficial and truly informative. To examine how these attributes relate to the informativeness of insider sales, we estimate the cross-section regression form to assess how the socially connected opportunistic sellers involve in informed selling during the trade war.

Table 6.14: Social Connections (Eigenvector)

This table presents results from estimating equation (2). $HPR_{i,t+1}$ is the one-month holding period returns (future) for firm *i* over days $(t+1)$, Opportunistic is an opportunistic seller if the shares sold amount by opportunistic insider *i* in firm *j* and Routine is a routine seller if the shares sold amount by routine insider *i* in firm *j* (insider trades are aggregated to the insider-month level). *BM* is the book-to-market ratio at the end of quarter *t*. $PastMoRet_t$ is the return in month *t*-1. The eigenvector centrality of vertex v ($S_E(a)$) is equal to the sum of all adjacent vertices' eigenvector centrality scores used to define the social connections of opportunistic and routine sellers. First-3M means the first three months after starting the trade war and Last-3M means the last three months of the trade war period. All transactions are aggregated to the insider-month level. *t*-Statistics (two-tailed *p*-values) based on robust standard errors appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

One-Month Future Returns				
Dependent Variable: $HPR_{i,t+1}$				
Panel A: Education Background				
	(1)	(2)	(3)	(4)
Variables	First-3M	Last-3M	Fast-3M	Last-3M
Opportunistic*Eigenvector	-0.728**	0.558	-0.788**	2.452
	(0.376)	(2.011)	(0.408)	(2.655)
Routine*Eigenvector	0.238	-3.399	0.294	5.906*
	(1.215)	(7.526)	(0.710)	(2.909)
Opportunistic	0.027***	-0.013	0.029***	-0.038
	(0.009)	(0.049)	(0.010)	(0.065)
Routine	0.005	-0.041	0.002	-0.156**
	(0.028)	(0.086)	(0.017)	(0.072)
PastMoret	0.082***	-0.082*	0.043	0.012
	(0.017)	(0.046)	(0.029)	(0.091)
BM	-0.004	-0.037	-0.006	-0.118***
	(0.004)	(0.037)	(0.007)	(0.028)
Observations	3,044	235	3,044	235
Month-Effects	No	No	Yes	Yes
Panel B: Employment Records				
	(1)	(2)	(3)	(4)
Variables	First-3M	Last-3M	Fast-3M	Last-3M
Opportunistic*Eigenvector	-0.645**	1.231	-0.753**	1.154
	(0.408)	(3.083)	(0.411)	(1.321)
Routine*Eigenvector	-0.300	-0.685	-0.195	0.584*
	(1.510)	(0.851)	(1.337)	(0.146)
Opportunistic	0.026**	-0.030	0.030***	-0.013
	(0.011)	(0.076)	(0.011)	(0.038)
Routine	0.018	-0.057	0.013	-0.125**
	(0.037)	(0.103)	(0.032)	(0.052)
PastMoret	0.083***	-0.082*	0.044	0.017
	(0.017)	(0.046)	(0.029)	(0.093)
BM	-0.004	-0.036	-0.006	-0.115***
	(0.004)	(0.037)	(0.007)	(0.028)
Observations	3,044	235	3,044	235
Month-Effects	No	No	Yes	Yes

Table 6.14 reports the regressions results from estimating equation (2) by using the educational background and employment records separately to calculate the social connections (Eigenvector). This table presents the cross-sectional regression results by using Ordinary Least Squares regression (OLS) and month-fixed effects. This table also presents results when the holding period return is measured at the one-month horizon. The dependent variable is one-month holding period returns ($HPR_{i,t+1}$). The independent variables are the opportunistic and routine sellers from columns (1) to (4) for both panels. Following Jagolinzer et al. (2020); Cohen et al. (2012), we consider the BM (Book-to-Market ratio) and PastMoRet (past month returns) as control variables in these regressions. Panel A estimates the results with social connections from an educational background, and panel B estimates the results with social connections from employment records.

In Panel A, columns (1) & (3) (first three months of the trade war) present the cross-sectional regression (between-group analysis) for routine and opportunistic sellers by using eigenvectors from the educational background only. Although, we consider the month-fixed effects in column (3). We find the coefficients of opportunistic*eigenvector (socially connected opportunistic sellers) are negative (-0.728 and -0.788), which are economically and statistically significant (<0.05) after using control variables and month-fixed effects. Therefore, the negative coefficient indicates the benefits for socially connected opportunistic sellers because they sold their stocks before going down the stock's price in the capital markets. However, the coefficients of routine*eigenvector (socially connected routine sellers) are positive (0.238 and 0.294) and statistically insignificant. The coefficients of BM (control variable) are also statistically insignificant, which indicates that the determinant does not vary with socially connected opportunistic and routine sales. Columns (2) & (4) (last three months of the trade war) present the cross-sectional regression (between-group analysis) for routine and opportunistic sellers by using eigenvectors from the educational background only. Although, we consider the month-fixed effects in column (4). However, we find the coefficients of opportunistic*eigenvector (socially connected opportunistic sellers) are positive (0.558 and 2.452) and statistically insignificant. Similarly, the coefficients of routine*eigenvector (socially connected routine sellers) are statistically insignificant.

In Panel B, columns (2) & (4) (first three months of the trade war) present the cross-sectional regression (between-group analysis) for routine and opportunistic sellers by using eigenvectors from the employment records only. Although, we consider the month-fixed effects in column (4). We find the coefficients of opportunistic*eigenvector (socially connected opportunistic sellers) are negative (-0.645 and -0.753), which are economically and statistically significant (<0.05) after using control variables and month-fixed effects. Therefore, the negative coefficient indicates the benefits for socially connected opportunistic sellers because they sold their stocks before going down the stock's price in the capital markets. Similarly, the coefficients of routine*eigenvector (socially connected routine sellers) are negative (-0.300 and -0.195) and statistically insignificant. The coefficients of BM (control variable) are also statistically insignificant, which indicates that the determinant does not vary with socially connected opportunistic and routine sales. Columns (2) & (4) (last three months of the trade war) present the cross-sectional regression (between-group analysis) for routine and opportunistic sellers by using eigenvectors from the employment records only. Although, we consider the month-fixed effects in column (4). However, we find the coefficients of opportunistic*eigenvector (socially connected opportunistic sellers) are positive (1.231 and 1.154) and statistically. Similarly, the coefficients of routine*eigenvector (socially connected routine sellers) are statistically insignificant.

In the models, the month-fixed effects control the change in market conditions, which affect all firms in a given period. We consider the month fixed effect separately as a different model to allow the period effects to differ between the models. This approach controls the possibility that the market conditions differentially affect the firms for socially connected opportunistic and routine sellers. We do not use firm fixed effects, given that a few insiders trade in the stock of more than one firm (Goergen et al., 2019).

All results indicate that the socially connected opportunistic sellers earn higher returns (e.g., (El-Khatib et al., 2017)) during the first three months of the trade war than the socially connected routine sellers, which is truly informative. This finding also suggests that socially connected opportunistic sellers had a significant information advantage during the first three months of the trade war, and they involved in informed selling to exploit that advantage. These findings support the baseline regression results.

6.4.4 Instrumental Variables Approach

In the whole analysis, we use one-month holding period (future) returns as a dependent variable and opportunistic and routine sellers (sales) as independent variables, but we consider three-years back trading algorithm (Figure A.6.1) to identify the opportunistic and routine sellers (sales) because we only consider the six-month insider trading performance during the trade war. Nevertheless, this consideration might be defined by a five or four-years back trading policy to identify the opportunistic and routine sellers (sales) to measure the insider trading performances. Therefore, there is a scope of arising the measurement error from calculating opportunistic and routine sellers (sales), which may correlate with the error term (ε_{t+1}). Moreover, the omitted variable bias can also cause of endogeneity issues because of the unavailability and unobservability of monthly firm-level variables (e.g., BM). Notably, we measure the firm-level variable by using the quarterly financial data. Ultimately, the measurement errors and omitted variable bias can increase the endogeneity concerns in our findings.

To mitigate the endogeneity concerns, we use the instrumental variable approach (2SLS) (El Ghoul et al., 2022; Rahman et al., 2021). However, it requires testing whether the opportunistic seller (explanatory variable) is endogenous or not by Wu-Hausman and Durbin (score) chi2 p values. Moreover, we need to choose an instrumental variable that should not correlate with the error term (ε_{t+1}) but is a good indicator of the opportunistic seller. It means that the instrumental variable has a sufficient correlation with opportunistic sellers (the instrumental variable explains the endogenous variable very well) but is uncorrelated with the error term (ε_{t+1}). Therefore, it demands a few tests to find a valid and strong instrument. In Table 6.15, column (1) estimates the regression for all the observations with selling ratio as an instrumental variable. Column (2) estimates the regression for socially connected opportunistic and routine sellers with selling ratio as an instrumental variable for the trade war period. Column (3) estimates the regression for socially connected opportunistic and routine sellers with selling ratio as an instrumental variable for the first three-month of the trade war.

Table 6.15: Instrumental Variables Approach (Two-stage least squares (2SLS))

This table presents results from estimating equation (2). $HPR_{i,t+1}$ is the one-month holding period returns (future) for firm *i* over days $(t+1)$. Opportunistic Seller is a socially connected opportunistic sellers if the shares sold amount by opportunistic insider *i* in firm *j* and they have social connections (eigenvector). Routine Seller is a socially connected routine sellers if the shares sold amount by routine insider *i* in firm *j* and they social connections (eigenvector). *BM* is the book-to-market ratio at the end of quarter *t*. $PastMoRet_t$ is the return in month *t*-1. Selling ratio is the number of shares sold by insider i in the firm j and month t, scaled by the total share volume (number of shares purchased plus the number of shares sold) of insider i in firm j and month t. All transactions are aggregated to the insider-month level. The eigenvector centrality of vertex v ($S_E(a)$) is equal to the sum of all adjacent vertices' eigenvector centrality scores used to define the social connections of opportunistic and routine sellers. *t*-Statistics (two-tailed *p*-values) based on robust standard errors appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

Panel A: First-Stage Regressions			
Dependent Variable: *Opportunistic Seller*			
	(1)	(2)	(3)
Variables	All	Trade War	First-3M
Selling Ratio	0.040***	0.039***	0.040***
	(0.000)	(0.000)	(0.000)
Routine Seller	-0.863***	-0.858***	-0.858***
	(0.015)	(0.016)	(0.016)
PastMoret	0.001*	-0.001	-0.001
	(0.001)	(0.002)	(0.003)
BM	-0.001**	-0.002**	-0.002**
	(0.000)	(0.001)	(0.001)
Observations	9,223	3,251	3,044
Month-Effects	No	Yes	Yes
Cluster by Firm	No	Yes	Yes
Panel B: Second-Stage Regressions			
One-Month Future Returns			
Dependent Variable: $HPR_{i,t+1}$			
	(1)	(2)	(3)
Variables	All	Trade War	First-3M
Opportunistic Seller	-0.266***	-0.295**	-0.374***
	(0 .077)	(0.152)	(0.150)
Routine Seller	-0.201	0.153	0.105
	(0.143)	(0.292)	(0.293)
PastMoret	-0.006	-0.032	-0.044
	(0.010)	(0.034)	(0.038)
BM	-0.005**	-0.016**	-0.014
	(0.002)	(0.005)	(0.005)
Observations	9,223	3,251	3,044
Month-Effects	No	Yes	Yes
Cluster by Firm	No	Yes	Yes
Wu-Hausman	0.020		
Mnimum eigenvalue statistic	High		
Kleibergen-Paap rk LM statistic		0.000	0.000

In Table 6.15, we use the selling ratio as an instrument in the models[13]. We choose the selling ratio as

[13] Prior study (Jagolinzer et al., 2020) uses the purchase ratio as an alternative variable to the Buyer variable (buy minus sell by each insider) to check the consistency with baseline results, but we choose the selling ratio as an instrumental variable because we use opportunistic and routine seller as explanatory variables in this study.

an instrumental variable because it has a good relationship with the opportunistic seller (endogenous variable). Logically, the opportunistic seller would be increased if the selling ratio increased during the trade war period. Moreover, this instrument meets the relevance conditions at first-stage and second-stage regressions. In the first stage, the instrument is highly statistically significant (0.01) and associated with socially connected opportunistic sellers. In the second stage, we find that the coefficients of socially connected opportunistic sellers are negative and statistically significant (<0.01 in columns (1) & (3)), which support the baseline regressions results. However, the socially connected routine sellers' coefficients are not statistically significant, which is also consistent with the previous results.

All results indicate that the socially connected opportunistic sellers earn higher returns (e.g., (El-Khatib et al., 2017)) during the first three months of the trade war than the socially connected routine sellers, which is truly informative. This finding also suggests that socially connected opportunistic sellers had a significant information advantage during the first three months of the trade war, and they involved in informed selling to exploit that advantage.

We find that the Wu-Hausman test and Durbin (score) chi2 (p values) of endogeneity have a significant result (0.020 and 0.000, respectively), which supports the opportunistic seller (explanatory variable) as an endogenous variable. It indicates that selling ratio sufficiently correlates with socially connected opportunistic sellers (the instrumental variable explains the endogenous variable very well) but is uncorrelated with the error term. We also find that the minimum eigenvalue statistic is too high, which indicates that the instrument (selling ratio) is strong enough for the models. We also find that Kleibergen-Paap rk LM statistics is statistically significant in the models (2) and (3), implying that the instrument is neither under nor weakly identified. All findings indicate that the selling ratio is a valid and strong instrument, which is endogenous with the socially connected opportunistic seller. Overall, mitigating endogeneity concerns through instrumental variable approaches yields results consistent with the baseline results.

6.4.5 Heterogeneity

Overall, we use multi-way fixed effects that perform well with complex datasets, and it is denoted by high-dimensional fixed effects (Correia, 2016). We absorb the firm id (CUSIP) and transaction month with clustering firm id (CUSIP) in multi-way fixed effects. These techniques allow me to control the unobserved heterogeneity (unobservable effects) specific to an individual or group, which is correlated with socially connected opportunistic and routine sellers, and it also prevents causal inference due to omitted variable biases (Gormley and Matsa, 2014). Specifically, in the baseline regression, we include month-fixed effects with cross-sectional regressions to account for potential heterogeneity in socially connected opportunistic and routine sellers across the firms in a given month. We do not use firm fixed-effects in the models (except difference-in-difference specification), given that a few insiders trade in the stock of more than one firm. Moreover, we consider the multi-way fixed effect in the instrumental variable-2SLS method to retain consistency with other models (e.g., event studies, baseline regressions, difference-in-difference specifications, robustness tests and alternative measurements). Importantly, we find consistent results in all the approaches and models.

We use the time and firm fixed effects in difference-in-difference approaches to account for the potential heterogeneity concerns (unobservable effects). Hence, firm fixed effects control time-invariant and cross-sectional differences between firms for socially connected opportunistic and routine sellers. These fixed effects help to mitigate the concerns of omitted firm-level characteristics, which might be associated with future performance, trading activity, identifying opportunistic sellers and social connections. The month-fixed effects control the change in market conditions, which affect all firms in a given period. We consider the month fixed effect separately as a different model to allow the period effects to differ between the models. This approach controls the possibility that the market conditions differentially affect the firms for socially connected opportunistic and routine sellers. Month fixed effect considers the period indicator variables in the first three months and the last three months of the trade war.

6.5 Conclusion

In this chapter, we investigate whether socially connected opportunistic sellers earn higher returns compared to socially connected routine sellers during the trade war in 2018. Since, opportunistic sellers do not participate in seasonal trading, whereas routine sellers participate in regular trading over the years. The opportunistic sellers may have an information advantage, although the social connection may accelerate this advantage which may influence them to be more pronounced in informed selling by using this advantage. Moreover, the trade war may more influence the socially connected opportunistic sellers to be involved in informed selling. We extend the literature on how social connections are more beneficial than political connections by studying whether socially connected opportunistic sellers earn more returns compared to politically connected opportunistic sellers. We consider the different empirical strategies (e.g., alternative measurement of social connection, strong and weak connections, political connections of sellers) and statistical techniques (e.g., event studies, different-in-difference) to find the inference that socially connected opportunistic sellers had a significant information advantage during the trade war, and they involved in informed selling to exploit this advantage.

We contribute to the insider trading literature in three ways. First, we contribute to the literature by focusing on social connections among insiders and their opportunistic sales during the trade war. Second, we also focus on political connections among insiders and holding period returns. The political connection of opportunistic sellers is an additional consideration in our research to compare with the benefits of socially connected opportunistic sellers. The comparative strategy helps to check the robustness of previous contributions. Third, we uniquely contribute to the prior literature by focusing on strong and weak social connections of opportunistic and routine sellers.

Importantly, we find that socially connected opportunistic sellers earn higher returns compared to the socially connected routine sellers (e.g., (El-Khatib et al., 2017)) during the trade war and this finding supports our hypotheses. Our findings show that socially connected opportunistic sellers are opportunistic and truly informative. The findings suggest that socially connected opportunistic sellers had a significant information advantage during the trade war, and they involved in informed selling to exploit that advantage.

Notably, the findings are remarkable in the current economic climate, where the government plays an active role in U.S. capital markets. We expect socially connected opportunistic insiders may have more information advantage, and the US government should play more active roles to reduce the influence of opportunism in insider trading. Therefore, we encourage other investors and capital market regulators to monitor the socially connected opportunistic insider sales actively. Accordingly, further research can proceed in two different directions. First, considering the insiders of Chinese firms will be an interesting contribution to insider trading literature because the trade war of 2018 happened between the US and China, and the consideration of the Chinese firms' insiders is relevant. Importantly, opportunistic insiders may have the same chance to get the information advantage and they may exploit that advantage to involve in informed selling in China during the trade war. Second, the insights provided in the chapter can be used to focus on socially connected opportunistic insiders' trades for Chinese firms instead of US firms. We leave these issues for further research.

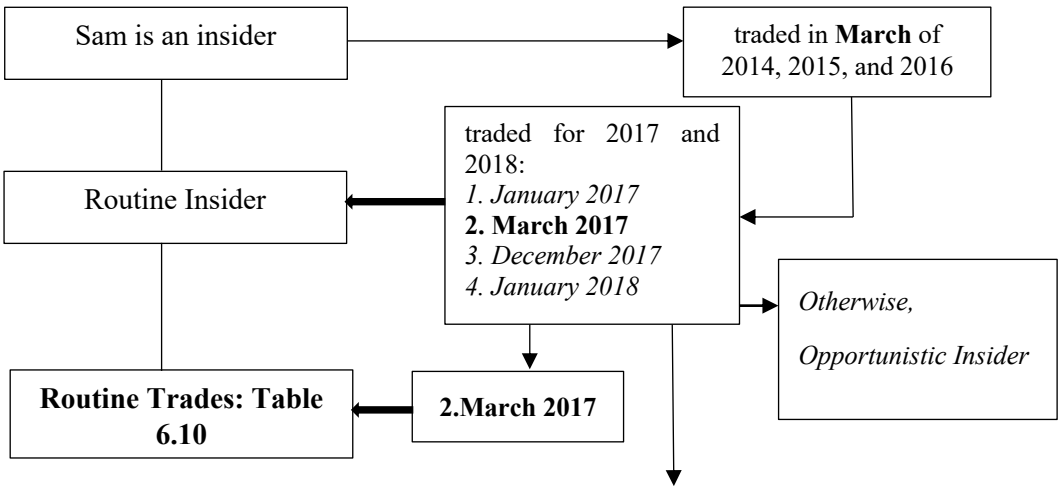
Appendixes:

A.6.1 Opportunistic and Routine Seller (sales)

We use three-years back-trading algorithm strategy to find the opportunistic and routine insiders (see, Neupane et al. (2021)). We have presented the whole process below for better understanding of readers. Following Cohen et al. (2012), in Figure A.6.1, we assume that Sam was an insider who traded in March of 2014, 2015, and 2016 (and no other trades in those years). Here are his transactions for 2017 and 2018:

1. January 2017
2. March 2017
3. December 2017
4. January 2018

"In all tables of the analysis (i.e., except Table 6.10), the "routine" trades are trades made by an insider who has had three consecutive calendar years with trades in the same month in the past. In the example above, insider Sam is routine. We would classify all his trades (1 through 4) as those made by a routine insider, and they would enter the tests as routine. In Table 6.10, we took a slightly different approach to the trade-level analysis. We wanted to differentiate trades made in the same month as the month that established an insider as routine from trades made in other (non-routine) months. In the example above, Sam is routine because he traded for three consecutive years in March. In Table 6.10, all his subsequent March trades (i.e., trade 2) would be classified as routine. However, trades that Sam makes in months other than March (i.e., trades 1, 3, and 4) would be opportunistic in the context of Table 6.10.



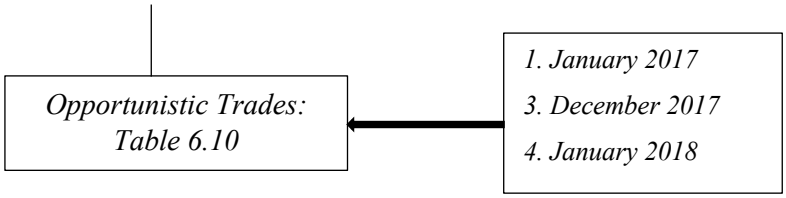


Figure A.6.1: Identifying Opportunistic and Routine Insider (Trades)

Some other notes about the classification scheme are as follows. In the results we report in the main tables (e.g., Table 6.6), once a trader becomes routine, he is classified as routine for all subsequent trades, regardless of what trading behaviour (or lack of trading behaviour) occurs after his initial three-year classification period. We have experimented with different permutations here, e.g., only using the most recent three-year lagged trading behaviour to define routine traders each year. Finally, in all the main results, we check the past three years of trading for all opportunistic traders each year, so they can "become" routine traders at any point. In which case, the opportunistic trader would become a routine trader if he traded in the same calendar month in the past three years and then stay as a routine trader from that point onward as mentioned above."

Afterwards, we generate the dummy variables for pre-trade, post-trade, and trade wars depending on the previously defined tranmonth. We also create two separate dummy variables for the trade war's first and last three months. Here, the pre-trade war refers to the six months from 22 July 2017 to 21 January 2018 as the 'pre-trade war period', from 22 January 2018 to 21 April 2018 as the 'first three months of trade war (First-3M) period', and from 22 April 2018 to 21 July 2018 as the 'last three months of trade war (Last-3M) period'. We use the selling ratio as an instrumental variable for the endogeneity issues to test the endogeneity and consistency with the baseline results.

A.6.2 Political Connections of Sellers

Following prior research (e.g. Duchin and Sosyura (2012); Jagolinzer et al. (2020); Akin et al. (2019)), we consider the political connections based on whether any of the directors or at least one of the top-level officers has current or previous work experience at Federal Reserve, Treasury Department, Congress or house, or bank regulator (e.g. Office of Comptroller of Currency, Office of Thrift Supervision, and Federal Deposit Insurance Corporation). All directors and top-level officers at companies in which one or more have such experience are considered politically connected. We indicate

that the political connections may be direct, indirect, or both connections of officers, directors, and/or CEOs. Connections are defined as direct when officers, directors and/or CEOs have such work experience, and the connections are defined as indirect when the directors, officers and/or CEOs are connected through the directly connected directors, officers and/or CEOs.

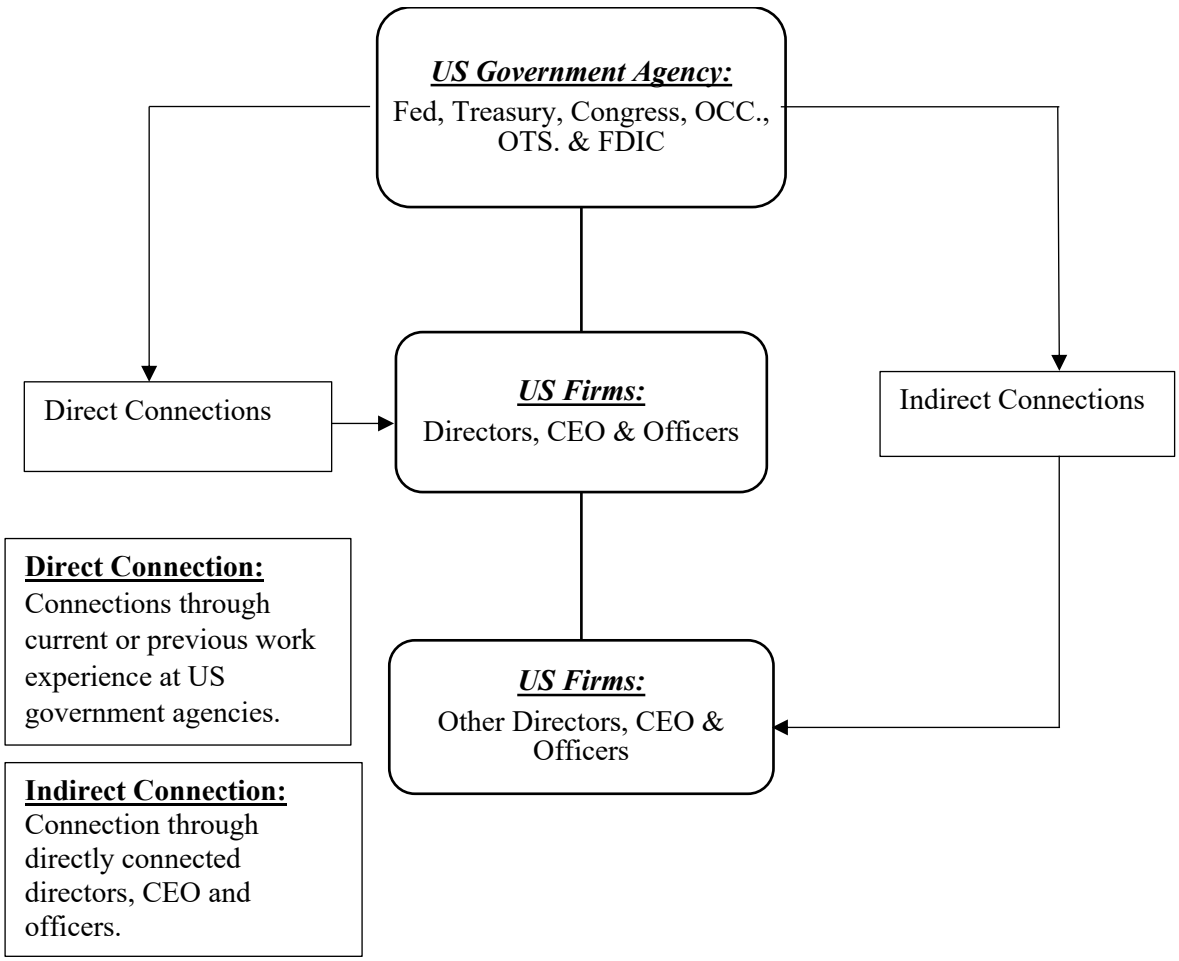


Figure A.6.2: Political connection map

Figure A.6.2 presents the political connections of directors, officers and CEOs used to test for information sharing among the other US firms' directors, officers and CEOs. We use the company's proxy statement to determine whether a particular director, officer and CEO have work experience at the Federal Reserve, U.S. Treasury Department, Congress, Office of Comptroller of Currency (OCC), Office of Thrift Supervision (OTS), or Federal Deposit Insurance Corporation (FDIC). Connections are defined as direct when the director, officer or CEO has such experience. All other directors, officers,

and CEOs are classified as indirectly connected.

Table: A.6.1: Different periods surrounding Trade War period (Insider sales)

This table presents results from estimating equation (2). $HPR_{i,t+1}$ is the one-month holding period returns (future) for firm *i* over days $(t+1)$, Opportunistic is an opportunistic sales if the shares sold amount by opportunistic insider *i* in firm *j* and Routine is a routine sales if the shares sold amount by routine insider *i* in firm *j*. *BM* is the book-to-market ratio at the end of quarter *t*. $PastMoRet_t$ is the return in month *t*-1. The eigenvector centrality of vertex v ($S_E(a)$) is equal to the sum of all adjacent vertices' eigenvector centrality scores used to define the social connections of opportunistic and routine sellers. First-3M means the first three months after starting the trade war and Last-3M means the last three months of the trade war period. All transactions are aggregated to the insider-month level. *t*-Statistics (two-tailed *p*-values) based on robust standard errors appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

One-Month Future Returns			
Dependent Variable: $HPR_{i,t+1}$			
	(2)	(3)	(4)
VARIABLES	Trade War	Pre-Trade War	Post-Trade War
Opportunistic*Eigenvector	-0.687**	-0.082	0.687
	(0.288)	(0.213)	(1.067)
Routine*Eigenvector	0.152	-0.213	1.429
	(0.608)	(0.452)	(1.331)
Opportunistic	0.046***	0.001	-0.018
	(0.015)	(0.011)	(0.049)
Routine	0.013	0.003	-0.069
	(0.034)	(0.021)	(0.059)
PastMoret	0.019	-0.010	-0.123
	(0.030)	(0.035)	(0.077)
BM	-0.008	-0.010	0.016**
	(0.007)	(0.006)	(0.006)
Observations	3,251	5,156	816
Month-Effects	Yes	Yes	Yes

Table: A.6.2: Opportunistic and Routine Trades (Trade War)

This table presents results from estimating equation (2). $HPR_{i,t+1}$ is the one-month holding period returns (future) for firm *i* over days $(t+1)$. Opportunistic is an opportunistic sales if the shares sold amount by opportunistic insider *i* in firm *j* and Routine is a routine sales if the shares sold amount by routine insider *i* in firm *j*. *BM* is the book-to-market ratio at the end of quarter *t*. $PastMoRet_t$ is the return in month *t*-1. The eigenvector centrality of vertex v ($S_E(a)$) is equal to the sum of all adjacent vertices' eigenvector centrality scores used to define the social connections of opportunistic and routine sellers. First-3M means the first three months after starting the trade war and Last-3M means the last three months of the trade war period. All transactions are aggregated to the insider-month level. *t*-Statistics (two-tailed *p*-values) based on robust standard errors appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

One-Month Future Returns				
Dependent Variable: $HPR_{i,t+1}$				
Panel A: Degree				
	(1)	(2)	(3)	(4)
Variables	First-3M	Last-3M	Fast-3M	Last-3M
Opportunistic*Eigenvector	-0.006**	0.005	-0.006**	0.003
	(0.003)	(0.014)	(0.003)	(0.017)
Routine*Eigenvector	0.001	-0.034	0.002	-0.004
	(0.007)	(0.108)	(0.006)	(0.029)
Opportunistic	0.023***	0.008	0.024***	0.007
	(0.008)	(0.040)	(0.008)	(0.050)
Routine	0.016	0.005	0.013	-0.076

	(0.017)	(0.266)	(0.020)	(0.089)
PastMoret	0.083***	-0.028	0.044	0.017
	(0.017)	(0.044)	(0.029)	(0.093)
BM	-0.004	-0.097***	-0.006	-0.116***
	(0.004)	(0.036)	(0.007)	(0.028)
Observations	3,044	235	3,044	235
Month-Effects	No	No	Yes	Yes

Panel B: Closeness

	(1)	(2)	(3)	(4)
Variables	First-3M	Last-3M	Fast-3M	Last-3M
Opportunistic*Eigenvector	-0.040**	-0.014	-0.043**	0.038
	(0.016)	(0.089)	(0.018)	(0.000)
Routine*Eigenvector	-0.011	-230.146	-0.013	-101.208
	(0.040)	(230.815)	(0.033)	(0.000)
Opportunistic	0.048***	0.012	0.052***	-0.003
	(0.016)	(0.087)	(0.018)	(0.000)
Routine	0.029	229.955	0.030	101.135
	(0.039)	(230.667)	(0.035)	(0.000)
PastMoret	0.082***	-0.080*	0.043	-0.062
	(0.017)	(0.046)	(0.029)	(0.000)
BM	-0.004	-0.035	-0.006	-0.041
	(0.004)	(0.037)	(0.006)	(0.000)
Observations	3,044	235	3,044	235
Month-Effects	No	No	Yes	Yes

Table: A.6.3: Alternative Measurement (Opportunistic and Routine Trades)

This table presents results from estimating equation (2). $HPR_{i,t+1}$ is the one-month holding period returns (future) for firm *i* over days $(t+1)$. Opportunistic is an opportunistic sales if the shares sold amount by opportunistic insider *i* in firm *j*. *BM* is the book-to-market ratio at the end of quarter *t*. $PastMoRet_t$ is the return in month *t*-1. The eigenvector centrality of vertex v ($S_E(a)$) is equal to the sum of all adjacent vertices' eigenvector centrality scores used to define the social connections of opportunistic and routine sellers. First-3M means the first three months after starting the trade war and Last-3M means the last three months of the trade war period. All transactions are aggregated to the insider-month level. *t*-Statistics (two-tailed *p*-values) based on robust standard errors appear in parentheses (brackets). ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail).

One-Month Future Returns

Dependent Variable: $HPR_{i,t+1}$

Panel A: Education Background

	(1)	(2)	(3)	(4)
Variables	First-3M	Last-3M	Fast-3M	Last-3M
Opportunistic*Eigenvector	-0.696*	0.554	-0.764*	1.690
	(0.393)	(2.012)	(0.431)	(2.266)
Routine*Eigenvector	-0.292	33.048	-0.245	90.528
	(0.887)	(120.817)	(0.708)	(69.884)
Opportunistic	0.025***	-0.013	0.028***	-0.003
	(0.010)	(0.049)	(0.011)	(0.061)
Routine	0.024	-0.820	0.023	-2.135
	(0.020)	(2.840)	(0.021)	(1.673)
PastMoret	0.082***	-0.082*	0.043	-0.064
	(0.017)	(0.046)	(0.029)	(0.047)
BM	-0.004	-0.037	-0.006	-0.043
	(0.004)	(0.037)	(0.006)	(0.032)
Observations	3,044	235	3,044	235

Month-Effects	No	No	Yes	Yes
	Panel B: Employment Records			
	(1)	(2)	(3)	(4)
Variables	First-3M	Last-3M	Fast-3M	Last-3M
Opportunistic*Eigenvector	-0.814*	1.166	-0.934**	-0.331
	(0.417)	(3.083)	(0.417)	(1.739)
Routine*Eigenvector	0.835	74.575	0.957	33.215
	(1.197)	(96.806)	(1.040)	(47.851)
Opportunistic	0.029***	-0.029	0.033***	0.041
	(0.011)	(0.076)	(0.011)	(0.047)
Routine	-0.002	-1.810	-0.005	-0.795
	(0.030)	(2.294)	(0.031)	(1.161)
PastMoret	0.083***	-0.081*	0.044	-0.059
	(0.017)	(0.046)	(0.029)	(0.049)
BM	-0.004	-0.036	-0.006	-0.040
	(0.004)	(0.037)	(0.006)	(0.032)
Observations	3,044	235	3,044	235
Month-Effects	No	No	Yes	Yes

Chapter 7

7. Conclusion

7.1 Summary and Key Findings

An extensive empirical finance literature examines the relationship between abnormal insider trading and profitability surrounding the major firm-level events (e.g., Altanlar et al., 2023; Arif et al., 2022; Haselmann et al., 2021; Kim, 2016; Cohen A. et al., 2015), important financial market events (e.g., Blackburne et al., 2021; Dechow et al., 2016), pandemic (e.g., Hoang, K. et al., 2023; Henry et al., 2022; Ozik et al., 2021; Anginer et al., 2020) and financial crisis (e.g., Gangopadhyay et al., 2019; Cziraki, 2018; Ozkan and Trzeciakiewicz, 2014). However, opportunism through insiders' political connections or opportunistic behaviour, which has attracted much attention in recent insider trading studies (e.g., El-Khatib et al., 2021; Jagolinzer et al., 2020; Goergen et al., 2019; Cziraki, 2018; Cohen, L. et al., 2012), provides a theoretical foundation of how asymmetric information increases insiders' information advantage and participate in informed trading. This thesis investigates whether insiders' political or social connections or opportunistic behaviour increase information advantage and influence to participate in informed trading for generating higher returns during the trade war in 2018.

The objective of the thesis is to contribute to the insider trading literature in three ways. First, we contribute to the literature by focusing on political connections among insiders and their opportunistic trades during the trade war. We importantly contribute to direct, recent, and stale political connections among insiders and their holding period returns. Second, we investigate whether opportunistic insiders earn higher returns compared to routine insiders during the same period. Third, we contribute to the literature by focusing on social connections among insiders and their opportunistic sales during the trade war. We especially consider the political connection of opportunistic sellers additionally to compare with the benefits of socially connected opportunistic sellers. Even, we uniquely consider the strong and weak social connections of opportunistic and routine sellers to decide whether strongly connected opportunistic sellers earn higher returns compared to weakly connected sellers during the trade war.

In the first empirical chapter, we find that the relationship between political connections and opportunism of insider trades is statistically and economically much larger for politically connected insiders compared to non-politically connected insiders during the trade war. This finding suggests that politically connected insiders generate greater returns compared to non-politically connected insiders during the trade war. The findings also interpret that politically connected insiders have an information advantage and are more likely to use private information opportunistically when they trade their firm's shares. From the different event studies surrounding the trade war, we also find that politically connected insiders generate higher abnormal returns than non-politically connected insiders. Even, we find that the recent directly connected insiders generate higher returns than stale directly connected insiders. This finding suggests that the recent direct connections are stronger than stale direct connections to generate greater returns. Additionally, we use different demographic analyses, and we find that female insiders are more opportunistic compared to male insiders, young insiders are more opportunistic compared to old insiders and CEOs are more opportunistic than other directors and officers. Our results have survived a number of robustness tests and endogeneity concerns. Overall, our findings suggest that political connections provided information advantage to the insiders and they traded to exploit their advantages opportunistically.

In the second empirical chapter, we find that non-routine or opportunistic insiders earn higher returns compared to routine insiders during the trade war. This finding suggests that non-routine insiders may have the information advantage and they may use it opportunistically. Moreover, from the different event studies surrounding the trade war, we also find that opportunistic insiders generate higher abnormal returns than routine insiders. We also consider several tests for opportunistic insiders, e.g., gender, age, board position, compensation, and sector classifications. From these additional analyses, we find that female insiders are more opportunistic compared to male insiders, old insiders are more opportunistic compared to young insiders, CEOs are more opportunistic than directors, highly compensated insiders are more opportunistic than lowly compensated insiders from buying shares, lowly compensated insiders are more opportunistic than highly compensated insiders from selling shares, technology sector's insiders are more opportunistic in buying shares than other sectors and

financial sector's insiders are more opportunistic in selling shares than other sectors. Overall, our findings suggest that opportunistic insiders' transactions were more beneficial and truly informative during the trade war.

In the third empirical chapter, we investigate whether socially connected opportunistic sellers were more opportunistic compared to socially connected routine sellers during the trade war in 2018. We find that the relationship between socially connected opportunistic sellers and holding period returns is statistically and economically larger than that of socially connected routine sellers during the trade war. This finding suggests that socially connected opportunistic sellers generate greater returns compared to routine sellers during the trade war. The findings also interpret that socially connected opportunistic sellers have an information advantage and are more likely to use private information opportunistically when they trade their firm's shares. From the different event studies surrounding the trade war, we also find that socially connected opportunistic sellers generate higher abnormal returns than socially connected routine sellers. Even, we also find that socially connected opportunistic sellers generate greater returns compared to politically connected opportunistic and routine sellers. Our findings suggest that socially connected opportunistic sellers have more information advantage and social connection is stronger than political connection. We uniquely consider the insiders from China-connected (US firms have business relations with China) firms and we find that socially connected opportunistic sellers from China-connected firms generate higher returns compared to routine and non-connected opportunistic sellers. Our results have survived a number of alternative measurements, robustness tests and endogeneity concerns. Overall, our findings suggest that the socially connected opportunistic sellers had an information advantage and they earned higher returns from informed sales during the trade war.

7.2 Implications of the Thesis

Insiders' political or social connections or opportunistic behaviour provides a theoretical foundation of how asymmetric information increases insiders' information advantage and influences them to be involved in informed trading during the trade war. Even, in game theory, opportunism is the behaviour of seeking benefits from asymmetric information where politically or socially connected or

opportunistic insiders have unequal access to private information. The information advantage through connections or opportunistic behaviour can facilitate the insiders to be involved in informed trading.

Our findings have important managerial implications, especially for non-routine or opportunistic insiders getting higher returns by involving in informed trading during the trade war. Hence, information asymmetry may influence opportunistic insiders to participate in informed trading. Therefore, we encourage firms' managers to raise ethical issues of opportunistic trades in the firm or ensure appropriate compensation packages for each employee to control informed trading.

Since there was no other major political event (e.g., an election) during the trade war period in 2018. Thus, considering trade war time is free from other exogenous events like the interim election on 06 November 2018. Therefore, politically or socially connected or opportunistic insiders may get the prior non-public information regarding the trade war announcement and its effect on firms' performances and the connections can make the insiders opportunistic to generate higher returns than non-connected or routine insiders. To strengthen this finding, we consider the insiders' trades which are reported to US SEC timely. Thus, this consideration is not subject to checking the legal issues of insider trades. The findings from the empirical chapters are remarkable in the current stock market environment, where the government plays an active role in US capital markets. Therefore, we encourage other investors and capital market regulators to monitor insider trades by insiders with political and social connections and opportunism behaviour.

7.3 Limitations and Directions for Future Research

The first limitation of the thesis perhaps involves the consideration of insider trading in US during the trade war in 2018. However, the trade war happened between the US and China. Therefore, considering Chinese firms and insider trading in Chinese stock markets would be an interesting addition to the current study. However, we cannot focus on the additional consideration of insider trading in China because of the inaccessibility of Chinese data. Moreover, the stock markets in US and China are not similarly efficient[14]. The US stock markets are efficient (Fama, 1991), and the Chinese stock markets

[14] Fama (1970) describes an efficient market as, "A market in which prices always fully reflect all available information".

are inefficient (Bertrand et al., 2020). Therefore, the consideration of insider trading in China might make weaker our empirical findings on opportunistic trades. However, considering the insiders of Chinese firms will be an interesting contribution to insider trading literature because of the trade war in 2018 happened between the US and China, and the consideration of the Chinese firms' insiders are relevant. Importantly, opportunistic insiders may have the same chance to get the information advantage and they may exploit that advantage to be involved in informed trading in China during the trade war. We leave this issue for further research.

The second limitation of the thesis relates to the consideration of a shorter time (e.g., three months for empirical studies) to evaluate the performance of opportunistic trades. However, we test the performance of informed trading for six months for pre-trade war, post-trade war and trade war periods separately before moving on to evaluate the shorter time performance (e.g., Jagolinzer et al. (2020)). Moreover, we cannot examine the performance of opportunistic trades for longer time because we expect that the investors' reaction to trade war declaration may not be retained for a longer time. However, further examinations can be conducted how greedy insiders earn higher profits throughout longer periods because of trade war.

The third limitation of the thesis relates to the unavailability of political data. Although we manually collect it from the firm's proxy statement, which may raise the endogeneity concern due to measurement errors and we use the instrumental variable approach to mitigate the endogeneity issues. However, future research can be conducted on political connections and opportunistic insider trading in China during the trade war. This consideration will be an interesting contribution to insider trading literature how politically connected insiders utilise the information advantage to earn higher returns in the presence of different political governmental system (communist state) in China. Additionally, the insights provided in the thesis can be used to focus on socially connected opportunistic insiders' trades in China.

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