Public Firm Presence, Financial Reporting, and the Decline of U.S. Manufacturing

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August 2019

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We thank Raffi Indjejikian, Zach Kaplan, Eva Labro, Mark Lang, DJ Stockbridge, Gwen Yu, and workshop participants at the University of Michigan and the Columbia Junior Accounting Faculty Conference for helpful comments and suggestions.

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1. Introduction

U.S. manufacturing employment fell by more than 40% over the last two decades, from 18% of the total U.S. workforce in 1997 to just 10% by 2018. Prior work identifies increased import competition from foreign competitors as a primary cause of this decline (e.g., Autor et al 2013; Acemoglu et al. 2016). Against this backdrop, the economics literature argues that indirect trade costs, such as information frictions, have a stronger effect on import competition than direct costs, such as tariffs and quotas.[1] In this paper, we explore the effects of a potential source of information frictions in trade that is unrelated to trade policy. Specifically, we ask whether the information created by public firm presence helps foreign competitors overcome information frictions and compete with U.S. manufacturers.

The U.S. Securities and Exchange Commission (SEC) requires public firms to prepare financial reports for the stated purposes of protecting investors, facilitating capital formation, and maintaining fair, orderly, and efficient capital markets.[2] These financial reports contain a staggering amount of information (e.g., Ford Motor Company's 2017 annual report includes over 200 pages of information). Firms must include details of their investments, financial performance, exposure to risk factors, material contracts, expansion plans, and production schedules; much of this information must be machine readable. Independent auditors review these reports to ensure they are a "fair representation of [the] entity's financial position."

The information created about public firms is not limited to SEC-mandated disclosures. Public firms commonly hold open conference calls to discuss performance with analysts, who in

[1] See, e.g., Rauch and Trindade (2003); Rauch and Casella (2003); Anderson and van Wincoop (2004); Portes and Rey (2005); Head and Mayer (2013); Shroff et al. (2013); and Allen (2014). Pierce and Schott (2016) show that the decision to grant Permanent Normal Trade Relations to China, which reduced uncertainty about tariff fluctuations decreased U.S. manufacturing employment. Similarly, Handley and Limão (2017) find that China's accession to the WTO reduced trade uncertainty and increased Chinese imports into the U.S.

[2] https://www.sec.gov/Article/whatwedo.html

turn produce their own forecasts based on firm guidance and independent research. The business press also follows and reports on public firms. Although investors are the intended beneficiaries of this information, competitors can also take advantage of this information. For example, foreign competitors can use disclosed profitability information to enter (or avoid) the markets where U.S. public firms are profitable (or unprofitable). Foreign competitors can also use other disclosed information to understand supply and demand conditions facing U.S. firms, U.S. firms' capacity and financial health, and even what does and does not work for U.S. firms. Consequently, public firm presence can produce information that reduces the uncertainty facing foreign competitors and facilitate import competition regardless of U.S. firm profitability. Moreover, this information can help importers contract with U.S. firms and can therefore increase import competition even when importers do not sell directly to U.S. consumers.

However, public firm presence may also hinder import competition. Public firms can access a large pool of liquid capital and are more responsive to investment opportunities because of their public status and superior information environments.[3] Consequently, public firms may have a greater ability to respond to actual or potential import competition by investing in projects designed to help them "escape competition" (e.g., Aghion et al., 2005; Acharya and Xu, 2017; Aghion et al., 2018). Consequently, public firms may be stronger competitors, and their presence may deter import competition as a result. Public firms' access to outside capital may also affect the separation of ownership and control and ultimately their governance structures. The different governance structures of private and public firms may affect their relative ability and willingness to respond to import competition (e.g., public firm CEOs may be less willing to lay off workers in

[3] E.g., Rajan and Zingales (1998); Michaely and Roberts (2011); Badertscher et al. (2013); Maksimovic et al. (2013); Gilje and Taillard (2016).

the face of import competition because of agency conflicts). Therefore, the relation between public firm presence and import competition is an open empirical question.

To understand the effects of public firm presence on import competition, we first examine the industry-level relation between import competition and public firm presence. Consistent with public firm presence facilitating import competition by alleviating information frictions, we find a positive association between the sales-weighted fraction of public firms in an industry and subsequent import competition in that industry. This association is robust to the inclusion of time-varying controls, industry and year fixed effects, and alternative specifications. These alternative specifications include disaggregating imports to the industry-exporting country-year level and including country-year fixed effects to absorb all variation at the country-year level. This absorbed variation includes characteristics commonly examined by gravity models of international trade (e.g., distance between countries, language, and both U.S. and exporting country macroeconomic conditions; Head and Mayer, 2014).

While the association between public firm presence and import competition is suggestive, other reasonable explanations exist for this association. Therefore, we use a natural experiment created by the Sarbanes-Oxley Act (SOX) to provide evidence on the causality of this association (Badertscher et al., 2013). SOX imposed high regulatory compliance costs that varied by industry, leading firms in some industries to avoid public listing.[4] Importantly, the Enron and Worldcom accounting scandals that triggered SOX were unexpected, as evidenced by the high market value of the two firms immediately prior to the scandals. Enron was an oil and natural gas company and

[4] Engel et al. (2007) and Leuz et al. (2008) find that SOX caused public firms to deregister with the SEC and no longer provide public financial reports. Iliev (2010) finds that SOX imposed costs equal to 12% to 35% of firm value for small firms likely on the margin between deregistering and remaining public. Financial Executives International (2005) survey 217 large companies and find that the one year increase in direct compliance costs due to SOX was over $4 million.

Worldcom was a telecommunications company, suggesting their behavior had little relation to import competition in *manufacturing* industries, outside of triggering SOX. Consequently, SOX is plausibly exogenous with respect to import competition, suggesting we can use cross-sectional and time-series variation in SOX to draw causal inferences about the effects of public firm presence on import competition.

We use inter-industry differences in the expected costs of SOX as an instrument for inter-industry changes in public firm presence after the passage of the Act. We follow prior work to calculate the expected costs and find significant differences in these costs between industries (Zhang, 2007). Consistent with prior work, our first stage results suggest that the expected costs of SOX affect changes in public firm presence after the passage of the Act (Engel et al., 2007; Leuz et al., 2008). In the second stage, we find that changes in public firm presence cause changes in import competition.[5]

The estimated effect of public firm presence on import competition is economically significant. We compare the effect of public firm presence to the effect of China's ascension to the World Trade Organization, which reduced trade uncertainty and increased Chinese import competition (Pierce and Schott, 2016; Handley and Limão, 2017). The results from our country-level SOX analysis suggest that the effect of moving from the median to the 75th percentile of public firm presence is about one fourth of the effect of China's ascension to the World Trade Organization on Chinese import competition.

Next, we examine whether the information created by public firm presence, particularly by SEC-mandated financial reports, is an important mechanism through which public firm presence

[5] One potential concern with SOX as a natural experiment is that SOX imposed regulatory costs on public firms, potentially making them less able to compete with foreign firms. However, this potential effect, if anything, would work against finding that industries in which the expected costs of SOX are greatest are the industries where import penetration relatively decreases.

affects import competition. To do so, we provide descriptive evidence on which foreign competitors respond to changes in public firm presence, what information they respond to, and when they respond.

If public firm presence ameliorates foreign firms' uncertainty, it should be particularly useful to firms that have no prior experience in the U.S. market. Consequently, we expect that public firm presence is particularly relevant to foreign competitors considering exporting to the U.S. for the first time (i.e., we expect public firm presence to be particularly relevant on the extensive margin of import competition). To test if public firm presence facilitates entry in particular, we conduct a hazard analysis of foreign competitors' initial entry to the U.S. market. We find that firms in a country and industry that previously never exported to the U.S. are significantly more likely to begin exporting to the U.S. when U.S. public firm presence is higher.

We next test for cross-sectional differences in the response to public firm presence based on foreign competitors' ability to understand and process the financial disclosures of U.S. manufacturers. We find that foreign competitors from countries where local Generally Accepted Accounting Principles (GAAP) is more similar to U.S. GAAP, as measured by Bradshaw et al. (2004), are more sensitive to changes in public firm presence. We argue that this effect is consistent with these competitors having a greater ability to process and understand U.S. financial reports and therefore relying more on them when deciding whether, where, and how to compete with U.S. firms. We also find that competitors from countries where the primary language is not English are more sensitive to changes in public firm presence. We argue that this effect is consistent with these competitors relying more on the quantitative information contained in financial reports and less on information from alternative non-financial sources such as the media (e.g., Li and Ramesh, 2009).

We next examine whether foreign competitors appear to pay attention to specific types of information generated by public manufacturing firms. We find that increases in downloads of U.S. financial statements in a given industry from the SEC's Electronic Data Gathering, Analysis, and Retrieval system (EDGAR) by users in a foreign country precede increases in import competition from that country in that industry. We also find that import competition is sensitive to changes in the publicly disclosed gross margins of public firms, but not to changes in the imputed gross margins of private firms, which are only disclosed in an aggregate fashion after a relative delay of a year or more. This result is consistent with an "imitation effect" of financial reporting; foreign competitors use the performance information contained in financial reports to understand the profitability of importing.

However, we also find that the presence of public firms incrementally affects import competition independently of disclosed performance, consistent with financial reports affecting import competition by serving in an "uncertainty reduction" role (e.g., Badertscher et al., 2013; Ferracuti and Stuben, 2019; Roychowdhury et al., 2019). Finally, we find that when 10-K, 10-Q, and earnings announcements are more informative to investors, as measured using trading volume and absolute market returns around their release, the relation between public firm presence and import competition is stronger. In total, these findings suggest that foreign firms respond to the information in financial disclosures and not to other differences between industries with greater or lesser public firm presence.

We conduct a final falsification test to bolster our inference that public firm presence affects import competition via the production of SEC-mandated financial reports. In many developed countries both public and private firms must report publicly, unlike in the U.S. where only public firms report publicly. If the sensitivity of import competition to public firm presence

is due to financial reporting, then we should not observe a relation between import competition and public firm presence in countries where both public and private firms must report publicly. Alternatively, we should observe a differential relation in these countries if the sensitivity is driven by some omitted variable, selection issue, or alternative mechanism. Consistent with the first explanation, we find that import competition is not sensitive to public firm presence in the U.K., where both public and most private firms must report publicly.

In total, the evidence from our association tests, natural experiment, cross-sectional specifications, and falsification test provide consistent evidence that financial reporting provides foreign competitors with insights for competing with U.S. manufacturing firms, reducing trade costs and increasing import competition. In our final test, we descriptively link this effect to reduced aggregate employment in U.S. manufacturing industries.

Our work contributes to the literature that examines the determinants and effects of import competition by documenting evidence of information frictions affecting trade.[6] Prior work finds that shared borders, distance between countries, and shared language affects trade between countries, indirectly consistent with information frictions preventing trade (Disdier and Head, 2008 review the literature).[7] An important distinction is that borders, distance, and language are largely time-invariant and outside the control of policymakers. In contrast, the SEC controls U.S. financial reporting requirements, suggesting our work has potential policy implications.

Our work also contributes to the literature that investigates the trade-off between public listing and staying private, and its effects on firms' outcomes. Public listing provides firms with

[6] E.g., Fresard (2010), Xu (2012), Hombert and Matray (2018), Bloomfield and Tuijn (2019) and Glaeser and Landsman (2019). Bernard et al. (2012) review the literature.

[7] Steinwender (2018) is an exception. She finds that the completion of the transatlantic cable on July 28, 1866 increased transatlantic trade flows.

access to capital and public firms are more responsive to investment opportunities.[8] However, public listing creates agency conflicts by diversifying ownership and by separating ownership and control (Gao et al., 2013; Asker et al., 2014). Prior work argues that financial reporting can reduce information asymmetry and alleviate these agency conflicts (see Armstrong et al., 2010 for a review). However, our results suggest that financial reporting also imposes costs; financial reporting provides enabling information to foreign competitors.

In this regard, we also contribute to the prior literature on proprietary costs and voluntary disclosure. This literature argues that product market competition discourages voluntary disclosure, based on the assumption that financial reporting can provide enabling information to competitors.[9] We contribute to this literature by providing evidence of disclosure benefiting competitors, consistent with this assumption.[10] In this final regard, our work also contributes to the information economics literature on disclosure regulation. Leuz and Wysocki (2016) argue that this literature has not identified "the real and macro-economic consequences of disclosure regulation." Although a complete accounting of the costs, benefits, and consequences of disclosure regulation is beyond the scope of any single paper, our paper suggests that at least one real macroeconomic consequence of disclosure regulation is providing useful information to foreign competitors and increasing import competition.[11]

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[8] E.g., Ritter and Welch (2002); Brau and Fawcett (2006); Brav (2009); Michaely and Roberts (2011); Badertscher et al. (2013); Maksimovic et al. (2013); Mortal and Reisel (2013); Phillips and Sertsios (2014); Gilje and Taillard (2016); and Acharya and Xu (2017).

[9] Beyer et al. (2010) review the literature. Graham et al. (2005) survey more than 400 executives and find that most worry about revealing information to competitors via their financial reports.

[10] A growing literature documents evidence of financial reporting affecting *intra*-country competitive outcomes, in particularly profitability and profitability dispersion (e.g., Bernard, 2016; Breuer, 2018; Berger et al., 2019; Christensen et al., 2019; and Hann et al., 2019). In contrast, we examine *inter*-country competitive outcomes. Regulators likely internalize changes in foreign competition differently than changes in domestic competition. We also examine changes in competitors' production, rather than changes in disclosing-firm profitability or industry profit dispersion.

[11] See also Badertscher et al. (2013), who show that public firm presence improves the investment efficiency of private firms, and Bernard et al. (2019), who show that investment opportunities cause firms to acquire accounting information about their rivals. Sadka (2006) and Beatty et al. (2013) present evidence that fraudulent misreporting causes

2. Background and predictions

Direct barriers to trade, like protectionist regulation, appear significantly less important than indirect barriers, like information frictions.[12] Potential information frictions in trade include uncertainty about customer preferences, foreign government trade policy, trading partners' outside options and financial health, and competitors' plans and capabilities. Importers must spend considerable time and resources overcoming information frictions, and often fail (Albornoz et al., 2012). Information frictions are also dynamic; importers must continually navigate a shifting landscape. However, direct evidence of information frictions impeding trade is scarce (Steinweinder, 2018). We argue that the information created by public firm presence, in particular via public firms' financial reports, is potentially a key source of information that can alleviate information frictions in trade.

The SEC oversees financial reporting by U.S. public firms. The SEC's mission is to, "protect investors, maintain fair, orderly, and efficient markets, and facilitate capital formation."[13] The SEC's mission derives, "from a simple and straightforward concept: all investors, whether large institutions or private individuals, should have access to certain basic facts about an investment prior to buying it, and so long as they hold it. To achieve this, the SEC requires public companies to disclose meaningful financial and other information to the public. This provides a common pool of knowledge for all investors to use to judge for themselves whether to buy, sell,

competitors to increase their own investment, consistent with competitors using peer firm financial statements to inform their investment decisions. Their findings also suggest that financial reporting may be misleading and therefore harmful to foreign competitors. However, we believe that the evidence that investors and competitors rely on financial reports and the comparative rareness of fraudulent misreporting suggests that financial reporting generates information that is useful to competitors, on average.

[12] See, e.g., Rauch and Trindale (2003); Rauch and Casella (2003); Alearne et al. (2004); Anderson and van Wincoop (2004); Portes and Rey (2005); Head and Mayer (2013); Shroff et al. (2013); and Allen (2014).

[13] https://www.sec.gov/Article/whatwedo.html

or hold a particular security. Only through the steady flow of timely, comprehensive, and accurate information can people make sound investment decisions."

Required SEC disclosures include, but are not limited to, annual and quarterly financial statements, current reports of material events (SEC form 8-K), and notifications of transactions by insiders. These required disclosures reveal financial information about U.S. firm profitability, financial health, and investments. Public financial reports also contain a tremendous amount of non-financial information, including the existence of trade secrets (Glaeser, 2018), discussions of the material risks faced by firms (Smith and Heinle, 2017), material contracts (Costello, 2013), the identities of key customers, and even mine safety records (Christensen et al., 2017). The information in required disclosures is often forward looking, either explicitly due to the accruals system or by SEC mandate as is the case for discussions of risk factors, or implicitly due to the serial correlation between past performance and investment and future performance and investment.

Public firms' information environments are not limited to required disclosures. The owners of public firms are disperse investors who are uninvolved in the daily operation of the firm. Consequently, they demand, and frequently receive, additional information to oversee and allocate their investments. This additional information includes management forecasts of future earnings and investment, public conference calls with management, and press releases (see Armstrong et al., 2010 and Dechow et al., 2010 for reviews of the literature on investor demand for information). Information intermediaries, like the business press and financial analysts, contextualize, extend, and disseminate information about public firms.[14] In total, public firm presence directly and indirectly generates a tremendous amount of public information.

[14] E.g., Bushee et al. (2010); Engelberg and Parsons (2011); Kelly and Ljungqvist (2012); and Dougal et al. (2013).

Although the information generated by U.S. public firms is for the benefit of investors, competitors may also use this information (Roychowdhury et al., 2019 review the literature). Indirectly consistent with competitors using the information generated by public firms, a large accounting literature documents evidence of a negative relation between product market competition and voluntary disclosure.[15] A growing accounting literature also documents evidence of financial reporting requirements affecting industry profitability dispersion and disclosing-firm profitability.[16] Building on this evidence, we argue that foreign competitors can use the information revealed by U.S. public firms to compete with these firms.

We consider two channels through which public financial reporting can benefit foreign competitors. We refer to the first channel as the imitation channel. By providing prompt and disaggregated profitability information, public financial reporting can reveal to foreign competitors the attractiveness of the markets in which U.S. firms compete. Foreign competitors can use this information to enter these markets when and where conditions are more profitable. Accordingly, we predict that import competition will be more sensitive to the profitability of public firms than to the profitability of private firms.

While the imitation channel only increases import competition when U.S. firms' profitability is higher, the second channel we consider, the uncertainty reduction channel, increases import competition regardless of U.S. firm profitability. Prior work finds that private firms are more sensitive to their investment opportunities when they operate in industries with greater public firm presence because public firm presence reduces uncertainty (Badertscher et al., 2013; Matray,

[15] For example, Huang et al. (2016) find that tariff rate reductions cause firms to reduce their disclosure of earnings forecasts.

[16] Bernard (2016); Breuer (2018); Berger et al. (2019); Christensen et al. (2019), and Hann et al. (2019).

2016). Prior work also finds that investment opportunities cause firms to acquire accounting information about their rivals. (Bernard et al., 2019).

We extend this logic to import competition from foreign competitors. We argue that the information disclosed by public firms in their financial reports can also help foreign competitors understand market opportunities, U.S. firms' competitive position and plans, and what has and has not worked for U.S. firms (e.g., financial reports may reveal why poorly performing U.S. firms did not succeed, helping foreign competitors enter the market even when U.S. firms experience poor performance). Consequently, foreign competitors should be more willing and able to enter the markets where U.S. firms compete when the proportion of public firms is higher, even holding the profitability of U.S. firms fixed.

The information produced by public firm presence can also be useful to foreign competitors even when these competitors do not sell directly in the U.S. market. For example, a foreign importer contracting, or considering contracting, with an intermediary likely benefits from information about the intermediary's financial health, the robustness of demand, and the intermediary's outside options (e.g., the capabilities of domestic producers and the intermediary's ability to produce the product itself). Consequently, the information produced by public firm presence can help these firms contract with intermediaries, consistent with a large literature in accounting that highlights the role of financial reports in contracts (see Armstrong et al., 2010 for a review). Accordingly, we predict that import competition will be sensitive to public firm presence, and especially sensitive when public reports provide information that is more useful or relevant to foreign competitors.

We investigate the relation between public firm presence and import competition in the setting of U.S. manufacturing. Manufacturing firms are particularly vulnerable to import

competition because unlike services, manufacturing products can be easily produced in one market and sold in another. The U.S. Census also collects extensive data about manufacturing firms, including about private manufacturing firms. These data allow us to measure the prevalence of public firms in each manufacturing industry *ex post*. However, these data are likely of limited use to foreign competitors because they are reported in an aggregated fashion after a delay of over a year, and lack the additional information included in financial reports (e.g., information on risk exposures). Consequently, manufacturing is an ideal laboratory to examine whether foreign competitors benefit from the information contained in public financial reports.

Of course, our focus on manufacturing limits the generalizability of our inferences (Glaeser and Guay, 2017). However, manufacturing is important in its own right (Berger et al., 2019). The Bureau of Labor Statistics reports that manufacturing employed approximately 17 million U.S. workers at the start of our sample period. By the end of our sample period, that number had fallen to approximately 12 million. Prior work links this decline to increased import competition.[17] Consequently, understanding the determinants of import competition in manufacturing is important to understanding an important share of the economy. Similarly, understanding the effects of financial reporting is also important. Both the SEC and public firms expend a tremendous amount of resources on financial reporting. The SEC spent almost $1.7 billion in 2017[18], "Big-4" accounting firms were paid billions for the provision of accounting services to U.S. firms[19], and firms fund entire departments dedicated to overseeing financial reporting.

[17] See, e.g., Freeman and Katz (1991); Revenga (1992); Sachs et al. (1994); Bernard et al. (2006); Autor et al. (2013); Acemoglu et al. (2016); Pierce and Schott (2016).
[18] https://www.sec.gov/foia/docs/budgetact.htm
[19] E.g., Deloitte alone earned over $5 billion from U.S. auditing services (https://www2.deloitte.com/us/en/pages/about-deloitte/articles/facts-and-figures.html).

3. Empirical approach and results

3.1. Public firm presence and import competition

We begin our empirical analyses by documenting the association between import competition and public firm presence. To do so, we estimate the following baseline industry-level regression:

$$ImportCompetition_{i,t} = \alpha_1 PublicPresence_{i,t-1} + \beta' X_{i,t-1} + \gamma_i + \delta_t + \varepsilon_{i,t,} \quad (1)$$

where i indexes 4-digit NAICS industries and t indexes calendar years. We measure *ImportCompetition* as the ratio of imports to total U.S. firm production in industry i in year t. This measure captures the competitive pressure foreign firms exert on U.S. manufacturers.[20] We use U.S. Census Bureau import data, downloaded from Peter Schott's website (Schott, 2008).[21] These data measure imports at the harmonized code (i.e., product) and exporting country level; we aggregate them to the primary (4-digit) NAICS industry-year level. We obtain U.S. production at the 4-digit NAICS industry-year level from the U.S. Census Bureau's Annual Survey of Manufactures and Census of Manufacturers (ASM/CMF).[22]

We follow Badertscher et al. (2013) and measure public firm presence using the ratio of public firm sales to total U.S. production in the industry, or *PublicPresence*. Specifically, we

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[20] Our measure is akin to import penetration by foreign firms. However, a key difference is that we include U.S. production that is ultimately exported out of the U.S. in our measure. We do so because U.S. sales lost to importers are often offset by increased export sales by U.S. firms (e.g., Kletzer, 2001). Our interest is in U.S. production relative to foreign competition—not how U.S. demand is satisfied. By including U.S. exports we also capture how U.S. financial reporting helps foreign firms to compete with U.S. firms outside the U.S. Nonetheless, to ensure our results are not solely attributable to US export activity we estimate models with unscaled imports, imports scaled by initial (1997) U.S. production levels, and the natural logarithm of imports plus one as the dependent variable. We report the results of these analyses in our supplemental appendix.

[21] http://faculty.som.yale.edu/peterschott/sub_international.htm. We thank Peter Schott for making these data publicly available.

[22] The Census Bureau conducts a full census of manufacturing establishments in years ending in 2 and 7 to determine industry production and uses a stratified random sampling procedure to determine production levels in other years.

measure *PublicPresence* as sales by U.S. firms in industry *i* as reported in the Compustat database, scaled by total U.S. production as reported by the Census Bureau. Consequently, *PublicPresence* reflects the ratio of public firm production to total domestic production, and not the share of firms that report publicly. Firms may produce products that fall under a number of NAICS codes, although they report under a primary NAICS code. Prior work uses confidential U.S. Census data to disaggregate firm production into NAICS-level segment production (e.g., Bens et al., 2011). We do not do so because we want to replicate the information set available to foreign importers as closely as possible and we do not expect foreign importers to have access to confidential U.S. Census data. If aggregate reporting obfuscates firms' production and reduces the relevance of U.S. firms' financial statements to foreign importers, our measure should reflect this effect.[23]

Eq. (1) includes fixed effects for each industry (γ_i) to control for time-invariant differences between industries and year fixed effects (δ_t) to control for general macroeconomic effects (e.g., inflation). We also include time-varying industry controls in the vector *X*. To control for direct costs of trade we include *Tariff*, measured as the realized duty paid and obtained from the Census Bureau import data. We also include *NTRGap* × *Post2001*, measured as in Pierce and Schott (2016) as the difference between the normal trade relations (NTR) tariff rate and the higher nonmarket economies tariff rate in 1999 per industry, interacted with an indicator for the period after Congress granted China Permanent Normal Trade Relations status.[24] To control for differences in growth opportunities, we include *IndustryGrowth*, measured as the change in industry sales, scaled by industry sales in the prior year. To control for differences in input prices across industries and time, we include *ValueAdd*, defined as the total value of industry shipments less the cost of raw materials

[23] Similar arguments apply to domestic production that firms ultimately sell abroad. Note that as a result, the ratio is at times greater than one and captures the degree to which reporting by public firms across all markets and industries increases domestic import competition in firms' main NAICS industry.
[24] We obtain these data from the Pierce and Schott (2016) data appendix.

and fuel, scaled by total shipments. We also control for differences in labor intensity and skill with *Payroll*, defined as total industry payroll expenses divided by the total value of industry shipments, and *WageRate*, defined as the hourly wage rate for the average production worker in the industry. Additionally, we control for the size and market control of major industry firms using *Concentration*, defined as the percentage of U.S. production by the top 20 industry firms (public or private) by shipments.[25] We obtain *IndustryGrowth*, *ValueAdd*, *Payroll*, *WageRate*, and *Concentration* from the U.S. Census Bureau ASM/CMF data.

Table 1 reports descriptive statistics for our sample. Our main sample begins in 1998 and ends in 2016 (the most recent year Census data are available). We include each four-digit manufacturing NAICS industry (3111-3399), resulting in 86 industries.[26] We winsorize all ratios at the 1% and 99% levels to minimize the effects of outliers, and standardize continuous variables and report standardized coefficients throughout to ease interpretation. We adjust standard errors for clustering within industries and years.

Panel A of Table 2 presents the result of estimating Eq. (1). Column (1) presents the results of estimating Eq. (1) without controls or industry fixed effects, column (2) the results including industry fixed effects, and column (3) the results of our preferred specification including the full vector of controls and fixed effects. The coefficient on *PublicPresence* in column (3) suggests that a one standard deviation increase in *PublicPresence* is associated with a 0.473 standard deviation increase in *ImportCompetition* (*t*-statistic of 3.50).

[25] Our results are unchanged using different concentration definitions (top 4, 8, or 50 companies).

[26] The NAICS system underwent revision during our sample period, resulting in changes to the definitions of 14 of the four-digit classifications in our sample. To ensure that our results are not a byproduct of these classification changes we estimate a robustness tests after excluding the industries that changed. We report results in our supplemental analyses appendix; our inferences remain the same.

The inclusion of controls in column (3) attenuates the coefficient estimate on *PublicPresence*. A potential concern is that the included controls imperfectly capture correlated omitted factors and that additional bias remains. Using the maximum $R2$ and delta heuristics proposed by Oster (2019), we conclude our inferences are robust to this potential source of bias. We also explore which variables are responsible for most of the attenuation and find that *Payroll* is responsible for the vast majority of the coefficient reduction. To ensure that the functional form of this variable is not limited in its ability to properly control for labor intensity, we simultaneously include unscaled payroll, logged unscaled payroll and scaled payroll squared (each lagged). Our results, reported in our supplemental analyses appendix, are robust to their inclusion.

Column (4) presents the results after including an indicator for the presence of any public firm in the industry (*AnyPublicFirms*). This specification explores whether there are non-linearities in the effect of public firm presence. For example, the first firm reporting publicly in an industry may provide the bulk of the relevant information and further public firm reporting may provide only a negligible amount of additional information. The results in column (4) suggest that this is not the case; the coefficient on *PublicPresence* is virtually unchanged whereas the coefficient on *AnyPublicFirms* variable is statistically insignificant. This result is consistent with the literature on financial reporting and profitability dispersion. This literature suggests that there is significant dispersion in profitability within industries due to a lack of information sharing (e.g., Breuer, 2018; Hann et al., 2018; Berger et al., 2019). Consequently, one firm's financial information provides a very incomplete picture of the competitive environment.

Public firms are more likely to be large multinationals than are private firms, and hence may be more apt to offshore part of their supply chain to a related party overseas. If they offshore production to a related party, it will appear as imports in our import competition measure,

potentially inducing a spurious correlation. To rule out this possibility driving our results, we use related party trade data from the U.S. Census Bureau to remove related party imports from the numerator of the *ImportCompetition* measure. We re-estimate the model reported in column (3), but with this alternative dependent variable. Our results, reported in column (5), are robust to this alternate specification.[27]

We also modify Eq. (1) to estimate the relation between import competition and public firm presence at the industry-exporting country-year level:

$$ImportCompetition_{i,j,t} = \alpha_1 PublicPresence_{i,t-1} + \beta' X_{i,t} + \gamma_{i,j} + \delta_{j,t} + \varepsilon_{i,j,t} \quad (2)$$

where *j* indexes countries and the other subscripts remain the same.[28] Eq. (2) includes country-year fixed effects ($\delta_{j,t}$) to control for time-varying and time-invariant country characteristics, including those typically examined by gravity models of trade (e.g., country-level macroeconomic conditions, language, distance). Eq. (2) also includes industry-country fixed effects ($\delta_{j,t}$) to control for all time-invariant characteristics of a given industry in a given country. In addition to allowing us to control for all time-varying exporting country characteristics, this model mitigates the risk that one exporting country drives our results. Eq. (2) also allows us to include country-industry specific tariff rates ($Tariff_{i,j,t}$). When estimating Eq. (2) we adjust standard errors for clustering within exporting countries, in addition to within industries and years.

Panel B of Table 2 reports the results of estimating Eq. (2). We repeat the sequence of included controls and fixed effects from columns (1) – (4) of Panel A. The results of our preferred

[27] Related party trade data are only available from 2000 through 2016. Country-by-country breakdowns are not available before 2005 so we do not repeat this analysis in our country-by-country tests in panel B.

[28] Our main sample includes 233 countries. 20 of the smallest economy countries are not present in the import data each year. The countries with partial coverage are Curaçao, Sudan, South Sudan, Sint Maarten, North Korea, Kosovo, Serbia, Montenegro, Western Sahara, Bulgaria, Cuba, Libya, Mayotte, East Timor, Heard Island, Tuvalu, Wallis and Futuna, Svalbard and Jan Mayen, Iran, and French Southern Territories. As reported in our supplemental analyses appendix, our results are robust to excluding these countries from the sample.

specification in column (3) suggests that a one standard deviation increase in *PublicPresence* is associated with a 0.016 standard deviation increase in *ImportCompetition*. (*t*-statistic of 2.29). This coefficient is smaller than the corresponding coefficient in Panel A, but we note that the two are not directly comparable. The results documented in panel A represent the increase in import competition from the entire world whereas the results documented in panel B represent the average increase in import competition from individual countries.

3.2. SOX Natural Experiment

A potential concern with Eqs. (1) and (2) is that ownership type (public or private) is an endogenous choice. For example, U.S. firms may select into public ownership when concerns about foreign competition are lower if public reporting indeed benefits foreign competitors, attenuating the α_1 coefficient will be attenuated (i.e., α_1 will underestimate the causal effect of public firm presence on import competition). We expect this selection concern is ameliorated in our setting because most of the costs of increased import competition accrue to competitors, and firms should make their listing decisions without internalizing these costs. Nonetheless, we use SOX as a natural experiment to obtain plausibly exogenous variation in the public firm presence and address selection and other potential endogeneity concerns (Badertscher et al., 2013).

U.S. regulators reacted to the unexpected Enron and Worldcom accounting scandals by enacting far-reaching and unprecedented securities regulation (Romano, 2004). Prior work finds that SOX imposed large net costs on firms, and that firms responded to these costs by either deregistering or forgoing public listing in the first place.[29] Consequently, we anticipate that the expected costs of SOX will negatively affect public firm presence. To calculate the expected costs of SOX, we follow Zhang (2007) using firms' buy and hold abnormal returns from July 8th, 2002

[29] Engel et al., 2007; Zhang, 2007; Leuz et al., 2008; and Iliev, 2010.

to July 20th, 2002, when significant news about the likelihood of success and the severity of potential SOX legislation was released.[30] We average returns by 4-digit NAICS, and refer to the resulting variable, which captures the expected costs of SOX, as *SOXBHAR*.

We find *SOXBHAR* is large and negative, and varies considerably across industries (mean of -4.5%, median of -4.2%, and standard deviation of 5.8%). Because these returns are, by construction, unexpected, we do not expect them to relate to selection by individual firms. Moreover, because malfeasance by non-manufacturing firms triggered SOX, we do not expect that regulators designed SOX with respect to characteristics of different manufacturing industries.

We examine the relevance of *SOXBHAR* as an instrument after the passage of SOX in the following first stage regression:

$$PublicPresence_{i,t-1} = \alpha_1(PostSOX_t \times SOXBHAR_i) + \beta' X_{i,t-1} + \gamma_i + \delta_t + \varepsilon_{i,t} \qquad (3a)$$

Eq. (3a) identifies changes in *PublicPresence* using cross-sectional differences in the expected costs of SOX (*SOXBHAR*) and time-series variation in the implementation of the Act (*PostSOX*). Consequently, Eq. (3a) is equivalent to a generalized difference-in-differences specification.[31] The industry fixed effects (γ_i) absorb the main effect of *SOXBHAR* and the year fixed effects (δ_t) absorb the main effect of *PostSOX*. Therefore, any common effect of SOX or general macroeconomic effect concurrent with SOX does not drive our results.

[30] During this period the Senate passed the SOX bill with added amendments to strengthen its impact, President Bush delivered speeches in support of rulemaking on corporate reform, and House Republicans reportedly retreated from efforts to dilute the bill. We estimate abnormal returns as the residual from a model of expected returns based on the Fama-French and momentum factors. We estimate firms' factor exposures using firm returns over the 100-day window (requiring at least 70 return observations per firm) prior to a 50-day gap before the event using the WRDS event study application.

[31] While we use cross-sectional differences in industry-level costs of SOX in conjunction with time-series variation in the timing of the Act, prior studies use alternative sources of variation. For example, Gao et al. (2009), Iliev (2010), and Glaeser et al. (2019) use variation in firms' proximity to size-based compliance thresholds and Armstrong et al. (2019) use differences in firms' fiscal year ends. We expect these sources of variation to be too narrow to detect aggregate cross-industry effects.

Panel A of Table 3 reports the results of estimating Eq. (3a). The coefficient on *PostSOX* × *SOXBHAR* in column (1) suggests that the costs of complying with SOX cause a reduction in public firm presence. Specifically, the coefficients suggests that a one standard deviation greater *SOXBHAR*, equal to 5.8% of firm value, causes a 0.21 standard deviation decrease in *PublicPresence* after the passage of SOX. Importantly, the results also suggest that *PostSOX* × *SOXBHAR* is a relevant instrument (first stage *t*-statistic of 3.13). The results are largely unchanged when we estimate Eq. (3a) at the industry-country-year level in column (2).

We use the predicted values of *PublicPresence* from the first stage in the following second stage regression:

$$ImportCompetition_{i,t} = \alpha_1 \widehat{PublicPresence}_{i,t-1} + \beta' X_{i,t-1} + \gamma_{i,j} + \delta_{j,t} + \varepsilon_{i,t} \qquad (3b)$$

The α_1 coefficient on $\widehat{PublicPresence}$ estimates the causal effect of U.S. public firm presence on import competition, so long as the identification assumptions are satisfied. Panel B of Table 4 presents the results of estimating the second stage regression, Eq. (3b). The results in column (1) suggest that a one standard deviation increase in *PublicPresence* causes a 0.702 standard deviation increase in *ImportCompetition* (*t*-statistic of 2.74). The results in column (2), which are estimated at the industry-country-year level, suggest that a one standard deviation increase in *PublicPresence* causes a 0.063 standard deviation increase in *ImportCompetition* from individual countries on average (*t*-statistic of 2.03).

However, one potential concern with interpreting the results of Eq. (3b) is that SOX deters public presence by increasing the regulatory compliance costs faced by public firms. If increased regulatory costs hamper public firms' ability to compete with foreign competitors, then SOX could affect import competition through the alternative channel of increased regulatory costs. However, we expect this potential effect would work against finding results consistent with public firm

presence aiding foreign competitors. Any "direct" effect of increased regulatory costs should relatively increase import competition in the industries in which the expected costs of SOX are greatest. However, public firm presence relatively *decreases* in these same industries. Consequently, our finding of a positive α_1 coefficient suggests, at a minimum, that the negative effect of decreased public firm presence on import competition outweighs the positive effect of increased public firm regulatory costs.[32]

We also note that SOX potentially affected the mechanisms through which public firm presence affects import competition. For example, SOX may have changed the information environments of public firms, but not of private firms, altering how public firm presence affects import competition (e.g., by affecting public firms' relative governance quality, investment efficiency, or information production). In other words, SOX is a natural experiment that induced variation in public firm presence and a natural mechanism experiment that potentially induced variation in the mechanisms through which public firm presence affects import competition (Ludwig et al., 2011). Consequently, we caution readers against generalizing our results to the pre-SOX period or interpreting these results as verifying any mechanism (Christensen, 2019).

In total, the results in Table 3 suggest that increases in public firm presence causes increases in import competition. The standard errors are generally larger in Table 3 than in Table 2, potentially due the use of instrumental variables or the loss of observations from requiring the necessary data to calculate *SOXBHAR*. The coefficient estimates are also generally larger in Table 3, consistent with our SOX instrument addressing a negative endogenous relation between public

[32] Similarly, we do not expect the fact that markets may have anticipated changes in import competition caused by SOX to bias our results. The market as a whole reacted negatively to SOX, suggesting that the direct costs of SOX outweighed any anticipated benefits of reduced import competition (Zhang, 2007). Therefore, the industries in which the market reacted more negatively should also be the industries in which public presence relatively decreases (i.e., the monotonicity assumption should be satisfied). The market reaction in this scenario is also not endogenous, as it is the expected deregistering and/or decreases in initial public offerings that causes the import competition.

firm presence and import competition (e.g., because firms select into public presence when they expect reduced import competition).

We also examine how industry import competition varies with *SOXBHAR*, prior to the Act (i.e., pre-2002). This test is akin to the parallel trends test typically estimated with difference-in-differences models. Because this test is a falsification test, we estimate it in the reduced form to increase the power to detect differential effects prior to the Act. In particular, we regress *ImportCompetition* on *SOXBHAR* interacted with indicators for individual years, along with our set of control variables.[33] Figure 1 reports the coefficient estimates, along with the 90% confidence interval around each estimate, for each of the *i*nteractions. We report results relative to 2002 (i.e., the year the Act passed). We find no evidence that *ImportCompetition* trends differently based on *SOXBHAR* prior to the Act, consistent with the parallel trends assumption. Moreover, we find that the relation between *SOXBHAR* and *ImportCompetition* increased gradually after the passage of the Act, before reaching a steady state.

3.3. Foreign competitor entry into the U.S. Market

Eqs. (1) – (3) examine the relation between public firm presence and import competition. However, the information provided by public firm presence may be particularly valuable to competitors considering entering a foreign market for the first time (i.e., the information may more valuable on the extensive margin than on the intensive margin). Consequently, we estimate the following hazard model of foreign competitors' entry into the U.S. market:

$$h(t) = h_{0[jj]}(t) \times e^{\alpha PublicPresence_{i,t-1} + \beta' X_{i,t-1}} \quad (4)$$

[33] To preserve as much sample in the pre-period as possible, we exclude the lagged variable, *IndustryGrowth*. The results are almost identical if we include this variable, although doing so requires excluding 1998 from the sample.

Because our data do not permit us to measure entry at the firm level, we measure entry with an indicator that takes the value one the first time country *j* exports industry *i* goods to the U.S. (i.e., when imports from a given country in a given industry begin).

Table 4 presents the results of estimating Eq. (4). Columns (2), (4), and (6) present results stratified by country, which allows a unique baseline hazard model (h_{0j}) for each country to reflect time-varying differences in entry rates across countries. This approach is akin to using country × year fixed effects in our OLS regressions. Columns (3) and (4) present results with the vector of controls, and columns (5) and (6) present results including lagged total import competition from all countries at the industry level as an additional control. The results of our preferred specification reported in column (6) suggest that a one standard deviation increase in public firm presence increases the probability of foreign competitor entry by 56% (*z*-statistic of 3.34).[34]

3.4. Mechanism tests

A potential concern with the preceding analyses is that they investigate the effect of *PublicPresence* on *ImportCompetition*, but do not isolate the mechanism(s) through which this effect arises. In this section, we describe several tests designed to identify whether the disclosure of enabling information to foreign competitors is an important mechanism through which increases in public firm presence affects import competition.

3.4.1 Sources of information outside of U.S. financial reports

We estimate Eq. (2) after splitting the sample on different characteristics of the exporting country. The first characteristic we examine measures the ability of foreign competitors to access and process sources of information outside of U.S. financial reports. We use an indicator that takes the value one if the main language of the exporting country is English, or *English Speaking*.

[34] $e^{0.444} = 1.56$

English language ability should help importers acquire and process information from non-financial sources (e.g. the media), allowing them to rely less on the quantitative information in financial reports and attenuating the relation between *PublicPresence* and *Import Competition*.

Alternatively, English language ability may help competitors better understand and process the information contained in English language financial reports, amplifying the relation between *PublicPresence* and *ImportCompetition*. Although both scenarios are possible, prior work finds that quantitative information in financial reports is significantly more relevant to investors than qualitative items (e.g., Li and Ramesh, 2009). To the extent this is also true for foreign competitors, this result suggests that English language ability is not vital for processing financial reports.

Table 5 presents the results of estimating Eq. (2) after splitting the sample on *English Speaking* in columns (1) and (2). The results suggest that competitors from non-English speaking countries are significantly more sensitive to U.S. public firm presence (*F*-statistic of the difference of coefficients of 5.90). This result is consistent with competitors from English speaking countries having a greater ability to acquire, understand, and process information from alternative, non-financial sources, and relying less on the quantitative information in financial reports.

3.4.2 Differences in costs to process U.S. financial reports

The second exporting country characteristic we examine measures foreign competitors' costs of understanding U.S. financial reports. We use the similarity between the exporting country's accounting rules and U.S. GAAP, as measured in Bradshaw et al. (2002), or *LocalGAAPSimilarity*. We predict that competitors from countries where financial reporting rules are more similar to U.S. GAAP will have a greater ability to process and understand U.S. financial reports, amplifying the relation between *PublicPresence* and *ImportCompetition*. Table 5 presents the results. Because *LocalGAAPSimilarity* is a continuous variable, we split the sample on the

mean of *LocalGAAPSimilarity* in columns (3) and (4). We also report the results of estimating Eq. (2) including the interaction between *LocalGAAPSimilarity* and *PublicPresence*, but without splitting the sample, in column (5).

The results suggest that competitors from countries where the financial reporting rules are more similar to U.S. GAAP are significantly more sensitive to U.S. public firm presence (*F*-statistic of the difference in coefficients between columns (3) and (4) of 18.06). This result is consistent with foreign competitors with a greater ability to process and understand the complexities of U.S. financial reports relying on these reports to a greater degree when deciding whether, where, and how to compete with U.S. firms.

3.4.3 Informativeness of U.S. financial reports

We next estimate Eq. (2) after including different characteristics of U.S. financial reports and their interaction with *PublicPresence*. We use interactions rather than mean splits because the characteristics we examine are highly skewed.[35] We predict that when U.S. financial reports are more informative to competitors the relation between *PublicPresence* and *ImportCompetition* will be greater. We use the equity market responses to disclosures as a measure of their informativeness (e.g., Ball and Brown, 1968; Beaver 1968; see Dechow et al., 2010 for a review).[36] We calculate four measures of financial report informativeness, $ICScore1\text{-}4_j$.

Each measure of financial report informativeness is an $R2$ from a regression of trading volume or absolute returns on earnings release dates. We separately estimate four models for each industry-year:

[35] If we instead split on the mean of our informativeness variables, the difference in coefficients corresponding to the results reported in columns (3) and (4) of Table 6 remain statistically significant, while the difference corresponding to columns (1) and (2) becomes marginally statistically insignificant (*p*-values of 0.14 and 0.22).

[36] We assume that foreign competitors and investors find the same kind of information informative. We believe this assumption is reasonable because many of the forces that affect domestic firm value should affect the attractiveness of their markets to importers (e.g., the risks, opportunities, and performance facing domestic firms should affect foreign importers' entry, exit, and production decisions).

$$Volume_{f,d}/SharesOutstanding_{f,d} = \beta_0 + \beta_1 AnyRelease_{f,d} + \beta_2 AnyPeerRelease_{f,d} + \varepsilon_{f,d} \quad (5a)$$

$$Volume_{f,d}/SharesOutstanding_{f,d} = \beta_0 + \beta_1 EARelease_{f,d} + \beta_2 EAPeerRelease_{f,d} + \varepsilon_{f,d} \quad (5b)$$

$$|Return|_{f,d} = \beta_0 + \beta_1 AnyRelease_{f,d} + \beta_2 AnyPeerRelease_{f,d} + \varepsilon_{f,d} \quad (5c)$$

$$|Return|_{f,d} = \beta_0 + \beta_1 EARelease_{f,d} + \beta_2 EAPeerRelease_{f,d} + \varepsilon_{f,d} \quad (5d)$$

where *f* indexes firms and *d* indexes days.

$AnyRelease_{f,d}$ is an indicator for the days on which the firm releases quarterly or annual financial statements on EDGAR, or releases a quarterly earnings number.[37] $AnyRelease_{f,d}$ measures the informativeness of key mandatory disclosures. $AnyPeerRelease_{f,d}$ is the firm's industry competitors' financial statement and earnings release dates multiplied by the peer's sales weight in the industry in the prior year (e.g., if a peer firm of firm *f* is responsible for 50% of industry sales in the prior year and is the only firm to disclose its 10-K on date *d*, then $AnyPeerRelease_{f,d}$ equals 0.5 on date *d*). $AnyPeerRelease_{f,d}$ measures the informativeness for the focal firm of key mandatory disclosures made by its competitors (i.e., spillovers from competitor disclosures, see, e.g., Foster, 1981). We calculate the *EARelease* variables analogously to the *AnyRelease* variables, but use earnings announcement days only.

Table 6 presents the results of interacting the *PublicPresence* variable with the four measures of the informativeness of financial reports derived from estimating Eqs. (5a)-(5d). The results are consistent with foreign competitors responding more to public firm presence when financial statements are more informative (*t*-statistics of 1.69 to 3.03). These results suggest that a one standard deviation increase in *ICScore* increases the relation between *PublicPresence* and *ImportCompetition* by 0.1 of a standard deviation. This increase is economically significant; it represents an increase of approximately 20% of the baseline effect of *PublicPresence*.

[37] We use Compustat to identify earnings release dates.

3.4.4 Foreign acquisition of U.S. financial reports

In this section, we provide evidence that foreign acquisition of U.S. firms' financial reports precede increases in import competition from the acquirer's country. We use download logs from the SEC's EDGAR system to categorize non-robot downloads of forms 10-K and 10-Q by the downloader's country using IP addresses. We examine whether industry import competition from a foreign country is a function of downloads of industry financial reports by users in that country:

$$\begin{aligned} \textit{Import Competition}_{i,j,t} = \\ + \alpha_1 \textit{Downloads}_{i,j,t-1}(/ \textit{Downloads}_{t-1})[/ \textit{Downloads}_{j,t-1}]\{ / \textit{Downloads}_{i,t-1}\} \\ + \beta_{i,j} + \gamma_{j,t} + \delta_{i,t} + \varepsilon_{i,j,t} \end{aligned} \quad (6)$$

where $\textit{Downloads}_{i,j,t-1}$ is the number of downloads of industry *i* financial reports that originate from country *j* in year *t-1*.[38]

Because our explanatory variable of interest varies across all three dimensions (industry, country, and year), we are able to include additional fixed effects in Eq. (6) that address many alternative explanations. We include country × industry fixed effects ($\beta_{i,j}$) to control for time-invariant differences in why some exporting countries may be more likely to export to the U.S. in a particular industry (e.g., differences in raw material resource availability); country × year fixed effects ($\gamma_{j,t}$) to control for time-varying reasons why a particular country may be more likely to export to the U.S. (e.g., exchange rate fluctuations); and industry × year fixed effects ($\delta_{i,t}$) to control for time-varying reasons why a particular industry may face greater import competition (e.g., technological advances). These fixed effects also subsume the controls from prior tables.

[38] The EDGAR logs only identify the country of international downloaders and not the downloader's identity, in contrast to the IP addresses of other SEC-registered firms (Bernard et al., 2019). As a result, we cannot disambiguate downloads made by foreign competitors from downloads made by foreign competitors' capital providers. Both are likely occurring, but in either case U.S. financial reporting should aid foreign competitors (directly or indirectly).

Table 7 presents the results of estimating Eq. (6). The coefficient estimate on $Downloads_{i,j,t-1}$ in column (1) suggests that a one standard deviation increase in industry downloads by users in a foreign country precedes a 0.009 of a standard deviation increase in industry import competition originating from that country (*t*-statistic of 3.00).

We also scale *Downloads* by different scalars to avoid potential scale biases. In column (2) we scale by total worldwide downloads in year *t*, providing an estimate of how industry *i* × country *j*'s share of worldwide downloads changes over time. In column (3) we scale by country *j*'s downloads in in year *t*, providing an estimate of how country *j*'s download profile shifts towards industry *i* over time. In column (4), we scale by industry *i*'s downloads in year *t*, providing an estimate of how industry *i's* download profile shifts to country *j*. We find consistent results in columns (2) and (4), but find an insignificant coefficient estimate in column (3). In total, the results in Table 7 suggest that foreign downloads of U.S. firms' financial statements precede increases in import competition from the downloader's country, consistent with foreign competitors using information contained in financial statements to compete with U.S. firms.

3.4.5 Content of U.S. financial reports

In this section, we provide evidence of what information in financial reports foreign competitors use. We predict that foreign competitors will use the profitability information disclosed in U.S. financial reports to inform their entry, exit, and production decisions (we refer to this as the imitation channel of financial reporting). Consequently, we examine whether public gross margins and import competition share a positive relation:

$$ImportCompetition_{i,t} = \alpha_1 PublicGrossMargin_{i,t-1} + \alpha_2 ImputedPrivateGrossMargin_{i,t-1} [+ \alpha_3 PublicPresence_{i,t-1}] + \gamma' X_{i,t} + \delta_t + \varepsilon_{i,t} \quad (7a)$$

$$ImportCompetition_{i,j,t} = \alpha_1 PublicGrossMargin_{i,t-1} + \alpha_2 ImputedPrivateGrossMargin_{i,t-1}$$

$$[+\alpha_3 PublicPresence_{i,t-1}] + \gamma' X_{i,j,t} + \delta_{j,t} + \varepsilon_{i,j,t} \quad (7b)$$

where $PublicGrossMargin_{i,t-1}$ is the total gross margin ((Sales – Cost of Goods Sold)/Sales) of public furns in industry *i* during year *t-1*.[39]

We include the gross margins of private firms, or $ImputedPrivateGrossMargin_{i,t-1}$, in Eqs. (7a) and (7b). We do not predict a positive relation between $ImputedPrivateGrossMargin_{i,t-1}$ and $ImportCompetition_{i,j,t}$ because private firms' profitability information is reported only in an aggregate fashion after a considerable delay. If private and public firms' profitability are correlated with economic opportunities that encourage import competition and are disclosed elsewhere, we expect the relation between $ImputedPrivateGrossMargin_{i,t-1}$ and $ImportCompetition_{i,j,t}$ to be positive and the relation $PublicGrossMargin_{i,t-1}$ and $ImportCompetition_{i,j,t}$ to be greater (i.e., $\alpha_1 > \alpha_2 > 0$).

We impute the gross margin of private firms using industry wide aggregates from the Census ASM/CMF data as the weighted average of public and private gross margins[40]:

$$ImputedPrivateGrossMargin_{i,t} = \frac{CensusGrossMargin_{i,t} - PublicPresence_{i,t} \times PublicGrossMargin_{i,t}}{1 - PublicPresence_{i,t}} \quad (8)$$

We also include *PublicPresence* in Eqs. (7a) and (7b). We predict that *PublicPresence* will be related to *ImportCompetition* to the extent that the investment, risk, and other information contained in financial reports incrementally reduces importers' uncertainty.

Table 8 presents the results of estimating Eqs. (7a) and (7b). We include *PublicPresence* in columns (2) and (4), but exclude it in columns (1) and (3). The results suggest that competitors

[39] Because there is little variation in gross margin within industry over time, we exclude time invariant industry fixed effects from Eqs. (7a) and (7b). Including these fixed effects results in virtually unchanged coefficient estimates on *ImputedPrivateGrossMargin*. The coefficient estimates on *PublicPresence* are similar, but somewhat smaller (coefficient estimate of 0.474 and *t*-statistic of 3.59 in the specification corresponding to column (2)). The coefficient estimates on *PublicGrossMargin* are similarly attenuated (coefficient estimate of 0.065 and *t*-statistic of 1.34 in the specification corresponding to column (2)).

[40] Our results are robust to instead controlling for the Census industry margins in lieu of using imputed private gross margins.

are sensitive to the disclosed gross margins of public firms, but are insensitive to the gross margins of private firms. The results documented in column (2) suggest that a one standard deviation increase in U.S. public firms' profitability results in a 0.14 standard deviation increase in import competition (*t*-statistic of 3.26). In contrast, the results suggest that a one standard deviation increase in private U.S. firms' profitability results in a less than 0.01 standard deviation decrease in import competition (*t*-statistic of 0.18).

The relative insensitivity of foreign competitors to private firms' profitability suggests these competitors have a difficult time identifying opportunities in U.S. firms' markets without the information generated by public firms. Moreover, the evidence of a positive relation between *PublicPresence* and *ImportCompetition* in columns (2) and (4) after controlling for profitability is consistent with financial reporting providing competitors with valuable investment, risk, and other information that reduces importers' uncertainty. Consequently, the evidence suggests that public presence facilitates import competition, independently of domestic firm profitability.

3.5. U.K. falsification test

In this section, we follow (Badertscher et al. (2013) and estimate a falsification test in the U.K. to bolster our inference that public financial reporting is an important mechanism through which public firm presence affects import competition. The U.K.'s Financial Reporting Council (FRC) requires both public and private firms to report audited financial statements, and the requirements are nearly identical for public and large private firms.[41]

[41] Public firms must report their financial statements within six months of their fiscal year end, while private firms must do so within nine months. Medium firms can omit certain information from the business review and small and micro firms can omit the entirety of the business review, file abridged balance sheet and profit and loss information, and qualify for an audit exemption. To qualify for medium firm status, firms must meet two of the following conditions: (i) annual turnover must be no more than £36 million (ii) the balance sheet total must be no more than £18 million and (iii) the average number of employees must be no more than 250. The requirements to qualify for small or micro firm status are more stringent. The qualifications to qualify for micro, small, or medium status have also generally increased over time. In total, economically important firms in the U.K. must publicly report a similar amount of information regardless of whether they are public or private, and all firms must report some information. Private

We focus on the U.K. because it is in many other ways culturally and economically similar to the United States (e.g., the Special Relationship; Griffith, Harrison et al., 2006). Consequently, we anticipate that any endogenous relation between changes in public firm presence and import competition will also be present in the U.K. We also anticipate that any non-financial reporting characteristic of public firms that causally affects import competition will also be present in the U.K. (i.e., we expect alternative mechanisms to also be present in the U.K.). However, we do not anticipate finding any relation between changes in public firm presence and import competition in the U.K. due to financial reporting because both public and private firms must report publicly. Therefore, we estimate the following regression:

$$ImportCompetitionUK_{i,t} = \alpha_1 PublicPresenceUK_{i,t-1} + \gamma_i + \delta_t + \varepsilon_{i,t} \quad (9)$$

An α_1 value not different than zero suggests that financial reporting, and not some other characteristic of public firms, is the mechanism through which public firm presence affects import competition.

We measure *ImportCompetitionUK* analogously to how we measure import competition in the U.S. (i.e., as the ratio of imports to total U.K. production in industry *j* in year *t*). We obtain U.K. import data from the BACI international trade database compiled by the OECD. We measure *PublicPresenceUK* as sales by public firms divided by U.K production, both obtained from the Amadeus database.[42] Our sample in these tests spans 2009 to 2014 because Amadeus maintains a limited number of sample years. Because the U.K. economy is smaller than the U.S. economy, our sample in these tests includes 51 four-digit NAICS industries.

firm reporting requirements, like public firm reporting requirements, have increased over time in the U.K. (see, e.g., Ball and Shivakumar, 2005 or the Companies Act of 2006 for descriptions of prior reporting requirements).

[42] Amadeus uses header data to identify public firms, and backfills the data (e.g., if a firm first lists publicly in 2012, Amadeus will incorrectly identify that firm as public in every year prior to 2012). Consequently, we identify firms as public if they have public equity information available in Amadeus in a given year.

Table 9, column (1) presents the results of estimating Eq. (9). The results in column (1) suggest that a one standard deviation increase in public firm presence in the U.K. is insignificantly statistically associated with a 0.23 of a standard deviation *decrease* in import competition (*t*-statistic of -1.28). To ensure this result is not due to reduced power resulting from the smaller sample, we estimate Eq. (2) on the same sample of industries and years in the U.S. The results in column (2) suggest that a one standard deviation increase in public firm presence in the U.S. over the same time period and for the same industries is associated with a 0.39 standard deviation increase in import competition (*t*-statistic of 2.55). The difference in coefficients between the two columns is statistically significant at conventional levels (*F*-statistic of 7.46).

The results in Table 9 suggest that the positive relation between import competition and public firm presence is present in the U.S., but not in the U.K. Therefore, some difference between public firm presence and import competition between the two countries is likely responsible for the differential relation. Arguably, the most significant difference is that the SEC does not require U.S. private firms to report publicly, but the FRC does require U.K. private firms to report publicly. Consequently, the results in Table 9 suggest that public financial reporting requirements, and not some other characteristic (omitted or causal) of public firm presence, is responsible for the positive relation between public firm presence and import competition in the U.S.

3.6. Employment

In our final test, we attempt to trace the effects we document to U.S. employment. We replace *ImportCompetition* at the dependent variable in Eqs. (1) and (3) with the natural logarithm of total domestic employment in a given industry as reported in the Census Bureau's ASM/CMF data ($ln(Employment_{i,t})$). Table 10 presents the results of estimating the modified Eq. (1) in columns (1) – (3) and Eq. (3b) in column (4). We find consistent evidence of negative relation

between *PublicPresence* and *ln(Employment)*. The results of our preferred specification in column (3) suggests that a one standard deviation increase in *PublicPresence* is associated with an 11% decline in *Employment* (*t*-statistic of 4.07).

However, we caution readers against interpreting the results of this table as the causal effect of public firm presence on employment. Employment is more likely to be endogenously related to public firm presence than is import competition for a variety of reasons (e.g., because public firms employ in-house financial accounting departments or because public and private firms' differential access to capital differentially affects their ability to automate). Consequently, we view the evidence in this table as suggestive and encourage readers to adopt the same view.

4. Conclusion

We examine how public firm presence affects import competition in the U.S. The SEC requires U.S. public firms to prepare and make publicly available independently audited financial reports. Although these reports are for the benefit of investors, foreign competitors may be able to use the information they contain to compete with U.S. firms. We find evidence that this is the case. Foreign competitors appear to use the profitability information contained in financial reports to enter (or avoid) the markets where U.S. public firms are profitable (or unprofitable). We also find evidence that financial reports serve an uncertainty reduction role: they provide foreign competitors valuable information about U.S. firms' financial position, opportunities, plans, and market conditions. Consequently, financial reporting also facilitates import competition regardless of U.S. firm profitability.

We acknowledge that we do not randomly assign financial reporting rules to some economies and not others. However, we use a variety of approaches to bolster the strength of our

inferences: we use the Sarbanes-Oxley Act as a natural experiment, estimate cross-sectional differences in the relation between public firm presence and import competition that are arguably uniquely consistent with our preferred explanation, show that downloads of industry financial statements by users in a foreign country precede import competition from that in country in that industry, and estimate a falsification test that leverages differences in financial reporting rules between the U.S. and the U.K.

We believe the collective evidence allows us to contribute to the literatures on the effects of public firm status and financial reporting by documenting evidence that information generated by public firm presence benefits foreign importers. Financial reporting spillovers from U.S. firms to foreign competitors represent an important externality of financial reporting that may be of interest to policymakers. Our evidence that these spillovers affect import competition also allows us to contribute to the international trade literature by providing direct evidence of information frictions affecting trade.

Appendix A: Variable Definitions

Variable	Definition
$\text{AnyPublicFirms}_{i,t}$	Indicator equaling 1 if industry i has any public firms, 0 otherwise
$\text{CapEx}_{i,t-1}$	Capital expenditures scaled by total value of shipments in 4-digit NAICS industry i in year $t-1$
$\text{Concentration}_{i,t-1}$	Percentage of US production from the top 20 firms by shipments in 4-digit NAICS industry i in year $t-1$
$\text{Downloads}_{i,j,t-1}$	Number of 10-K and 10-Q downloads per country, per industry, per year from EDGAR server logs where crawler = 0. Country information obtained from the first three octets of the downloading IP address, with country ranges obtained from `lite.ip2location.com`
$\text{EnglishSpeaking}_{j}$	Indicator equaling 1 if English is an official language for country j, 0 otherwise
$\text{ICScore1}_{i,t}$	R^2 from an industry year-regression: $$\frac{TradingVolume_{f,d}}{SharesOutstanding_{f,d}} = \beta_0 + \beta_1 AnyRelease_{f,d} + \beta_2 AnyPeerRelease_{f,d} + \varepsilon_{f,d}$$ where f indexes firm, d indexes day, $TradingVolume_{f,d}$ is the number of firm f's shares traded on day d, $SharesOutstanding_{f,d}$ is the number of shares outstanding for firm f on day d, $AnyRelease_{f,d}$ is an indicator if d is a day that firm f releases its 10-K, 10-Q, or announces its earnings. $AnyPeerRelease_{f,d}$ is an indicator for the focal firm's industry peers' EDGAR 10-Q release dates, 10-K date, and earnings release dates from Compustat times each peer's sales weight in the industry in the prior year
$\text{ICScore2}_{i,t}$	R^2 from an industry year-regression: $$\frac{TradingVolume_{f,d}}{SharesOutstanding_{f,d}} = \beta_0 + \beta_1 EARelease_{f,d} + \beta_2 EAPeerRelease_{f,d} + \varepsilon_{f,d}$$ where f indexes firm, d indexes day, $TradingVolume_{f,d}$ is the number of firm f's shares traded on day d, $SharesOutstanding_{f,d}$ is the number of shares outstanding for firm f on day d, $EARelease_{f,d}$ is an indicator if d is a day that firm f announces its earnings. $EAPeerRelease_{f,d}$ is an indicator for the focal firm's industry peers' earnings release dates from Compustat times each peer's sales weight in the industry in the prior year
$\text{ICScore3}_{i,t}$	R^2 from an industry year-regression: $$\lvert Return_{f,d}\rvert = \beta_0 + \beta_1 AnyRelease_{f,d} + \beta_2 AnyPeerRelease_{f,d} + \varepsilon_{f,d}$$ where f indexes firm, d indexes day, $\lvert Return_{f,d}\rvert$ is the absolute value of the stock return for firm f on day d. $AnyRelease_{f,d}$ is an indicator if d is a day that firm f releases its 10-K, 10-Q, or announces its earnings. $AnyPeerRelease_{f,d}$ is an indicator for the focal firm's industry peers' EDGAR 10-Q release dates, 10-K date, and earnings release dates from Compustat times each peer's sales weight in the industry in the prior year

$\text{ICScore4}_{i,t}$	R^2 from an industry year-regression: $$\lvert Return_{f,d}\rvert = \beta_0 + \beta_1 EARelease_{f,d} + \beta_2 EAPeerRelease_{f,d} + \varepsilon_{f,d}$$ where f indexes firm, d indexes day, $\lvert Return_{f,d}\rvert$ is the absolute value of the stock return for firm f on day d. $EARelease_{f,d}$ is an indicator if d is a day that firm f announces its earnings. $EAPeerRelease_{f,d}$ is an indicator for the focal firm's industry peers' earnings release dates from Compustat times each peer's sales weight in the industry in the prior year
$\text{ImportCompetition}_{i,t}$	Worldwide imports in a 4-digit NAICS i in year t scaled by US production in the same 4-digit NAICS and year. Winsorized at 1% and 99%
$\text{ImportCompetition}_{i,j,t}$	Imports from country j in a 4-digit NAICS i in year t scaled by US production in the same 4-digit NAICS and year. Winsorized at 1% and 99%
$\text{ImpCompNoRP}_{i,t}$	Worldwide imports in a 4-digit NAICS i in year t excluding related-party trade, scaled by US production in the same 4-digit NAICS and year. Winsorized at 1% and 99%
$\text{Inventory}_{i,t-1}$	Ending inventory in a 4-digit NAICS i in year $t-1$ scaled by total value of shipments for the same industry and year
$\text{IndustryGrowth}_{i,t-1}$	Change in 4-digit NAICS industry sales from $t-2$ to $t-1$, scaled by industry sales in $t-2$
$\text{LocalGAAPSimilarity}_{j}$	Conformity between country j's local GAAP and US GAAP using the measure from Bradshaw, Bushee, and Miller (2002) that does not penalize for non-disclosure (Ratio2)
NTRGap_{i}	Difference between the normal trade relations (NTR) tariff rate and the higher nonmarket economies tariff rate in 1999 per industry from Pierce and Schott (2016)
$\text{Payroll}_{i,t-1}$	Payroll expenses for US firms in 4-digit NAICS industry i in year $t-1$, scaled by lagged total value of shipments for the same industry and year
$\text{PublicPresence}_{i,t-1}$	Sales from Compustat firms in a given 4-digit NAICS industry i in year $t-1$, scaled by US production in the same industry and year. Winsorized at 1% and 99%
PostSOX_{t}	Indicator equaling 1 if t is greater than 2002, missing if 2002, and 0 less than 2002
SOXBHAR_{i}	Buy-and-hold return for an equal-weighted portfolio of stocks in 4-digit NAICS industry i for the 12 trading days following Jul 8, 2002. Calculated for all industries with 10 or more publicly traded firms
$\text{Tariff}_{i,t-1}$	Tariffs levied on imported goods in 4-digit NAICS industry i worldwide divided by total value of imports the dame industry and year
$\text{Tariff}_{i,j,t-1}$	Tariffs levied on imported goods divided by total value of imports for consumption from country j in 4-digit NAICS i in year $t-1$
$\text{USMarketEntry}_{i,j,t}$	Indicator equaling 1 if t is the first year country j exports goods in industry i to the US, 0 if t is prior to country j's first export of goods in industry i to the US, and missing if t is after country j's entry into the US market in industry i

$\text{WageRate}_{i,t-1}$	Hourly wage rage in dollars for the average production worker in industry i in year $t-1$
$\text{ValueAdd}_{i,t-1}$	Value added by US manufacturing (shipments - raw materials and fuels) scaled by shipments in 4-digit NAICS industry i in year $t-1$

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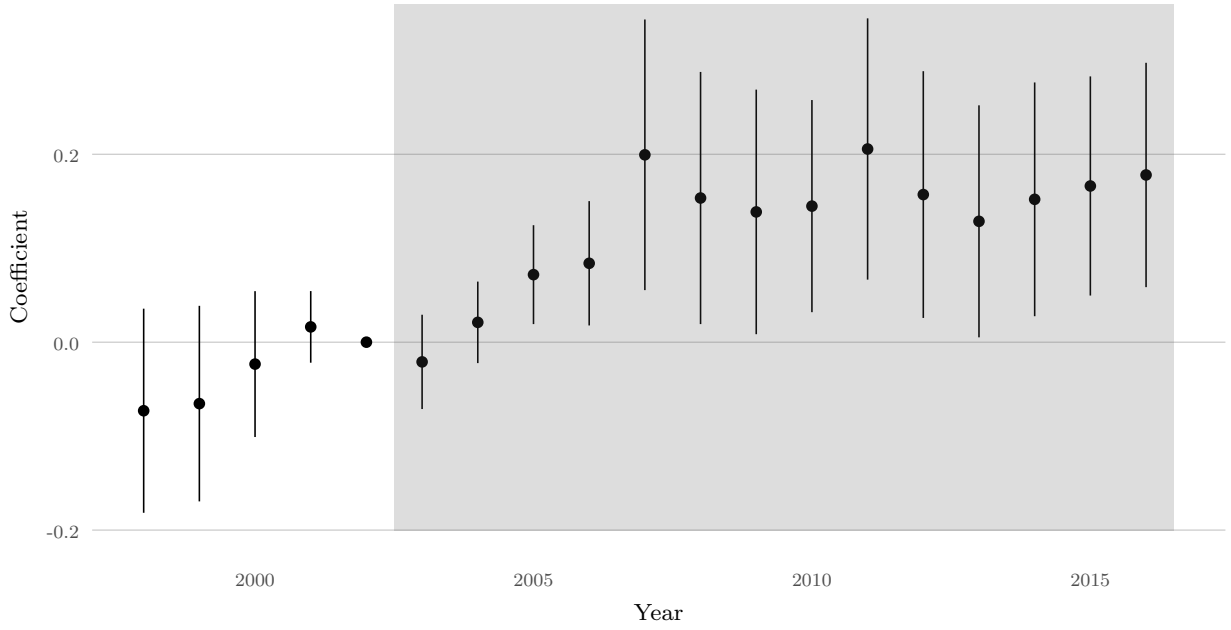
Figure 1: SOX Difference-in-Difference Trend Analysis



This figure plots the β coefficients and associated 90% confidence intervals from an estimation of the model:

$$\begin{aligned} ImportCompetition_{i,t} = \; & \alpha_1 Tariff_{i,t} + \alpha_2(NTRGap_i \times Post2001_t) + \alpha_3 ValueAdd_{i,t} + \\ & \alpha_4 Payroll_{i,t} + \alpha_5 WageRate_{i,t} + \alpha_6 Concentration_{i,t} + \\ & \beta_1(SOXBHAR_i \times Year1998_t) + \\ & \beta_2(SOXBHAR_i \times Year1999_t) + \\ & \beta_3(SOXBHAR_i \times Year2000_t) + \\ & \beta_4(SOXBHAR_i \times Year2001_t) + \\ & \beta_5(SOXBHAR_i \times Year2003_t) + \\ & \beta_6(SOXBHAR_i \times Year2004_t) + \cdots + \\ & \beta_{18}(SOXBHAR_i \times Year2016_t) + \gamma_i + \delta_t + \varepsilon_{it} \end{aligned}$$

where i indexes industry and t indexes year. γ_i is a time-invariant fixed effect for each industry and δ_t is a year fixed effect. $YearXXXX_t$ is an indicator if $t = XXXX$. All other variables are defined in Appendix A. The reference period is the year 2002. Standard errors are clustered by industry.

Table 1: Sample Characteristics

Panel A: Descriptive Statistics

This table presents means, standard deviations, and quartiles of the sample variables.

Variable	N	Mean	Std. Dev.	25%	Median	75%
$\text{PublicPresence}_{i,t}$	1720	0.813	1.269	0.208	0.521	0.895
$\text{ImportCompetition}_{i,t}$	1720	0.580	1.412	0.080	0.225	0.421
$\text{AnyPublicFirms}_{i,t}$	1720	0.982	0.133	0.000	0.000	0.000
$\text{ImpCompNoRP}_{i,t}$	1364	0.424	1.118	0.058	0.125	0.234
$\text{Tariff}_{i,t}$	1700	2.038	2.595	0.380	1.173	2.585
NTRGap_{i}	1700	0.315	0.120	0.224	0.324	0.384
$\text{IndustryGrowth}_{i,t}$	1634	0.011	0.109	−0.035	0.016	0.063
$\text{ValueAdd}_{i,t}$	1720	0.484	0.114	0.412	0.496	0.557
$\text{Payroll}_{i,t}$	1720	0.153	0.063	0.104	0.155	0.197
$\text{WageRate}_{i,t}$	1720	17.663	6.667	14.158	17.471	21.358
$\text{Concentration}_{i,t}$	1720	54.213	20.509	38.7	54.3	68.5
$\text{CapEx}_{i,t}$	1290	0.028	0.015	0.019	0.025	0.033
$\text{Inventory}_{i,t}$	1204	0.119	0.046	0.087	0.117	0.142
$\text{SOXBHAR}_{i,t}$	980	−0.045	0.058	−0.083	−0.042	−0.004
$\text{ICScore1}_{i,t}$	1477	0.024	0.046	0.002	0.007	0.022
$\text{ICScore2}_{i,t}$	1477	0.018	0.039	0.001	0.005	0.016
$\text{ICScore3}_{i,t}$	1477	0.020	0.038	0.003	0.008	0.021
$\text{ICScore4}_{i,t}$	1477	0.015	0.032	0.002	0.005	0.015
$\text{ImportCompetition}_{i,j,t}\times 10{,}000$	383,095	9.328	45.022	0	0	0.1
$\text{Tariff}_{i,j,t}$	383,095	2.193	3.401	0.173	1.252	2.608
$\text{EnglishSpeaking}_{i}$	383,095	0.332	0.471	0.000	0.000	1.000
$\text{LocalGAAPSimilarity}_{i,j,t}$	83,300	0.727	0.091	0.677	0.719	0.775
$\text{USMarketEntry}_{i,j,t}$	103,405	0.145	0.352	0.000	0.000	0.000

Panel B: Correlations

This table presents pairwise correlations of the key variables. Spearman correlations are above and Pearson correlations are below the diagonal.

Variable		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
$\text{PublicPresence}_{i,t}$	(1)	1	0.239	0.079	−0.096	0.005	0.053	−0.301	0.293	0.481	−0.158	0.079
$\text{ImportCompetition}_{i,t}$	(2)	0.650	1	0.911	0.175	−0.171	0.055	0.170	0.021	0.079	−0.136	0.429
$\text{ImpCompNoRP}_{i,t}$	(3)	0.635	0.961	1	0.236	−0.197	0.145	0.341	−0.210	−0.047	−0.126	0.467
$\text{Tariff}_{i,t}$	(4)	0.263	0.491	0.637	1	−0.100	0.016	0.152	−0.350	−0.096	−0.145	0.193
$\text{IndustryGrowth}_{i,t}$	(5)	−0.081	−0.142	−0.138	−0.155	1	0.017	−0.145	0.121	−0.006	0.002	−0.091
$\text{ValueAdd}_{i,t}$	(6)	0.055	0.043	0.068	0.054	−0.015	1	0.569	−0.060	−0.295	0.207	0.244
$\text{Payroll}_{i,t}$	(7)	−0.071	0.159	0.222	0.210	−0.162	0.507	1	−0.369	−0.592	0.084	0.375
$\text{WageRate}_{i,t}$	(8)	0.119	−0.101	−0.190	−0.342	0.123	−0.100	−0.346	1	0.268	0.193	−0.002
$\text{Concentration}_{i,t}$	(9)	0.297	0.090	0.046	−0.061	0.030	−0.265	−0.610	0.289	1	−0.204	−0.225
$\text{CapEx}_{i,t}$	(10)	−0.079	−0.193	−0.197	−0.177	−0.055	0.174	0.090	0.130	−0.134	1	−0.009
$\text{Inventory}_{i,t}$	(11)	0.160	0.296	0.298	0.224	−0.084	0.257	0.361	0.032	−0.130	−0.031	1

Table 2: Foreign Competition and Public Firm Presence

Panel A: Worldwide Aggregate Competition

	ImportCompetition$_{i,t}$				ImpCompNoRP$_{i,t}$
	(1)	(2)	(3)	(4)	(5)
PublicPresence$_{i,t-1}$	0.651***	0.618***	0.473***	0.472***	0.357***
	(0.145)	(0.167)	(0.135)	(0.135)	(0.133)
AnyPublicFirms$_{i,t-1}$				0.084	
				(0.111)	
Tariff$_{i,t-1}$			−0.065	−0.062	0.098
			(0.164)	(0.165)	(0.259)
NTRGap$_i$ × Post2001$_t$			0.091**	0.090**	0.126**
			(0.040)	(0.040)	(0.059)
IndustryGrowth$_{i,t-1}$			0.025	0.025	0.019
			(0.028)	(0.028)	(0.026)
ValueAdd$_{i,t-1}$			0.221	0.220	0.131*
			(0.135)	(0.135)	(0.075)
Payroll$_{i,t-1}$			0.529***	0.530***	0.510**
			(0.167)	(0.167)	(0.211)
WageRate$_{i,t-1}$			−0.255**	−0.259**	−0.310**
			(0.115)	(0.116)	(0.136)
Concentration$_{i,t-1}$			0.168	0.172	0.336
			(0.232)	(0.234)	(0.218)
Observation Level:	i,t	i,t	i,t	i,t	i,t
Fixed Effects:					
Year (t)	Yes	Yes	Yes	Yes	Yes
Industry (i)	No	Yes	Yes	Yes	Yes
Number of Clusters:					
Industry (i)	86	86	85	85	85
Year (t)	19	19	18	18	17
N	1,634	1,634	1,530	1,530	1,364
Adjusted R^2	0.419	0.880	0.908	0.908	0.908

Panel A presents estimates of import competition as a function of lagged public firm presence. All variables are defined in Appendix A and, with the exception of binary variables are standardized to mean 0 and unit variance. i indexes industry (4-digit NAICS) and t indexes year. In all columns, standard errors are clustered by industry and year.

Panel B: Country-level Competition

	ImportCompetition$_{i,t}$			
	(1)	(2)	(3)	(4)
PublicPresence$_{i,t-1}$	0.076***	0.025***	0.016**	0.016**
	(0.017)	(0.009)	(0.007)	(0.006)
AnyPublicFirms$_{i,t-1}$				−0.018
				(0.040)
Tariff$_{i,j,t-1}$			−0.014	−0.014
			(0.011)	(0.009)
NTRGap$_i$ × Post2001$_t$ × China$_j$			0.377***	0.377***
			(0.031)	(0.045)
NTRGap$_i$ × Post2001$_t$ × NotChina$_j$			0.022***	0.022***
			(0.007)	(0.006)
IndustryGrowth$_{i,t-1}$			−0.001	−0.001
			(0.003)	(0.002)
ValueAdd$_{i,t-1}$			0.015**	0.016**
			(0.007)	(0.007)
Payroll$_{i,t-1}$			0.026*	0.026*
			(0.015)	(0.015)
WageRate$_{i,t-1}$			−0.017	−0.016
			(0.011)	(0.011)
Concentration$_{i,t-1}$			0.006	0.004
			(0.024)	(0.024)
Observation Level:	i,j,t	i,j,t	i,j,t	i,j,t
Fixed Effects:				
Exporting Country (j) × Year (t)	Yes	Yes	Yes	Yes
Exporting Country (j) × Industry (i)	No	Yes	Yes	Yes
Number of Clusters:				
Industry	85	85	85	85
Year	19	19	18	19
Exporting Country	233	233	233	233
N	364,650	364,650	344,845	344,845
Adjusted R^2	0.423	0.932	0.937	0.937

Panel B presents estimates of import competition as a function of lagged public firm presence. All variables are defined in Appendix A and with the exception of the binary variables are standardized to mean 0 and unit variance. i indexes industry (4-digit NAICS), j indexes exporting country, and t indexes year. In all columns, standard errors are clustered by industry, year, and exporting country.

Table 3: SOX Instrument for Public Firm Presence

Panel A: First Stage: Public firm presence and SOX industry returns.

	$\text{PublicPresence}_{i,t}$	
	(1)	(2)
$\text{PostSOX}_t \times \text{SOXBHAR}_i$	0.210***	0.206***
	(0.067)	(0.067)
$\text{Tariff}_{i,t}$	0.012	
	(0.334)	
$\text{Tariff}_{i,j,t}$		−0.034
		(0.021)
$\text{NTRGap}_i \times \text{Post2001}_t$	0.063	
	(0.094)	
$\text{NTRGap}_i \times \text{Post2001}_t \times \text{China}_j$		0.066
		(0.070)
$\text{NTRGap}_i \times \text{Post2001}_t \times \text{NotChina}_j$		0.062
		(0.100)
$\text{IndustryGrowth}_{i,t}$	0.027	0.026
	(0.032)	(0.031)
$\text{ValueAdd}_{i,t}$	0.160	0.159
	(0.105)	(0.098)
$\text{Payroll}_{i,t}$	0.893***	0.882***
	(0.290)	(0.276)
$\text{WageRate}_{i,t}$	0.081	0.079
	(0.186)	(0.180)
$\text{Concentration}_{i,t}$	−0.292	−0.300
	(0.506)	(0.501)
Observation Level:	i,t	i,j,t
Fixed Effects:		
Industry (i)	No	Yes
Year (t)	No	Yes
Exporting Country (j) × Industry (i)	Yes	No
Exporting Country (j) × Year (t)	Yes	No
Number of Clusters:		
Industry	49	49
Year	17	17
Exporting Country		233
N	833	187,915
Adjusted R^2	0.861	0.864

Panel A presents estimates of public firm presence in an industry as a function of average stock returns in the industry over 12 trading days starting with July 8, 2002. All variables are defined in Appendix A, and with the exception of the binary variables, are standardized to mean 0 and unit variance. In both columns, standard errors are clustered by industry and year, and in (2) are further clustered by exporting country.

Panel B: Second Stage: Foreign Competition and Instrumented Public Firm Presence

	$\text{ImportCompetition}_{i,t}$ (1)	$\text{ImportCompetition}_{i,j,t}$ (2)
$\widehat{\text{PublicPresence}}_{i,t-1}$	0.702***	0.063**
	(0.256)	(0.031)
$\text{Tariff}_{i,t-1}$	0.067	
	(0.311)	
$\text{Tariff}_{i,j,t-1}$		−0.030
		(0.022)
$\text{NTRGap}_i \times \text{Post2001}_t$	−0.007	
	(0.073)	
$\text{NTRGap}_i \times \text{Post2001}_t \times \text{China}_j$		0.316***
		(0.060)
$\text{NTRGap}_i \times \text{Post2001}_t \times \text{NotChina}_j$		0.011
		(0.011)
$\text{IndustryGrowth}_{i,t-1}$	0.014	−0.002
	(0.043)	(0.004)
$\text{ValueAdd}_{i,t-1}$	0.237	0.005
	(0.170)	(0.011)
$\text{Payroll}_{i,t-1}$	0.353*	−0.019
	(0.191)	(0.046)
$\text{WageRate}_{i,t-1}$	−0.275*	−0.013
	(0.151)	(0.012)
$\text{Concentration}_{i,t-1}$	0.134	−0.012
	(0.280)	(0.033)
Observation Level:	i,t	i,j,t
Fixed Effects:		
Industry (i)	Yes	No
Year (t)	Yes	No
Exporting Country (j) × Industry (i)	No	Yes
Exporting Country (j) × Year (t)	No	Yes
Number of Clusters:		
Industry	49	49
Year	17	17
Exporting Country		233
N	833	187,915
Adjusted R^2	0.907	0.941

Panel B presents estimates of import competition as a function of the fitted values of public firm presence in an industry from the stage one regressions. All variables are defined in Appendix A, and with the exception of the binary variables, are standardized to mean 0 and unit variance. In both columns, standard errors are clustered by industry and year, and in (2) are further clustered by exporting country.

Table 4: Entry of Foreign Competitors into the US Market

	USMarketEntry$_{i,j,t}$					
	(1)	(2)	(3)	(4)	(5)	(6)
PublicPresence$_{i,t-1}$	0.121***	0.236***	0.169**	0.334***	0.379***	0.444***
	(0.040)	(0.069)	(0.071)	(0.085)	(0.119)	(0.133)
Tariff$_{i,j,t-1}$			−0.076	−0.021	−0.034	−0.013
			(0.108)	(0.149)	(0.131)	(0.151)
IndustryGrowth$_{i,t-1}$			0.048*	0.038	0.057*	0.042
			(0.028)	(0.033)	(0.032)	(0.035)
ValueAdd$_{i,t-1}$			0.145*	0.177	0.110	0.159
			(0.081)	(0.110)	(0.082)	(0.109)
Payroll$_{i,t-1}$			0.169	0.200	0.245**	0.230
			(0.106)	(0.146)	(0.125)	(0.157)
WageRate$_{i,t-1}$			−0.606***	−0.579***	−0.617***	−0.584***
			(0.048)	(0.053)	(0.046)	(0.051)
Concentration$_{i,t-1}$			−0.071	−0.213	−0.062	−0.214
			(0.115)	(0.162)	(0.121)	(0.164)
ImportCompetition$_{i,t-1}$					−0.296*	−0.144
					(0.177)	(0.156)
Observation Level:	i,j,t	i,j,t	i,j,t	i,j,t	i,j,t	i,j,t
Strata:	None	Country	None	Country	None	Country
N	85,425	85,425	85,425	85,425	85,425	85,425
R^2	0.001	0.002	0.032	0.041	0.034	0.042

This table estimates Cox proportional hazard models of competitors from foreign countries' entry into the US market:

$$h(t) = h_{0[j]}(t) \times e^{\alpha_1 \text{PublicPresence}_{i,t-1} + B \cdot \text{Controls}_{i,j,t-1}}$$

All variables are defined in Appendix A, and excepting USMarketEntry$_{i,t}$ are standardized to mean 0 and unit variance. In columns (2), (4), and (6), the model is stratified by exporting country (j). Coefficients are tabulated in unexponentiated form. Standard errors are clustered by industry.

Table 5: Information Processing Costs Cross-sectional Analysis

	ImportCompetition$_{i,j,t}$				
	English Speaking		Local GAAP Similarity		
	Yes	No	High	Low	
	(1)	(2)	(3)	(4)	(5)
PublicPresence$_{i,t-1}$	0.005	0.021***	0.054***	−0.015	0.016
	(0.006)	(0.008)	(0.018)	(0.017)	(0.018)
PublicPresence$_{i,t-1}$ × LocalGAAPSimilarity$_j$					0.035**
					(0.017)
Tariff$_{i,j,t-1}$	−0.008	−0.016	−0.009	−0.043*	−0.030
	(0.007)	(0.011)	(0.020)	(0.026)	(0.021)
NTRGap$_i$ × Post2001$_t$ × China$_j$		0.376***	0.372***		0.370***
		(0.031)	(0.040)		(0.030)
NTRGap$_i$ × Post2001$_t$ × NotChina$_j$	0.016**	0.025***	0.060***	0.076***	0.069***
	(0.007)	(0.007)	(0.021)	(0.022)	(0.019)
IndustryGrowth$_{i,t-1}$	0.0003	−0.001	−0.006	−0.004	−0.005
	(0.002)	(0.003)	(0.010)	(0.007)	(0.009)
ValueAdd$_{i,t-1}$	0.014*	0.016*	0.079*	0.028**	0.051*
	(0.008)	(0.008)	(0.045)	(0.014)	(0.028)
Payroll$_{i,t-1}$	0.040**	0.019	0.058	0.062	0.060
	(0.016)	(0.018)	(0.078)	(0.059)	(0.056)
WageRate$_{i,t-1}$	−0.010	−0.020	−0.037	−0.049	−0.044
	(0.010)	(0.013)	(0.044)	(0.035)	(0.036)
Concentration$_{i,t-1}$	0.002	0.007	−0.037	0.016	−0.008
	(0.018)	(0.029)	(0.097)	(0.069)	(0.078)
Difference in PublicPresence$_{i,t-1}$ coefficient	−0.017***		0.068***		
	(0.007)		(0.018)		
Observation Level:	i,j,t	i,j,t	i,j,t	i,j,t	i,j,t
Fixed Effects:					
Industry(i) × Exporting Country(j)	Yes	Yes	Yes	Yes	Yes
Year(t) × Exporting Country(j)	Yes	Yes	Yes	Yes	Yes
Number of Clusters:					
Industry	85	85	85	85	85
Year	18	18	18	18	18
Exporting Country	77	156	22	27	49
N	114,240	230,605	33,660	41,310	74,970
Adjusted R^2	0.945	0.934	0.939	0.932	0.936

This table presents estimates of import competition as a function of lagged public firm presence, time-varying industry controls, and fixed effects. The sample for column (1) is observations where the exporting country has English as an official language whereas column (2) is observations where the exporting country does not have English as an official language. The sample for column (3) includes observations where the US GAAP-local GAAP of the exporting country is above the mean, and column (4)'s observations are below the mean. Column (5) includes all observations for countries with a US GAAP-local GAAP similarity measure from (Bradshaw, Bushee, and Miller 2004). Tests of differences in coefficients between columns (1) and (2) and between (3) and (4) are estimated using a fully interacted model (including control variables). All variables are defined in Appendix A and are standardized to mean 0 and unit variance. There is no coefficient for NTRGap$_i$ × Post2001$_t$ × China$_j$ as the fixed effects absorb all variation (China is not an English-speaking country and has a higher than mean GAAP similarity measure. in columns (1) and (4) Standard errors are clustered by industry, year, and exporting country.

Table 6: Information Content of Earnings Cross-sectional Analysis

	ImportActivity$_{i,t}$			
	(1)	(2)	(3)	(4)
PublicPresence$_{i,t-1}$	0.464***	0.460***	0.468***	0.462***
	(0.126)	(0.130)	(0.130)	(0.132)
ICScore1$_{i,t-1}$	0.037			
	(0.023)			
ICScore2$_{i,t-1}$		0.027		
		(0.022)		
ICScore3$_{i,t-1}$			0.029	
			(0.022)	
ICScore4$_{i,t-1}$				0.020
				(0.022)
PublicPresence$_{i,t-1}$ × ICScore1$_{i,t-1}$	0.102*			
	(0.055)			
PublicPresence$_{i,t-1}$ × ICScore2$_{i,t-1}$		0.088*		
		(0.052)		
PublicPresence$_{i,t-1}$ × ICScore3$_{i,t-1}$			0.104***	
			(0.035)	
PublicPresence$_{i,t-1}$ × ICScore4$_{i,t-1}$				0.094***
				(0.031)
Observation Level:	i,t	i,t	i,t	i,t
Additional Controls:	Yes	Yes	Yes	Yes
Fixed Effects:				
Industry(i)	Yes	Yes	Yes	Yes
Year(t)	Yes	Yes	Yes	Yes
Number of Clusters:				
Industry	81	81	81	81
Year	18	18	18	18
N	1,313	1,313	1,313	1,313
Adjusted R^2	0.926	0.926	0.924	0.923

This table presents presents estimates of the model:

$$\begin{aligned} ImportActivity_{i,t} = \; & \alpha_1 PublicPresence_{i,t-1} + \alpha_2 ICScoreX_{i-t-1} + \alpha_3 (PulicPresence_{i,t-1} \times ICScoreX_{i-t-1}) \\ & + B \cdot Controls_{i,j,t-1} + \gamma_i + \delta_t + \varepsilon_{i,t} \end{aligned}$$

where i indexes 4-digit NAICS industry and t indexes year. γ_i is an industry fixed effect and δ_t is a year fixed effect. In each column we include the control variables Tariff$_{i,t-1}$, NTRGap$_i$ × Post2001$_t$, IndustryGrowth$_{i,t-1}$, ValueAdd$_{i,t-1}$, Payroll$_{i,t-1}$, WageRate$_{i,t-1}$ and Concentration$_{i,t-1}$, but do not tabulate coefficients for brevity. $ICScore1_{i,t}$ is the R^2 value from an industry-year regression:

$$\frac{TradingVolume_{f,d}}{SharesOutstanding_{f,d}} = \beta_0 + \beta_1 AnyRelease_{f,d} + \beta_2 AnyPeerRelease_{f,d} + \varepsilon_{f,d}$$

where f indexes firm, d indexes day, $TradingVolume_{f,d}$ is the number of firm f's shares traded on day d, $SharesOutstanding_{f,d}$ is the number of shares outstanding for firm f on day d, $AnyRelease_{f,d}$ is an indicator if d is a day that firm f releases its 10-K, 10-Q, or announces its earnings. $AnyPeerRelease_{f,d}$ is an indicator for the focal firm's industry peers' EDGAR 10-Q release dates, 10-K date, and earnings release dates from Compustat times each peer's sales weight in the industry in the prior year. $ICScore2_{i,t}$ is the R^2 value from an analogous industry-year regression replacing $EARelease_{f,d}$ and $EAPeerRelease_{f,d}$ for $AnyRelease_{f,d}$ and $AnyPeerRelease_{f,d}$ respectively, which only consider earnings announcement days. $ICScore3_{i,t}$ is the R^2 value from an industry-year regression:

$$|Return_{f,d}| = \beta_0 + \beta_1 AnyRelease_{f,d} + \beta_2 AnyPeerRelease_{f,d} + \varepsilon_{f,d}$$

Where $|Return_{f,d}|$ is the absolute value of the stock return for firm f on day d. $ICScore4_{i,t}$ is calculated analogously to $ICScore3_{i,t}$ but replaces $EARelease_{f,d}$ and $EAPeerRelease_{f,d}$ for $AnyRelease_{f,d}$ and $AnyPeerRelease_{f,d}$ respectively. Standard errors are clustered by industry and year.

Table 7: Foreign EDGAR Downloads and Import Competition

	ImportCompetition$_{i,j,t}$			
	(1)	(2)	(3)	(4)
Downloads$_{i,j,t-1}$	0.009***			
	(0.003)			
$\frac{\text{Downloads}_{i,j,t-1}}{\text{Downloads}_{t-1}}$		0.014***		
		(0.002)		
$\frac{\text{Downloads}_{i,j,t-1}}{\text{Downloads}_{j,t-1}}$			0.0003	
			(0.0003)	
$\frac{\text{Downloads}_{i,j,t-1}}{\text{Downloads}_{i,t-1}}$				0.003***
				(0.001)
Observation Level:	i,j,t	i,j,t	i,j,t	i,j,t
Fixed Effects:				
Industry (t) × Country (j)	Yes	Yes	Yes	Yes
Year (t) × Industry (i)	Yes	Yes	Yes	Yes
Year (t) × Country (j)	Yes	Yes	Yes	Yes
Number of Clusters:				
Industry	84	84	84	84
Year	13	13	13	13
Exporting Country	217	217	217	217
N	193,821	193,821	193,821	193,821
Adjusted R^2	0.959	0.959	0.959	0.959

This table presents estimates of regressions of import competition on lagged EDGAR downloads of forms 10-K and 10-Q in a given industry by downloaders in the exporting country. i indexes industry (4-digit NAICS) , j indexes exporting country, and t indicates year. All variables are defined in Appendix A. In the regressions, all variables are standardized to mean 0 and unit variance. Standard errors are clustered by industry, year, and exporting country.

Table 8: Gross Margins and Import Competition

	$\text{ImportCompetition}_{i,t}$		$\text{ImportCompetition}_{i,j,t}$	
	(1)	(2)	(3)	(4)
$\text{PublicGrossMargin}_{i,t-1}$	0.309***	0.137***	0.077***	0.054***
	(0.076)	(0.042)	(0.019)	(0.015)
$\text{ImputedPrivateGrossMargin}_{i,t-1}$	−0.002	−0.002	−0.0004	−0.001
	(0.011)	(0.011)	(0.002)	(0.002)
$\text{PublicPresence}_{i,t-1}$		0.561***		0.062***
		(0.087)		(0.014)
$\text{Tariff}_{i,t-1}$	0.426***	0.245**		
	(0.144)	(0.099)		
$\text{Tariff}_{i,j,t-1}$			0.035	0.024
			(0.024)	(0.024)
$\text{NTRGap}_i \times \text{Post2001}_t$	−0.152	−0.069		
	(0.144)	(0.071)		
$\text{NTRGap}_i \times \text{Post2001}_t \times \text{China}_j$			2.126***	2.134***
			(0.054)	(0.043)
$\text{NTRGap}_i \times \text{Post2001}_t \times \text{NotChina}_j$			0.037	0.044
			(0.037)	(0.031)
$\text{IndustryGrowth}_{i,t-1}$	−0.070	−0.031	−0.017*	−0.012
	(0.055)	(0.053)	(0.009)	(0.008)
$\text{ValueAdd}_{i,t-1}$	−0.246***	−0.183***	−0.068***	−0.057**
	(0.059)	(0.032)	(0.022)	(0.022)
$\text{Payroll}_{i,t-1}$	0.444***	0.295***	0.080***	0.059**
	(0.147)	(0.059)	(0.030)	(0.027)
$\text{WageRate}_{i,t-1}$	−0.112	−0.262*	0.0004	−0.009
	(0.141)	(0.140)	(0.024)	(0.023)
$\text{Concentration}_{i,t-1}$	0.352**	0.133	0.043*	0.015
	(0.139)	(0.086)	(0.023)	(0.022)
Difference between Gross Margin Coefficients:	0.311***	0.139***	0.077***	0.055***
[*p-value*]	[0.001]	[0.005]	[0.001]	[0.002]
Observation Level:	i,t	i,t	i,j,t	i,j,t
Fixed Effects:				
Year(t)	Yes	Yes	No	No
Year(t) × Exporting Country(j)	No	No	Yes	Yes
Number of Clusters:				
Industry	85	85	85	85
Year	18	18	18	18
Exporting Country			233	233
N	1,505	1,505	337,080	337,080
Adjusted R^2	0.393	0.608	0.439	0.442

This table presents estimates of import competition as a function of lagged gross margin of public US firms in the industry, lagged gross margin of all US firms in the industry, lagged public firm presence (in columns (2) and (4)), time-varying industry controls, and year (columns (1) and (2)) or year × exporting country (columns (3) and (4)) fixed effects. All variables are defined in Appendix A and are standardized to mean 0 and unit variance. Standard errors are clustered by industry, year, and exporting country.

Table 9: UK Falsification Test

	ImportCompetitionUK$_{i,t}$ (1)	ImportCompetitionUS$_{i,t}$ (2)
PublicPresenceUK$_{i,t-1}$	−0.230	
	(0.179)	
PublicPresenceUS$_{i,t-1}$		0.390**
		(0.153)
Coefficient Difference	0.620***	
	(0.227)	
Observation Level:	i,t	i,t
Fixed Effects:		
Industry (i)	Yes	Yes
Year (t)	Yes	Yes
Number of Clusters:		
Industry	51	51
N	292	292
Adjusted R^2	0.972	0.979

This table presents estimates of import competition as a function of lagged public firm presence, an industry fixed effect, and a year fixed effect. ll variables are defined in Appendix A, and are standardized to mean 0 and unit variance. Column (1) presents results from the United Kingdom; column (2) presents results from the United States. Both specifications are estimated on the same set of years (2009-2014) and industries, limited by data availability from the UK sample. Standard errors are clustered by industry. The test of coefficient differences is calculated by estimating both specifications simultaneously in a fully interacted specification.

Table 10: Employment

	ln(Employment$_{i,t}$)			
	(1)	(2)	(3)	(4)
PublicPresence$_{i,t-1}$	−0.176**	−0.153***	−0.114***	
	(0.077)	(0.034)	(0.028)	
$\widehat{\text{PublicPresence}}_{i,t-1}$				−0.388***
				(0.109)
Tariff$_{i,t-1}$			−0.089	0.027
			(0.092)	(0.107)
NTRGap$_i$ × Post2001$_t$			−0.164***	−0.100**
			(0.030)	(0.039)
IndustryGrowth$_{i,t-1}$			0.005	0.016
			(0.011)	(0.016)
ValueAdd$_{i,t-1}$			−0.038	0.007
			(0.040)	(0.034)
Payroll$_{i,t-1}$			−0.119**	0.073
			(0.051)	(0.135)
WageRate$_{i,t-1}$			0.189***	0.162**
			(0.069)	(0.082)
Concentration$_{i,t-1}$			−0.177**	−0.087
			(0.085)	(0.126)
Observation Level:	i,t	i,t	i,t	i,t
Fixed Effects:				
Year (t)	Yes	Yes	Yes	Yes
Industry (i)	No	Yes	Yes	Yes
Number of Clusters:				
Industry	86	86	85	49
Year	19	19	18	17
N	1,634	1,634	1,530	833
Adjusted R^2	0.059	0.970	0.980	0.964

This table presents estimates of US employment in each manufacturing industry as a function of lagged public firm presence. All variables are defined in Appendix A, and with the exception of *Employment*$_{i,t}$ are standardized to mean 0 and unit variance. Column (4) is the fitted values of *PublicPresence*$_{i,t-1}$ from the instrumental variables analysis in Table 4. i indexes industry (4-digit NAICS) and t indexes year. In all columns, standard errors are clustered by industry and year.

Online Supplementary Material

Table S1: Robustness Tests of Main Results to Alternate Specifications

This table presents alternate specifications of the main results. Panel A presents log-log and first differences specifications analogous to Table 3, column (3); Panel B presents the corresponding changes specifications. Panel C presents specifications without scaling the key variables of interest.

Panel A: Log-Log Specifications

	$\ln(1+\text{ImportCompetition}_{i,t})$ (1)	$\ln(1+\text{ImportCompetition}_{i,j,t})$ (2)
$\ln(1+\text{PublicPresence}_{i,t-1})$	0.341***	0.0002***
	(0.070)	(0.0001)
$\text{Tariff}_{i,t-1}$	0.004	
	(0.039)	
$\text{Tariff}_{i,j,t-1}$		−0.0001
		(0.0001)
$\text{NTRGap}_i \times \text{Post2001}_t$	0.069***	
	(0.017)	
$\text{NTRGap}_i \times \text{Post2001}_t \times \text{China}_j$		0.002***
		(0.0001)
$\text{NTRGap}_i \times \text{Post2001}_t \times \text{NotChina}_j$		0.0001***
		(0.00003)
$\text{IndustryGrowth}_{i,t-1}$	0.006	−0.00000
	(0.008)	(0.00001)
$\text{ValueAdd}_{i,t-1}$	0.056***	0.0001**
	(0.014)	(0.00003)
$\text{Payroll}_{i,t-1}$	0.173***	0.0001
	(0.045)	(0.0001)
$\text{WageRate}_{i,t-1}$	−0.067*	−0.0001
	(0.036)	(0.00005)
$\text{Concentration}_{i,t-1}$	0.050	0.00001
	(0.062)	(0.0001)
Observation Level:	i,t	i,j,t
Fixed Effects:		
Year (t)	Yes	No
Industry (i)	Yes	No
Exporting Country (j) × Year (t)	No	Yes
Industry (i) × Year (t)	No	Yes
Number of Clusters:		
Industry	85	85
Year	18	18
Exporting Country		233
N	1,530	344,845
Adjusted R^2	0.945	0.937

Panel A presents log-log specifications of import competition as a function of lagged public firm presence:

$$\ln(1+\mathit{ImportCompetition}_{i[,j],t}) = \alpha_1 \ln(1+\mathit{PublicPresence}_{i,t-1}) + \alpha_2\,\mathit{Tariff}_{i[,j],t-1} + \alpha_3(\mathit{NTRGap}_i \times \mathit{Post2001}_t[\times \mathit{China}_j]) [+\alpha_4(\mathit{NTRGap}_i \times \mathit{Post2001}_t \times \mathit{NotChina}_j)] + \alpha_5\,\mathit{IndustryGrowth}_{i,t-1} + \alpha_6\,\mathit{ValueAdd}_{i,t-1} + \alpha_7\,\mathit{Payroll}_{i,t-1} + \alpha_8\,\mathit{WageRate}_{i,t-1} + \alpha_9\,\mathit{Concentration}_{i,t-1} + \beta_{[j,]i} + \gamma_{[j,]t} + \varepsilon_{i[,j],t}$$

i indexes industry (4-digit NAICS), j indexes exporting country, and t indexes year. All variables are defined in Appendix A. *ImportCompetition*, *PublicPresence*, and binary variables are unstandardized; all other variables are standardized to mean 0 and unit variance. In both columns, standard errors are clustered by industry and year, and in (2) are further clustered by exporting country.

Panel B: Changes Specifications

	ΔImportCompetition$_{i,t}$ (1)	ΔImportCompetition$_{i,j,t}$ (2)
ΔPublicPresence$_{i,t-1}$	0.164**	−0.005
	(0.082)	(0.005)
ΔTariff$_{i,t-1}$	−0.029	
	(0.037)	
ΔTariff$_{i,j,t-1}$		−0.004
		(0.003)
ΔNTRGapIn2001$_i$ × Year2001$_t$	−0.034*	
	(0.020)	
ΔNTRGapIn2001$_i$ × Year2001$_t$ × China$_j$		−0.803***
		(0.049)
ΔNTRGapIn2001$_i$ × Year2001$_t$ × NotChina$_j$		−0.017***
		(0.006)
ΔIndustryGrowth$_{i,t-1}$	−0.193***	−0.011
	(0.066)	(0.008)
ΔValueAdd$_{i,t-1}$	0.008	−0.004
	(0.047)	(0.010)
ΔPayroll$_{i,t-1}$	−0.068	−0.004
	(0.099)	(0.010)
ΔWageRate$_{i,t-1}$	−0.037	−0.001
	(0.104)	(0.022)
ΔConcentration$_{i,t-1}$	−0.029	−0.005
	(0.067)	(0.012)
Observation Level:	i,t	i,j,t
Fixed Effects:		
Year (t)	Yes	No
Exporting Country (j) × Year (t)	No	Yes
Number of Clusters:		
Industry	85	85
Year	17	17
Exporting Country		233
N	1,445	325,040
Adjusted R^2	0.053	0.026

Panel B presents changes specifications of import competition as a function of lagged public firm presence:

$$\Delta ImportCompetition_{i[,j],t} = \alpha_1 \Delta PublicPresence_{i,t-1} + \alpha_2 \Delta Tariff_{i[,j],t-1} + \alpha_3 \Delta \text{NTRGapIn2001}_i \times \text{Year2001}_t [\times \text{China}_j] + [\alpha_4 \Delta \text{NTRGapIn2001}_i \times \text{Year2001}_t \times \text{NotChina}_j +] \alpha_5 \Delta IndustryGrowth_{i,t-1} + \alpha_6 \Delta ValueAdd_{i,t-1} + \alpha_7 \Delta Payroll_{i,t-1} + \alpha_8 \Delta WageRate_{i,t-1} \alpha_9 \Delta Concentration_{i,t-1} + \gamma_{[j,]t} + \varepsilon_{i[,j],t}$$

i indexes industry (4-digit NAICS), j indexes exporting country, and t indexes year. All variables are defined in Appendix A and continuous variables are standardized to mean 0 and unit variance. In both columns, standard errors are clustered by industry and year, and in (2) are further clustered by exporting country.

Panel C: Unscaled/Alternate Scaling Specifications

	$\text{Imports}_{i,t}$	$\frac{\text{Imports}_{i,t}}{\text{USProduction}_{i,1997}}$	$\ln(\text{Imports}_{i,t}+1)$	
	(1)	(2)	(3)	(4)
$\text{PublicSales}_{i,t-1}$	0.381***			
	(0.126)			
$\text{USProduction}_{i,t-1}$	0.189			
	(0.163)			
$\frac{\text{PublicSales}_{i,t-1}}{\text{USProduction}_{i,1997}}$		0.182*		
		(0.093)		
$\frac{\text{USProduction}_{i,t-1}}{\text{USProduction}_{i,1997}}$		−0.032		
		(0.041)		
$\ln(1+\text{PublicSales}_{i,t-1})$			0.123**	0.009
			(0.054)	(0.012)
$\ln(1+\text{USProduction}_{i,t-1})$			0.636***	0.365***
			(0.183)	(0.096)
$\text{Tariff}_{i,t-1}$	0.033	−0.147	0.322**	−0.045
	(0.074)	(0.119)	(0.152)	(0.124)
$\text{NTRGap}_i \times \text{Post2001}_t$	0.087***	0.055**	0.294*	0.096**
	(0.031)	(0.026)	(0.158)	(0.039)
$\text{IndustryGrowth}_{i,t-1}$	0.018	0.021	−0.048	0.028*
	(0.020)	(0.015)	(0.050)	(0.015)
$\text{ValueAdd}_{i,t-1}$	0.007	0.029	−0.231	−0.006
	(0.049)	(0.044)	(0.172)	(0.052)
$\text{Payroll}_{i,t-1}$	0.043	0.112	0.367*	0.080
	(0.109)	(0.084)	(0.202)	(0.082)
$\text{WageRate}_{i,t-1}$	0.224	−0.037	0.207	−0.027
	(0.165)	(0.081)	(0.166)	(0.075)
$\text{Concentration}_{i,t-1}$	−0.134	0.109	0.180	0.023
	(0.173)	(0.099)	(0.163)	(0.084)
Observation Level:	i,t	i,t	i,t	i,t
Fixed Effects:				
Industry (i)	Yes	Yes	No	Yes
Year (t)	Yes	Yes	Yes	Yes
N	1,530	1,530	1,530	1,530
Adjusted R^2	0.936	0.961	0.392	0.976

Panel C presents estimates of models in the form of:

$$Y_{i,t} = \alpha_1 X_{i,t-1} + \alpha_2 Z_{i,t-1} + \alpha_3 \mathit{Tariff}_{i,t-1} + \alpha_4(\mathit{NTRGap}_i \times \mathit{Post2001}_t) + \alpha_5 \mathit{IndustryGrowth}_{i,t-1} + \alpha_6 \mathit{ValueAdd}_{i,t-1} + \alpha_7 \mathit{Payroll}_{i,t-1} + \alpha_8 \mathit{WageRate}_{i,t-1} + \alpha_9 \mathit{Concentration}_{i,t-1} + \beta_i + \gamma_t + \varepsilon_{i,t}$$

i indexes industry (4-digit NAICS), j indexes exporting country, and t indexes year. In column (1), the $Y_{i,t}$ variable is US imports in industry i during year t, the $X_{i,t-1}$ variable is sales from public firms in industry i during year $t-1$, and the $Z_{i,t-1}$ variable is US production in industry i during year $t-1$. Each of these variables standardized to mean 0 and unit variance. In column (2), each of these three variables are scaled by US production in industry i during 1997 before standardizing. In columns (3) and (4), the $Y_{i,t}$ variable is 1 + the natural log of US imports in industry i during year t, the $X_{i,t-1}$ variable is 1 + the natural log of sales from public firms in industry i during year $t-1$, and the $Z_{i,t-1}$ variable is 1 + the natural log of US production in industry i during year $t-1$. All variables are defined in Appendix A and, with the exception of the logged variables, standardized to mean 0 and unit variance. Standard errors are clustered by industry and year.

Table S2: Robustness of Main Result to Sample Changes

This table presents robustness checks of Table 2, Panel A, Column (3), and Panel B, Column (3) to excluding certain industries and countries. In Panel A, the sample excludes 4-digit NAICS codes that underwent definition changes during the sample period (3149, 3152, 3219, 3261, 3262, 3333, 3334, 3339, 3341, 3342, 3345, 3366, 3371, and 3391). In Panel B, the sample excludes countries that are not present in the export data for each year in the sample (Curaçao, Sudan, South Sudan, Sint Maarten, North Korea, Kosovo, Serbia, Montenegro, Western Sahara, Bulgaria, Cuba, Libya, Mayotte, East Timor, Heard Island, Tuvalu, Wallis and Futuna, Svalbard and Jan Mayen, Iran, and French Southern Territories).

Panel A: Excluding Changing 4-digit NAICS Classifications

	$\text{ImportCompetition}_{i,t}$ (1)	$\text{ImportCompetition}_{i,j,t}$ (2)
$\text{PublicPresence}_{i,t-1}$	0.704***	0.020**
	(0.128)	(0.010)
$\text{Tariff}_{i,t-1}$	−0.205*	
	(0.110)	
$\text{NTRGap}_i \times \text{Post2001}_t$	0.085**	
	(0.035)	
$\text{Tariff}_{i,j,t-1}$		−0.007
		(0.005)
$\text{NTRGap}_i \times \text{Post2001}_t \times \text{China}_j$		0.476***
		(0.036)
$\text{NTRGap}_i \times \text{Post2001}_t \times \text{NotChina}_j$		0.017***
		(0.006)
$\text{IndustryGrowth}_{i,t-1}$	0.006	−0.0001
	(0.025)	(0.003)
$\text{ValueAdd}_{i,t-1}$	0.295**	0.023***
	(0.137)	(0.007)
$\text{Payroll}_{i,t-1}$	0.320***	0.025
	(0.083)	(0.016)
$\text{WageRate}_{i,t-1}$	−0.161*	−0.019
	(0.091)	(0.013)
$\text{Concentration}_{i,t-1}$	0.076	0.001
	(0.242)	(0.025)
Observation Level:	i,t	i,j,t
Fixed Effects:		
Year (t)	Yes	No
Industry (i)	Yes	No
Exporting Country (j) × Year (t)	No	Yes
Exporting Country (j) × Industry (i)	No	Yes
Number of Clusters:		
Industry	71	71
Year	18	18
Exporting Country		233
N	1,278	288,047
Adjusted R^2	0.923	0.936

Panel B: Excluding Countries without Full Coverage

	$\text{ImportCompetition}_{i,j,t}$
	(2)
$\text{PublicPresence}_{i,t-1}$	0.016**
	(0.008)
$\text{Tariff}_{i,j,t-1}$	−0.014
	(0.012)
$\text{NTRGap}_i \times \text{Post2001}_t \times \text{China}_j$	0.376***
	(0.031)
$\text{NTRGap}_i \times \text{Post2001}_t \times \text{NotChina}_j$	0.022***
	(0.007)
$\text{IndustryGrowth}_{i,t-1}$	−0.001
	(0.003)
$\text{ValueAdd}_{i,t-1}$	0.016**
	(0.008)
$\text{Payroll}_{i,t-1}$	0.027*
	(0.016)
$\text{WageRate}_{i,t-1}$	−0.017
	(0.011)
$\text{Concentration}_{i,t-1}$	0.005
	(0.025)
Observation Level:	i,j,t
Fixed Effects:	
Exporting Country (j) × Year (t)	Yes
Exporting Country (j) × Industry (i)	Yes
Number of Clusters:	
Industry	85
Year	18
Exporting Country	213
N	325,890
Adjusted R^2	0.937