Executive Incentives, Import Restrictions, and Competition

Empirical Analysis of Antidumping and Countervailing Duty Orders

Brian Blank

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Abstract

To better understand the political economy of trade policy, I examine executive compensation around the time of changes to import restrictions through antidumping and countervailing duty orders. Trade policy restrictions limit international competition, so I explore the resulting compensation of firm managers. When imports are restricted, firms linked to restrictive orders give their CEOs compensation in cash and equity incentives that is 17 percent higher than when the restrictions are not in place. Furthermore, CEOs' compensation is $1 million higher than expected, suggesting the additional compensation is not explained by superior firm performance or other characteristics. Overall, the findings suggest that executives benefit amid import restrictions, thereby contributing to research on executive incentives, trade, and public choice.

JEL codes: M12, G3, F13, J3, K22

Keywords: managerial incentives, international trade restrictions, competition, firm governance

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Introduction

Ever since Adam Smith's (1776) *The Wealth of Nations*, economists have explored how individuals, institutions, and economies respond to tax incentives. Increasingly, global commerce motivates regulators' and policymakers' interest in the implications of import restrictions and taxes, including their resulting effects on firm and managerial incentives. Because of the effect of trade policy on competition, researchers of public choice and international trade often investigate incentives and compensation when trade policies change. Accordingly, I examine executive compensation following changes in import restriction on competing products through antidumping and countervailing duty orders from the US International Trade Commission and US Department of Commerce.

While competitive industries use more performance-based incentives, both executive compensation and the process by which it is set are complex (Aggarwal and Samwick 1999; Raith 2003; Vroom 2006; Karuna 2007; Beiner, Schmid, and Wanzenried 2011). Consequently, researchers exploit policy changes to observe increasingly performance-sensitive compensation following deregulation, with CEO compensation rising the most, as a result of talent demand (Cuñat and Guadalupe 2009a, 2009b). Dasgupta, Li, and Wang (2018) also note higher CEO turnover following tariff cuts. However, these studies examine manager incentives in response to more competition, leaving declines in competition relatively unexplored. Moreover, US tariffs are smaller than other nontariff duties, historically, of which the United States is among the most

frequent users (Bown 2016).[1] Therefore, I analyze CEO compensation following both newly imposed and revoked antidumping and countervailing duties.

New antidumping orders restrict imports and lower competition, which may benefit firms and allow corporate stakeholders to extract rents. As a result, instead of focusing on firm survival, CEOs may seek more power (for example, empire building), job security from less firm risk, or compensation.[2] Still, who benefits from less competition remains unknown. A firm's rent extraction and allocation in a less competitive environment may follow governance or performance (Giroud and Mueller 2010). For example, firms could add value through additional dividends or alternatively allocate resources to community welfare or lower-level employees. Regardless, benefits to the firm following import restrictions remain an empirical question. By investigating both the imposition of new antidumping and countervailing duty orders and the revocation of existing ones, I can examine the extent to which the effects are symmetric, resulting in a more general analysis.

To learn more about firm decisions and outcomes following import restrictions, I examine executive compensation of firms following changes in the status of antidumping and countervailing duty orders. I construct a sample of firms with executive compensation information and use the imposition or revocation (i.e., new implementation or lifting) of antidumping and countervailing duty orders from the US International Trade Commission and US Department of Commerce. The goal is to identify instances where import restrictions change substantially. For this reason, antidumping and countervailing duty orders are especially effective tools for observing the impact on firms, given that orders are more than eight times

[1] See, for example, part II, section D of the World Trade Organization's 2009 *World Trade Report*, which shows average antidumping duties of 41 percent compared to the average applied (i.e., Most Favored Nation [MFN] or nondiscriminatory tariff) rate of 5 percent for the United States.
[2] Investment may decline because of uncertainty, with the goal being stable firm performance and job security, perhaps allowing more capital for compensation. See, for example, Ramkumar and Francis (2019).

larger than tariffs on average (41 percent average antidumping duties compared to 5 percent applied tariffs). I analyze firms that exhibit changes in the status of import restrictions (i.e., a newly imposed order or the revocation of a previously imposed order). Importantly, I study over a thousand firms from 1994 to 2015, designate firms identified within a specific antidumping and countervailing duty case as order firms, and compare them to their industry peers, which generate similar goods and services. Most order firms are large manufacturers with better operating performance and slower growth than their peers. Order firm executives are also highly compensated, which is not surprising given that the firms are larger. However, I use the approach from Core, Guay, and Larcker (2008) to account for differences in firm traits and find that executive compensation is similar for each group.

By comparing order firms to various comparison groups to control for additional factors and explanations, I observe a positive relation between the presence of an order and executive compensation, in terms of both equity and cash compensation. The 17 percent higher compensation linked to the imposition of antidumping and countervailing duty orders equates to $700,000 in additional compensation. While much of the raise is received via stock and options, salary and bonuses are also higher by $150,000, suggesting that CEOs receive higher compensation when import restrictions are in place.

One explanation for higher compensation could be firm growth or superior performance. I use two methods to assess this possibility. First, I follow Core, Guay, and Larcker (2008) to analyze differences from expected compensation. Expected compensation is designed to account for what an executive of a firm with specific traits, including size and performance, would be anticipated to earn on average compared to peers. Deviations from expected compensation are often referred to as residual or excess compensation. I observe that excess compensation is more

than $1 million (18 percent) higher for firms with active antidumping and countervailing orders in place, suggesting that compensation differences are not attributable to firm characteristics. Using alternative measures with broader and more restrictive groups of peer and control firms, I continue to document higher compensation for CEOs at firms with orders in place.

Next, I analyze performance and find no evidence of changes following the imposition or revocation of orders. Given higher cash compensation, the compensation rise following new restrictions is not the result of incentives benefiting shareholders. Higher compensation is not explained by firm characteristics or performance. I also conduct synthetic and propensity score matching analyses to account for differences in order and nonorder (control) firms and consider alternative explanations. Similar conclusions persist, with compensation rising after new orders.

Overall, this research documents how changes in international trade policy affect firm executives by examining managerial incentives in changing competitive environments. Antidumping and countervailing duty orders are important because of their increasing use in the United States. Furthermore, rents are extracted and allocated amid declining competition, which is noteworthy since firm performance does not increase with executive compensation following import restrictions. Finally, by investigating both new and revoked orders, I offer a more comprehensive and general analysis of import restrictions, including examining competition declines, that has implications for government officials and policymakers. The remainder of the paper is arranged as follows. The next section summarizes the background for my hypothesis and some relevant literature, the section after that describes the methodology and results, and the final section offers conclusions from the study.

Related Literature and Hypothesis Development

CEO compensation levels and structures are heavily scrutinized and closely examined, especially with compensation rising at large firms (Murphy 1999; Murphy and Zabojnik 2004; Gabaix and Landier 2008; Frydman and Saks 2010; Edmans et al. 2012; Quigley and Hambrick 2015). For example, Frydman and Jenter (2010) survey the rise in compensation and offer explanations, suggesting that both managerial power and competitive forces play a role. Related literature seeks to identify market dynamics of executive compensation. Core, Holthausen, and Larcker (1999) and Core, Guay, and Larcker (2008) use firm characteristics as determinants of compensation and identify expected levels of CEO compensation compared to actual compensation levels. More recently, Murphy and Jensen (2018) show unintended consequences of the regulatory process and suggest that policy is an important reason for compensation trends.

In general, firms strive to select optimal CEOs and structure compensation to align incentives of management with those of shareholders (Bebchuk and Fried 2003). Researchers have posed a variety of theories to evaluate compensation setting and promotion (Leonard 1990; Lambert, Larcker, and Weigelt 1993; Main, O'Reilly, and Wade 1993; Eriksson 1999; Bognanno 2001; Conyon, Peck, and Sadler 2001). For example, the tournament theory of compensation suggests that newly promoted CEOs obtain the prize of a large raise and substantially higher compensation, which motivates executives to compete for the prize of promotion to CEO and results in higher performance and greater shareholder value (Lazear and Rosen 1981; Green and Stokey 1983; Rosen 1986; Kale, Reis, and Venkateswaran 2009; Burns, Minnick, and Starks 2017). Alternatively, traditional labor market theories view the CEO labor market as a subset of the broader market for labor, where supply and demand jointly determine the price (i.e., wage)

and quantity of workforce jobs and candidates (Finkelstein and Hambrick 1988). Similarly, the literature on the labor markets for company directors links their wages with changes in supply and demand around the time of changes like the Sarbanes-Oxley Act of 2002 (Linck, Netter, and Yang 2009). These labor markets are presumed to act competitively and efficiently, optimally matching CEOs and firms without friction, such that firms hire the best CEO and compensate accordingly (Jenter, Matveyev, and Roth 2016).

Several studies discuss the role of competition on labor markets and compensation (Aggarwal and Samwick 1999; Vroom 2006; Beiner, Schmid, and Wanzenried 2011). Specifically, Raith (2003) discusses the relation of compensation to risk and competition, while Karuna (2007) shows that competitive industries have stronger incentive structures. However, identification of the impact of competition on compensation faces challenges. As a result, some researchers seek to exploit changes to product market competition, such as import restrictions. For example, Cuñat and Guadalupe (2009a, 2009b) use deregulation in the financial sector as well as proxying for import penetration with exchange rates and tariffs. They observe shifts in compensation structure such that compensation becomes more sensitive to performance and less fixed. They also see pay differentials increase within firms, with CEO compensation rising more than that of other employees, which they suggest is related to the higher demand for talent. Similarly, Dasgupta, Li, and Wang (2018) examine major industry-level tariff cuts and detect increases in CEO turnover and performance sensitivity. However, the literature to date has focused on increases in competition. As a result, I focus on trade policy changes relaxing and tightening large, substantive import restrictions that include both increases and decreases in competition.

Increasing and relaxing import restrictions can result in changes in competition (Fresard 2010). Specifically, tariff and duty increases (i.e., additional restrictions on imports) each will lower the level of competition, which may result in benefits accruing to firms instead. Furthermore, many important differences between increases and decreases in competition exist that could suggest asymmetry of these effects. For example, when less competitive environments yield additional value to firms, leaders of those firms have discretion to distribute that value, so they may choose to increase investment or wages as a result of the less competitive environment. This is in stark contrast to more competitive environments, where firms may remove CEOs to avoid bankruptcy. While CEOs in less competitive environments may see declines in performance-sensitive compensation, at least relative to total compensation, they are unlikely to be promoted or hired at a better firm as a result of the change in competitive environment. However, CEO power could rise, resulting in a higher level of entrenchment and relaxing the governance mechanisms at the firm. Moreover, tariffs and duties can be politically and economically motivated, with firm and industry decision makers expecting higher, more stable compensation packages as a result. In turn, firms may be pressured to respond by allocating resources in a particular manner, perhaps avoiding media criticism or even a reversal of import restrictions. These forces may affect the distribution of compensation changes asymmetrically, but previous literature has focused on forces acting in a single direction. Consequently, the generalizability of previous work is unclear. In addition to the impact on firms affected by declines in competition within industries with import restrictions, customers in industries along the supply chain could also be affected.

Since the role and impact of governance depend on the competitive environment within the industry, the extent to which firms extract rents and how they allocate them could also

depend on the current corporate governance mechanisms in place at a firm (Giroud and Mueller 2010). Specifically, firms with powerful boards and shareholders may pay additional dividends or invest in more projects to increase the firm's value, while entrenched CEOs could obtain larger compensation packages with higher salaries, especially relative to pay-for-performance and equity compensation components. Alternatively, environmentally and socially responsible firms may allocate resources toward community welfare. Similarly, employees could also benefit financially through larger workforces that allow for career advancement or higher compensation, perhaps through additional job security, either by lowering turnover or raising the quality of the labor pool, in turn limiting financial downside risk for current employees.

Empirical Methodology and Results

I focus on antidumping and countervailing duties, which are nontariff forms of temporary trade barriers that have become an increasingly important part of growing protectionist trade policy since the Great Recession (Bown 2011). Antidumping and countervailing duties are not in the tariff schedule, since they are nontariff import restrictions. As noted earlier, duty increases may lead to lower competition, such that a revocation could increase the level of competition. I look at both the imposition and revocation of orders for antidumping and countervailing duties to capture changes in competitive conditions in both directions.

The US International Trade Commission instituted 437 antidumping and countervailing duty orders from October 21, 1977, through April 19, 2018. Of these orders, 225 focus on iron and steel products, while the others are tied to agriculture, plastics, textiles, transportation, machinery, metals, chemicals, and pharmaceuticals. Products imported from China and India account for 162 and 37 orders, respectively. Many of these orders are tied to multiple firms, with the total linked to 1,351 unique firms; however, many firms are linked to multiple orders. Since

this study focuses on executive compensation and requires regulatory filings for data availability, I concentrate on the 275 orders beginning between 1994 and 2015 and the 43 ending during the same period, because data may be obtained from Securities and Exchange Commission proxy filings throughout the sample period through ExecuComp and directEDGAR.

Beginning with the list of firms tied to antidumping and countervailing duty order requests, I construct a sample of public firms whose regulatory filings contain compensation and financial information from Compustat and directEDGAR.[3] Next, I develop a database of firms included in industries impacted by these orders from the US International Trade Commission. Since many of these orders are applied in a series to related firms and products, I isolate 91 specific event dates that do not have any other orders within the three years preceding or following the order and label them as clean windows to examine. These event dates are tied to 51 order firms. To isolate similar firms and product lines, I restrict my analysis to firms sharing the same Standard Industrial Classification (SIC) code with the 51 order firms. The final sample consists of 1,009 unique firms.

I gather firm characteristics such as size and performance from the Center for Research in Security Prices (CRSP), Thomson Reuters, and Compustat. Compensation information comes from two sources: (1) Compustat's ExecuComp database, which covers S&P 1500 firms, and (2) directEDGAR, which is a platform that makes available the information in regulatory filings for other firms. Using directEDGAR, I supplement compensation information for firms impacted by orders but not covered by ExecuComp. Since my analysis focuses on industries affected by orders, I expand my sample by approximately 60 percent from just over 5,000 firm-year

[3] I am thankful to Chad P. Bown for making his detailed Global Antidumping Database and Temporary Trade Barriers Database available, in addition to the manual "Global Antidumping Database," through his website: https://www.chadpbown.com/global-antidumping-database/.

observations to 8,137.[4] Table 1 provides summary statistics showing that the sample consists of large, profitable firms. Total assets, market capitalization, and sales average $5.1 billion, $6.1 billion, and $3.6 billion, respectively. Average annual stock returns are 17 percent, while returns adjusted for size and industry are 9 percent. As a result, many of the executives are highly paid, with the average CEO earning $3.7 million annually, $890,000 of which is composed of cash compensation (defined as the sum of the salary and bonus components). In many cases, the variables have positive skewness, such that the median values are lower as a result. For this reason and to benefit economic interpretation, many analyses will include logarithm transformations of the relevant variables in an effort to estimate linear relations. In another effort to limit the effects of outliers, data are winsorized, such that extreme values are set at the 99 percent and 1 percent values, though similar results persist at other thresholds, including using data that have not been winsorized (Hastings et al. 1947).

Table 1. Summary Statistics

Panel A: Firm characteristics

Measure	Count	Mean	Standard deviation	Percentiles		
				25th	50th	75th
Total assets (millions of $)	8,137	5,052	22,184	178	701	2,714
Sales (millions of $)	8,137	3,619	13,392	128	610	2,356
Sales growth	8,137	0.21	0.88	(0.03)	0.08	0.23
Market capitalization (millions of $)	8,136	6,090	21,062	222	812	2,903
Book-to-market	8,137	0.51	0.70	0.22	0.40	0.65
Book leverage	8,137	0.21	0.20	0.02	0.18	0.32
Operating ROA	8,137	0.06	0.29	0.04	0.11	0.17
Industry-adjusted ROA	8,137	(0.08)	0.38	(0.06)	—	0.04
Stock return	8,137	0.17	0.80	(0.22)	0.06	0.36
Size- and industry-adjusted return	8,137	(0.07)	0.38	(0.06)	—	0.04
S&P 500	8,137	0.14	0.35	—	—	—

(continued on next page)

[4] Note that 91 observations are singleton observations without sufficient data for the purposes of our multivariate analyses but are included in summary statistics and univariate analyses.

Measure	Count	Mean	Standard deviation	Percentiles		
				25th	50th	75th
Panel B: Compensation characteristics						
Total compensation (thousands of $)	8,137	3,700	4,616	783	1,954	4,810
Equity compensation (thousands of $)	8,137	2,878	4,797	202	1,118	3,673
Cash compensation (thousands of $)	8,137	890	764	433	688	1,067
Bonus (thousands of $)	6,626	337	636	—	70	403
Excess compensation—all industries (millions of $)	8,034	0.530	3.080	(0.680)	(0.070)	1.100
Excess compensation—order industries (millions of $)	8,034	0.730	3.010	(0.520)	0.040	1.210
Panel C: ExecuComp S&P 1500 characteristics						
TDC1 (thousands of $)	5,545	4,708	5,424	1,340	2,948	6,137
Equity compensation (thousands of $)	5,533	2,814	4,477	315	1,364	3,605
Cash compensation (thousands of $)	5,552	1,058	861	557	850	1,235
Equity ratio	5,533	0.45	0.28	0.25	0.49	0.67
Tenure (years)	5,445	7.5	7.7	2.4	5.3	10.3
Executive age (years)	5,392	56.3	7.6	51.0	56.0	61.0
Salary (thousands of $)	5,552	700	343	440	646	904
Bonus (thousands of $)	5,552	354	675	—	5	442
Excess compensation—all industries (millions of $)	5,233	0.780	3.560	(0.770)	0.030	1.420
Excess compensation—order industries (millions of $)	5,233	0.770	3.560	(0.730)	0.030	1.400

Note: Table 1 summarizes the sample of firms with compensation information within industries affected by antidumping and countervailing duty orders. Panel A summarizes firm statistics, while panels B and C include compensation characteristics. Data come from CRSP and Compustat, including ExecuComp, which covers S&P 1500 firms. For other firms, compensation information is supplemented with data from directEDGAR. Excess compensation is presented in millions of dollars and is computed following Core, Guay, and Larcker (2008) for the ExecuComp universe of firms, as is common within the literature, as well as with the full universe of compensation information, which includes other firms that lack tenure data. For comparison, both these computations are also estimated only for firms within the industries affected by import-restricting duty orders.

Univariate Comparisons and Excess Compensation

One assessment commonly used in the compensation literature is excess or residual compensation, which follows Core, Guay, and Larcker (2008) to predict the expected compensation of the CEO using firm characteristics (e.g., sales, book-to-market ratio, current and prior stock returns, current and prior returns on assets, and whether the firm is included in the S&P 500) and the CEO's tenure. I perform similar analyses, with modifications relevant for this sample. The first modification I make is to perform this analysis by developing the measure of expected compensation using firms included in industries impacted by orders

during my sample period. Next, I expand the sample to include firms not covered in ExecuComp (i.e., not included in the S&P 1500 during the sample period), but this expansion requires excluding tenure from this model, as this information is not readily available for these firms in a machine-readable format. As a result, I compute four measures of excess compensation: (1) excess compensation for all industries without using tenure, (2) excess compensation for order industries without using tenure, (3) excess compensation for S&P 1500 firms in all industries (in order to include tenure measures in the model), and (4) excess compensation for S&P 1500 firms in order industries, also including tenure within the model.

In each case, the relative compensation of CEOs at order firms will be the focus, but the group to which these firms are compared will differ for each measure. Rather than limiting the overall sample size of our study for the purposes of our empirical model, the measure affects the level of expected compensation by limiting the pool of firms to which the level of compensation is compared. This impacts the measure (i.e., the variable being analyzed in our empirical model) rather than the model and sample therein. Specifically, since the expected level of compensation for order firms is dependent on the sample from which the expectations are developed, I perform this analysis using four different sample comparisons (i.e., different approaches) to ensure robust results. Since the study focuses only on firms in order industries, data are available for all measures throughout. By computing each measure, I am able to present estimates most comparable to those from the literature, as well as estimates that are specifically suited to this particular sample and analysis. The measures have median values close to zero and are similar in most respects, but some differences do exist. Specifically, average excess compensation is generally positive for each measure, suggesting these CEOs in the sample make more than expected using Core, Guay, and Larcker's (2008) prescribed measures to predict and assess

compensation. The mean is the lowest ($530,000) for the estimate that includes the broadest sample, *Excess Compensation for All Industries*, while the estimate for *Excess Compensation for S&P 1500 Firms in All Industries* is the highest ($780,000). These measures are particularly useful for the univariate comparisons presented in table 2, where I compare firms by order status.

For my primary univariate analysis, I compare firms linked to specific orders and other firms in related industries. In particular, I partition firms by whether they have an order during the sample (order firms) and by whether the order is active during the particular year (order years). These characteristics result in three mutually exclusive groups: (1) all years at nonorder firms, (2) order years at order firms, and (3) nonorder years at order firms. Columns 2 and 3 present all firms separated by whether the firm is ever linked to an order during the sample period. Column 2 of table 2 includes all firm-years for any firm not directly linked to a specific order during the sample period (i.e., nonorder firms), while column 3 includes all firm-years for order firms. The results suggest that these groups are different in many ways: order firms are larger, more highly leveraged, better performing, and growing more slowly. Furthermore, order firms compensate their CEOs at higher levels and with higher equity ratios. However, excess compensation is lower, if different (statistically) at all.

Next, I further divide the order firms in column 3 into two groups by whether the order is active during the particular year. Columns 4 and 5 focus on order firms and compare order years to nonorder years, revealing that order years also have higher revenue and lower book-to-market ratios. Order years also have higher total compensation, equity ratios, and excess compensation. Column 6 includes nonorder years at order firms as well as all years at nonorder firms (i.e., groups (1) and (3) from the previous paragraph). A comparison to order years documents even more extreme differences in firm characteristics than order firm order and nonorder years.

Table 2. Comparison of Firms by Import Restriction Status

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All		**Order firms**		**All firms**	**Limited panel**	
	nonorder			Nonorder	Nonorder		Nonorder
	firm-years	All years	Order years	years	years	Order years	years
Measure	*N* = 7,297	*N* = 840	*N* = 343	*N* = 497	*N* = 7,794	*N* = 232	*N* = 210
Panel A: Firm characteristics							
Sales (millions of $)	3,836	11,924***	18,676	7,296***	4,159***	11,041	7,805
Sales growth	0.13	0.06***	0.06	0.06	0.13***	0.07	0.05
Book-to-market	0.48	0.48	0.43	0.51***	0.49**	0.47	0.55**
Book leverage	0.21	0.25***	0.26	0.24	0.21***	0.23	0.24
Operating ROA	0.12	0.15***	0.15	0.15	0.12***	0.15	0.14
Industry-adjusted ROA	(0.03)	(0.00)***	0.01	(0.00)**	(0.02)***	0.00	(0.02)***
Stock return	0.19	0.14	0.14	0.15	0.19	0.13	0.14
Size- and industry-adjusted return	(0.02)	(0.01)**	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)**
S&P 500	0.18	0.38***	0.32	0.43***	0.20***	0.32	0.42**
Panel B: Compensation characteristics							
Total compensation (thousands of $)	4,449	6,269***	6,984	5,779***	4,573***	6,483	6,106
Cash compensation (thousands of $)	993	1,396***	1,594	1,261***	1,018***	1,689	1,319***
Excess compensation (millions of $)	0.794	0.589	0.856	0.405	0.758	1.294	0.830
Excess comp—order (millions of $)	1.050	0.770***	1.111	0.536**	1.002	1.602	0.938
Panel C: ExecuComp S&P 1500 characteristics							
TDC1 (thousands of $)	4,484	6,320***	7,109	5,779***	4,605***	6,673	6,106
Cash compensation (thousands of $)	995	1,414***	1,637	1,261***	1,020***	1,745	1,319***
Equity ratio	0.45	0.48**	0.49	0.47	0.46**	0.45	0.51**
Tenure (years)	8.2	6.5***	6.7	6.3	8.0***	6.9	6.0
Executive age (years)	56.1	56.9***	57.5	56.5**	56.1***	58.1	56.9**
Salary (thousands of $)	679	866***	922	829***	693***	885	833
Excess—S&P 1500 (millions of $)	0.820	0.525**	0.753	0.369	0.778	1.421	0.648
Excess —S&P order (millions of $)	0.821	0.478**	0.850	0.223**	0.766	1.441	0.581**

Note: Table 2 compares the sample of firms with compensation information within industries affected by antidumping and countervailing duty orders across groups, taking into consideration whether the firm has an order in place at the time or during the sample period. Specifically, statistical significance for differences in column 3 is compared to column 2, while columns 5 and 6 are compared to column 4. Note that column 3 contains all firms in columns 4 and 5, while column 6 contains all firms in columns 2 and 5. Furthermore, columns 7 and 8 are subsets of columns 4 and 5, respectively, including only periods within five years of order status changes. Data come from CRSP and Compustat, including ExecuComp, which covers S&P 1500 firms. For other firms, compensation information is supplemented with data from directEDGAR. Excess compensation is presented in millions of dollars and computed following Core, Guay, and Larcker (2008) for the ExecuComp universe of firms, as is common within the literature, as well as with the full universe of compensation information, which includes other firms that lack tenure data. For comparison, both these computations are also estimated only for firms within the industries affected by import restrictions. *, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

To limit the time variation, I focus on a limited window immediately preceding and following changes in the status of orders (i.e., the implementation, when orders become active, or the end of the order, at which point the order is no longer active). For the final two columns, I again partition order and nonorder years at order firms, limited to the firm-years around changes in the status of an order. Columns 7 and 8 of table 2 present the five firm-year observations for each order firm following the change in the status of orders. The results show that order years are still tied to lower book-to-market ratios and higher (cash) compensation, while the other statistical differences do not seem to persist. Regardless, because of these differences in firm characteristics, I formalize this analysis in a multivariate framework and attempt to control for other differences that may exist following changes in order status.

Before beginning my multivariate analysis, I summarize the sample by industry and compare the breakdown for order and nonorder firms, as shown in table 3.[5] While 10 percent of the sample consists of order firms, the variation is considerable. Most firms impacted by orders are tied to manufacturing industries (e.g., three-digit SIC codes between 200 and 399, with only 5 percent of the sample or order firms falling outside that range). Medicinal chemicals (283) and electronics (367) each account for at least 20 percent of order firms but are the only industries accounting for more than 10 percent. On the other hand, nearly half of the steel works (331) sample consists of order firms, while order firms comprise nearly half of several other industries: household appliances (363), paperboard containers (265), and plastic materials (282). In most industries, order firms comprise between 1 percent and 5 percent of the sample.

[5] Note that the fabricated structural metal products industry (344) is included because one firm includes an order, but the firm does not have sufficient data to be included in the analysis, resulting in zero order firms for the purposes of table 3 and the subsequent analyses. Since multivariate analyses include firm fixed effects, this inclusion has limited effect. Results persist when this industry is excluded.

Table 3. Summary of Firms and Import Restrictions by Industry Classification

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) = (2)/(4)	(9) = (3)/(4)
				Classification percentage			**Industry percentage**	
First three digits of SIC code	Nonorder firms	Order firms	All firms	Nonorder firms (%)	Order firms (%)	All firms (%)	Nonorder firms (%)	Order firms (%)
010	117	12	129	2	1	2	91	9
104	148	7	155	2	1	2	95	5
170	81	3	84	1	0	1	96	4
206	74	24	98	1	3	1	76	24
262	178	30	208	2	4	3	86	14
263	113	20	133	2	2	2	85	15
265	50	36	86	1	4	1	58	42
280	40	24	64	1	3	1	63	38
281	278	58	336	4	7	4	83	17
282	44	36	80	1	4	1	55	45
283	1,701	24	1,725	23	3	21	99	1
285	87	24	111	1	3	1	78	22
286	234	24	258	3	3	3	91	9
287	111	22	133	2	3	2	83	17
289	196	13	209	3	2	3	94	6
331	202	200	402	3	24	5	50	50
333	100	6	106	1	1	1	94	6
335	113	45	158	2	5	2	72	28
344	80	0	80	1	0	1	100	0
351	112	9	121	2	1	1	93	7
356	188	24	212	3	3	3	89	11
357	307	7	314	4	1	4	98	2
363	31	24	55	0	3	1	56	44
367	1,571	91	1,662	22	11	20	95	5
371	717	31	748	10	4	9	96	4
372	75	2	77	1	0	1	97	3
386	104	21	125	1	3	2	83	17
495	133	12	145	2	1	2	92	8
505	112	11	123	2	1	2	91	9
Total	7,297	840	8,137	100	100	100	90	10

Note: Table 3 compares the sample of firms with compensation information within industries affected by antidumping and countervailing duty orders by industry, which is defined as the first three digits of the firm's Standard Industrial Classification (SIC) code, given in column 1. Columns 2 through 4 tabulate the number of firms by whether the firm had an order in place during the sample period, while columns 5 through 7 tabulate the percentage that each industry group comprises relative to the whole sample group. Finally, columns 8 and 9 show the percentage of each industry that has an order during the sample period.

Multivariate Analysis of Total Compensation

To begin my multivariate analysis, I examine whether antidumping and countervailing duty orders are linked to changes in compensation, after controlling for effects related to firm characteristics and firm fixed effects. I estimate the following pooled, cross-sectional ordinary least squares regression model:

$$\begin{aligned} Compensation_{i,t} = {} & \lambda_0 + \lambda_1 \, Import\ Restriction_{i,t} + \lambda_2 \, Log\ (Sales)_{i,t} + \lambda_3 \, Book\text{-}to\text{-}Market_{i,t} \\ & + \lambda_4 \, Book\ Leverage_{i,t} + \lambda_5 \, Operating\ ROA_{i,t} + \lambda_6 \, Sales\ Growth_{i,t} \\ & + \lambda_7 \, Annual\ Return_{i,t} + \lambda_8 \, Size\ and\ Industry\ Adjusted\ ROA_{i,t} \\ & + \lambda_9 \, S\&P\ 1500_{i,t} + \lambda_9 \, Log\ (Total\ Assets)_{i,t} + \sum Year_t + \sum Firm_i + \mu_{i,t}. \quad (1) \end{aligned}$$

Compensation is the estimate of the CEO compensation for a particular firm-year. Initially, I analyze *Log (Total Compensation)* but follow up with additional analyses of *Log (Cash Compensation)*, *Log (Equity Compensation)*, and the measures of excess compensation discussed earlier (i.e., *Excess Compensation for All Industries*, *Excess Compensation for S&P 1500 Firms in All Industries*, *Excess Compensation for Order Industries*, and *Excess Compensation for S&P 1500 Firms in Order Industries*), though the measures are presented in millions of dollars and the logarithms thereof. To examine the effect of orders on compensation, I generate the variable *Import Restriction*, which takes the value of 1 for firms with countervailing and antidumping orders in place and 0 otherwise, such that firms tied to an order are designated as order firms throughout the sample but *Import Restriction* has a value of 1 only during the period in which the order is in place. The control variables included in each regression measure firm characteristics and include *Log (Sales)*, *Book-to-Market*, *Book Leverage*, *Operating ROA*, *Sales Growth*, *Annual Return*, *Size- and Industry-Adjusted ROA*, *S&P 500*, and *Log (Total Assets)*. *Log (Sales)* controls for effects related to firm size, such that

firms with higher revenue are expected to compensate their CEO more highly.[6] *Book-to-Market* is a measure of how the firm is valued in the marketplace, such that firms that are more valuable (relative to the firm's asset size) may be expected to pay higher compensation. As a result, this variable is expected to correlate negatively with compensation. *Book Leverage* is a measure of the percentage of the firm's assets financed through debt, which measures the risk of the company. *Operating ROA* correlates the firm's operating profit with the assets and profitability of the firm. *Sales Growth* measures how quickly the firm is growing. *Log (Total Assets)* measures the size of the firm's asset base, while *S&P 500* is an indicator variable equal to 1 for firms included in the S&P 500 index. Firm size and prominence in the media are measured in a variety of facets, each of which is typically positively correlated with compensation. *Annual Return* measures the performance of the firm's stock, and *Size- and Industry-Adjusted ROA* measures how the firm performs relative to other similar firms. Performance is often positively correlated with compensation. For each analysis, robust standard errors are clustered at the firm level.[7]

To assess the empirical relation between compensation and antidumping and countervailing duty orders, I construct three separate research designs using distinct samples: (1)

[6] Results are qualitatively and quantitatively similar for analyses incorporating controls related to CEO age and tenure, but these characteristics restrict the sample to S&P 1500 firms and therefore are not tabulated as primary analyses. However, additional panels (e.g., panels C and D of table 4 and panel B of tables 5 and 6) and tables (e.g., table 8) present results limited to the S&P 1500 to display the robustness of the analyses using samples similar to those analyzed by prior researchers. In additional untabulated results, I observe that results are quantitatively similar after incorporating additional controls for firm performance, including size- and industry-adjusted return on assets (ROA) and size- and industry-adjusted equity performance.

[7] Though the primary models implement cluster-corrected standard errors robust to heteroskedasticity, alternative standard errors have been analyzed and considered separately. Alternative standard errors provide similar results and conclusions. For robustness, models employing standard errors robust to heteroskedasticity and autocorrelation have been examined for more than a decade. Furthermore, using a balanced panel, the maximum possible number of periods was considered. The results continue to be statistically significant. Tables present clustered robust *p*-values rather than heteroskedastic and autocorrelation-consistent standard errors because of the limited time series present for the firms in the panel. Most firms have fewer than 10 years present, while over 1,000 firms are included. Therefore, cluster-corrected standard errors related to firm correlation are likely to be at least as important as any autocorrelation. Importantly, most analyses have relatively short panels (e.g., balanced panels with a maximum of 10 years), limiting the role of autocorrelation. Overall, inferences are unaffected by additional analysis.

all firms, including both order and nonorder firms throughout the full sample period; (2) order firms, including the full sample period; and (3) balanced panel of order firms, including firm-years within five years of a change in the status of an order, in an effort to limit the effects of unbalanced panels and sample selection throughout time. For each table from the main analysis (i.e., *Total Compensation*, *Equity Compensation*, and *Cash Compensation*), I present each of these three models in two forms, first with the variable of interest and year and firm fixed effects, then with each control variable also included. As a result, the second column of each table includes the full sample of order and nonorder firms with firm and year fixed effects, while the third column adds control variables. The next four columns include the sample of order firms for the full sample and then the balanced panel for the five years before and after order changes. All analyses employ firm and year fixed effects to focus on changes in the status of orders.

Table 4 presents the results of the regression analysis of *Log (Total Compensation)*. In each case, I observe a positive (coefficients = 0.228, 0.212, 0.254, 0.186, 0.208, and 0.165) and significant (p-values < 0.01) relation between the presence of an order and total CEO compensation. In addition to being statistically significant, the results are also economically meaningful, suggesting a compensation level 16 percent (more than $650,000) higher during the presence of an order for the average firm (e.g., sample mean total compensation = $3,700,000, the natural logarithm of which equals 8.216) using the smallest effect within the table (i.e., sum of mean and coefficient = 8.216 + 0.165 = 8.381, the exponential of which is $4,364 or, in terms of compensation, $4,364,000).

Table 4. Total CEO Compensation and Import Restrictions

Panel A: Firms sharing Standard Industrial Classification codes with order firms

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	All firms		**Order firms**		**Balanced panel**	
Variables	Dependent variable = *Log* (*Total Compensation*)					
Import Restriction	0.228***	0.212***	0.254***	0.186***	0.208***	0.165**
	(0.002)	(0.002)	(0.001)	(0.002)	(0.005)	(0.011)
Log (Sales)		0.192***		0.185		0.404
		(<0.001)		(0.278)		(0.251)
Book-to-Market		−0.0823**		0.00744		−0.225*
		(0.011)		(0.938)		(0.059)
Book Leverage		−0.444***		−0.681**		−0.695
		(<0.001)		(0.020)		(0.213)
Operating ROA		−0.0807		1.283***		0.377
		(0.293)		(0.003)		(0.405)
Sales Growth		−0.0309**		−0.0201		−0.0111
		(0.020)		(0.740)		(0.838)
Annual Return		0.0749***		0.151***		0.147**
		(<0.001)		(<0.001)		(0.036)
Size- and Industry-Adjusted ROA		0.0921**		−0.0403		0.495
		(0.035)		(0.879)		(0.305)
S&P 500		0.703***		0.688**		
		(<0.001)		(0.024)		
Log (Total Assets)		0.264***		0.170		−0.114
		(<0.001)		(0.372)		(0.748)
Constant	7.544***	4.636***	8.172***	5.016***	8.141***	6.056***
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)
Firm and year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,046	8,046	838	838	440	440
R-squared	0.762	0.790	0.796	0.820	0.805	0.824

Note: Table 4 reports results for linear regression models of CEO compensation in the presence of orders. Specifically, *Import Restriction* takes on the value of 1 for firms with orders in place and 0 otherwise. *Total Compensation* includes CEO compensation in the form of salary, bonuses, other annual compensation, and stock grants. Control variables include *Log (Sales)*, *Book-to-Market*, *Book Leverage*, *Operating ROA*, *Sales Growth*, *Annual Return*, *Size- and Industry-Adjusted ROA*, *S&P 500*, and *Log (Total Assets)*. Panel A models use three different samples limited to firms sharing SIC codes with order firms. Specifically, columns 2 and 3 include all firm-years, while columns 4 and 5 are limited to order firms. Finally, to create a balanced panel, columns 6 and 7 include only order firm observations within five years of an order status change. Panel B repeats the analysis for all firm-years sharing the same industry as defined by one (columns 2 and 3), two (columns 4 and 5), and three (columns 6 and 7) SIC digits, while panels C and D focus on S&P 1500 firms. Panel E analyzes import restriction timing. Data come from CRSP and Compustat, including compensation information on S&P 1500 firms from ExecuComp. For other firms, compensation information is supplemented with data from directEDGAR to expand the sample. Clustered robust *p*-values are included in parentheses. *, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Panel B: All firms sharing broader industry classifications with order firms

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	First SIC digit		**First two SIC digits**		**First three SIC digits**	
Variables	Dependent variable = *Log (Total Compensation)*					
Import Restriction	0.212***	0.204***	0.212***	0.205***	0.219***	0.212***
	(0.004)	(0.001)	(0.004)	(0.001)	(0.003)	(0.002)
Log (Sales)		0.141***		0.146***		0.134***
		(<0.001)		(<0.001)		(<0.001)
Book-to-Market		−0.128***		−0.133***		−0.0964***
		(<0.001)		(<0.001)		(0.001)
Book Leverage		−0.357***		−0.359***		−0.349***
		(<0.001)		(<0.001)		(<0.001)
Operating ROA		0.00731		−0.0106		−0.104*
		(0.860)		(0.832)		(0.055)
Sales Growth		−0.0154***		−0.0178***		−0.0249***
		(0.008)		(0.008)		(0.001)
Annual Return		0.0614***		0.0606***		0.0582***
		(<0.001)		(<0.001)		(<0.001)
Size- and Industry-Adjusted ROA		0.0618***		0.0494**		0.0500*
		(<0.001)		(0.010)		(0.090)
S&P 500		0.781***		0.853***		0.972***
		(<0.001)		(<0.001)		(<0.001)
Log (Total Assets)		0.253***		0.244***		0.266***
		(<0.001)		(<0.001)		(<0.001)
Constant	7.553***	4.965***	7.486***	4.993***	7.503***	5.016***
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)
Firm and year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	42,243	42,243	26,574	26,574	13,002	13,002
R-squared	0.764	0.785	0.773	0.793	0.750	0.774

Panel C: S&P 1500 firms sharing Standard Industrial Classification codes with order firms

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	All firms		**Order firms**		**Balanced panel**	
Variables	Dependent variable = *Log (Total Compensation)*					
Import Restriction	0.266***	0.205***	0.254***	0.164***	0.226***	0.150**
	(<0.001)	(0.001)	(0.001)	(0.009)	(0.001)	(0.014)
Log (Sales)		0.00127		0.239		0.503
		(0.981)		(0.222)		(0.163)
Book-to-Market		−0.257***		−0.0439		−0.216*
		(<0.001)		(0.716)		(0.090)
Book Leverage		−0.668***		−0.593*		−0.584
		(<0.001)		(0.059)		(0.330)
Operating ROA		0.655***		0.837		0.116
		(0.001)		(0.106)		(0.788)
Sales Growth		−0.0305		−0.00300		−0.0924
		(0.598)		(0.966)		(0.525)
Annual Return		0.156***		0.154***		0.151**
		(<0.001)		(<0.001)		(0.011)
Size- and Industry-Adjusted ROA		0.306***		0.600		0.419
		(0.001)		(0.133)		(0.491)

(continued on next page)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	All firms		**Order firms**		**Balanced panel**	
Variables	Dependent variable = *Log (Total Compensation)*					
Log (Total Assets)		0.424***		0.190		−0.214
		(<0.001)		(0.371)		(0.479)
Log (Tenure)		0.0168		0.0454		0.108*
		(0.430)		(0.270)		(0.073)
Log (Age)		−0.305		0.307		0.654
		(0.164)		(0.379)		(0.280)
Constant	7.945***	6.228***	8.262***	3.444**	8.236***	3.292
	(<0.001)	(<0.001)	(<0.001)	(0.029)	(<0.001)	(0.153)
Firm and year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5,095	5,095	751	751	387	387
R-squared	0.721	0.760	0.770	0.806	0.795	0.823

Panel D: All S&P 1500 firms sharing broader industry classifications with order firms

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	First SIC digit		**First two SIC digits**		**First three SIC digits**	
Variables	Dependent variable = *Log (Total Compensation)*					
Import Restriction	0.246***	0.192***	0.248***	0.196***	0.270***	0.220***
	(0.001)	(0.001)	(0.001)	(0.001)	(<0.001)	(<0.001)
Log (Sales)		0.0253		0.0266		0.0180
		(0.321)		(0.401)		(0.676)
Book-to-Market		−0.235***		−0.296***		−0.269***
		(<0.001)		(<0.001)		(<0.001)
Book Leverage		−0.539***		−0.579***		−0.666***
		(<0.001)		(<0.001)		(<0.001)
Operating ROA		0.555***		0.459***		0.347**
		(<0.001)		(<0.001)		(0.037)
Sales Growth		0.0367		0.0389		0.0244
		(0.110)		(0.151)		(0.534)
Annual Return		0.128***		0.137***		0.119***
		(<0.001)		(<0.001)		(<0.001)
Size- and Industry-Adjusted ROA		0.170***		0.126**		0.186**
		(0.003)		(0.044)		(0.022)
Log (Total Assets)		0.318***		0.313***		0.337***
		(<0.001)		(<0.001)		(<0.001)
Log (Tenure)		0.0332***		0.0232**		−0.00407
		(<0.001)		(0.044)		(0.829)
Log (Age)		−0.296***		−0.296**		−0.180
		(0.001)		(0.011)		(0.295)
Constant	7.978***	6.723***	7.946***	6.799***	7.943***	6.339***
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)
Firm and year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	26,211	26,211	16,188	16,188	7,678	7,678
R-squared	0.720	0.747	0.720	0.746	0.710	0.739

Panel E: Import restriction timing

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	All firms		**Order firms**		**Balanced panel**	
Variables	Dependent variable = *Log (Total Compensation)*					
Import Restriction$_t$	0.206**	0.190**	0.217**	0.192**	0.184**	0.146*
	(0.030)	(0.029)	(0.036)	(0.027)	(0.038)	(0.075)
Import Restriction$_{t-1}$	0.0311	0.0238	0.0425	−0.00968	0.0331	0.0236
	(0.682)	(0.735)	(0.603)	(0.899)	(0.734)	(0.793)
Log (Sales)		0.172***		0.193		0.392
		(<0.001)		(0.262)		(0.265)
Book-to-Market		−0.107***		−0.00674		−0.228*
		(0.001)		(0.943)		(0.060)
Book Leverage		−0.469***		−0.662**		−0.701
		(<0.001)		(0.030)		(0.219)
Operating ROA		0.0190		1.236***		0.348
		(0.764)		(0.003)		(0.462)
Sales Growth		−0.0198		−0.0228		−0.00729
		(0.136)		(0.723)		(0.896)
Annual Return		0.0777***		0.158***		0.144**
		(<0.001)		(<0.001)		(0.041)
Size- and Industry-Adjusted ROA		0.0611		−0.0963		0.509
		(0.218)		(0.726)		(0.300)
S&P 500		0.706***		0.689**		
		(<0.001)		(0.025)		
Log (Total Assets)		0.266***		0.183		−0.110
		(<0.001)		(0.341)		(0.757)
Constant	7.604***	4.773***	8.185***	4.864***	8.145***	6.126***
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)
Firm and year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,587	7,587	830	830	438	438
R-squared	0.769	0.795	0.792	0.817	0.803	0.821

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

The results also suggest that larger, more prominent firms give CEOs larger compensation packages. Since the models include firm and year fixed effects, this suggests that as a firm accrues more sales and assets, it compensates the CEO more heavily. Similarly, performance is also positively linked to compensation, suggesting that for each firm the compensation is higher in years when performance is higher. Since the models include year fixed effects, these are all relative to any increases that impact the entire sample for a particular year.

Unfortunately, within the balanced panel, I am unable to observe the effect of a firm being included within the S&P 500, since the status of firms being included (or not included) in the index does not change within the five-year panel on either side of the orders. Analyses limited to S&P 1500 and ExecuComp data provide similar conclusions as well.[8] Overall, I observe how firms allocate resources before order changes as well as what subsequently changes. By comparing firms affected that have active antidumping and countervailing duty orders in place to a variety of control groups, I seek to alleviate alternative explanations and suggest that the orders are linked to compensation changes.

In panel B of table 4, I perform similar analyses using a broader sample of control firms to ensure that the results are not driven by sample selection decisions related to how specifically related firms and industries are defined. For example, it is possible that the difference observed in panel A of table 4 is limited to a small subset of firms in a limited number of industries. As a result, I expand the breadth of industries included in panel B of that table. Specifically, I perform the same analysis from columns 2 and 3 of panel A by including all firms in the same industry as an order firm, where industry is defined by using the first digit, first two digits, and first three digits of the SIC codes. This significantly increases the sample size to over 40,000 firm-year observations. As before, the models including the expanded control firm sample document similarly positive (coefficients = 0.212, 0.204, 0.212, 0.205, 0.219, and 0.212) and significant (*p*-values < 0.005) relations to *Log (Total Compensation).* While the previous results compared firms linked to orders to those firms that are most similar (i.e., sharing all four digits of the SIC code), this analysis suggests that relaxing the constraint provides similar results. Panels C and D of table 4 repeat these analyses for the S&P 1500 sample of firms, providing similar results and

[8] See, for example, tables 7 and 8, which tabulate analyses of excess compensation. Differences in sample size relate to limitations from additional control variables available for S&P 1500 firms.

conclusions. By limiting the sample, I can control for the CEO characteristics (i.e., CEO tenure and age). Finally, panel E of table 4 compares the timing of import restrictions by comparing the effect of the year that import restrictions change (i.e., current-year import restrictions relative to the prior year) to the effect of the subsequent year. The results suggest that the change takes place immediately following the order. In other untabulated analyses, I perform similar analyses of the other periods following the change, and the same conclusions persist. Overall, the analysis suggests that CEO compensation is significantly higher in the presence of orders in the form of antidumping and countervailing duty orders. Additional analyses will explore this higher compensation in further detail by separately considering the structure and components of compensation.

Compensation Structure

Next, I examine the structure of the compensation by performing a similar analysis with *Log (Cash Compensation)* in table 5. Again, I perform the same empirical framework, and the results suggest a positive (coefficients = 0.165, 0.158, 0.184, 0.147, 0.159, and 0.145) and significant (*p*-values = 0.018, 0.016, 0.005, 0.011, 0.013, and 0.024) relation to cash compensation throughout the analysis. Furthermore, the size of the effect is similar if not larger, given the similar coefficient magnitudes and substantially smaller levels of cash compensation (mean = $890,000 and standard deviation = $764,000), though constants are also similar and suggest an approximately 16 percent difference in cash compensation as well. In panel B of table 5, I again relax industry constraints to expand the sample analysis to include other related firms in a broader set of industries, and I observe similar results. Specifically, the coefficients range from 0.150 to 0.162, with *p*-values below 0.03. Overall, the results suggest that CEOs receive higher salary and bonus compensation of approximately $150,000 following

the implementation of antidumping and countervailing duty orders.[9] These results are of particular importance given that higher performance-sensitive compensation is less likely to result in higher cash compensation. Given that cash compensation exhibits significantly higher levels in the presence of orders, these results are unlikely to be attributable entirely to higher firm performance. I investigate related explanations in more detail within the next set of analyses.

Table 5. Cash Compensation

Panel A: Firms sharing Standard Industrial Classification codes with order firms

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	All firms		**Order firms**		**Balanced panel**	
Variables	Dependent variable = *Log (Cash Compensation)*					
Import Restriction	0.165**	0.158**	0.184***	0.147**	0.159**	0.145**
	(0.018)	(0.016)	(0.005)	(0.011)	(0.013)	(0.024)
Log (Sales)		0.139***		0.254		0.157
		(<0.001)		(0.223)		(0.623)
Book-to-Market		−0.0422***		0.0199		−0.0158
		(0.001)		(0.865)		(0.926)
Book Leverage		−0.185**		0.0481		0.680
		(0.019)		(0.890)		(0.371)
Operating ROA		−0.0774		1.300***		1.003
		(0.153)		(0.009)		(0.119)
Sales Growth		−0.0217**		0.220*		0.185
		(0.010)		(0.054)		(0.139)
Annual Return		0.0429***		0.178***		0.182**
		(<0.001)		(0.001)		(0.029)
Size- and Industry-Adjusted ROA		0.0579**		0.343		1.273
		(0.023)		(0.306)		(0.147)
S&P 500		0.0384		0.789		
		(0.823)		(0.106)		
Log (Total Assets)		0.0966***		−0.200		−0.0899
		(0.001)		(0.494)		(0.744)

(continued on next page)

[9] In untabulated analyses, I perform similar studies for salary and bonus components of cash compensation separately and observe similar results.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	All firms		**Order firms**		**Balanced panel**	
Variables	Dependent variable = *Log (Cash Compensation)*					
Constant	6.485***	5.036***	6.867***	5.931***	6.915***	6.087***
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)
Firm and year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,057	8,057	838	838	440	440
R-squared	0.687	0.701	0.348	0.379	0.559	0.597

Note: Table 5 reports results for linear regression models of CEO cash compensation in the presence of orders. Specifically, *Import Restriction* takes on the value of 1 for firms with orders in place and 0 otherwise. *Cash Compensation* includes CEO compensation in the form of salary and bonuses, excluding equity compensation. Control variables include *Log (Sales)*, *Book-to-Market*, *Book Leverage*, *Operating ROA*, *Sales Growth*, *Annual Return*, *Size- and Industry-Adjusted ROA*, *S&P 500*, and *Log (Total Assets)*. Panel A models use three different samples limited to firms sharing SIC codes with order firms. Specifically, columns 2 and 3 include all firm-years, while columns 4 and 5 are limited to order firms. Finally, to create a balanced panel, columns 6 and 7 include only order firm observations within five years of an order status change. Panel B includes models that repeat the analysis for all (columns 2, 4, and 5) and S&P 1500 (columns 2, 4, and 6) firm-years sharing the same industry as defined by one (columns 2 and 3), two (columns 4 and 5), and three (columns 6 and 7) SIC digits. Data come from CRSP and Compustat, including compensation information on S&P 1500 firms from ExecuComp. For other firms, compensation information is supplemented with data from directEDGAR to expand the sample of firms analyzed. Clustered robust *p*-values are included in parentheses. *, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Panel B: Firms sharing broader industry classifications with order firms

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	First three SIC digits		**First two SIC digits**		**First SIC digit**	
Variables	Dependent variable = *Log (Total Compensation)*					
Import Restriction	0.158**	0.152***	0.154**	0.150***	0.154**	0.162***
	(0.010)	(0.007)	(0.012)	(0.009)	(0.021)	(0.008)
Log (Sales)	0.139***	0.142***	0.118***	0.148***	0.0967***	0.135***
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)
Book-to-Market	−0.0489***	−0.0516**	−0.0582***	−0.0856***	−0.0431***	−0.0550*
	(<0.001)	(0.012)	(<0.001)	(0.001)	(0.001)	(0.090)
Book Leverage	−0.139***	−0.171**	−0.156***	−0.230**	−0.108**	−0.115
	(<0.001)	(0.012)	(0.002)	(0.016)	(0.031)	(0.225)
Operating ROA	0.00829	0.245**	−0.00542	0.0660	−0.0423	0.0586
	(0.788)	(0.021)	(0.879)	(0.611)	(0.261)	(0.745)
Sales Growth	−0.0154***	−0.0449**	−0.0106*	−0.0259	−0.0165***	−0.0260
	(0.004)	(0.032)	(0.068)	(0.255)	(0.001)	(0.352)
Annual Return	0.0441***	0.0755***	0.0396***	0.0772***	0.0409***	0.0612***
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)
Size- and Industry-Adjusted ROA	0.0722***	0.200***	0.0843***	0.155***	0.0434**	0.120**
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(0.023)	(0.039)
Log (Total Assets)	0.0987		0.146		0.101	
	(0.358)		(0.283)		(0.525)	
S&P 500	0.0911***	0.0606**	0.0920***	0.0497*	0.109***	0.0480
	(<0.001)	(0.023)	(<0.001)	(0.069)	(<0.001)	(0.244)

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(1)	(2)	(3)	(4)	(5)	(6)	(7)
	First three SIC digits		**First two SIC digits**		**First SIC digit**	
Variables	Dependent variable = *Log (Total Compensation)*					
Log (Tenure)		0.0751***		0.0585***		0.0442**
		(<0.001)		(<0.001)		(0.018)
Log (Age)		−0.222*		−0.0860		0.150
		(0.081)		(0.612)		(0.543)
Constant	5.052***	6.073***	5.161***	5.622***	5.208***	4.762***
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)
Firm and year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	42,301	26,254	26,609	16,212	13,019	7,690
R-squared	0.663	0.609	0.676	0.603	0.669	0.608

*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$.

To complete the analysis of the structure of compensation, I also analyze the equity component. The results for equity compensation are presented in table 6 and provide similar conclusions, with each of the coefficients positive (0.491, 0.454, 0.596, 0.492, 0.387, and 0.301) and statistically significant (p-values < 0.001). Again, the results are at least as significant as for total compensation, suggesting that the results are not driven solely by either the cash or equity components of compensation. Instead, both aspects are significantly higher in the presence of import restrictions. However, the coefficients and statistical significance for equity compensation may suggest slightly stronger relations relative to the mean ($2.9 million) and constant (0.906 to 7.446). The economic magnitude of this analysis suggests an equity compensation of more than $0.8 million higher. In panel B of table 6, I again perform similar analyses on a larger sample of industries and observe similar results (coefficients > 0.4 and p-values < 0.001). Overall, the results suggest economically meaningful differences in both equity and cash compensation when firms have active antidumping and countervailing duty orders in place.[10]

[10] In an additional analysis, I also examine the proportion of cash and equity compensation following changes in order status and do not observe statistically significant differences, consistent with both components rising.

Table 6. Equity Compensation

Panel A: Firms sharing Standard Industrial Classification codes with order firms

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	All firms		**Order firms**		**Balanced panel**	
Variables	Dependent variable = *Log (Equity Compensation)*					
Import Restriction	0.491***	0.454***	0.596***	0.492***	0.387***	0.301***
	(0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)
Log (Sales)		0.433***		0.499*		0.590
		(<0.001)		(0.075)		(0.283)
Book-to-Market		−0.0953		−0.0360		−0.444**
		(0.161)		(0.849)		(0.020)
Book Leverage		−0.960***		−0.916		−2.681**
		(0.001)		(0.101)		(0.042)
Operating ROA		−0.162		1.360		−0.170
		(0.287)		(0.109)		(0.888)
Sales Growth		−0.0811**		−0.0951		−0.143
		(0.026)		(0.490)		(0.274)
Annual Return		0.107***		0.179**		0.288**
		(0.002)		(0.022)		(0.019)
Size- and Industry-Adjusted ROA		0.301**		−0.843		−0.130
		(0.016)		(0.126)		(0.920)
S&P 500		1.633***		0.748*		
		(0.008)		(0.077)		
Log (Total Assets)		0.426***		−0.00384		0.0513
		(<0.001)		(0.990)		(0.941)
Constant	6.380***	0.906*	7.412***	3.188**	7.446***	3.159
	(<0.001)	(0.066)	(<0.001)	(0.024)	(<0.001)	(0.331)
Firm and year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,041	8,041	838	838	440	440
R-squared	0.657	0.684	0.679	0.700	0.723	0.748

Note: Table 6 reports results for linear regression models of CEO equity compensation in the presence of orders. Specifically, *Import Restriction* takes on the value of 1 for firms with orders in place and 0 otherwise. *Equity Compensation* includes CEO compensation in the form of stock grants and options, excluding cash compensation. Control variables include *Log (Sales)*, *Book-to-Market*, *Book Leverage*, *Operating ROA*, *Sales Growth*, *Annual Return*, *Size- and Industry-Adjusted ROA*, *S&P 500*, and *Log (Total Assets)*. Panel A models use three different samples limited to firms sharing SIC codes with order firms. Specifically, columns 2 and 3 include all firm-years, while columns 4 and 5 are limited to order firms. Finally, to create a balanced panel, columns 6 and 7 include only order firm observations within five years of an order status change. Panel B includes models that repeat the analysis for all (columns 2, 4, and 5) and S&P 1500 (columns 3, 5, and 7) firm-years sharing the same industry as defined by one (columns 2 and 3), two (columns 4 and 5), and three (columns 6 and 7) SIC digits. Data come from CRSP and Compustat, including compensation information on S&P 1500 firms from ExecuComp. For other firms, compensation information is supplemented with data from directEDGAR to expand the sample of firms analyzed. Clustered robust *p*-values are included in parentheses. *, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Panel B: All firms sharing broader industry classifications with order firms

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	First three SIC digits		**First two SIC digits**		**First SIC digit**	
Variables	Dependent variable = *Log (Equity Compensation)*					
Import Restriction	0.431***	0.454***	0.439***	0.470***	0.447***	0.522***
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)
Log (Sales)	0.303***	−0.00341	0.347***	0.0313	0.314***	0.0168
	(<0.001)	(0.953)	(<0.001)	(0.676)	(<0.001)	(0.862)
Book-to-Market	−0.205***	−0.371***	−0.196***	−0.415***	−0.129**	−0.372***
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(0.035)	(<0.001)
Book Leverage	−0.698***	−1.009***	−0.661***	−0.981***	−0.659***	−1.227***
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)
Operating ROA	−0.00743	0.842***	−0.0329	0.675**	−0.202*	0.358
	(0.929)	(<0.001)	(0.762)	(0.033)	(0.094)	(0.383)
Sales Growth	−0.0595***	0.0204	−0.0603***	0.0356	−0.0654***	−0.0161
	(<0.001)	(0.708)	(<0.001)	(0.566)	(0.001)	(0.862)
Annual Return	0.0742***	0.181***	0.0804***	0.194***	0.0843***	0.179***
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(0.002)	(<0.001)
Size- and Industry-Adjusted ROA	0.115*	0.289**	0.0460	0.250*	0.128	0.420**
	(0.085)	(0.022)	(0.440)	(0.086)	(0.107)	(0.019)
S&P 500	1.967***		2.207***		2.593***	
	(<0.001)		(<0.001)		(<0.001)	
Log (Total Assets)	0.371***	0.510***	0.358***	0.494***	0.399***	0.536***
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)
Log (Tenure)		−0.0285		−0.0475*		−0.111**
		(0.170)		(0.082)		(0.010)
Log (Age)		−0.650***		−0.727**		−0.415
		(0.003)		(0.012)		(0.303)
Constant	1.890***	6.342***	1.717***	6.595***	1.826***	5.405***
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(0.001)
Firm and year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	42,217	26,195	26,560	16,182	12,994	7,675
R-squared	0.664	0.614	0.677	0.616	0.663	0.597

Performance and Alternative Explanations

While the results thus far document higher compensation in the presence of import restrictions, the explanation for this is not yet clear. For example, firms may exhibit high growth and performance during these periods, which could result in higher executive compensation. While performance characteristics were included in the initial multivariate analysis, the positive correlation they exhibit does not tell us whether performance is the primary explanatory factor

for increased CEO compensation. In particular, performance may be related to import restrictions, which could hamper the previous model estimation. If import restrictions lead to higher performance, that could be the primary reason for the previously observed relation.

As a result, I specifically investigate performance as a possible explanation for this higher compensation. In particular, I examine the compensation relative to expectations (i.e., unexpected compensation after accounting for the effects of performance and firm characteristics) in addition to the firm's performance during periods when orders are in place. If higher performance explains the higher compensation, then firm performance should be higher and excess compensation (which takes into consideration the expected compensation based on performance) should not. I begin by examining the residual compensation to discern whether executives are compensated differently than expectations may suggest when orders are in place.

In addition to understanding the level and structure of compensation, assessing the relative magnitude could be at least as important. As a result, the next multivariate analysis focuses on excess (or residual) compensation, following Core, Guay, and Larcker (2008), who account for the compensation expected based on characteristics of the firm and CEO using the following model:

$$\begin{aligned} \textit{Log (Total Compensation)}_{i,t+1} = {} & \lambda_0 + \lambda_1 \textit{ Log (Tenure)}_{i,t} + \lambda_2 \textit{ Log (Sales)}_{i,t} + \lambda_3 \textit{ S\&P 500}_{i,t} \\ & + \lambda_4 \textit{ Book-to-Market}_{i,t} + \lambda_5 \textit{ Annual Return}_{i,t} \\ & + \lambda_6 \textit{ Annual Return}_{i,t-1} + \lambda_7 \textit{ ROA}_{i,t} + \lambda_8 \textit{ ROA}_{i,t-1} \\ & + \sum \textit{Industry}_i + \mu_{it}. \end{aligned} \quad (2)$$

Similarly, I follow Core, Guay, and Larcker (2008) in defining *Excess Compensation* as the difference between *Compensation* and *Expected Compensation*, which is the fitted value from equation (2). Specifically, I analyze each of the four methods of computing expected

compensation described earlier for the relevant executives compared to different peer groups, computing the residual of expected and actual compensation. In particular, table 7 presents the results for excess (residual) CEO compensation, computed using the full sample of firms in columns 2 and 3 and using industries impacted by orders in columns 4 and 5, before the rest of the table focuses on S&P 1500 firms, similar to the prior literature. In order to expand the sample beyond S&P 1500 firms, *Log (Tenure)* is not included in the expected compensation model (i.e., equation (2)) to expand the sample for firms without available information. The analysis is performed with natural logarithms (i.e., *Log (Excess Compensation)* defined as the difference between *Log (Compensation)* and *Log (Expected Compensation)* to compute residual compensation as a percentage), but I also use levels of excess and expected compensation as alternative measures. These results are also statistically significant, with *p*-values below 0.005. The coefficients suggest excess compensation of 17 to 18 percent in the presence of orders. The results in each case show positive coefficients ranging from 1.04 (representing $1,040,000) to 1.09 (representing $1,090,000) and *p*-values less than 0.07.

Table 7. Excess Compensation and Import Restrictions

Panel A: Log (Excess Compensation)

(1)	(2)	(3)	(4)	(5)
	All firms	**Order**	**All firms**	**Order**
Variables	*Log (Excess Compensation)*		*Log (Excess Compensation for Order Industries)*	
Import Restriction	0.177***	0.171***	0.177***	0.175***
	(0.003)	(0.001)	(0.002)	(0.001)
Log (Sales)	−0.253***	−0.299*	−0.270***	−0.320**
	(<0.001)	(0.069)	(<0.001)	(0.048)
Book-to-Market	0.0594***	0.154	0.101***	0.209**
	(0.003)	(0.129)	(<0.001)	(0.045)
Book Leverage	−0.365***	−0.613**	−0.345***	−0.580**
	(<0.001)	(0.037)	(<0.001)	(0.050)
Operating ROA	0.173**	0.614	0.133**	0.516
	(0.012)	(0.191)	(0.045)	(0.275)
Sales Growth	−0.0421***	0.0598	−0.0434***	0.0629
	(0.001)	(0.364)	(0.001)	(0.336)
Annual Return	0.0249*	0.0897**	0.000881	0.0681*
	(0.082)	(0.014)	(0.952)	(0.061)
Size- and Industry-Adjusted ROA	0.203***	0.653**	0.296***	0.710**
	(<0.001)	(0.033)	(<0.001)	(0.023)
S&P 500	0.683***	0.801***	0.678***	0.799***
	(<0.001)	(0.006)	(<0.001)	(0.004)
Log (Total Assets)	0.313***	0.240	0.326***	0.248
	(<0.001)	(0.181)	(<0.001)	(0.154)
Constant	−0.589***	0.113	−0.511***	0.236
	(0.001)	(0.893)	(0.005)	(0.770)
Firm and year FEs	Yes	Yes	Yes	Yes
Observations	7,944	832	7,944	832
R-squared	0.540	0.491	0.511	0.403

Note: Table 7 reports results for linear regression models of excess (residual) CEO compensation in the presence of orders. Specifically, *Import Restriction* takes on the value of 1 for firms with orders in place and 0 otherwise. Panel A of table 7 presents *Log (Excess Compensation)*, computed following Core, Guay, and Larcker (2008) for all firms with available compensation information, with the exception that tenure information is not required for the model, in order to expand the sample of firms. As a result, the universe of firms included extends beyond the S&P 1500 and includes other firms lacking tenure data. Similarly, *Excess Compensation for Order Industries* is computed for all firms in industries affected by orders. Panel B presents *Excess Compensation*. Control variables include *Log (Sales)*, *Book-to-Market*, *Book Leverage*, *Operating ROA*, *Sales Growth*, *Annual Return*, *Size- and Industry-Adjusted ROA*, *S&P 500*, and *Log (Total Assets)*. The models use two samples. Specifically, columns 2 and 4 include all firm-years, while columns 3 and 5 are limited to firms with orders during the period. Data come from CRSP and Compustat, including compensation information on S&P 1500 firms from ExecuComp, with other information from directEDGAR. Clustered robust *p*-values are included in parentheses. *, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Panel B: Level of excess compensation

(1)	(2)	(3)	(4)	(5)
	All firms	**Order**	**All firms**	**Order**
Variables	*Excess Compensation*		*Excess Compensation for Order Industries*	
Import Restriction	1.076*	1.087*	1.038*	1.056*
	(0.055)	(0.064)	(0.061)	(0.065)
Log (Sales)	−0.116	0.280	−0.0832	−0.216
	(0.463)	(0.824)	(0.608)	(0.863)
Book-to-Market	−0.0946	0.491	−0.0498	0.844*
	(0.309)	(0.293)	(0.572)	(0.064)
Book Leverage	−1.197***	−2.390	−1.131***	−2.525
	(0.001)	(0.240)	(0.001)	(0.225)
Operating ROA	0.178	0.474	0.0717	1.209
	(0.263)	(0.877)	(0.647)	(0.698)
Sales Growth	−0.0735*	0.210	−0.0699	0.511
	(0.098)	(0.725)	(0.122)	(0.441)
Annual Return	0.198*	0.216	0.164	0.0868
	(0.063)	(0.263)	(0.148)	(0.652)
Size- and Industry-Adjusted ROA	0.336***	3.923**	0.487***	4.145**
	(0.008)	(0.034)	(0.001)	(0.032)
S&P 500	2.382***	5.158**	2.679***	5.141*
	(<0.001)	(0.037)	(<0.001)	(0.053)
Log (Total Assets)	0.610***	−0.425	0.680***	−0.0128
	(<0.001)	(0.801)	(<0.001)	(0.994)
Constant	−2.860***	−0.160	−3.384***	0.451
	(0.002)	(0.978)	(<0.001)	(0.937)
Firm and year FEs	Yes	Yes	Yes	Yes
Observations	7,944	832	7,944	832
R-squared	0.374	0.369	0.329	0.311

*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$.

I continue analyzing residual compensation in table 8 and perform similar analyses with a change to the computation of expected compensation. Specifically, I focus on S&P 1500 firms available in ExecuComp, consistent with the literature. This allows my excess compensation computation to follow Core, Guay, and Larcker (2008) and control for the CEO's tenure in my model of expected compensation. The final two columns of the table perform the same analysis but focus on firms within industries affected by orders, as in the previous analyses. The results

are similar, suggesting that CEOs exhibit positive and significantly higher compensation when orders are active. Throughout all these analyses, the most persistent relations to compensation are firm size, as measured by *Log (Sales)*, and the presence of an active order. Again, the coefficient magnitudes range from 0.151 to 0.189 in panel A and 1.002 to 1.155 (representing $1,002,000 to $1,155,000) in panel B. Additionally, while all these analyses utilize variables winsorized at the 1 percent and 99 percent thresholds, I observe similar results when the analyses are performed for these same variables winsorized at alternative thresholds, including not winsorizing the variables at all. As with all the analyses, the inferences rely on the specifications in place. As a result, I employ firm and year fixed effects throughout this and other analyses to take into consideration the effects attributable to unobservable firm-specific characteristics. Overall, the results suggest similarly large changes in excess compensation when I perform these analyses after taking into consideration the effects of other related changes in firm characteristics and the relative compensations for a variety of alternative sample comparisons.

Table 8. Excess Compensation among S&P 1500 Firms

Panel A: Log (Excess Compensation)

(1)	(2)	(3)	(4)	(5)
	S&P 1500	**S&P Order**	**S&P 1500**	**S&P Order**
Variables	*Excess Compensation for S&P 1500*		*Excess Compensation for S&P Order Industries*	
Import Restriction	0.187***	0.151***	0.189***	0.155***
	(0.001)	(0.009)	(0.001)	(0.007)
Log (Sales)	−0.387***	−0.231	−0.403***	−0.254
	(<0.001)	(0.207)	(<0.001)	(0.157)
Book-to-Market	−0.0250	0.157	0.0281	0.205*
	(0.517)	(0.172)	(0.469)	(0.078)
Book Leverage	−0.507***	−0.481	−0.487***	−0.450
	(<0.001)	(0.127)	(<0.001)	(0.155)
Operating ROA	0.527***	0.554	0.435**	0.460
	(0.004)	(0.296)	(0.016)	(0.389)

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(1)	(2)	(3)	(4)	(5)
	S&P 1500	**S&P Order**	**S&P 1500**	**S&P Order**
Variables	*Excess Compensation for S&P 1500*		*Excess Compensation for S&P Order Industries*	
Sales Growth	−0.0591	−0.0274	−0.0593	−0.0233
	(0.287)	(0.695)	(0.265)	(0.738)
Annual Return	0.0870***	0.105***	0.0603***	0.0833**
	(<0.001)	(0.004)	(0.001)	(0.023)
Size- and Industry-Adjusted ROA	0.386***	0.622*	0.463***	0.648**
	(<0.001)	(0.060)	(<0.001)	(0.047)
Log (Total Assets)	0.408***	0.228	0.416***	0.239
	(<0.001)	(0.238)	(<0.001)	(0.201)
Log (Tenure)	−0.288	0.366	−0.285	0.393
	(0.175)	(0.254)	(0.177)	(0.213)
Log (Age)	0.0144	0.0422	0.0132	0.0415
	(0.488)	(0.281)	(0.524)	(0.283)
Constant	0.995	−1.619	1.069	−1.607
	(0.261)	(0.236)	(0.222)	(0.230)
Firm and year FEs	Yes	Yes	Yes	Yes
Observations	5,058	748	5,058	748
R-squared	0.514	0.511	0.465	0.427

Note: Table 8 reports results for linear regression models of excess (residual) CEO compensation in the presence of orders. Specifically, *Import Restriction* takes on the value of 1 for firms with orders in place and 0 otherwise. Panel A presents *Log (Excess Compensation S&P 1500)*, computed following Core, Guay, and Larcker (2008) for all firms with available compensation information. Panel B presents *Excess Compensation*. Control variables include *Log (Sales)*, *Book-to-Market*, *Book Leverage*, *Operating ROA*, *Sales Growth*, *Annual Return*, *Size- and Industry-Adjusted ROA*, *Log (Total Assets)*, *Log (Tenure)*, and *Age*. The models use two different samples. Specifically, columns 2 and 4 include all firm-years, while columns 3 and 5 limit the sample to firms with orders during the sample period. Data come from CRSP and Compustat, including compensation information on S&P 1500 firms from ExecuComp. Other compensation information is supplemented with data from directEDGAR to expand the sample. Clustered robust *p*-values are included in parentheses. *, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Panel B: Level of Excess Compensation

(1)	(2)	(3)	(4)	(5)
	S&P 1500	**S&P Order**	**S&P 1500**	**S&P Order**
Variables	*Excess Compensation for S&P 1500*		*Excess Compensation for S&P Order Industries*	
Import Restriction	1.155*	1.050*	1.101*	1.002
	(0.055)	(0.097)	(0.065)	(0.105)
Log (Sales)	−0.595*	0.754	−0.598*	0.280
	(0.052)	(0.587)	(0.060)	(0.838)
Book-to-Market	−0.487**	0.748	−0.331	1.119**
	(0.024)	(0.133)	(0.141)	(0.018)
Book Leverage	−1.421**	−1.646	−1.394**	−1.833
	(0.012)	(0.470)	(0.015)	(0.426)

(continued on next page)

(1)	(2)	(3)	(4)	(5)
	S&P 1500	**S&P Order**	**S&P 1500**	**S&P Order**
Variables	*Excess Compensation for S&P 1500*		*Excess Compensation for S&P Order Industries*	
Operating ROA	2.022**	0.412	1.937*	1.084
	(0.044)	(0.910)	(0.063)	(0.769)
Sales Growth	0.0108	−0.337	0.0381	0.00111
	(0.959)	(0.583)	(0.856)	(0.999)
Annual Return	0.444***	0.254	0.408**	0.125
	(0.009)	(0.232)	(0.028)	(0.551)
Size- and Industry-Adjusted ROA	0.638	4.742**	0.962**	5.109**
	(0.191)	(0.021)	(0.027)	(0.017)
Log (Total Assets)	1.084***	−0.810	1.192***	−0.389
	(0.001)	(0.654)	(<0.001)	(0.825)
Log (Tenure)	0.518	2.868	0.433	3.055
	(0.532)	(0.271)	(0.601)	(0.253)
Log (Age)	0.00748	0.155	0.0162	0.153
	(0.935)	(0.538)	(0.862)	(0.548)
Constant	−4.877	−11.16	−5.125	−11.53
	(0.200)	(0.278)	(0.182)	(0.276)
Firm and year FEs	Yes	Yes	Yes	Yes
Observations	5,058	748	5,058	748
R-squared	0.383	0.376	0.329	0.324

*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$.

Next, I will examine other explanations related to firm performance that could result in higher executive compensation. If orders are intended to support firms or industries, then one might expect that the performance of the firms would be higher in the presence of antidumping and countervailing duty orders. Furthermore, univariate comparisons in table 2 suggest that the firms were larger in the presence of orders, suggesting revenue growth. However, that univariate analysis does not provide in-depth multivariate analyses of the evolving firm profitability and performance following changes in the orders. As a result, I now examine the profitability of order firms when there are changes in the status of orders. Specifically, I examine operating

income and stock returns to determine whether they explain the higher compensation CEOs receive.

Table 9 presents analyses of *Size- and Industry-Adjusted Return on Assets* and *Annual Stock Returns* following changes in the status of orders. The results suggest no significant change in performance after taking into consideration additional characteristics. The results are similar when analyzing operating return on assets and size- and industry-adjusted stock performance as well as a host of additional related models. The results are also not sensitive to alternative control variable specifications, either when including or when excluding additional variables to account for effects related to operating income or stock returns. These results suggest that higher compensation is not explained by higher performance, despite relatively lower international competition as a result of import restrictions. These results are consistent with those discussed earlier, which document higher cash and excess compensation that is unlikely to have been driven by a rise in performance-sensitive compensation as shareholders benefit from more profitable or productive operations. Alternatively, higher cash compensation, higher excess compensation, and a lack of improvement in performance suggest that the results are not explained by performance and are unrelated to performance-sensitive compensation. While it is possible that performance changes lag or follow different timing, that would be inconsistent with the observations made regarding compensation. Therefore, while the firm's performance may subsequently improve, compensation for future performance is uncommon. Instead, compensation typically relates more closely to recent performance.

Table 9. Firm Performance and Import Restrictions

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	All firms	**All firms**	**Order**	**All firms**	**All firms**	**Order**
Variables	*Size- and Industry-Adjusted ROA*			*Annual Stock Return*		
Import Restriction	0.00768	−0.00502	−0.00386	0.0567	0.0716	0.0547
	(0.556)	(0.672)	(0.735)	(0.251)	(0.144)	(0.267)
Log (Total Assets)	−0.000709	−0.0461***	0.0232	−0.318***	−0.360***	−0.391***
	(0.948)	(0.002)	(0.527)	(0.000)	(<0.001)	(0.005)
Book-to-Market	−0.0444***	−0.0508***	−0.235***	0.190***	0.215***	0.213
	(0.001)	(<0.001)	(0.002)	(0.000)	(<0.001)	(0.119)
Log (Sales)		0.0761***	−0.0349		0.0635***	0.248*
		(<0.001)	(0.367)		(0.004)	(0.086)
Book Leverage		−0.138***	−0.238*		0.381***	0.580**
		(0.004)	(0.057)		(<0.001)	(0.043)
Sales Growth		0.00435	−0.00342		−0.0144*	−0.0230
		(0.368)	(0.788)		(0.098)	(0.413)
S&P 500		0.0592	−0.202*		0.0583	0.0872
		(0.440)	(0.078)		(0.761)	(0.465)
Annual Return		0.0355***	0.0447**			
		(<0.001)	(0.044)			
Operating ROA					−0.129**	−0.958**
					(0.040)	(0.022)
Size- and Industry-Adjusted ROA					0.346***	0.789**
					(<0.001)	(0.021)
Constant	−0.0631	−0.199***	0.319**	1.987***	1.821***	1.152*
	(0.340)	(0.001)	(0.017)	(0.000)	(<0.001)	(0.069)
Firm and year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	14,746	14,746	894	14,746	14,746	894
R-squared	0.550	0.563	0.624	0.235	0.249	0.287

Note: Table 9 reports results for linear regression models of firm performance in the presence of orders. Specifically, *Import Restriction* takes on the value of 1 for firms with orders in place and 0 otherwise. *Size- and Industry-Adjusted ROA* is the ratio of earnings before interest and taxes to total assets relative to the industry average, while *Annual Return* measures the firm's prior year stock performance. Control variables include *Log (Sales)*, *Book-to-Market*, *Book Leverage*, *Sales Growth*, *Annual Return*, *Size- and Industry-Adjusted ROA*, *S&P 500*, and *Log (Total Assets)*. The models use two different samples. Specifically, columns 2, 3, 5, and 6 include all firm-years, while columns 4 and 7 limit the sample to firms with orders during the sample period. Data come from CRSP and Compustat. Clustered robust *p*-values are included in parentheses. *, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Table 10. Import Restriction Likelihood Matched Analysis

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	All firms		**Order firms**		**Balanced panel**	
Variables	Dependent variable = *Log (Total Compensation)*					
Import Restriction	0.162***	0.172***	0.183**	0.186***	0.151**	0.165**
	(0.004)	(0.002)	(0.016)	(0.00154)	(0.0193)	(0.0106)
Log (Sales)	0.159**	0.218***	0.335***	0.185	0.329	0.404
	(0.025)	(0.006)	(0.006)	(0.278)	(0.331)	(0.251)
Book-to-Market	−0.194*	−0.200*	−0.140	0.00744	−0.222*	−0.225*
	(0.063)	(0.062)	(0.122)	(0.938)	(0.0592)	(0.0594)
Book Leverage	−0.674***	−0.483**	−0.247	−0.681**	−0.735	−0.695
	(0.001)	(0.032)	(0.398)	(0.0205)	(0.167)	(0.213)
Operating ROA	1.089***	0.894**	0.355	1.283***	0.397	0.377
	(0.001)	(0.021)	(0.343)	(0.00264)	(0.354)	(0.405)
Sales Growth	−0.0884	−0.144**	−0.0502	−0.0201	−0.00897	−0.0111
	(0.314)	(0.030)	(0.481)	(0.740)	(0.876)	(0.838)
Annual Return	0.226***	0.184***	0.162***	0.151***	0.147**	0.147**
	(<0.001)	(0.007)	(0.001)	(<0.001)	(0.0308)	(0.0356)
Size- and Industry-Adjusted ROA	−0.574**	−0.551*	−0.476*	−0.0403	0.561	0.495
	(0.044)	(0.081)	(0.067)	(0.879)	(0.243)	(0.305)
S&P 500	−0.0138	−0.0302	−0.0976	0.688**		
	(0.863)	(0.691)	(0.518)	(0.0241)		
Log (Total Assets)	0.302***	0.242***	0.114	0.170	−0.0669	−0.114
	(0.000)	(0.002)	(0.383)	(0.372)	(0.852)	(0.748)
Constant	4.544***	4.569***	4.633***	5.016***	6.272***	6.056***
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)
Firm and year FEs	Yes	Yes	Yes	Yes	Yes	Yes
First-stage FEs	Industry	Year	Industry	Year	Industry	Year
Observations	1,533	1,391	845	838	457	440
R-squared	0.694	0.721	0.772	0.820	0.824	0.824

Note: Table 10 reports results for linear regression models of CEO compensation in the presence of orders on a matched sample. *Import Restriction* takes on the value of 1 for firms with orders in place and 0 otherwise. *Total Compensation* includes CEO compensation in the form of salary, bonuses, other annual compensation, and stock grants. A first-stage logistic regression model used for matching incorporates control variables, including *Log (Sales)*, *Book-to-Market*, *Book Leverage*, *Operating ROA*, *Sales Growth*, *Annual Return*, *Size- and Industry-Adjusted ROA*, *S&P 500*, and *Log (Total Assets)*. Second-stage models use three different samples limited to firms sharing SIC codes with order firms. Specifically, columns 2 and 3 include all firm-years, while columns 4 and 5 are limited to order firms. Finally, columns 6 and 7 include only order firm observations within five years of order status change to create a balanced panel. Data come from CRSP and Compustat, including compensation information on S&P 1500 firms from ExecuComp. For other firms, compensation information is supplemented with data from directEDGAR to expand the sample of firms analyzed. Clustered robust *p*-values are included in parentheses. *, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Additional Analysis and Robustness

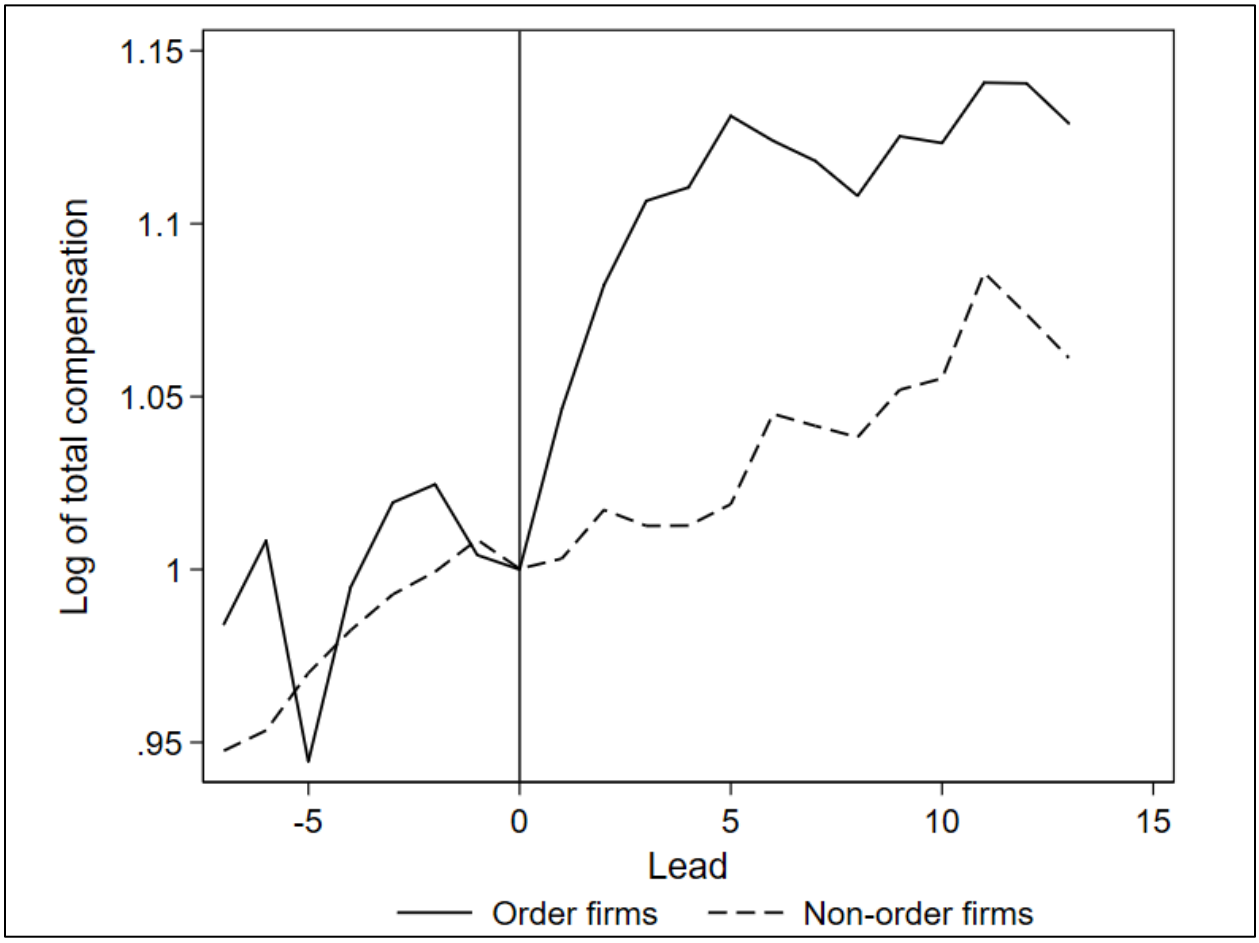
Finally, I examine a host of additional robustness analyses besides the linear regression models in an effort to consider alternative explanations related to my inferences and to identify

causality. In particular, I perform multiple matching analyses, including the use of a synthetic control and propensity score–matching sample to consider explanations related to differences in order and nonorder firms. Specifically, the synthetic matching analysis compares order (treated) firms to nonorder (control) firms before and after the order dates to construct a differences-in-differences estimator for total compensation. This methodology creates an estimator by separating firms into treated units and untreated units that do not have active orders. The model then constructs a synthetic firm with characteristics averaged from all untreated units, using weights to select units that closely approximate the treated units' statistics. This approach allows me to estimate the effect of orders on CEO compensation by constructing a counterfactual scenario, where the firms did not have orders, and to compare the outcomes for both scenarios. I follow Cavallo et al. (2013) and normalize by setting the compensation of the affected firm (for each of the orders considered) to be equal to 1 in the event year. This method is particularly effective in generating control firms similar to treatment firms, using the best weighting of control firms to create a synthetic firm with limited differences from treated firms. To estimate the effect, this approach requires a balanced panel for all firms included, which leaves only 119 firms and seven additions of import restrictions to develop a balanced panel from 1999 to 2014.

While the analyses up to this point included newly implemented orders and the lifting of prior orders (resulting in lower and higher competition, respectively), this analysis focuses on new orders. Because of the limited number of observations, the results do not include effects related to the revocation of prior orders. Identification relies on matching the pretreatment behavior of the outcome variable of interest. By performing this analysis, I can determine

whether increases play a significant role in the compensation changes relative to a similarly constructed synthetic counterfactual.

Figure 1. Order and Nonorder Firm CEO Compensation Following Import Restriction Changes



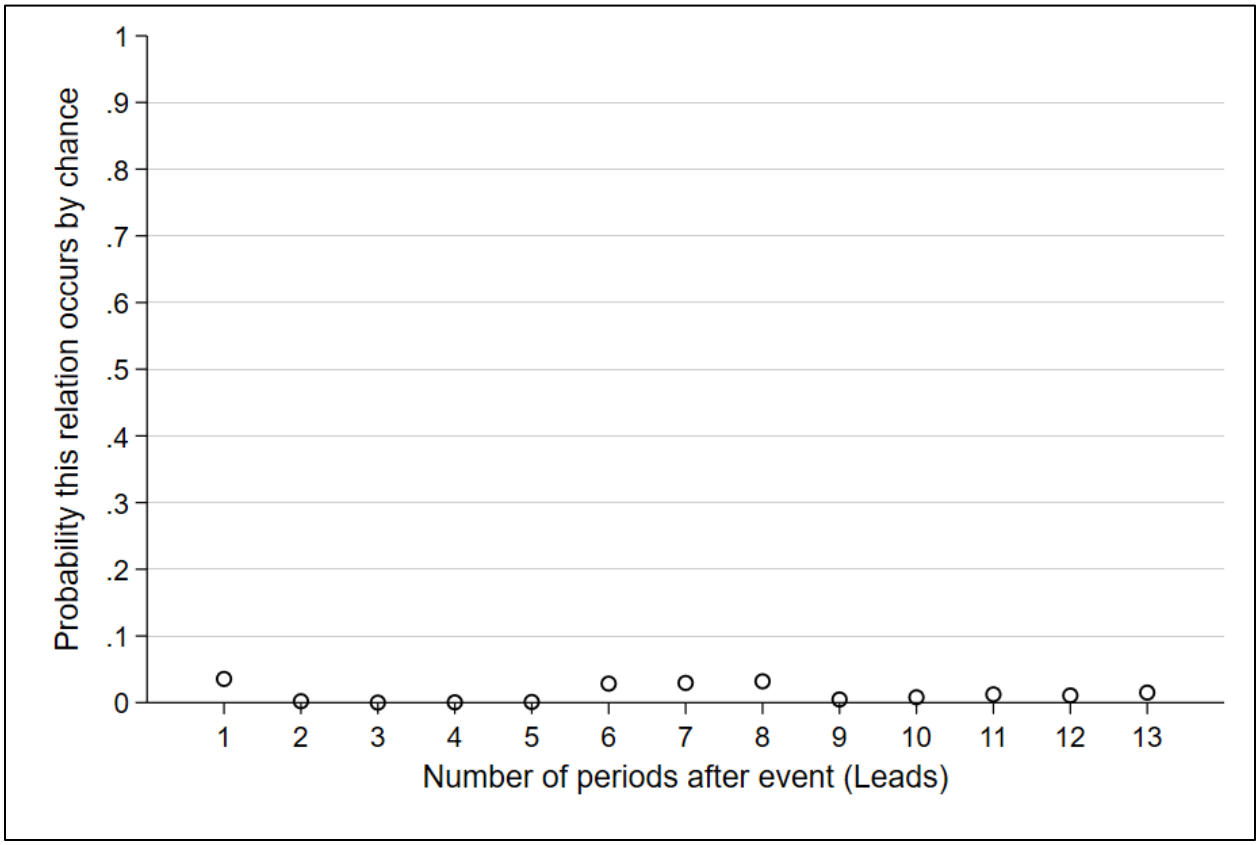
Note: Figure 1 presents the logarithm of total CEO compensation for order firms compared to a synthetic control firm match at the initiation of new antidumping and countervailing duty orders, where each value is normalized to 1 at the time of the order.

Figure 1 presents the average impact of an order on the log of CEO total compensation and shows similar rising trends in order (treatment) firms and nonorder (synthetic control) firms leading up to the implementation of the new order. However, following the order, a large,

significant difference between the two groups emerges, suggesting that compensation is impacted by changes at the time of the order. Order firms rise significantly faster than the synthetic control immediately following the order. In some ways, this is the most compelling evidence regarding the timing of import restrictions and compensation, since figure 1 documents significant divergence immediately following restrictions.

Figure 2 documents the likelihood that this difference emerges by chance, in which case all the *p*-values are below 0.05, and often much lower, throughout the post-restriction period. Even though my analysis does not distinguish between small and large orders, a significant gap emerges between the order firms and the synthetic nonorder (control) firms. The extended range of these effects is consistent with earlier results from the linear regression models. By using synthetic control methodology, I increase the likelihood that differences emerge because of orders as opposed to alternative explanations both by limiting the focus of the timing and by observing trends following the events. Specifically, I confirm that trends for each group are similar before event windows, after considering observable traits to limit differences across groups. Overall, these results suggest that the activation of new antidumping and countervailing duty orders is linked to large, significant increases in executive compensation. Unfortunately, the ability to focus on the revocation of antidumping and countervailing duty orders is limited by data availability and other events during the relevant times before and after the orders.

Figure 2. Difference between Order and Nonorder Firm Compensation Following Order Changes



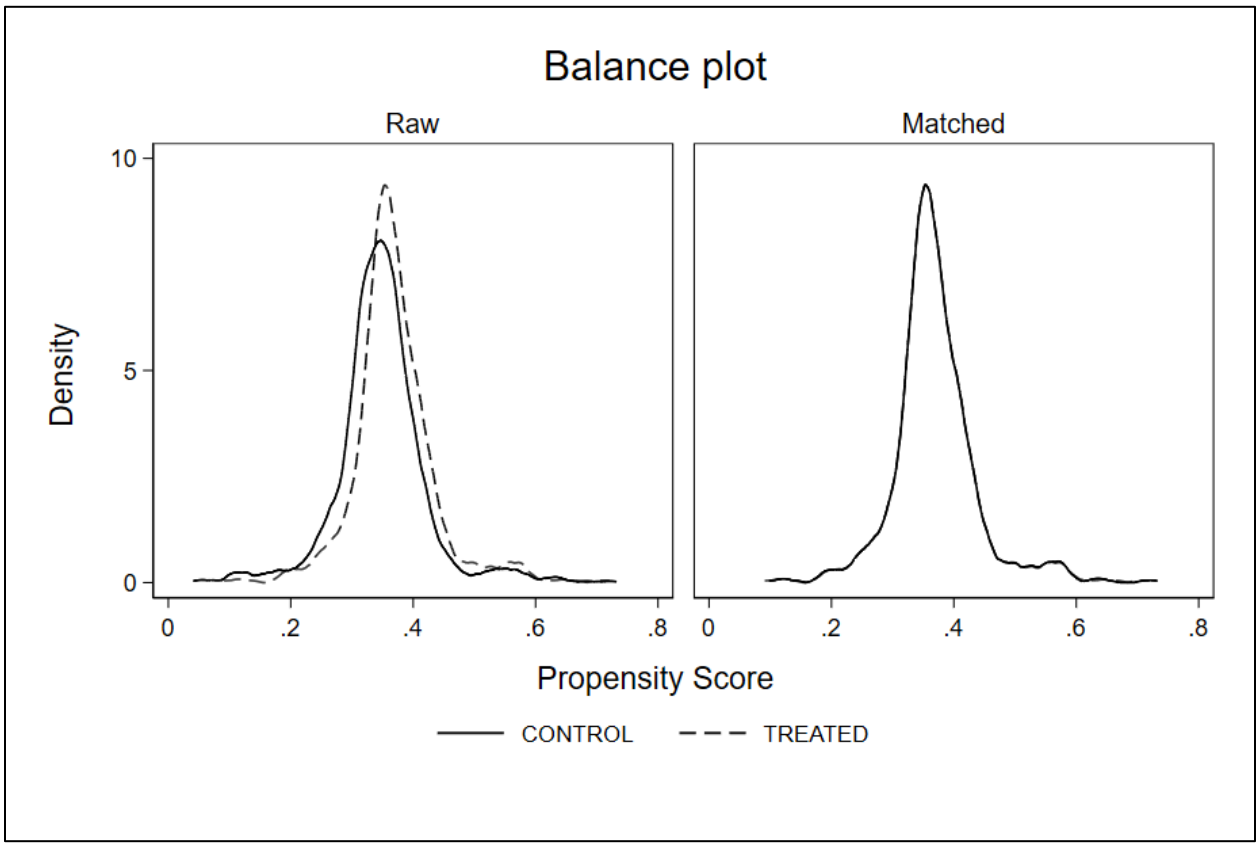
Note: Figure 2 presents statistical tests of the differences between order and nonorder firm compensation following periods of import restrictions in the form of antidumping and countervailing duty orders, documenting the likelihood that the synthetic control match composed of nonorder firms would be as different from the order firms by chance by estimating the percentage of placebo pseudo *t*-statistics that are at least as large as the main pseudo *t*-statistics for each post-treatment period.

In an effort to control for the effect of unobservable effects related to observable characteristics, I also use a treatment effects model using propensity scores to match order firms with nonorder firms that share similar characteristics. After matching firms based on propensity scores related to the firm's likelihood of being directly linked to antidumping and countervailing duty orders, the treatment effects model compares outcomes for the treated and control groups to estimate the average (treatment) effect of orders on order firms. Similar to the procedure followed for previous regression analyses, I control for the following covariates: *Log (Sales)*,

Book-to-Market, *Book Leverage*, *Operating ROA*, *Sales Growth*, *Annual Return*, *Size- and Industry-Adjusted ROA*, *S&P 500*, and *Log (Total Assets)*, as well as industry and year fixed effects. This analysis is performed by using both the limited and expanded samples with firms sharing an industry with an order firm.

To check that covariates are properly balanced, I construct a propensity score plot in figure 3, which shows the estimated probabilities that each firm, including both order and nonorder firms, is linked to an order. The estimated probabilities are similar before matching, and the probability density curves are not distinguishable after matching. Again, the results suggest a significantly higher level of compensation in the presence of orders. Overall, this analysis supports the findings of the primary regression series, as well as the previous synthetic model. The estimated treatment effect on the treated firm is statistically significant at the 1 percent level, with a *p*-value of 0.003. The coefficient magnitude suggests orders are linked to higher CEO total compensation, on the order of approximately 20 percent on average.

Figure 3. Kernel Balance Plot of Propensity Scores for Order and Nonorder Firms



Note: Figure 3 presents the propensity score density plots for the raw and matched samples for order (dashed line) and nonorder (solid line) firms based on the logistic regression model of a firm's likelihood of being linked to an order as a result of firm characteristics, including firm size, book-to-market ratio, leverage, profitability, and stock performance. The raw plot (left) includes all firms within the main sample, while the matched plot (right) is limited to firms similar to order firms, resulting in two lines that overlap completely.

I also perform a series of additional matching analyses, including matching on the likelihood of being an order firm, using a logistic regression model to approximate this probability by using control variables throughout prior analyses and industry and year fixed effects. I observe similar results throughout these analyses, including specifications varying the strictness of the matching requirements. Table 10 presents models using nearest neighbor matching, where the first stage uses year (columns 2, 4, and 6) and industry (columns 3, 5, and 7) fixed effects. Results and conclusions persist. In additional untabulated analyses, I observe

similar results with broader industry classifications as well. Overall, these results suggest that the effects I observe are not likely to have been driven by chance or related to unobserved effects correlated with firm characteristics.

Conclusion

To better understand the political economy of trade policy and allocation of extracted rents, I explore how employees are affected. I examine executive compensation levels and structure in industries following changes in competition within industries affected by import restrictions through the passage and revocation of antidumping and countervailing duties. The results suggest that firms compensate CEOs significantly more during active orders, with orders linked to a 17 percent higher compensation. Furthermore, compensation is even higher after incorporating the expected compensation of executives, suggesting an 18 percent higher level of excess compensation, worth more than $1 million. Additional analyses suggest that higher performance is not the primary determinant of the higher compensation I observe following import restrictions, since excess compensation rises without evidence of improving performance. My matching analyses suggest that order implementation results in significant increases in compensation that are unlikely to be driven by chance. Future researchers may consider focusing on revoked orders to concentrate on the role of plausibly exogenous competition increases. I also leave additional analyses on turnover and job stability to future researchers, as well as investigations into additional beneficiaries and the response of compensation allocated to employees other than the CEO. Importantly, taken with previous research, these findings suggest that changes to competition related to trade policy drive compensation higher, whether competition is increasing or decreasing. Investigating both newly imposed and existing revoked orders, I offer a comprehensive, generalizable analysis of

import restrictions. Overall, these findings contribute to research on international trade incentives, the implications of which should be considered as trade restrictions are considered in the future. Given the growing prominence of trade policy and import restrictions in the United States, policymakers should be aware of the beneficiaries of any rulemaking or import restrictions.

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