Journal of International Business Policy (2022) 5, 444–466
© 2021 Academy of International Business All rights reserved 2522-0691/22
www.jibp.net

WTO accession and firm exports in developing economies

N. Nuruzzaman[1], Ajai Gaur[2] and Rakesh B. Sambharya[3]

[1] Comparative and International Business Research Group, Alliance Manchester Business School, University of Manchester, Booth St. West, Manchester M15 6PB, UK; [2] Department of Management and Global Business, Rutgers Business School - Newark and New Brunswick, 1 Washington Park, Newark, NJ 07102, USA; [3] School of Business, Rutgers University – Camden, 227 Penn Street, Camden, NJ 08102-1656, USA

Correspondence:
N Nuruzzaman, Comparative and International Business Research Group, Alliance Manchester Business School, University of Manchester, Booth St. West, Manchester M15 6PB, UK
e-mail:
nuruzzaman.nuruzzaman@manchester.ac.uk

Abstract
The World Trade Organization (WTO) has a significant impact on international business activities due to its actions and decisions that set the rules of international trade. However, our understanding of how WTO affects firm behavior is limited. Taking advantage of the variations in entry dates to the World Trade Organization, we perform difference-in-differences estimation to examine whether a country's accession to the WTO significantly increases firms' export intensity. In addition, we apply insights from the threat-rigidity hypothesis to argue that firms' reactions to supranational institutions vary depending on how managers perceive the institutional environment. We find that firms from countries that enter the WTO experience significantly higher growth in export intensity when their managers have positive perceptions about domestic institutions. In contrast, accession to the WTO does not significantly increase firms' export intensity whose managers perceive domestic institutions as obstacles. Our findings suggest that supranational institutions, such as the WTO, play an important role in the strategic decisions that firms make. However, the full value of such institutions can only be realized if the managers are aware and positively disposed to engage with these institutions.
Journal of International Business Policy (2022) **5**, 444–466.
https://doi.org/10.1057/s42214-021-00115-8

Keywords: multilateral institutions; developing countries; World Trade Organization; threat-rigidity hypothesis; export performance; difference-in-differences estimator

INTRODUCTION

There is an on-going interest in studying the role of supranational institutions in influencing national policy and economic performance (Allee & Scalera, 2012; Bach & Newman, 2010; Jandhyala & Phene, 2015; Mansfield & Reinhardt, 2008). Supranational institutions, such as the World Trade Organization (WTO) or regional intergovernmental organizations (EU, NAFTA, ASEAN), can facilitate cross-border economic activity as they promote free trade across their member countries (Bagwell & Staiger, 1999). In the context of developing economies, supranational institutions could fill the void in domestic institutions by assisting the governments in establishing market-friendly regulations (Allee & Scalera, 2012; Bagwell & Staiger, 2002) and by providing resources and connections to promote innovations (Jandhyala & Phene, 2015; Taylor, 2006). At the same time, some scholars argue that supranational

Received: 3 June 2019
Revised: 26 March 2021
Accepted: 9 April 2021
Online publication date: 23 June 2021

institutions are not effective, as they often lack coercive power over national institutions (Mearsheimer, 1994; Rose, 2004a, 2004b). Therefore, supranational institutions can only rely on normative roles and have very limited influence over firm behavior. Global crises, like the Covid-19 pandemic or the 2008 financial crisis, further spark the discussion about the effectiveness of supranational institutions. For example, the Trump administration formally withdrew the United States of America from the World Health Organization (WHO) in 2020 after accusing the WHO of being ineffective in dealing with the Covid-19 pandemic.

However, little is known about the effect of supranational institutions on micro actors, such as firms or individuals. The effectiveness of supranational institutions in improving the aggregate economic outcomes, for example, depends on their ability to influence the economic decisions of firms or individuals. Thus, studying the mechanisms through which supranational institutions influence the economic decisions of micro actors is important, as it can help us understand the linkages between supranational institutions and macro-economic outcomes (Van Assche, 2018). To address this gap, we examine the influence of supranational institutions on firms' strategic decisions about exporting. We submit that the effectiveness of supranational institutions in influencing firms' strategic decisions depends on how the top managers perceive the quality of domestic institutions. Drawing on the threat-rigidity hypothesis (Chattopadhyay et al., 2001; Staw et al., 1981), we argue that firms react positively to institutional change when the top managers have a positive perception of the domestic institutional environment. In contrast, when managers perceive the domestic institutional environment as a threat to their operations, they may view the accession to supranational institutions as a new source of uncertainty and therefore hesitate to change their behavior or strategies.

To test our argument, we examine the impact of the WTO accession on the firm-level export intensity. Our study focuses on the WTO, as it is considered amongst the most powerful supranational institutions, regulating 98% of global trade flows. Members of the WTO must give each other the most-favored-nation (MFN) rate, a non-discriminatory low tariff rate. If countries want to be part of the global trading system, they must become a member of the WTO. Thus, the WTO exerts both normative and regulative pressure over member countries and those who desire to be part of it (Ingram et al., 2005; Pauwelyn, 2001). Furthermore, we focus on the impact of accession to the WTO because accession is the crucial period during which the WTO has considerable power over the newly entering member countries (Allee & Scalera, 2012). In practice, the commitment to trade liberalization and free trade agreement is made by the candidate member states during the accession period, even though the full implementation of trade liberalization or free trade agreements may not always happen in the accession period.

The benefits of WTO accession for individual countries have received much scholarly attention in the last two decades (Allee & Scalera, 2012; Engelbrecht & Pearce, 2007; Goldstein et al., 2007; Gowa & Kim, 2005; Rose, 2004a; Subramanian & Wei, 2007). However, the findings have been mixed. For example, Rose (2004a) found no evidence that membership in GATT/WTO led to increased aggregate trade, after controlling for national income, geography, and other factors. Other scholars found asymmetrical benefits of WTO accession such that WTO helped in increasing the trade volume, but only for developed countries (Subramanian & Wei, 2007; Gowa & Kim, 2005). Most of this literature is based on the analyses of country-level aggregate data. As Melitz (2003) states, firms are the entities that indulge in exports, and there is large heterogeneity in the types of firms in any given country. Thus, an analysis of the efficacy of WTO accession is still an open question and needs to be investigated with firm-level data.

We contribute to the IB policy domain by establishing a linkage between supranational institutions and firm-level outcomes. Furthermore, we contend that export decisions at the firm level are not made in abstract. The cognition of agents in the decision-making process influences the impact of supranational institutions on firm-level international strategy. Extant studies often assume that managers act rationally in responding to institutional change. We submit that the rationality assumption does not always hold. Managers' perceptions about the institutional environment are heterogenous, and these perceptions trigger different reactions to external changes. By accounting for the agency of decision-making, we bridge the macro-level theoretical frameworks used in the international economics/relations literature and micro-level analysis in the international business studies. Our theory and findings provide insights

for scholars and policymakers to account for the heterogeneity in managers' cognition in predicting how firms respond to changes in the institutional environment.

THEORETICAL FOUNDATION

Institutional Economics

Institutions are defined as sets of formal and informal rules and norms that govern human behavior (North, 1990). Institutions provide the supporting systems for the economy and promote economic growth by facilitating exchanges, including cross-border exchange (Singh & Delios, 2017). In the IB domain, scholars have analyzed the impact of institutions on firm-level strategic decisions such as foreign market location selection (Delios et al., 2008), internationalization strategy (Gaur et al., 2014; Mukherjee et al., 2018), and innovation (Bahl, Lahiri, & Mukherjee, 2021). A related stream of research focuses on the distance between host- and home-country institutions and how such distance affects foreign market entry decisions (Gaur & Lu, 2007; Malhotra & Gaur, 2014) and internationalization–performance relationships (Contractor et al., 2016).

The basic premise of these studies is that institutions directly influence firms' ability to formulate and implement a strategy that creates a competitive advantage in the global market. Strong property rights laws, for example, protect economic actors from potential appropriation by state or non-state actors during cross-border exchanges. Strong contract laws allow the trade participants to solve the potential disputes that may arise in cross-border exchanges. Well-developed institutions that promote free-market mechanisms also encourage cross-border exchanges (Cuervo-Cazurra et al., 2019; Shinkle & Kriauciunas, 2010).

The institutional environment, however, varies by time and space. In some transition economies, the government lacks the capacity, and perhaps political will, to eliminate trade restrictions and promote a free market economy (Michalopoulos, 1999). Trade-restrictive regulations can impede the export performance of firms in developing economies. The recent backlash against globalization manifesting in the rise of nationalism even in developed countries, such as Brexit in the UK and the "America first" policies of the Trump administration, have led to increased skepticism of trade and globalization (Cuervo-Cazurra et al., 2020).

In countries with poorly developed domestic institutions, trade-restrictive regulations, and underdeveloped capacity to implement market-based rules, the impact of supranational institutions such as the WTO becomes more pronounced. The support and pressure from the supranational institutions can help remove some of the bottlenecks imposed by weak domestic institutions in facilitating trade (Steinberg, 2002). In addition, membership or participation in supranational institutions can reduce the risk and uncertainty in cross-border exchange (Olabisi, 2019).

The Role of the Actor and the Behavioral Assumption of Institutional Economics

Institutions enact themselves through actors. There has been a movement to incorporate the individual actors in the analysis of institutions to understand the formation, operation, and influence of institutions (George et al., 2006). For example, recent research on institutional logics (Thornton et al., 2012) argues that the complex interplay between institutions and organizations depends on how individual actors identify and view their relationship with institutions. This perspective highlights the notion of embedded actors who have partial autonomy to enact change in the institutional environment that both constrain and enable individuals' perceptions and actions (Thornton et al., 2012).

There are two key assumptions of the traditional economics-based studies of institutions (Cuervo-Cazurra et al., 2019). First, there is a rationality assumption – individuals react rationally to institutional demands. This rationality assumption implies that managers have stable preferences which are based on complete and uniform beliefs or knowledge about the institutional environment within which the firm operates. Second, there is an assumption about full information – managers have the same knowledge and understanding about the institutional environment. Based on these assumptions, researchers often use secondary data to measure institutional quality (Cuervo-Cazurra et al., 2019). While these assumptions are useful in building a theoretical model, they do not accurately represent human behavior. In his seminal work, North (1990) questioned the traditional behavioral assumptions in the theory of institutions. Specifically, North (1990, p. 17) argued:

> More controversial (and less understood) among the behavioral assumptions, usually, is the implicit one that the actors possess cognitive systems that provide true models of the

> worlds about which they make choices or, at the very least, that the actors receive information that leads to convergence of divergent initial models. This is patently wrong for most of the interesting problems with which we are concerned. Individuals make choices based on subjectively derived models that diverge among individuals and the information the actors receive is so incomplete that in most cases these divergent subjective models show no tendency to converge.

This account from North (1990) should draw attention to the underlying behavioral assumption adopted in the study of institutions and firm strategy. In particular, there is an important assumption in the institutions-based view that all individuals have the same objective perception of institutions that truly reflect the state of reality. The dominance of this assumption in the management field is surprising given the acknowledgment in psychology and cognitive sciences that individuals make decisions based on the subjective perception of reality, not on the reality itself. This subjective perception of reality may be biased, causing managers to deviate from predicted behavior. As Simon (1986; p. 210) has pointed out:

> The rational person in neo-classical economies always reaches the decision that is objectively, or substantively, best in terms of given utility function. The rational person of cognitive psychology goes about making his or her decisions in a way that is procedurally reasonable in the light of the available knowledge and means of computation.

The above statement depicts that decision-making is not always driven by complete and perfect information but rather by a perception of reality that is subject to cognitive biases. This notion of economic actors' divergent subjective perception of the world requires us to revise the existing theory of the institution-based view of firm strategy. We evaluate the validity of this rational-agent hypothesis by analyzing (i) how economic actors (including managers) diverge in their perception of reality and (ii) how variation in perception influences the cognitive process in decision-making. We build our arguments on the threat-rigidity hypothesis, which we explain next.

The threat-rigidity hypothesis suggests that individuals view environmental events as either threats or opportunities and make a decision based on their interpretation of the environment (Dutton & Jackson, 1987; Staw et al., 1981). George et al. (2006) present a conceptual model that integrates threat-rigidity hypotheses with the institutional theory to suggest that patterns of institutional persistence and change depend on whether decision-makers evaluate environmental shifts as potential opportunities or threats. This hypothesis further posits that in the face of threat or uncertainty, organizations and individuals are likely to continue with routine activities and play it safe rather than taking actions that can maximize the utility (Chattopadhyay et al., 2001; Staw et al., 1981). Past studies have used the threat-rigidity hypothesis to explain how firms adjust their export strategy in responding to changing external environment (Li, 2010; Yu & Lindsay, 2016)

We apply the insight from cognitive psychology to the study of the effect of supranational institutions on firms' export behavior. We first submit that managers may not hold the same information or knowledge about the institutional environment. Therefore, the perception of the institutional environment may diverge across managers. Building on the threat-rigidity hypothesis, we then argue that firms whose managers view domestic institutions positively react differently to the WTO accession than firms whose managers view domestic institutions negatively. Our arguments incorporate cognitive psychology to institutional economics and highlight the critical role of managers' cognition in determining the firm reaction to institutional change.

This contribution also has empirical implications. The regulatory environment has been measured by secondary sources such as the World Competitiveness Indices, Economic Freedom Index, and the Euromoney country risk survey (Cuervo-Cazurra et al., 2019). Delios (2017) criticized the use of "objective" secondary measures as a proxy for institutional environment dimensions due to an oversimplification that is detached from reality. These secondary measures do not address the institutional context that has an impact on managerial choices or firm actions. We address this criticism by using perceptual measures of domestic institutions to study their impact on firm strategy.

HYPOTHESES DEVELOPMENT

The WTO and the Governance of Global Trade

The WTO is a prominent supranational institution governing international trade. Since its inception to replace the General Agreement on Tariff and Trade (GATT) in 1994, the WTO serves two main functions (World Trade Organization, 2015). First, the WTO supervises the implementation, administration, and operation of all trade agreements among its members. Second, the WTO establishes a forum for negotiations and trade dispute

settlement (Pauwelyn, 2001). The WTO also reviews and disseminates national trade policies of member countries and ensures the coherence and consistency of national trade policy and global trade policy.

The accession to the WTO is a long and complex process (Allee & Scalera, 2012). After submitting the written request to join the WTO, the candidate nation must provide a memorandum covering all aspects of its trade and legal regime to the relevant working party in the WTO, which examines the substantive part of the multilateral negotiations involved in accessions. This analysis determines the terms and conditions of entry for the applicant government. The terms and conditions include the applicant's commitments to observe WTO rules upon accession and provide details about the transition period required to make any legislative or structural changes to implement these commitments. During the assessment process, the applicant government can engage in bilateral negotiations with the interested working party members on concessions and commitments on market access for goods and services. The results of these multilateral negotiations are consolidated into a document that is part of the final "accession package", which is presented to the General Council or the Ministerial Conference for adoption (World Trade Organization, 2015).

Once a country is admitted to the WTO, it must follow various requirements. First, member countries of the WTO must apply the most-favored-nation (MFN) rule, which requires a member country to implement the trade regulations on a non-discriminatory basis to all other WTO member countries. This rule also aims to eliminate the non-tariff barrier of trade, such as procedural and other administrative barriers. Second, the WTO requires member countries to impose binding and enforceable tariff commitments that were agreed upon at the time of accession. This commitment is specified in the list of concessions. WTO members can change their tariff commitment only after negotiations with the trading partners. Third, the WTO enhances the transparency of global trade rules and regulations by requiring its members to publish amendments in their trade regulations and to notify other member countries of the changes in regulations. This requirement is accompanied by the publication of a country-specific periodical review, which also provides information about the changes in regulations (World Trade Organization, 2015).

The WTO also provided support to its member countries, particularly the developing and the least developed ones, in fulfilling the accession requirements. For example, the WTO provides trade-related technical assistance to the member countries on implementing the WTO agreements and making full use of member rights. The trade-related technical assistance also facilitates the governments of member countries to formulate a trade policy that is in line with the WTO requirement. In cooperation with other organizations and through the Aid for Trade initiative, the WTO also provides support to the least developed countries in building more efficient ports and road networks, as well as providing customs officials with automated equipment (World Trade Organization, 2015).

We argue that the WTO accession requirements can have both positive and negative effects on the internationalization of firms from developing economies. The positive direct effect of the WTO accession includes greater access to knowledge about market expansion and associated regulatory barriers, which reduce the costs of exporting. The WTO offers various training programs for firms from member countries, such as training to (i) better understand the non-tariff measures under the WTO framework, (ii) the multilateral trading systems, and (iii) the sanitary and phytosanitary regulations for firms in the agricultural sector. The knowledge gained from these training programs can help firms in developing economies expand the scope of their market (Bagwell & Staiger, 2002). Another direct benefit of accession to the WTO is the reduction of export-related costs. The ceiling tariffs imposed by the WTO to member countries limit the import tariffs that member countries can impose. Thus, firms from countries that accede to the WTO can expect the reduction of barriers to export in the destination countries (Bagwell & Staiger, 2002).

The WTO accession also affects exporting in indirect ways through the improvements in the domestic institutional environment. For example, in 1997, the WTO brokered a deal to get member countries to agree to open the telecommunication sectors to broader competition. Although not all members accepted the proposed agreement, the liberalization of the telecommunication industry led to overall improvements in the domestic institutional environment (Hill, 2008). The WTO accession may also reduce the uncertainty in trade policy. The commitment expressed in the WTO accession package and the negotiation mechanism

improves the stability of trade regulations applied in member countries and diminishes the exposure to regulatory hazards for exporting firms from the trading partners. Moreover, the MFN rule creates the basis for the non-discriminating trade policy, which limits the possibility that the government of importing countries abruptly change their trade regulations. The WTO accession also helps to reduce information asymmetry. The requirement for member countries to regularly publish their trade policy and to notify other member countries when there is a change in domestic trade-related policy allows firms in other member countries to anticipate the change in trade regulations imposed by the host governments.

Furthermore, the WTO accession improves the quality of domestic trade-related policy, which indirectly improves the export prospects of firms from developing economies (World Trade Organization, 2017). The WTO offers technical assistance to the governments of member countries to help them participate in multilateral trade negotiations. The technical assistance can come in the form of financing the training workshops for trade officials to enhance their negotiation skills and improve their ability to comprehend the WTO agreement. Another type of technical assistance is training the developing countries' trade officials to better comply with international trade standards. This program can have spillover effects on firms as the synchronization between international and domestic standards can help gain access to foreign markets.

However, the reality of WTO accession is more complicated and nuanced than the abstract theoretical benefits that traditional trade theory posits. Evenett and Braga (2005) identified several costs that WTO accession imposes on member countries. First, new member countries need to implement substantive regulatory changes to align their domestic institutions and policies with the WTO accession requirements. These policy changes require trained personnel that are familiar with trade policies under the WTO regime (Evenett & Braga, 2005). Many developing countries face resource constraints to recruit and train personnel, and therefore have been falling behind in their schedule in implementing the required changes. Such a delay in the implementation of trade reform post WTO accession creates policy uncertainty and has an adverse impact on the operations of domestic firms. Second, the WTO accession does not account for the specific circumstances of new member countries and their needs for special and differential treatment (Evenett & Braga, 2005). For example, domestic regulations and physical infrastructure for export and import activities may not adjust quickly to the levels required in the WTO accession process.[1] As a result, domestic firms from developing countries may face higher costs of exporting. Taken together, it is clear that the WTO accession requires significant changes in the domestic institutional environment and infrastructure, which exacerbates uncertainties in the post-accession period and creates potential risks for the operation of the firm.

We summarize the positive and negative effects of the WTO accession in Figure 1.

Given these costs and uncertainties, it is not surprising that there is no consensus about the positive benefits of WTO accession. Much of the analysis of the effect of WTO accession is based on aggregate country-level data. As Melitz (2003) pointed out, it is firms and not nation-states that engage in exporting. It is plausible that some firms derive value from WTO accession, while others do not. The extant literature on the impact of WTO on export performance also provided mixed evidence. For example, Rose (2004a) reported that WTO accession did not result in an increase in international trade. Others, such as Subramanian and Wei (2007), demonstrated that WTO membership is generally a more effective vehicle of trade creation for industrial countries than for developing countries. On the other hand, studies such as Goldstein et al. (2007) and Engelbrecht and Pearce (2007) found that GATT/WTO led to an increase in export under specific conditions.

Nevertheless, we argue that the overall effect of WTO accession on firm-level exporting is positive, as the potential benefits from the accession outweigh the potential drawbacks. With the capacity to provide institutional support, we maintain that the WTO is expected to facilitate cross-border trade. Hence, we argue that firms from countries that enter WTO membership are in a better position to expand internationally than firms from countries that do not join the WTO, ceteris paribus.

Hypothesis 1: Firms from countries that accede to WTO have higher growth of export intensity than firms from countries that do not accede to the WTO.

Managerial Perception of the Domestic Institutional Environment

Moving beyond the baseline effect proposed in Hypothesis 1, we examine how certain firms may

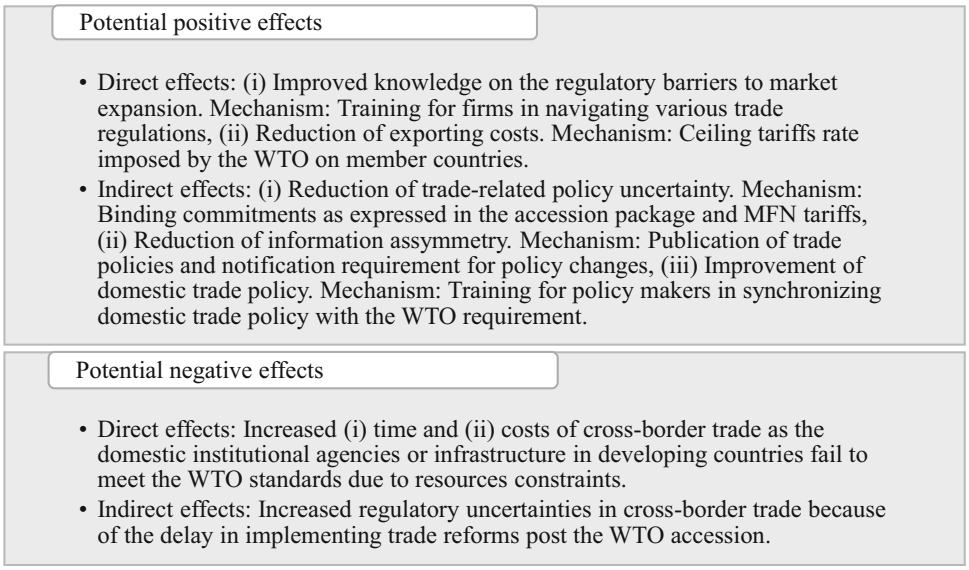

Figure 1 Potential impacts of the WTO accession to the internationalization of firms from developing economies.

benefit from WTO accession while others may not. The success of WTO accession depends on the institutional capacity of the member country (Dadush & Osakwe, 2015). As we argued earlier, a country's accession to the WTO requires a significant change in the domestic institutional environment, as the government is required to synchronize its trade-related policy with the WTO standards. However, managers may not view WTO accession and the associated policy changes as favorable for their firms. Past studies often assume that managers are rational agents that maximize their utility. This rationality assumption implies that managers have stable preferences, which are based on complete and uniform beliefs or knowledge about the domestic institutional environment within which the firm operates. However, this assumption is questionable, as managers may interpret the same situation differently. Research suggests that individual interpretation of the environment and the subsequent framing are relevant in determining if the decision-makers view the environment as supportive or non-supportive for their business operations (Li et al., 2019; Spicer et al., 2000). Therefore, we submit that managers' cognition, particularly the way they perceive the domestic institutional environment, would influence firms' propensity to engage in international expansion following the accession to the WTO.

We first establish that heterogeneous reactions to the WTO accession appear because there is information asymmetry with regards to how firms can realize benefits from the accession to the WTO. That is, we believe that managers may not have correct and complete information on how the WTO accession affects the trade regulations imposed by the national government. Second, we submit that important events, such as the accession to the WTO, may cause a significant change in the institutional environment and create uncertainty and potential risks for the operation of the firm. Managers can view this institutional change as an opportunity or a threat depending on their evaluation of their country's business environment. Managers with a positive perception of domestic institutions may believe that the accession to the WTO eliminates uncertainty in exporting activity as the national governments have the capability to adjust quickly to the WTO agreements. Consequently, those managers with a positive perception of domestic institutions are likely to further expand their foreign presence because they expect to become more competitive in foreign markets due to the reduction of export-related difficulties following the WTO accession.

On the other hand, some managers may believe that the lack of domestic institutional capacity can prevent the smooth adjustment of trade liberalization and thus can negatively affect the cross-border economic transaction. Managers may fear that domestic institutions and infrastructure would fail to cope with the surge of international economic activity following the accession to the WTO. For example, following China's accession to the WTO in 2001, the wait time

at Shanghai ports surged by 2 days on average due to a sudden increase in imports and exports (Djankov et al., 2010). Moreover, underdeveloped domestic institutions can further hamper the implementation of market-friendly export regulations as mandated by the WTO. For example, after its accession to the WTO, Russia issued new guidelines for meat processing and storage facilities. While these guidelines were in compliance with the WTO trading regime, the process to get approval for meat processing and storage facilities in Russia remained very difficult (The United States Trade Representative, 2014). Similar experiences have been reported in other countries. Hindley (2008) documented how the weak domestic institutions in Kyrgyzstan hampered the implementation of the new WTO-based trading rules. Such delays in the implementation of the WTO agreement can cause uncertainty for managerial decision-making and may make them believe that the accession to the WTO would be a threat to their international operations. In their attempt to avoid the potential threats that can be harmful to their operations and performance, managers with unfavorable views of domestic institutions are likely to hesitate in international expansion through exports.

In sum, managers who perceive the domestic institutional environment as unfavorable are more likely to engage in a threat-avoidance strategy. Such threat avoidance results in sub-optimal reactions to the WTO accession. In contrast, managers with positive perceptions of the domestic institutions are more likely to view the home country's accession to the WTO as an opportunity, and therefore engage in market expansion through export. Hence, we hypothesize:

Hypothesis 2: Positive managerial perception of domestic institutions positively moderates the impact of WTO accession on a firm's export intensity.

DATA AND METHODS

Data Source

We obtained the firm-level data from the World Bank Enterprise Surveys. Some of these surveys are done in two different time periods, which provides the opportunity to observe the change in firm characteristics (including its exporting performance) over time. The survey's sample is from the population of publicly listed businesses in each country and follows a stratified random sampling methodology (Nuruzzaman et al., 2020; Nuruzzaman, Singh, & Pattnaik, 2019).

An important advantage of these surveys is their broad coverage of the managerial perception of business constraints in the countries in which they operate. Constraints on the business environment cover many aspects such as easiness to get electricity and the cost of trading across borders, etc. All the surveys are piloted to ensure that questions are properly interpreted and formulated in the context of a country's business environment. The survey consists of two sets of questions to all firms in the sample: (i) questions on the business environment and business unit. This set must be answered by the managing director or senior manager and (ii) questions on productivity measures and balance sheets, which are answered by the chief accountant. These two steps are taken to avoid the common method bias. In some cases, the interviews were conducted at different times to again prevent common method bias.

Identification Strategy

To better identify the effect of WTO accession on a firm's export intensity, we employ the difference-in-differences approach. Variation in the timing of entry to WTO across countries surveyed by the World Bank gives us the opportunity to perform this natural experiment. To do so, we must identify the countries in the World Bank Enterprises Survey that can serve as the treatment group (joining the WTO within the first and second wave of the survey) and those countries that can serve as the control group (not joining the WTO across two periods of the survey). After carefully assessing the date of entry to the WTO[2] for each country available in the World Bank Enterprises Survey and matching it with the year of the survey, we identify four countries that can serve as the treatment group and four different countries for the control group. Countries in the treatment group are Laos People's Democratic Republic (Laos PDR), Montenegro, Russia, and Tajikistan, while those in the control group are Azerbaijan, Bosnia and Herzegovina, Kosovo, and Serbia. All these countries are categorized as middle-income countries by the World Bank; similarities in the income levels, as well as institutional development across countries in each group, make them comparable. Table 1 provides detail on the date of entry to the WTO, data of the first and second surveys, the World Bank's income classification, and the number of

Table 1 Summary of treatment vs. control group

Treatment group	# Sample 1st wave	# Sample 2nd wave	The WB income category	Year of entry to WTO	Year of 1st WBE Survey	Year of 2nd WBE Survey
Laos	344	343	Lower middle income	2013	2012	2016
Montenegro	97	133	Upper middle income	2012	2009	2013
Russia	269	221	Upper middle income	Early 2012	2009	Late 2012
Tajikistan	323	311	Lower middle income	Early 2013	2008	Late 2013
Total treatment	1033	1008				
Control group	# Sample 1st wave	# Sample 2nd wave	The WB income category	Year of entry to WTO	Year of 1st WBE Survey	Year of 2nd WBE Survey
Azerbaijan	309	348	Upper middle income	NA	2009	2013
Bosnia	334	347	Upper middle income	NA	2009	2013
Kosovo	156	190	Lower middle income	NA	2009	2013
Serbia	349	336	Upper middle income	NA	2009	2013
Total control	1148	1221				
Total samples	2181	2229				
% of treatment	47.36%	45.22%				
% of control	52.64%	54.78%				

Note Date of entry to the WTO is drawn from the WTO website

firms observed for each country in each wave of the survey.

The treatment group consists of 2041 observations, of which 1033 firms are observed in the first period, and 1008 firms are observed in the second period. Of the total 2369 observations in the control group, 1148 firms are observed in the first period, and 1221 firms are observed in the second wave of the survey.

Operationalization of Variables

We operationalize our dependent variable as export intensity, measured as a proportion of total export sales (direct and indirect export sales) to total sales in percent. The value of export intensity is bounded between 0 and 100. Therefore, we use Tobit regression that is designed to estimate the linear relationship between variables when there is left and right censoring of the dependent variable.

The first independent variable is a binary variable to indicate if observation comes from the first or the second period. We assign 0 to the first wave of the survey and 1 to the second wave of the survey. The second independent variable is a binary variable to separate the treatment group from the control group. We assign 0 to the control group and 1 to the treatment group. Again, the treatment group consists of four countries that join the WTO in the period between the first and the second survey, while the control group consists of four countries that remain as non-members of the WTO in the two waves of the survey.

We then construct a variable to capture the managerial perception of the domestic institutional environment. The construction of this variable takes several steps. First, we identify interview questions in the World Bank Enterprises survey that ask managers' perception of business regulation and other supporting institutions in their home country. We find six questions that ask, "to what degree is (a specific business-related regulation or institution in the home country) an obstacle to current business operations?" The responses are recorded on the Likert-scale between 0 and 4, where 0 = no obstacle, 1 = minor obstacle, 2 = moderate obstacle, 3 = major obstacle, 4 = very severe obstacle. The six business-related regulations or institutions of our interest are: (i) customs and trade regulation (ii) tax rate (iii) tax administration (iv) business licensing and permits (v) court/legal efficiency and (vi) labor regulations. We run factor analysis and Cronbach alpha test to check whether these items load into a single factor and satisfy convergent validity criteria. Table 2 presents the results of factor analysis and Cronbach alpha of the factor constructed from these six items.

Factor analysis shows that all items load into a single factor with the Cronbach's alpha of 0.742. This allows us to create the average perception of the domestic institutional environment for each

Table 2 Factor analysis on managers perception of institutional environment

Items	Factor 1 loadings
To what degree *customs and trade regulation* is an obstacle to business operation	0.451
To what degree *tax rate* is an obstacle to business operation	0.639
To what degree *tax administration* is an obstacle to business operation	0.691
To what degree *business licensing and permits* is an obstacle to business operation	0.566
To what degree *court/legal system* is an obstacle to business operation	0.530
To what degree *labor regulations* is an obstacle to business operation	0.488
Eigen value	1.929
Cronbach α	0.742

Note The minimum eigen value is set to 1, which results into single factor.

Table 3 Mean comparison for the perception of domestic institutional environment

Survey period = 1	Treatment	Control	Difference	*t*-stat
Positive perception on institutional environment	0.52	0.52	0.00	− 0.07
Survey period = 2				
Positive perception on institutional environment	0.50	0.51	− 0.01	0.63

Note The *t*-stats are not statistically significant.

observation/firm by taking the mean value across six items. If the average score of the perception of the domestic institutional environment is 0, then the firm has positive views on the institutional environment. On the contrary, if the average score of the perception of the institutional environment is 4, the firm is implied to have a negative perception of the domestic institutional environment. This implies that the perception of the domestic institutional environment gets worse if the average score of perception increases. Lastly, we create a binary variable from the average score of the perception of the domestic institutional environment. We assign the value 1 for observations that have the average score of the perception of the domestic institutional environment below the median (do not perceive the domestic institutional environment as an obstacle to business operations) and 0 for firms that have an average score of the perception of the domestic institutional environment above the median. In other words, the value of 1 reflects a positive perception of the domestic institutional environment, while value 0 reflects a less optimistic view of the domestic institutional environment. For robustness check, we use the firm-level average perception across various aspects of domestic institutions.

We realize that the home-country accession to the WTO may change the perception of the domestic institutional environment and thus create potential endogeneity between the accession to the WTO and the perception of the domestic institutional environment. We examine the possible changes in perception of the institutional environment by comparing the mean of the binary variable of the perceptual measure of institutional environment in the treatment and control group in two periods of the survey. We provide the results in Table 3.

The mean comparison using *t* test shows that no difference in the perception of domestic institutional environment between the treatment and control groups in both periods 1 and 2 of the surveys. In other words, we do not find statistically significant evidence suggesting a systematic difference in the positive perception of the domestic institutional environment between the treatment and control groups, either before or after the accession to the WTO.

To further allay the concern that the variation of firm internationalization between control and treatment group may be related to systematic differences in firm, industry, and country attributes, we include various firm-, industry-, and country-level control variables. Firm-level control variables are firm size, firm age, manager experience, international certification, sales-to-labor cost ratio, access to finance, foreign ownership, and government ownership. Firm size is measured as the natural log of the number of employees. Firm age is measured as the difference between the year of the survey and the year of firm establishment. Manager industry experience is measured as the number of years of top manager's industry

experience. International certification is measured as a binary variable to indicate whether a firm has international certification (=1) or not (=0). The sales-to-labor cost ratio is to measure the firm performance. This variable is in the natural log form. Access to finance is used to measure the obstacle in getting financing from external sources. The responses are recorded on a Likert-scale between 0 and 4, where 0 = no obstacle, 1 = minor obstacle, 2 = moderate obstacle, 3 = major obstacle, 4 = very severe obstacle. Foreign and government ownership are measured as the percentage of shares owned by foreigners (individuals or firms) and government, respectively.

Industry control variables are a set of binary variables to identify the industry category of the firm. These industry dummy variables can capture unobserved industry-specific factors. Lastly, we include country-level control variables that may affect firms' likelihood to export and the perception of domestic institutions. First, we control for the level of economic development by including the growth of gross domestic product (GDP) per capita. Second, we control for the quality of domestic trade regulations, measured as the natural log of a distance-to-frontier score of trade regulations of each country. Distance-to-frontier of trade regulations is taken from Ease of Doing Business indicators. We include the country-level score on the perception of the macroeconomic environment. The score of the macroeconomic environment ranges from 1 (low) to 7 (high). These data are taken from the World Economic Forum's Global Competitiveness Index. Another macro-level determinant of export is the exchange rate, which we control through the inclusion of the official PPP exchange rate (local currency unit to US Dollar). We also control for economic openness through foreign direct investment. Thus, we include foreign direct investment inflows, as well as outflows, as a percentage to GDP. Lastly, we control the quality of public services, policy formulation, and implementation at the country level by using the score of government effectiveness in enforcing regulations, taken from World Governance Indicators. The score of government effectiveness in enforcing regulations ranges from − 2.5 to 2.5 (best). Table 4 presents the descriptive statistics of all variables.

Econometric Specification

For the main analysis, we perform repeated cross-section difference-in-differences and the panel data difference-in-differences. In the repeated cross-section difference-in-differences, the units (in this case, firms) observed in the first and second period of surveys may be different. In panel data difference-in-differences, the observations are pure longitudinal. That is, the units observed in the first and second periods of the surveys are the same. As a result, panel data difference-in-differences contain

Table 4 Descriptive statistics of key variables

Variable	Obs	Mean	SD	Min	Max
Export intensity	4410	7.97	21.70	0.00	100.00
Post (1 = period 2; 0 = period 1)	4410	0.51	0.50	0.00	1.00
Treatment group	4410	0.46	0.50	0.00	1.00
Positive perception on domestic institutions	4410	0.51	0.50	0.00	1.00
Firm size	4410	3.32	1.41	0.00	10.54
Firm age	4410	17.81	17.84	1.00	174.00
Manager industry experience	4410	2.66	0.65	0.69	4.19
International certification	4410	0.22	0.42	0.00	1.00
Log of sales-to-labor cost ratio	4410	5.31	5.74	0.00	23.36
Access to finance	4410	1.38	1.30	0.00	4.00
Foreign ownership	4410	5.38	20.99	0.00	100.00
Government ownership	4410	1.33	8.60	0.00	98.00
Ease of trade across border	4410	49.83	22.79	2.83	79.22
Perception on macroeconomic env.	4410	4.42	0.86	2.63	6.05
GDP per-capita growth	4410	3.25	4.94	− 7.82	9.41
Exchange rate	4410	2.64	3.19	− 0.33	9.01
FDI inflows	4410	5.53	5.36	0.79	37.27
FDI outflows	4410	2.38	4.15	− 0.53	15.79
Government effectiveness	4410	− 0.51	0.33	− 1.07	0.16

smaller sets of data than the repeated cross-section difference-in-differences.

The econometric model for the repeated cross-section difference-in-differences estimator is as follows:

$$\begin{aligned} Y_{it} = {} & a\beta_0 + \beta_1 Post_t + \beta_2 Treatment_l \\ & + \beta_3 Post_t * Treatment_l + \beta_4 Positive\ perception_{it} \\ & + \beta_5 Post_t * Positive\ perception_{it} + \beta_6 Treatment_l \\ & * Positive\ perception_{it} + \beta_7 Post_t * Treatment_l \\ & * Positive\ perception_{it} + \gamma_1 \sum F_{it} + \gamma_2 \sum C_{lt} \\ & + I_t + \mu_{it} \end{aligned} \quad (1)$$

$_{i,l}$, and $_t$ represent firm, location, and time unit. Y_{it} denotes the natural log of export intensity as the dependent variable. F_{it} represents firm-level control variables, C_{lt} represents country-level control variables, and I_t denotes industry dummy variables. $Post_t$ is a binary variable with the value of 0 for the first wave of the survey and 1 for the second period of the survey. $Treatment_l$ is a binary variable with the value of 1 for firms from countries that join the WTO in the year between the first and second wave of the survey, while 0 is for firms from countries that did not join the WTO in the year between the first and second period of the survey. $Positive\ perception_{it}$ is a binary variable with the value of 1 if the manager of the firm has a positive perception of the domestic institutional environment and 0 otherwise. To test Hypothesis 1, we include the two-way interaction of $Post_t$*$Treatment_l$. To test Hypothesis 2, we include the three-way interaction $Post_t$*-$Treatment_l$* $Positive\ perception_{it}$. Hence, the coefficients of interest are $\beta_3$and β_7.

Furthermore, we also perform a panel data (pure longitudinal) difference-in-difference. This method requires a unit of analysis (firm) to be observed in both periods one and two. Therefore, the use of panel data difference-in-difference reduced the number of observations in our sample. The econometric model for the panel data (pure longitudinal) difference-in-differences estimator is as follows:

$$\begin{aligned} \Delta Y_i = {} & \alpha_0 + \alpha_1 Treatment_i + \alpha_2 \Delta Perception_{it} \\ & + \alpha_3 Treatment_l * \Delta Perception_{it} + \lambda_1 \sum \Delta F_i \\ & + \lambda_2 \sum \Delta C_l + \mu_i \end{aligned} \quad (2)$$

ΔY_i denotes the change of export intensity over two periods. ΔF_i and ΔC_i denote the change in the firm- and country-level control variables. $\Delta Perception_{it}$ denotes the change in the perception of domestic institutions. To test Hypothesis 1, we evaluate the coefficient of $Treatment_l$. To test Hypothesis 2, we evaluate the coefficient of interaction term $Treatment_l$* $Positive\ perception_{it}$. Hence, coefficients of interest are $\alpha_1$and α_2. We present the results from panel data difference-in-differences as robustness check.

To ensure the integrity of our result, we calculate the correlation coefficients for our variables, which are displayed in Table 5. There are high correlation coefficients among our country-level control variables. However, this multicollinearity among country-level variables (e.g., correlation between ease of trade regulations and FDI outflows, government effectiveness, and GDP per-capita growth) do not cause bias in estimated coefficients of our main explanatory variables.

RESULTS

We present the results from repeated cross-section difference-in-differences in Table 6. Column (1) in Table 6 shows the results when we include only $Post_t$ and $Treatment_l$ and their interaction term as independent variables. In this specification, the $Post_t$ is not significant ($\beta = -1.018$; $p = 0.306$), implying that there are no statistically significant differences in the export intensity across two different periods in the samples. The $Treatment_l$ is also not significant ($\beta = 0.235$; $p = 0.950$), suggesting that there are no differences in the export intensity across firms in the treatment and control groups. Further, the interaction between $Post_t$ and $Treatment_l$ is also not significant ($\beta = -0.315$; $p = 0.883$). This result implies that the average export intensity of firms in the treatment group in the second period of the survey is not significantly different from the average export intensity in the treatment group in the first period and also not significantly different from the average export intensity in the control group in the first and second periods. These results suggest that a country's accession to the WTO does not result in an increase in the export intensity of firms from that country. Column (2) in Table 6 shows the results when we add control variables to the baseline model in column 1. The interaction between $Post_t$ and $Treatment_l$ remains statistically not significant ($\beta = -1.421$; $p = 0.522$). In this model, the following control variables are statistically significant: firm size ($\beta = 2.542$; $p = 0.025$), firm age (β

Table 5 Correlation matrix

No	Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)	Export intensity	1.00									
(2)	Post (1 = period 2; 0 = period 1)	− 0.03	1.00								
(3)	Treatment group	− 0.01	− 0.02	1.00							
(4)	Positive perception on domestic institutions	− 0.07	− 0.01	0.00	1.00						
(5)	Firm size	0.19	− 0.11	0.11	− 0.07	1.00					
(6)	Firm age	0.05	− 0.08	− 0.02	− 0.01	0.40	1.00				
(7)	Manager industry experience	0.04	0.06	− 0.08	0.03	0.08	0.14	1.00			
(8)	International certification	0.15	0.00	− 0.10	− 0.05	0.34	0.16	0.02	1.00		
(9)	Log of sales-to-labor cost ratio	− 0.05	0.15	− 0.08	0.03	− 0.16	− 0.20	− 0.13	− 0.02	1.00	
(10)	Access to finance	0.02	− 0.10	− 0.05	− 0.28	0.06	0.10	0.01	0.01	− 0.11	1.00
(11)	Foreign ownership	0.14	− 0.04	0.01	− 0.04	0.18	0.01	− 0.04	0.14	0.00	− 0.06
(12)	Government ownership	0.03	− 0.09	− 0.01	0.01	0.16	0.19	0.02	0.06	− 0.04	0.05
(13)	Ease of trade across border	0.10	0.08	− 0.50	0.00	0.00	0.11	0.14	0.11	− 0.06	0.01
(14)	Perception on macroeconomic env.	− 0.05	0.15	− 0.17	− 0.02	0.19	0.10	0.02	0.00	− 0.01	0.00
(15)	GDP per-capita growth	− 0.06	0.28	0.18	0.00	− 0.30	− 0.25	− 0.07	− 0.18	0.10	− 0.12
(16)	Exchange rate	0.09	− 0.01	0.47	0.01	0.03	0.03	0.01	− 0.08	− 0.16	− 0.08
(17)	FDI inflows	− 0.04	− 0.27	0.27	0.00	− 0.10	− 0.09	− 0.06	− 0.06	0.00	− 0.05
(18)	FDI outflows	− 0.10	− 0.30	0.29	0.01	0.02	− 0.05	− 0.12	− 0.05	− 0.01	0.05
(19)	Government effectiveness	0.01	0.23	− 0.34	0.00	0.07	0.14	0.10	0.09	− 0.08	0.02

No	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
(1)								
(2)								
(3)								
(4)								
(5)								
(6)								
(7)								
(8)								
(9)								
(10)								
(11)	1.00							
(12)	− 0.01	1.00						
(13)	0.05	− 0.04	1.00					
(14)	− 0.03	− 0.01	0.15	1.00				
(15)	− 0.01	− 0.04	− 0.52	− 0.11	1.00			
(16)	0.10	− 0.02	0.07	− 0.10	0.13	1.00		
(17)	0.01	− 0.02	0.04	− 0.21	− 0.06	− 0.06	1.00	
(18)	− 0.03	0.06	− 0.73	− 0.35	0.33	− 0.25	0.19	1.00
(19)	0.03	− 0.04	0.78	0.17	− 0.49	0.05	0.20	− 0.52

Note Correlation coefficients greater than |0.3| are significant at 90% level of confidence

Table 6 Results from repeated cross-section difference-in-differences

DV: Export intensity (in %)	Coef.	Robust S.E.	$p > t$	Coef.	Robust S.E.	$p > t$	Coef.	Robust S.E.	$p > t$	Coef.	Robust S.E.	$p > t$
Post (1 = period 2; 0 = period 1)	− 1.018	(0.993)	0.306	0.596	(1.036)	0.565	− 0.413	(1.009)	0.683	1.709	(1.296)	0.188
Treatment group	0.235	(3.711)	0.950	− 1.362	(2.512)	0.588	1.640	(4.282)	0.702	0.588	(2.693)	0.827
Post × Treatment	− 0.315	(2.140)	0.883	− 1.421	(2.221)	0.522	− 2.644	(2.201)	0.230	− 3.736	(2.001)	0.062
Positive perception on institution							− 1.984	(0.788)	0.012	− 0.505	(0.832)	0.544
Post × Positive perception on dom. inst.							− 1.153	(0.859)	0.180	− 2.365	(1.009)	0.019
Treatment × Positive perception on dom. inst.							− 3.486	(2.038)	0.087	− 3.654	(1.465)	0.013
Post × Treatment × Positive perception on dom. inst.							4.295	(1.484)	0.004	4.419	(1.369)	0.001
Control variables												
Firm size				2.542	(1.134)	0.025				2.464	(1.125)	0.029
Firm age				− 0.063	(0.031)	0.043				− 0.061	(0.030)	0.043
Manager industry experience				0.533	(0.516)	0.302				0.579	(0.522)	0.268
International certification				2.890	(1.260)	0.022				2.752	(1.273)	0.031
Log of sales-to-labor cost ratio				− 0.043	(0.083)	0.601				− 0.044	(0.077)	0.571
Access to finance				0.166	(0.179)	0.356				− 0.105	(0.189)	0.578
Foreign ownership				0.090	(0.023)	0.000				0.088	(0.021)	0.000
Government ownership				0.042	(0.019)	0.028				0.046	(0.018)	0.014
Ease of trade across border				0.180	(0.041)	0.000				0.179	(0.041)	0.000
Perception on macroeconomic env.				− 3.277	(1.002)	0.001				− 3.301	(1.009)	0.001
GDP per-capita growth				0.276	(0.253)	0.276				0.266	(0.253)	0.294
Exchange rate				0.362	(0.355)	0.309				0.354	(0.355)	0.319
FDI inflows				0.122	(0.106)	0.254				0.108	(0.106)	0.310
FDI outflows				− 0.588	(0.330)	0.075				− 0.578	(0.335)	0.085
Government effectiveness				− 12.709	(3.438)	0.000				− 12.551	(3.426)	0.000
var(Export intensity)	470.54	(110.24)		401.12	(83.893)		467.54	(108.940)		399.41	(83.493)	
Number of observations	4410			4410			4410			4410		
Pseudo R^2		0.01%		1.78%				0.10%			1.83%	

Note We include binary variables of industry groups as control variables. However, for the sake of brevity, results for the industry groups are not presented. Treatment group consists of countries that accede to the World Trade Organization in the second wave of the survey.

Table 7 Robustness check 1: Panel data difference-in-differences

DV = change in export intensity (in percentage points)	Coef.	Robust S.E.	$p > t$	Coef.	Robust S.E.	$p > t$
Treatment	− 3.898	(4.435)	0.380	− 8.970	(1.135)	0.000
Change in perception on domestic institutions	− 4.789	(0.798)	0.000	− 5.179	(1.121)	0.000
Treatment × Change in perception on domestic institutions	4.741	(0.923)	0.000	3.485	(1.417)	0.014
Change in firm size				6.191	(1.309)	0.000
Change in firm age				0.061	(0.056)	0.281
Change in manager experience				1.679	(0.708)	0.018
Change in international certification				2.474	(2.242)	0.271
Change in sales-to-labor cost ratio				0.030	(0.366)	0.935
Change in access to finance				0.484	(0.485)	0.320
Change in foreign ownership				− 0.036	(0.026)	0.166
Change in government ownership				− 0.084	(0.122)	0.495
Change in ease of trade across border				− 0.383	(1.438)	0.790
Change in perception of macroeconomic env.				− 3.620	(8.019)	0.652
Change in GDP per capita growth				− 0.790	(1.339)	0.556
Change in exchange rate				3.501	(3.621)	0.334
Change in FDI inflows				− 0.562	(0.219)	0.011
Change in FDI outflows				− 0.127	(0.263)	0.631
Change in government effectiveness				− 12.146	(16.388)	0.459
var(change in export sales)	762.593	(283.39)		707.5	(292.51)	
Number of observations		490			490	
Pseudo R^2		0.21%			1.35%	

Note We use Tobit regression. As we use differencing method for panel data, we include only time variant variables in these regressions. The time invariant variables become zero for all observations in difference-in-differences method, and therefore are automatically omitted.

= − 0.063; p = 0.043), international certification (β = 2.890; p = 0.022), foreign ownership (β = 0.090; p = 0.000), government ownership (β = 0.042; p = 0.028), ease of trade across border (β = 0.180; p = 0.000), perception on macroeconomic environment (β = − 3.277; p = 0.001), FDI outflows (β = − 0.588; p = 0.075), and government effectiveness (β = − 12.709; p = 0.000)

Column (3) in Table 6 shows the results when we add *Positive perception*$_{it}$ and its interactions with *Post*$_t$ and *Treatment*$_I$ into the baseline model. In this specification, *Post*$_t$ remains statistically insignificant (β = − 0.413; p = 0.683). The variable *Treatment*$_I$ also remains statistically insignificant (β = 1.640; p = 0.702). However, the variable *Positive perception*$_{it}$ has negative coefficient and is significant in 95% level of confidence (β = − 1.984; p = 0.012). This result indicates firms with a positive perception of the domestic institutional environment on average have lower export intensity than firms with a less optimistic view of the domestic institutional environment. This result seems to be counter-intuitive, but a potential explanation is that developing economy firms with a greater degree of export intensity might have unpleasant experiences with domestic regulations and thus hold a pessimistic view of domestic institutions. The interaction between *Post*$_t$ and *Treatment*$_I$ is again not significant (β = − 2.644; p = 0.230), suggesting that the average export intensity of firms after the accession to the WTO is not significantly different from the average export intensity before the home country joins the WTO and is also not significantly different from the average export intensity of firms in countries that do not join the WTO. The three-way interaction between *Positive perception*$_{it}$, *Post*$_t$, and *Treatment*$_I$ has a positive coefficient, significant at the 99% confidence level (β = 4.295; p = 0.004). This finding provides support for Hypothesis 2, which we examine in more detail.

In column (4), we include all control variables to the model presented in column (2). The key variable of interest is the three-way interaction between *Positive perception*$_{it}$, *Post*$_t$, and *Treatment*$_I$. This interaction term has a positive coefficient, significant in a 99% confidence level (β = 4.361; p = 0.000). The positive coefficient of this three-way interaction term indicates that change over time of export intensity for firms that perceive domestic institutional environment positively in the countries that join the WTO is greater than change over time of export intensity for (i) firms that perceive the domestic institutional environment as an obstacle in countries that join the WTO and (ii) firms in countries that do not accede to the WTO.

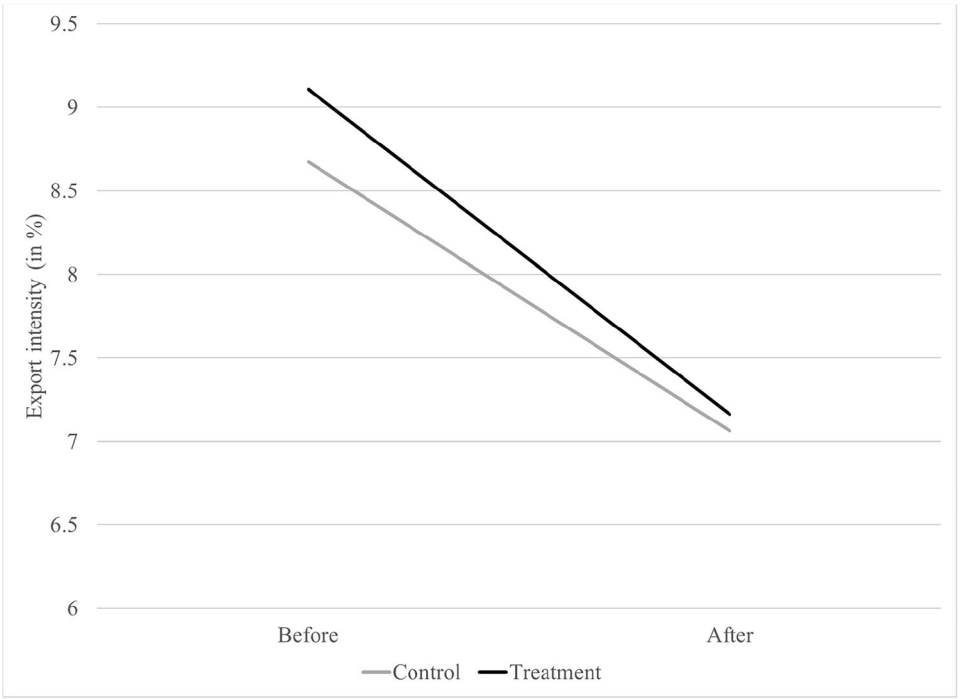

Figure 2 The average of export intensity in the first and second wave of surveys. *Note* The *y*-axis is the predicted export sales (in %). We calculate this variable using the margin command in STATA. We use the result presented in column (3) of Table 6 when calculating the predicted value of *y*.

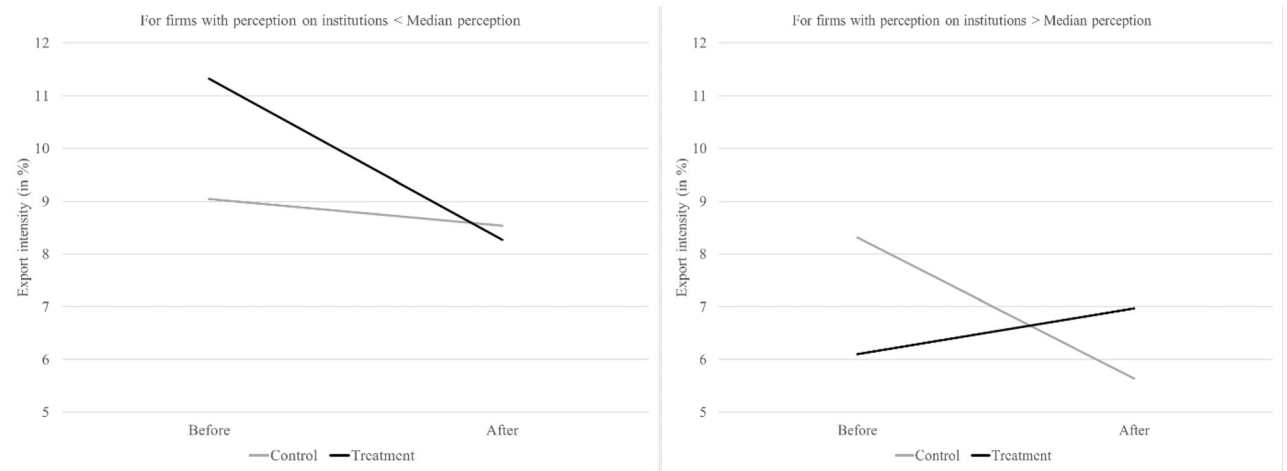

Figure 3 The average of export intensity in the first and second wave of surveys and by the perception of institutional environment. *Note*: The *y*-axis is the predicted export intensity (in %). We calculate this variable using the margin command in STATA. We use the result presented in column (3) of Table 6 when calculating the predicted value of *y*. The *left panel* shows the figure for firms with perceptions on domestic institutions lower than median perception, while the *right panel* shows the figure for firms with perceptions on domestic institutions greater than median perception.

This finding indicates support for the second hypothesis that firms whose managers have a positive perception of the domestic institutional environment respond to the WTO accession by increasing export intensity, while firms whose managers do not have a positive perception of the domestic institutional environment do not increase their export intensity. It is also important to note that the interaction term between $Post_{t,}$ and $Treatment_{I.}$ has a negative coefficient that is statistically significant at a 90% confidence level ($\beta = -3.736$; $p = 0.062$). This result indicates the possibility that

Table 8 Robustness check 2: Continuous measure of perception on domestic institutions

DV: Export intensity (in %)	Coef.	Robust S.E.	$p > t$	Coef.	Robust S.E.	$p > t$
Post (1 = period 2; 0 = period 1)	1.590	(1.974)	0.421	− 3.271	(1.174)	0.005
Treatment group	− 0.346	(4.697)	0.941	7.177	(2.193)	0.001
Post × Treatment	− 5.164	(3.264)	0.114	− 8.658	(1.378)	0.000
Perception on domestic institutions	− 1.502	(0.432)	0.001	− 0.854	(0.471)	0.070
Post × Perception on domestic institutions	− 0.713	(0.799)	0.373	− 0.199	(0.463)	0.668
Treatment × Perception on domestic institutions	0.035	(0.715)	0.961	− 0.562	(0.734)	0.445
Post × Treatment × Perception on domestic institutions	1.647	(0.894)	0.066	1.003	(0.589)	0.089
Control variables						
Firm size				2.288	(1.078)	0.034
Firm age				− 0.051	(0.037)	0.174
Manager industry experience				0.500	(0.508)	0.325
International certification				3.018	(1.240)	0.015
Log of sales-to-labor cost ratio				− 0.065	(0.059)	0.276
Access to finance				0.030	(0.278)	0.916
Foreign ownership				0.074	(0.021)	0.000
Government ownership				0.073	(0.033)	0.031
Ease of trade across border				− 0.172	(0.051)	0.001
Perception on macroeconomic env.				− 1.215	(0.847)	0.152
GDP per-capita growth				0.920	(0.189)	0.000
Exchange rate				0.124	(0.232)	0.593
FDI inflows				− 0.202	(0.116)	0.084
FDI outflows				− 1.227	(0.221)	0.000
Government effectiveness				− 16.947	(4.217)	0.000
var(Export sales)	457.25	(111.002)		394.81	(85.603)	
Number of observations	4410			4410		
Pseudo R^2	0.02%			1.81%		

Note We include binary variables of industry groups as control variables. However, for the sake of brevity results for the industry groups are not presented.

the average export intensity drops after the accession to the WTO. This finding may imply that, at least in the short run, an increased uncertainty following the accession to the WTO may outweigh its potential benefits and thus prevent a positive change in firms' export intensity.

To facilitate the understanding of our findings, we plot the predicted marginal effect of two-way and three-way interaction terms in Eq. (1) in Figures 2 and 3, respectively. Figure 2 depicts the difference in export intensity between the control and treatment groups over the two periods. As shown in Figure 2, the average export intensity declines over time for both treatment and control groups. Regression of Eq. (1) shows no significant change differences in export intensity for both treatment and control groups in both periods. This again indicates the lack of support for the first hypothesis that the WTO accession increases the export intensity of the firm.

Figure 3 depicts the three-way interaction effect. The first graph in Figure 3 plots the change over time of export intensity for firms whose perception of the domestic institutional environment is below the average perception. It shows that, for both firms in the treatment and control group, the average export intensity declines. Interestingly, the slope of the curve for the treatment group is greater than that of the control group. The second graph in Figure 3 plots the change over time of export intensity for firms whose perception of the domestic institutional environment is above the average perception. It shows that the average export intensity for firms in the control group declines, while the average export intensity for firms in countries that join the WTO increases. Hence, firms that perceive the domestic institutional environment positively in the countries that join the WTO are the only group that shows a positive change in the export intensity. This finding reveals the importance of managerial perception of the domestic institutional environment. Managers who perceive the domestic institutional environment as an obstacle to their business operations react suboptimally to positive institutional change, while managers with a positive perception of domestic

Table 9 Robustness check 3: Sub-sample of exporting firms only

DV: Export intensity (in %)	Coef.	Robust S.E.	$p > t$	Coef.	Robust S.E.	$p > t$
Post (1 = period 2; 0 = period 1)	2.390	(2.591)	0.357	− 9.696	(3.544)	0.006
Treatment group	17.629	(16.283)	0.279	31.749	(10.343)	0.002
Post × Treatment	− 12.762	(3.447)	0.000	− 23.540	(13.192)	0.075
Positive perception on institution	0.707	(1.832)	0.700	4.692	(2.331)	0.044
Post × Positive perception on dom. inst.	− 2.875	(3.011)	0.340	− 6.078	(2.398)	0.011
Treatment × Positive perception on dom. inst.	− 13.786	(3.779)	0.000	− 8.395	(4.432)	0.059
Post × Treatment × Positive perception on dom. inst.	15.900	(6.257)	0.011	8.084	(4.960)	0.104
Control variables						
Firm size				2.800	(1.596)	0.080
Firm age				− 0.151	(0.069)	0.029
Manager industry experience				− 1.004	(1.389)	0.470
International certification				− 2.816	(2.598)	0.279
Log of sales-to-labor cost ratio				− 0.122	(0.180)	0.499
Access to finance				0.496	(1.184)	0.675
Foreign ownership				0.092	(0.033)	0.006
Government ownership				0.174	(0.084)	0.039
Ease of trade across border				− 0.246	(0.283)	0.386
Perception on macroeconomic env.				− 7.113	(5.001)	0.155
GDP per-capita growth				3.239	(0.501)	0.000
Exchange rate				− 0.595	(1.002)	0.553
FDI inflows				− 0.657	(0.488)	0.179
FDI outflows				− 3.531	(1.015)	0.001
Government effectiveness				− 20.691	(19.564)	0.291
var(Export sales)						
Number of observations	1080.99	(158.174)		816.44	(97.958)	
Pseudo R^2		948			948	
		0.03%			3.13%	

Note We include binary variables of industry groups as control variables. However, for the sake of brevity results for the industry groups are not presented.

institutional environment do change their behavior following the institutional change.

Robustness Checks

Panel data difference-in-differences estimator

We perform additional analysis using a panel data difference-in-differences estimator. Again, the main difference between panel data difference-in-differences and the repeated cross-section difference-in-differences is that the former observes the same firms over the two periods. As a result, the number of observations drops from 4410 to 534. The results for the panel data difference-in-differences estimator are presented in

Column (1) of Table 7 presents the results from Eq. (2) when we include treatment variable to measure the accession to the WTO and the change in perception of domestic institutions as well as their interaction. The variable $Treatment_i$ has negative coefficient but is not statistically significant ($\beta = -3.898$; $p = 0.380$). This result means that no significant difference in the change in export intensity for firms in the countries that enter the WTO and the change in export intensity for firms in the countries that do not join the WTO. This finding does not support our first hypothesis. The variable of change in perception of the institutional environment is statistically significant at a 99% confidence level, and the coefficient is negative ($\beta = -4.789$; $p = 0.000$). The interaction between $Treatment_i$ and $Perception_{it}$ has a positive coefficient and is statistically significant at a 99% confidence level ($\beta = 4.741$; $p = 0.000$). This result provides support to our second hypothesis that positive perception of the domestic institutional environment positively moderates the impact of the WTO accession on the firm's export intensity. Column (2) of Table 7 displays the result when we add all control variables to the baseline model. The results in this specification are qualitatively similar to the results in the baseline model.

Using a continuous measure of perception of domestic institutions

As an alternative to the binary measure (positive vs. non-positive), we create a continuous measure of domestic institutional perception. The continuous measure of institutions' perception is an average of the reverse score (4 = good perception of to 0 = institutions as a major obstacle) over various aspects of domestic institutions. The result of this robustness check is presented in Table 8. The interaction between $Post_t$ and $Treatment_I$ is again not significant ($\beta = -5.164$; $p = 0.114$), suggesting that the average export intensity of firms after the accession to the WTO is not significantly different from the average export intensity before the home country joins the WTO and is also not significantly different from the average export intensity of firms in countries that do not join the WTO. The three-way interaction between $Perception_{it}$, $Post_{t,}$ and $Treatment_I$ has a positive coefficient, significant at the 90% confidence level ($\beta = 1.647$; $p = 0.066$). Column 2 shows the results when we include all control variables. Again, the interaction between $Post_t$ and $Treatment_I$ is negative, but is now statistically significant at 99% ($\beta = -8.658$; $p = 0.000$). However, Hypothesis 1 is again not supported. The three-way interaction between $Perception_{it}$, $Post_{t,}$ and $Treatment_I$ has a positive coefficient, significant at the 90% confidence level ($\beta = 1.003$; $p = 0.089$). Thus, our Hypothesis 2 is again supported.

Sub-sample of exporting firms

Melitz (2003) found that only more productive firms switch to exporting after the reduction in trade costs. Therefore, one would argue that firms in import-competing industries may not start exporting after the WTO accession because these firms do not have an advantage in foreign markets. To account for this argument, we perform another robustness check, in which we run regression in the sub-sample of exporting firms only. Results for the regression are presented in Table 9. As we use exporting firms only, the sample drops to only 948 observations. Results in column 1 of Table 9 show that the interaction between $Post_t$ and $Treatment_I$ is negative and statistically significant at 99% ($\beta = -12.762$; $p = 0.000$). This finding again contradicts our Hypothesis 1. Thus, we do not find evidence that firms increase their export propensity after the country's accession to the WTO. The three-way interaction between $Perception_{it}$, $Post_{t,}$ and $Treatment_I$ has a positive coefficient, significant at the 95% confidence level ($\beta = 15.900$; $p = 0.011$). Thus, our Hypothesis 2 is supported. Column 2 of Table 9 shows the regression result when we include all control variables. The interaction between $Post_t$ and $Treatment_I$ is negative, and statistically significant at 90% ($\beta = -23.540$; $p = 0.075$). The three-way interaction between $Perception_{it}$, $Post_{t,}$ and $Treatment_I$ remains positive, but the statistical significance drops to the 90% confidence level ($\beta = 8.084$; $p = 0.104$). The p value indicates that there is a 10.4% probability that the effect of the three-way interaction term on the export sales is not positive.

DISCUSSION AND CONCLUSION

North (1990) argued that institutions lower the uncertainty and risk inherent in transactions among economic actors. By doing so, institutions support the economy by incentivizing productivity and innovation. In developing countries, however, domestic institutions are often weak and thus fail to protect property rights and, as a result, discourage economic transactions. Supranational institutions can fill such voids in domestic institutions. Supranational institutions can establish the rules of the game at the global level, and by doing so, reduce transaction costs. Supranational institutions can also provide access to the required resources for entrepreneurs from countries with weak institutional support. Hence, supranational institutions can be the missing piece to explain the internationalization of firms from the weak institutional environment. In this study, we examine the role of the WTO in facilitating developing country firms' international expansion through exporting. We first hypothesize that firms from countries that accede to the WTO experience a higher increase in export intensity than firms from countries that do not accede to the WTO as the accession process demand the national government to reduce the barriers of trade as well as to improve the transparency of trade policies.

The significant contribution of the present study is in establishing the role of agency in shaping a firm's reaction to the external environment. We submit that the individual interpretation of the environment (positive vs. negative) and its subsequent framing are relevant in how decision-makers, especially in emerging and planned economies, react to institutional changes (Cai, Meng, Chakraborty, 2021; Spicer et al., 2000). Specifically, we argue that the degree to which a company changes its strategy after accession to a supranational

institution critically depends on how managers perceive the domestic institutional capabilities, especially when such accession triggers changes in the institutional environment. Building on the notion of threat rigidity from behavioral views of decision-making (Staw et al., 1981), we argue that firms whose managers perceive domestic institutions as obstacles to business operations are more likely to pursue loss avoidance when facing uncertainty caused by policy change and as a result, these firms do not react to home-country accession to the WTO. In contrast, firms whose managers perceive domestic institutions positively are more likely to take the opportunity to expand internationally when the home country accedes to the WTO. This theoretical argument and empirical evidence provide a new form of firm heterogeneity that should be considered in the trade policy debate (Van Assche, 2018).

Variation in the date of entry to the WTO provides the opportunity to test our hypotheses. We perform a repeated cross-section difference-in-differences test to examine whether accession to the WTO significantly increases firm foreign sales relative to firms from countries that do not accede to the WTO. The results do not support our baseline hypothesis that accession to the WTO significantly increases the export intensity of the firm. We do find evidence, however, that in the countries that join the WTO, firms whose managers perceive domestic institutions positively have a greater average export intensity than firms whose managers perceive domestic institutions as an obstacle to business operations. The finding also indicates that firms that perceive domestic institutions positively in the countries that join the WTO show a greater positive change in the average of export intensity than all firms in countries that do not join the WTO. Our finding helps to clarify the managers' cognitive mechanism through which institutional change influences a firm's strategic choice and performance.

Our study has important policy implications. The benefits of membership for individual countries in the World Trade Organization (WTO) have been debated in the international trade and economics literature over the last 15 years (Engelbrecht & Pearce, 2007; Goldstein et al., 2007; Rose, 2004a; Subramanian & Wei, 2007) and the results have been mixed. Our findings suggest that the effectiveness of WTO in encouraging global trade also depends on how agents (or managers) perceive the domestic institutional environment. A negative perception of the domestic institutional environment may prevent firms from participating in global trade, and limits the effect of the WTO agreements on aggregate trade. Thus, it is important for policymakers to complement the implementation of WTO agreements with the reform in other regulatory areas, such as taxation, ease of doing business, and contract enforcement. Moreover, such reform in domestic trade policy and other regulatory areas should be communicated to managers so that they respond optimally to positive change in the institutional environment. One way to disseminate the positive change in trade policy and other regulatory areas is through training or seminars for private sectors. The WTO website indicates that their training or seminar programs primarily target government officials in developing economies. It is essential for the WTO and the governments of developing economies to increase their reach to private sectors so that managers may respond rationally to positive change brought by the accession to the WTO.

Our findings on the WTO accession can be extended to the bilateral agreements or other regional trade agreements. The difficulty in negotiating multilateral agreements has motivated the establishment of a series of bilateral trade agreements (Amadeo, 2020). Our research shows that the success of trade agreements in encouraging cross-border trade depends on the business leaders' perception of domestic institutions. Thus, accounting for business leaders' opinion matter in creating an effective bilateral trade agreement. Second, this study also has implications for regional trade agreements. The establishment of regional trade blocs has reached an unprecedented level in the last two decades. The total number of regional trade agreements that follow the WTO legal provision currently in force is 481[3]. Despite the sheer number of regional trade agreements, some experts believe that the pro-market reform in emerging economies is a more important contributor to the post-war global trade expansion (Grossman, 2016). This study echoes such a view. Our findings suggest that the quality of domestic institutions, as well as the trust of important actors in those institutions, are necessary conditions for the success of these regional trade agreements. We suggest the domestic institutional reforms that are communicated well to managers can increase the trust in domestic institutions, which in turn encourages managers to react rationally and positively to the formation of regional trade agreements.

Nevertheless, our study has several limitations. First, the focus of this study is on the costs and benefits of WTO accession and not on the real power of WTO agreements in influencing export and import activity. Future studies can investigate how different accession processes may result in the variation of WTO agreements, and eventually how such WTO agreements may influence firm-level trade. Second, this study does not look at the impact of the creation of free trade agreements after the WTO accession on the firm's strategic decisions. WTO might open doors for multiple trade agreements that may have a great impact on firms than the WTO accession in itself. Future studies can examine how the creation of trade agreements following the WTO accession can have an impact on a firm's strategic decisions. Third, future studies can also examine the impact of WTO accession or the WTO agreements on other firm-level strategic decisions such as FDI, licensing, and innovation activities.

To conclude, supranational institutions, such as the WTO play an important role in the strategic decision that firms make. However, the full value of such institutions can only be realized if the managers are aware and positively disposed to engage with these institutions.

NOTES

[1]See the discussion on Russia and Kyrgyzstan in the next sub-section as an example of how the new members may not be able to adjust to the WTO agreements quickly and as a result create uncertainty.

[2]Data on entry data are available on the WTO website (https://www.wto.org/english/thewto_e/acc_e/acc_e.htm)

[3]http://rtais.wto.org/UI/publicsummarytable.aspx

REFERENCES

Allee, T. L., & Scalera, J. E. 2012. The divergent effects of joining international organizations: Trade gains and the rigors of WTO accession. *International Organization*, 66(2): 243–276.

Amadeo, K. 2020. Bilateral trade agreement with their pros and cons. *The Balance*. https://www.thebalance.com/what-are-bilateral-trade-agreements-pros-cons-and-list-3305911 Accessed 25 March 2021.

Bach, D., & Newman, A. L. 2010. Transgovernmental networks and domestic policy convergence: Evidence from insider trading regulation. *International Organization*, 64(3): 505–528.

Bagwell, K., & Staiger, R. W. 1999. An economic theory of GATT. *American Economic Review*, 89(1): 215–248.

Bagwell, K., & Staiger, R. W. 2002. Economic theory and the interpretation of GATT/WTO. *The American Economist*, 46(2): 3–19.

Bahl, M., Lahiri, S., & Mukherjee, D. 2021. Managing internationalization and innovation tradeoffs in entrepreneurial firms: Evidence from transition economies. *Journal of World Business*, 56(1): 101150.

Cai, H., Meng, Y., & Chakraborty, S. 2021. Migrants and exports: Decomposing the link. *Journal of World Business*, 56(2): 101166.

Chattopadhyay, P., Glick, W. H., & Huber, G. P. 2001. Organizational actions in response to threats and opportunities. *Academy of Management Journal*, 44(5): 937–955.

Contractor, F., Yang, Y., & Gaur, A. S. 2016. Firm-specific intangible assets and subsidiary profitability: The moderating role of distance, ownership strategy and subsidiary experience. *Journal of World Business*, 51(6): 950–964.

Cuervo-Cazurra, A., Gaur, A., & Singh, D. 2019. Pro-market institutions and global strategy: The pendulum of pro-market reforms and reversals. *Journal of International Business Studies*, 50(4): 598–632.

Cuervo-Cazurra, A., Doz, Y., & Gaur, A. 2020. Skepticism of globalization and global strategy: Increasing regulations and countervailing strategies. *Global Strategy Journal*, 10(1): 3–31.

Dadush, U., & Osakwe, C. 2015. *WTO accessions and trade multilateralism*. Cambridge: Cambridge University Press.

Delios, A. 2017. The death and rebirth (?) of international business research. *Journal of Management Studies*, 54(3): 391–397.

Delios, A., Gaur, A., & Makino, S. 2008. The timing of international expansion: Information, rivalry and imitation among Japanese firms, 1980–2002. *Journal of Management Studies*, 45(1): 169–195.

Djankov, S., Freund, C., & Pham, C. S. 2010. Trading on time. *The Review of Economics and Statistics*, 92(1): 166–173.

Dutton, J. E., & Jackson, S. E. 1987. Categorizing strategic issues: Links to organizational action. *Academy of Management Review*, 12(1): 76–90.

Engelbrecht, H.-J., & Pearce, C. 2007. The GATT/WTO has promised trade, but only in capital-intensive commodities. *Applied Economics*, 39(12): 1573–1581.

Evenett, S., & Braga, C. A. P. 2005. WTO accession: Lessons from experience. *Trade note 22, International Trade Department*, http://documents1.worldbank.org/curated/en/831891468330043210/text/331270TradeNote22.txt Accessed by 12 April 2021.

Gaur, A., & Lu, J. W. 2007. Ownership strategies and survival of foreign subsidiaries: Impacts of institutional distance and experience. *Journal of Management*, 33(1): 84–110.

Gaur, A. S., Kumar, V., & Singh, D. 2014. Institutions, resources, and internationalization of emerging economy firms. *Journal of World Business*, 49(1): 12–20.

George, E., Chattopadhyay, P., Sitkin, S. B., & Barden, J. 2006. Cognitive underpinnings of institutional persistence and change: A framing perspective. *Academy of Management Review*, 31(2): 347–365.

Goldstein, J. L., Rivers, D., & Tomz, M. 2007. Institutions in international relations: Understanding the effects of GATT and WTO on world trade. *International Organization*, 61(1): 37–67.

Gowa, J., & Kim, S. Y. 2005. An exclusive country club: The effects of the GATT on trade, 1950–94. *World Politics*, 57(4): 453–478.
Grossman, G. 2016. What trade deals are good for? *Harvard Business Review*. https://hbr.org/2016/05/what-trade-deals-are-good-for Accessed 25 March 2021.
Hill, C. 2008. *International business: Competing in the global marketplace*. New York: McGraw Hill.
Hindley, B. 2008. *Kazakhstan and the world economy: An assessment of Kazakhstan's trade policy and pending accession to the WTO*. European Centre for International Political Economy. https://ecipe.org/publications/kazakhstan-and-the-world-economy-an-assessment-of-kazakhstan2019s-trade-policy-and-pending-accession-to-the-wto/ Accessed 12 April 2021.
Ingram, P., Robinson, J., & Busch, M. L. 2005. The intergovernmental network of world trade: IGO connectedness, governance, and embeddedness. *American Journal of Sociology*, 111(3): 824–858.
Jandhyala, S., & Phene, A. 2015. The role of intergovernmental organizations in cross-border knowledge transfer and innovation. *Administrative Science Quarterly*, 60(4): 712–743.
Li, J., Liu, B., & Qian, G. 2019. The belt and road initiative, cultural friction and ethnicity: Their effects on the export performance of SMEs in China. *Journal of World Business*, 54(4): 350–359.
Li, L. Y. 2010. Factors that reduce rigid product adaptation decisions: The case of exporting firms in China. *Industrial Marketing Management*, 39(4): 531–537.
Malhotra, S., & Gaur, A. S. 2014. Spatial geography and control in foreign acquisitions. *Journal of International Business Studies*, 45(2): 191–210.
Mansfield, E. D., & Reinhardt, E. 2008. International institutions and the volatility of international trade. *International Organization*, 62(4): 621–652.
Mearsheimer, J. J. 1994. The false promise of international institutions. *International Security*, 19(3): 5–49.
Melitz, M. J. 2003. The impact of trade on intra-industry reallocations and aggregate industry productivity. *Econometrica*, 71(6): 1695–1725.
Michalopoulos, C. 1999. The integration of transition economies into the world trading system. *The World Bank*. https://doi.org/10.1596/1813-9450-2182Accessed25March.
Mukherjee, D., Makarius, E. E., & Stevens, C. E. 2018. Business group reputation and affiliates' internationalization strategies. *Journal of World Business*, 53(2): 93–103.
Nuruzzaman, N., Singh, D., & Gaur, A. S. 2020. Institutional support, hazards, and internationalization of emerging market firms. *Global Strategy Journal*, 10(2): 361–385.
Nuruzzaman, N., Singh, D., & Pattnaik, C. 2019. Competing to be innovation: Foreign competition and imitative innovation in emerging economy firms. *International Business Review*, 28(5): 101490.
North, D. C. 1990. *Institutions, Institutional change and economic performance*. Cambridge: Cambridge University Press.
Olabisi, M. 2019. Bridging the gap in international trade: Participation in the New York convention on arbitration. *Journal of International Business Policy*, 2(1): 86–109.
Pauwelyn, J. 2001. The role of public international law in the WTO: How far can we go? *American Journal of International Law*, 95(3): 535–578.
Rose, A. 2004a. Do we really know that the WTO increases trade? *The American Economic Review*, 94(1): 98–114.
Rose, A. 2004b. Do WTO members have more liberal trade policy? *Journal of International Economics*, 63(2): 209–235.
Singh, D., & Delios, A. 2017. Corporate governance, board networks and growth in domestic and international markets: Evidence from India. *Journal of World Business*, 52(5): 615–627.
Shinkle, G. A., & Kriauciunas, A. P. 2010. Institutions, size and age in transition economies: Implications for export growth. *Journal of International Business Studies*, 41(2): 267–286.
Simon, H. 1986. Rationality in psychology and economics. *Journal of Business*, 59(4): 209–224.
Spicer, A., McDermott, G. A., & Kogut, B. 2000. Entrepreneurship and privatization in Central Europe: The tenuous balance between destruction and creation. *Academy of Management Review*, 25(3): 630–649.
Staw, B. M., Sandelands, L. E., & Dutton, J. E. 1981. Threat rigidity effects in organizational behavior: A multilevel analysis. *Administrative Science Quarterly*, 26(4): 501–524.
Steinberg, R. H. 2002. In the shadow of law or power? Consensus-based bargaining and outcomes in the GATT/WTO. *International Organization*, 56(2): 339–374.
Subramanian, A., & Wei, S.-J. 2007. The WTO promotes trade, strongly but unevenly. *Journal of International Economics*, 72(1): 151–175.
Taylor, M. Z. 2006. *The political economy of technological innovation: A change in the debate Unpublished PhD dissertation*. Cambridge: Massachusetts Institute of Technology.
The United States Trade Representative. 2014. Report on Russia's implementation of the WTO agreement. https://ustr.gov/sites/default/files/Russia-2014-WTO-Implementation-Report-FINAL.12.15.14.pdf Accessed 25 March 2021
Thornton, P. H., Ocasio, W., & Lounsbury, M. 2012. *The institutional logics perspective: A new approach to culture, structure, and process*. Oxford: Oxford University Press.
Van Assche, A. 2018. From the editor: Steering a policy turn in international business – opportunities and challenges. *Journal of International Business Policy*, 1(3–4): 117–127.
World Trade Organization. 2015. Understanding the WTO. https://www.wto.org/english/thewto_e/whatis_e/tif_e/understanding_e.pdf Accessed 25 March 2021.
World Trade Organization. 2017. WTO Accessions 2017: Annual Report by the Director General. https://www.wto.org/english/thewto_e/acc_e/dgreport_2017_e.pdf Accessed 25 March 2021.
Yu, Y., & Lindsay, V. 2016. Export commitment and the global financial crisis: Perspectives from the New Zealand wine industry. *Journal of Small Business Management*, 54(2): 771–797.

ABOUT THE AUTHORS

N. Nuruzzaman is an Assistant Professor at the University of Manchester. He has a PhD from Rutgers University. His research interests are in the areas of global innovation, trade and investment in and out of emerging economies, and responsible business practices in the global context.

Ajai Gaur is a Professor at Rutgers University. He has a PhD from National University of Singapore. Ajai is a Fellow of the Academy of International Business and currently serves as the Editor-in-Chief of Journal of World Business. In his research, Ajai studies the distinct institutional influences on firms' growth strategies in different contexts.

Rakesh B. Sambharya (Ph.D., Temple University) is a Professor of Management and International Business at the School of Business, Rutgers

University - Camden. His research interests are in the areas of global strategies, international competitiveness, corporate social responsibility, Japanese management, foreign direct investment and corruption, innovation, international and product diversification, and composition of top management teams.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Accepted by Ari Van Assche, Deputy Editor, 9 April 2021. This article has been with the authors for four revisions.