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EVIDENCE FROM AN EU-MANDATED
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THE POLITICS OF TRADE PROTECTION: EVIDENCE FROM AN EU-MANDATED TARIff LIBERALIZATION IN MOROCCO[1]

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Abstract
Although non-tariff measures (NTMs) have surpassed tariffs as the most prevalent instrument of trade protection globally, our knowledge of what drives these NTMs is extremely limited. This paper sheds light on the political determinants of non-tariff protection using a rich empirical setting in Morocco. Taking advantage of a bilateral EU-Morocco trade agreement that resulted in an across the board tariff cut and a subsequent rise in NTMs, we use a difference-in-differences regression framework to show that sectors with close prior political connections to the royal family received disproportionately higher levels of non-tariff protection than unconnected sectors. We also demonstrate that, in the wake of the EU-induced tariff cut, connected sectors were mainly compensated through technical barriers to trade that depend on administrative oversight and are vulnerable to political influence.
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1 Introduction

With applied tariff rates falling by 66 percent since 1996, developing countries have witnessed a dramatic reduction in tariff barriers over the last two decades.[1] As tariff levels fell to a historic low, non-tariff measures (NTMs) have emerged as a potent substitute to become the most dominant form of trade protection today. NTMs are a broad set of policies, such as restrictions on hormones in meat products, labelling requirements or pre-shipment inspections, that can have an economic effect on the prices and quantities of internationally traded goods.[2] While the intent and impact of tariffs are clear and tangible, the effects of NTMs are more difficult to analyze. Unlike tariffs, NTMs can be imposed without an obvious protectionist intent and for legitimate reasons such as environmental, health and safety considerations. Their introduction is also linked with greater harmonization of trade standards triggered by international trade agreements.

Recent evidence has, however, begun to establish that NTMs can cause substantial trade frictions. A recent study demonstrated that NTMs added an average of 87% to the trade restrictiveness imposed by tariffs, and for almost 50% of countries the restrictive impact of NTMs on trade is higher than that of tariffs (Kee, Nicita, and Olarreaga, 2009). A more systematic analysis of the impact of NTMs has so far been hindered by the absence of credible and comparable information on laws and regulations that define these non-tariff measures. Using newly compiled and fine-grained data on NTMs, a recent report has tried to uncover the "unseen impact of non-tariff measures" and showed that they impose significant trade costs in developing countries (World Bank and UNCTAD, 2018).

How can NTMs that are sometimes introduced for supposedly non-discriminatory objectives end up causing trade frictions and undermine market access? One reason is that "the effects of NTMs are largely dependent not only on NTMs per se, but also on implementation procedures and administrative mechanisms" (UNCTAD, 2012b). NTMs can prove complex and burdensome for firms to conform, and for governments to implement. Inconsistent and selective enforcement can increase the costs of compliance for firms that lack both the capacity and resources to meet these trade requirements.[3]. This can cause a disjunction between the *de jure* intent and *de facto* practice along the lines demonstrated by Hallward-Driemeier and Pritchett (2015) in their work on World Banks Doing Business indicators. The gap between intent and practice can be especially large in countries that suffer from weak governance capacity and a

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[1]Applied tariff rate (weighted mean for all products) for low and middle-income countries from the World Bank.

[2]See (UNCTAD, 2012a) for a full classification of Non-Tariff Measures.

[3]Firms in developing countries, especially small and medium enterprises (SMEs), are shown to find these trade regulations especially burdensome (UNCTAD, 2012b)

discretionary enforcement environment. In such institutional contexts, even the most innocuous rules can become "deals" that privilege politically connected businesses.

This raises an important question for the political economy of trade policy. Can non-tariff protection in developing countries be considered as endogenous and dependent on institutional and political determinants similar to those governing tariff protection? Specifically, can the growing usage of NTMs be explained in part by the interests of politically connected actors looking for substitutes in the wake of externally-induced tariff liberalization? To evaluate this claim, we use a major shock to Morocco's trade regime that resulted from the country's Association Agreement with the European Union (EU) that came into force in 2000. The Agreement was driven by geo-political objectives, with the main impetus coming from the EU attempting to link "security and stability in the Mediterranean" with trade cooperation as part of its Barcelona process. The Agreement triggered an across-the-board tariff cut and was followed by a wave of non-tariff measures.

To explore the politics of this policy instrument substitution, we set up a difference-in-differences (DID) analysis and empirically examine whether sectors with greater prior exposure to politically connected businesses were more likely to receive higher NTM protection after the EU Agreement. To conduct this analysis, we constructed a novel dataset providing fine-grained information on the presence of politically connected businesses in all manufacturing activities classified along the four-digit ISIC sectors. In the most extensive exercise carried out for Morocco to date, we mapped political connections of over 1,500 firms using an array of hitherto untapped sources, and following closely the commonly used definition of politically connected firms proposed by (Faccio, 2006). We then combined this dataset on politically connected firms with detailed product-level data on the incidence and type of non-tariff measures recently made available by the World Bank and UNCTAD.

Our results provide strong evidence that sectors in which politically connected businesses were active prior to the Agreement received substantially higher levels of non-tariff protection after the EU agreement. The effect of cronyism on trade policy is quantitatively large. On average, the politically connected sectors ending up benefiting from an NTM coverage ratio that was between 9 and 11% higher compared to unconnected sectors. Recognizing that not all types of NTMs impose trade restrictions of a comparable scale and that the preference of cronies could vary across NTM types, we disaggregate our empirical analysis by different NTM types. We show that our results are principally driven by technical barriers to trade (TBTs) that require administrative oversight, are susceptible to selective enforcement, and can favour politically connected actors.

To explore possible political mechanisms driving this differential introduction of NTMs, we further disaggregate the effect of political connections by crony type. Given that the royal

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family has a dominant stake in Moroccan economy, we primarily distinguish between royally-owned firms and those owned by non-royal cronies. We show that the effect of cronyism on trade policy substitution is mainly driven by firms owned by advisors, confidants and politicians rather than royally-owned firms. This is consistent with the suggestion that authoritarian regimes tend to use economic policies to generate rents for politically influential segments of the ruling coalition. The need for such co-optation is well established in the literature on authoritarianism (Svolik, 2009). Our contribution is to demonstrate the relevance of trade policy for this.[4]

Our empirical strategy addresses the concerns arising from a DID analysis in this setting. Here, we highlight the three most important ones. Firstly, a possible endogeneity concern is that cronies might have self-selected into sectors that were predisposed to receiving more NTMs in the wake of EU Agreement. To address this, we take advantage of the temporal dimension of our database on cronies and treat sectors as politically connected only if they had crony presence seven years before the EU Agreement came into force (and several years before it was negotiated). In an institutional context defined by policy uncertainty and centralized decision-making, it is highly unlikely that political cronies could have anticipated the trade agreement this early. Furthermore, we show that the trajectory of NTMs for politically connected and unconnected sectors was fairly similar prior to the EU Agreement. The difference only emerges after the Agreement. Since sectors with initially higher tariff levels were more likely to receive NTM protection after the EU agreement, we ensure that all our specifications control for average MFN tariffs. Lastly, controlling for sector and year fixed effects allows us to account for any unobserved time-invariant sector-specific characteristics and any temporal shocks during the period of investigation that commonly affect all sectors.

A second concern is that part of the correlation we are documenting between the presence of political cronies and NTMs may result from broader regulatory harmonization with the EU. To the extent that such harmonization operates at a broad industrial level (ISIC-2) we account for it by including group-specific linear time trends. A third concern relates to the relevance of other variables previously found to be determinants of trade policy, and that may be correlated with both the sectoral exposure to politically connected actors and NTM incidence. To address this, we controlled for several determinants that were flagged by previous literature (Lee and Swagel, 1997), including industry employment, value-added, output, and number of establishments.

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[4]As (Svolik, 2009) suggests co-optation may be the most crucial pillar of regime survival, eclipsing other commonly mentioned strategies such as legitimation and repression. Commonly used instruments for co-optation are patronage, clientelism, and corruption (Gerschewski, 2013). Particularly in resource-poor countries with limited potential to distribute windfall revenues as rents, military and business elites need to be given the opportunity to benefit from their support of the regime through use of their own resources (Bueno de Mesquita, Smith, Svierson, and Morrow, 2003).

The effect of political connectedness still turns out to be larger than any of these traditional drivers of endogenous protection.

This paper contributes to several relevant strands of literature. Our findings complement the classic literature on "Protection for Sale", where trade protection is exchanged for lobbying contributions (Grossman and Helpman, 1994). The theoretical predictions of these models have been empirically affirmed using industry-level data from the United States (Goldberg and Maggi (1999); Gawande and Bandyopadhyay (2000)), Turkey (Mitra, Thomakos, Uluba, and Ulubasogl, 2002) and India (Bown and Tovar, 2011). The study on India is closest in spirit to our work, since it demonstrates how exceptional non-tariff measures, such as anti-dumping and safeguarding measures, were used to substitute for tariff reductions in politically organized sectors in the wake of 1990-91 IMF agreement. Although we do not directly test the structural model in Grossman and Helpman, our findings reinforce the primacy of politics in trade policy formulation in a small open economy. With the exception of Bown and Tovar (2011) and Limão and Tovar (2011), the overwhelming focus of past research is on tariffs.

Our analysis differs from the prior literature in two important respects. Firstly, existing research on the role of special interest groups in formulating trade policy has primarily focused on democracies. In this milieu, governments typically weigh the benefits from lobbying resources against the costs of trade protection to society. Our work differs in terms of the underlying institutional context, since we empirically examine the politics of trade protection in a purely authoritarian context where business lobbies are generally weak and ineffective, and the regime has greater bargaining power vis-à-vis domestic economic actors. Welfare concerns that conventionally motivate trade models are likely to receive less weight in dictatorial regimes, especially in the Middle East where regimes have historically relied on public employment and subsidies as their main welfare instruments. Our empirical analysis thus inform the nascent theoretical literature on trade policy under authoritarianism (Galiani and Torrens (2014); Zissimos (2017)).[5] A second point of departure is that we develop a more precise and direct proxy of politically connected sectors that is based on more granular information on the presence, number, and type of political connections. By contrast, previous studies have used relatively indirect proxies for sectoral exposure to special interest groups.[6]

Our paper also contributes to the literature that examines the economic consequences and mechanisms of cronyism. While prior work has explored the impact of political connections on

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[5]Zissimos's study offers one of the few attempts to theorize the conditions under which dictatorial regimes can manipulate trade policy in the wake of permanent global price shocks. Important political science contributions to the subject include studies by Frye, Mansfield, Frye, and Mansfield (2003), Kono (2009), and Milner, Rosendorff, and Mansfield (2004).

[6]Typically, interest group activity is measured using the number of groups listed in important reference works, such as the World Guide to Trade Associations

various outcomes, ranging from firm performance and leverage to banking, there are few analogous empirical illustrations on the politics of trade protection in developing country contexts. Our study also complements the recent literature on business and politics in the Middle East (Diwan, Keefer, and Schiffbauer (2016); Rijkers, Freund, and Nucifora (2017); Eibl and Malik (2016)). Our results have strong bearing on the literature studying the politics of economic reform. Specifically, our evidence on how connected sectors received compensatory protection through NTMs in exchange for EU-induced tariff cuts testifies to the importance of political considerations in explaining partial liberalizations in developing countries (Van de Walle, Nicolas, 2001).

Finally, while we argue that the Morocco-EU trade agreement was not determined by domestic political considerations, our emphasis on the substitution of NTMs for tariff reductions carries general relevance for a distinct but related strand of literature that studies the political economy of international trade agreements. Papers in this tradition have argued that international trade agreements serve as a commitment device for governments who can use these agreements to "foreclose political pressures at home" and neutralize politically influential business lobbies (Maggi and Rodríguez-Clare (1998), Maggi and Rodríguez-Clare (2007), Mitra, Thomakos, Uluba, and Ulubasogl (2002),Limão and Tovar (2011)). Trade agreements, in this perspective, make it easier to "withstand political pressures from future protectionists" (Rodrik (2018)). These models are, however, primarily relevant for competitive political environments with weak bargaining power of governments. Evidence suggests that democratic countries are more likely to join a trade agreement than authoritarian regimes(Maggi and Rodríguez-Clare, 1998). The question then arises why authoritarian regimes would commit to tying their hands by signing free trade agreements. One reason is that they can use their participation in international agreements to display their reformist credentials and bolster global legitimacy. But this comes at the expense of losing control of tariffs as an important instrument of rent distribution that aids regime stability. However, the ability to neutralize the effect of tariff reductions through compensatory non-tariff protection can make trade liberalization less threatening and more politically palatable to authoritarian regimes than previously thought.

The remainder of this paper is organised as follows. Section 2 offers a brief overview of the connection between business and politics in Morocco, and describes the main features of the Morocco-EU trade Agreement. Section 3 sets out the underlying data and empirical strategy. In section 4, we present our main results and associated robustness checks. Section 5 concludes the paper.

2 Background

2.1 Business and Politics in Morocco

Since its independence in 1955, the Moroccan political economy has been dominated by the king and the royal family. Politically, all three post-independence monarchs (Mohammed V, Hasssan II, Mohammed VI) have preserved the royal court (the *Makhzen*)[7] as the pinnacle of power in the political system, with key executive prerogatives exercised by the king, while gradually opening the political sphere to increased electoral competition.[8] The initial post-independence ruling coalition was small, based on rural elites, but gradually came to include important elite groups within society, including urban business elites. Without abundant natural resources as a means of co-optation, the monarchy has had to balance satisfying the needs of its citizenry against preserving privileges of its elites.

State-business relations have been at the centre of this dynamic. In this context, intermarriage has served as a tool to ensure the loyalty of important elite families (Willis, 2012).[9] Networks into the *makhzen* are thus more important than lobbying through business associations, which tend to be weakly organized. Economically, the king has successfully tied the business interests of the urban elite to the survival of the regime through patronage and rent generation. The "Moroccanization" policy of the 1970s allowed the narrow urban elite to take control of formerly French companies (Cammett, 2004). A second, similarly large transfer of company ownership took place in the 1990s as a result of the privatization of many state-owned enterprises pushed for by international institutions (Catusse, 2009). As a result, the Moroccan economy is dominated by large and diversified business groups, often associated with family clans.[10] Since the 1980s, the king himself has become one of the largest businessmen in the country, mainly by acquiring two previously state-owned holding companies that have since merged.[11] Beyond the royal family, there are several other well-known business families with large holding

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[7]In Moroccan Arabic, *makhzen* means "storehouse" and historically refers to the palace quarters where goods were offered to or expropriated by the sultan's representative were stored. In Moroccan political jargon, the *makhzen* refers simply to the palace as the ultimate seat of power and is used extensively as a concept in the political science literature (cf. Saadi (2019), Waterbury (1970)).

[8]The Moroccan king controls key judiciary appointments, is the country's religious supreme leader, and has de facto veto power over ministerial appointments. His advisers serve as shadow cabinet with considerable influence on key ministries. The king also has the ultimate control over the regime's security apparatus.

[9]For instance, King Hassan's sister was married to Ahmed Osman, who was prime minister 1972-1981. His daughter was married to the son of Abdellatif Filiali, who was prime minister 1993-97.

[10]Diversified business groups or holding companies dominate the private sector in many countries. As (Fisman, 2001) points out, these groups "are ubiquitous yet poorly understood organizational forms [...] Such groups are comprised of a diverse set of businesses, often initiated by a single family [...], and bound together by equity cross-ownership and common board membership" (p.1096). The prevalence of such groups has been observed in many regions, including the Middle East, Southeast Asia, India and Latin America.

[11]The Omnium Nord-Africain (ONA) and the Société Nationale d'Investissement (SNI).

companies. Saadi (2013) reports a list of the thirteen largest holding companies together with estimates of their recent turnover and number of firms owned. The estimated total number of firms owned by these holding companies is over 370. An overview of these holding companies is shown in Table 2.

Given the pivotal position of the royal court, Morocco can be characterized as a centralised network economy in which political connections are built in concentric circles of influence (see Figure 1). Immediate members of the *royal family* represent the centre of this network. The circle with the most direct political influence beyond the royal family are the members of the *royal court*. This includes board members of royal charitable foundations[12], advisors in the royal shadow cabinet that mirror each ministerial position, CEOs of royal holding companies and close friends of the king. A much larger group of individuals with substantial proximity to the royal court are current and former cabinet ministers (*politicians*). Especially since the 1970s cabinet positions have often been given to members of the urban elite families to co-opt them and maintain their support. Holding a cabinet position thus goes beyond the direct policy influence as an indicator of political connections: it suggests that the cabinet member is part of an important family or faction to be co-opted. In the absence of substantial natural resource rents, the distribution of regulatory rents assumes greater salience as a mechanism for ensuring continued elite allegiance to the monarchy.

FIGURE 1: Categories of politically connected individuals in order of their presumed proximity to the king.

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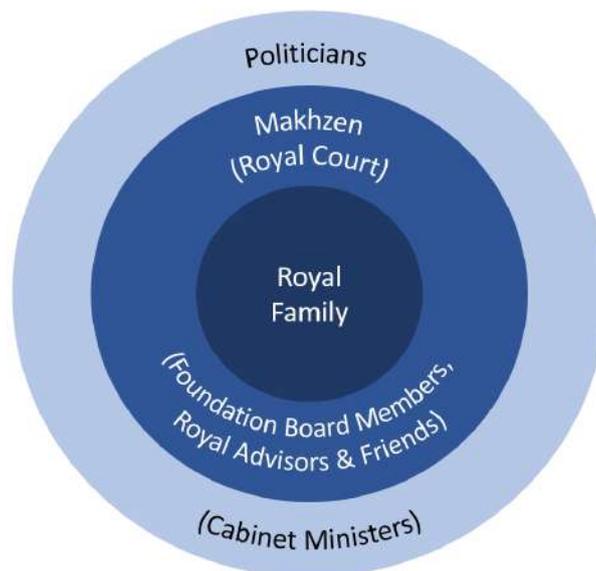
[12]The foundations considered here are Foundation Mohammed VI for Environmental Protection, Foundation Hassan II for Social Works and Foundation Mohammed V for Solidarity.

2.2 The EU-Morocco Free Trade Agreement

The Association Agreement between Morocco and the European Union that took effect in 2000 presents an excellent setting for analysing the relationship between political connections and trade protection. In the early 1990s, the European Union worked on redefining and deepening their relationship with its North African and Middle Eastern neighbours. The result of this process was the Barcelona Declaration of 1995, declaring a new "Euro-Mediterranean Partnership." This partnership was to extend across a political, an economic and a cultural "basket," though undoubtedly the economic one has been the most important. As a first step, the EU began to negotiate bilateral Association Agreements with countries that were part of the initiative. The Morocco-EU agreement was signed in 1996, but came into force only in March 2000. The Agreement involved a 12-year process of tariff liberalization with a view towards the gradual establishment of a Free Trade Area eliminating all industrial duties.[13]

With the exception of a few product lines, industrial goods were divided into two baskets for liberalisation. Duties on goods in the first basket were to be reduced by 25% of the 1995 rate each year to reach zero by 2003. Duties on products in the second basket were to be reduced by 10% of the 1995 rate annually from 2003 onwards to reach zero in 2012.[14] Prior to the Agreement, non-tariff barriers, such as quotas and import licences, were replaced with tariffs in process known as "tariffication" that was completed in 1997 and made tariffs as the principal instrument of trade policy. The EU-induced trade liberalization was mainly focused on tariff reduction and resulted in a downward shock to Moroccan tariff regime. The average tariff rate applied to manufacturing imports from EU fell by over 70%. The mean EU tariff rate fell from 31.45 in 2000 to 8.22 in 2009. This was accompanied with falling tariff dispersion. The standard deviation of tariffs across manufacturing sub-sectors fell from 18.3 in 2000 to 13.6 in 2009, pointing to a greater harmonization of tariffs.

Two aspects of the EU Agreement are particularly relevant for this empirical enquiry. Firstly, the EU-induced tariff cuts represented a discrete and universal shock that affected all sectors in the manufacturing space. These tariff cuts were followed by a dramatic rise in NTMs.[15]. The share of manufacturing products covered by NTMs doubled during the period 1999-2009. All sectors that witnessed a tariff cut experienced a subsequent rise in NTMs. Even when new universally applied NTMs are excluded from the analysis, about 55% of the sectors facing a tariff cut witnessed a subsequent rise in NTMs. Importantly, there was considerable variation

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[13]Imports of all Moroccan industrial products into the EU are duty free today, and imports of EU products into Morocco are duty free except for 142 lines resulting in an average duty of 0.2%.

[14]Agricultural products were exempted from this liberalization, and tariffs in the agro industry were to be split into an agricultural component (that could be maintained) and an industrial component (that had to be liberalised).

[15]Non-tariff measures were not part of the agreement. New EU protocols on NTMs, in particular sanitary and phytosanitary measures for agricultural products, were only implemented in 2012 (World Trade Organization, 2013)

in the introduction of new NTMs across sectors, which will be crucial for our identification strategy. Secondly, the EU Agreement was an important economic milestone for Morocco as the EU is Morocco's largest trading partner. In 2015, 61% of Morocco's exports went to the EU, and 55.7% of total trade was with the EU.[16]

We argue that the trade agreement with the EU can reasonably be considered as an event exogenous to domestic Moroccan politics. During this period, Moroccos FTAs had an explicitly political and strategic component, one born of the new context of the post-September 11 era and the War on Terror (White 2005, p.599). At a time when Western powers were seeking to promote broader regional stability in the Maghreb, the FTAs were increasingly viewed as an instrument in the fight against terrorism.[17] This is in line with prior understanding. Bilateral and multilateral trade agreements for North African countries have largely been pushed from the outside (Cammett, 2007). Decisions on trade policy tend to be made in a top-down manner in North Africa (Cammett, Diwan, Richards, and Richards, 2015). A recent assessment of EU policies in the Mediterranean region including Morocco suggest the practical absence of any input or engagement from local stakeholders in these policy interventions (Aboushady, N., Zaki, C., Moisseron, J. and Guesmi, K., 2019).

For all these reasons it is unlikely that politically connected actors could have predicted the onset of this substantial trade policy shift several years earlier, especially in a business climate marked by high policy uncertainty (Willis, 2012). There is also little evidence to suggest that tariff reductions were systematically correlated with industry characteristics.[18] Admittedly, tariffs were not reduced uniformly across sectors. To account for this differential effect of the trade shock, we control for sector-specific tariff levels throughout our empirical analysis.

3 Data and Descriptives

Our empirical analysis rests on three data inputs: information on the political connections of firms, annual data on tariffs and non-tariff measures, and data on important industrial characteristics that may drive trade protection. Data from all sources were then aggregated into a single panel dataset at the ISIC-4 sector-year level.

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[16]As reported by the European Commission, see http://ec.europa.eu/trade/policy/countries-and-regions/countries/morocco/index_en.htm

[17]In this strategic assessment, economic development was viewed as an antidote to extremism. This was best summed up in the words of former US trade negotiator, Robert Zoellick, who in the context of a US-Morocco trade agreement argued that "trade leads to tolerance" (Zoellick, 2004).

[18]Regressing the change in EU tariff rate between 2000 and 2009 on pre-Agreement industry characteristics shows that, apart from the share of imports, none of the other main industry characteristics are significantly correlated with the tariff change. See Online Appendix, Table 1).

3.1 Politically Connected Firms

To construct a dataset of politically connected firms we followed a three-step procedure. Firstly, we collected and categorized names of politically connected individuals. Secondly, we obtained firm-level data for over 100,000 mostly privately held firms in Morocco. Thirdly, we matched firms and individuals based on shareholdership to obtain a list of over 1,500 politically connected firms (PCFs), including sectoral activity and basic firm data.

To identify PCFs we follow (Faccio, 2006) and define a firm as politically connected if the owner, senior manager or at least one of its shareholders has a clearly-identifiable political link. We considered the most important channels of political influence in Morocco. These include members of the royal family, the royal court, former ministers and their family members. We then gathered lists of names for each of these channels from multiple sources, including official records, press reports and academic publications. Data on cabinet members was obtained from the CIA Chiefs of States Database, the 2012 Polcon Database, and several editions of the Political Handbook of the World. For board members of royal foundations, we obtained lists from their official websites.[19] Additional information on advisors, friends and military officers was obtained from academic publications and press reports, and validated these names in conversations with local experts.[20] Overall, over 400 individuals were identified as politically connected. Individuals on this list are not necessarily engaged in business and those for which no connections to firms could be established were later discarded.

Information on owners and shareholders of firms was obtained from the Orbis database, one of the largest repositories of data on private firms, especially non-listed companies (Bureau van Dijk, 2016).[21] We obtained a sample of over 100,000 mostly privately held firms in Morocco for which shareholder information and other basic data are available.[22] We then assembled a list

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[19]Data on the royal family was obtained from the official website of the Kingdom of Morocco (www.maroc.ma/en) and Royal Ark (http://www.royalark.net).Expert interviews were conducted with the economist Mohamed Saadi, the sociologist Mohamed Oubenal and Prince Moulay Hicham of Morocco.

[20]Noted academic publications in this regard include: (Saadi, 2013), (Saadi, 2019), (Willis, 2012), (Cammett, 2004), (Cammett, 2007), (Catusse, 2009) and (Oubenal, 2019). Press reports were taken from Reuters, L'Express, La Vie Eco, Jeune Afrique, Les Echos, Morocco Today and Huffington Post Maghreb. Expert interviews were conducted with the economist Mohamed Saadi, the sociologist Mohamed Oubenal and Prince Moulay Hicham of Morocco.

[21]The Orbis database is maintained by Bureau van Dijk, a private research company, which compiles information from multiple sources on private firms around the world, with a focus on non-listed companies. Over 200 million private companies worldwide are listed in Orbis. The data was downloaded from Orbis in November 2016. We imposed minimum data requirements for a firm to be included: that there be at least one listed shareholder, and at least some revenue data.

[22]Faccio (2006) considers only large shareholders (controlling at least 10 percent of voting shares) because she considers listed firms with potentially many shareholders. Almost all firms in Morocco are privately held with very few shareholders. This mitigates the fact that shareholders' voting shares are generally not available in Orbis for Moroccan firms. It can thus be safely assumed that a Moroccan firm's shareholder would pass Faccio's threshold for being a "large" shareholder.

of over 1,500 PCFs by matching the list of connected individuals with shareholder and officer information from the Orbis database. To get around matching problems resulting from frequent misspellings and varying transliterations of Arabic names, we used a fuzzy matching algorithm to compare the names collected against the Orbis database.[23] The algorithm returns names that are sufficiently similar to the search string (according to a pre-specified threshold). After running the algorithm on all names of connected individuals, we then validated the returned list manually and, to err on the side of caution, excluded matches that were ambiguous.

Firms were categorized according to their shareholders' type of political connection. Firms with several connected shareholders were classified according to the shareholder with the closest connection to the royal court. Since the Orbis database provides the year of incorporation of firms, our measure of PCFs is time-varying.[24] Firms are considered to have been connected since their year of incorporation, and to have been active in the same sector since. Aggregating this data at the sector-year level, we defined several variables to measure the presence and importance of PCFs. *Crony presence* is a dummy variable that takes the value 1 if at least one PCF in the dataset was active in the sector in a given year, and the variable *crony number* counts the number of crony firms active in a sector in a given year. Differentiating by type of political influence, we constructed separate measures of crony type. To capture *royal crony presence* we define a dummy variable that takes the value 1 if at least one firm owned by the royal family was active in a given sector-year. Using the same approach, we define *Makhzen* as sectors exposed to foundation board members and royal advisors, and *Politicians* as sectors where any of the cabinet members (and their extended family) have operated since 1979. Table 2 provides an overview of major holding companies and business conglomerates in our dataset.

Before proceeding further, two notes of caution are in order. Firstly, for the list of PCFs we only rely on publicly available and verifiable information. We might have missed some connections that remain unreported or public unknown. Secondly, firms that have been inactive for several years are generally dropped from the Orbis database. Consequently, we do not observe crony firms that were active in the past but have gone out of business. Both of these are minor concerns in our context. Firm entry and exit rates are among the lowest in the Middle East, including Morocco (Schiffbauer, Sy, Hussain, and Sahnoun, 2014). Turnover rates are likely to be even lower than the average for larger firms owned by politically connected businessmen. On the whole, our results will provide an underestimate of the true impact of cronyism in Morocco.

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[23]Fuzzy matching algorithms perform approximate string matching. In this particular context, the algorithm searched the list of all shareholders, and returned names that matched with the name searched for *approximately* rather than *exactly*. The particular algorithm we used is written in the R language and embedded in the Alteryx software environment. The algorithm was configured for name matching, so that it deals more efficiently with the presence or absence of titles, and uses phonetic similarity for matching.

[24]Of the 102,682 Moroccan firms with unique identifiers in the database 740 firms did not have information on year of incorporation and were dropped. This constitutes only 0.7 percent of the total sample.

3.2 Non-Tariff Measures

Data on non-tariff measures (NTMs) was extracted from the WITS database, recently compiled through a multi-donor initiative including the World Bank, WTO and UNCTAD (World Bank, 2016).[25] Containing systematic information on the incidence and types of NTMs, a major advantage of this database is its temporal dimension. It provides concrete information on the year when an NTM is introduced, allowing us to build a panel dataset.[26] The database also distinguishes between different NTM types, classifying them into 16 different chapters. Key NTM sub-types include Technical Barriers to Trade (TBT), Sanitary and Phytosanitary Measures (SPS), Pre-shipment Inspection (PSI), and Price Control Measures (PCMs).The raw dataset contains fine-grained information on NTMs for more than 5,000 products in the 6-digit HS classification, yielding 45,988 observations. We removed seven measures that are reported as universally applicable to all products and do not provide any sectoral variation for our empirical analysis (see Online Appendix, Table 2, for excluded NTMs). The data was then aggregated at the 4-digit ISIC sector level.

While the WITS provides the most comprehensive data collection effort to date, one potential concern for our analysis relates to the possible withdrawal of NTMs that might have been introduced during the period of this study and removed prior to such information being collected. Fortunately, this is not a serious concern for us, since almost all NTMs have been effective continuously since their year of introduction. Only two NTMs were withdrawn during the period 1990-2013, and we remove these to alleviate any concern.[27] We generate several measures to capture the breadth and intensity of NTM protection. *NTM_share* is the simple unweighted coverage ratio, defined as the share of products covered by at least one NTM in a given sector and year[28] The intensity of NTM protection is captured by *NTM_avg2*, the average number of NTMs applied per covered product in the sector. To combine both breadth and intensity of coverage, we constructed *NTM2_share*, the share of products in the sector subject to at least two NTMs. While *NTM2_share* is our preferred measure, we report results for all three variables to demonstrate robustness.

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[25]Available at http://wits.worldbank.org/

[26]The database does not distinguish between the introduction of a new NTM and a major amendment of an NTM, both of which require a legal decree. For further details on the compilation of this time-varying data on NTMs, see: http://www.worldbank.org/en/news/video/2018/06/28/transparency-matters-the-unseen-impact-of-non-tariff-measures

[27]Information on NTM withdrawal is available from UNCTAD TRAINS database. The two withdrawn NTMs were both Contingent Trade Protection Measures (CTPM) applied on a bilateral basis.

[28]Following (Lee and Swagel, 1997), we used a simple average rather than weighting NTM incidences by import or production shares. As is well-known, all weighting procedures have their drawbacks. In the Moroccan case, we would expect import-weighting to substantially underestimate the true coverage effect due to very high (and varied) levels of tariff protection at the beginning of the period that reduce imports.

3.3 Tariffs, Trade and Industry Data

To control for sector-level determinants of trade protection flagged by previous research, we collected data on tariffs, trade, and industry specifics at the ISIC-4. Tariff data (both the applied most-favoured-nation (MFN) rate and the preferential tariff rate for European imports) were compiled at the 6-digit product level from the WTO's Integrated Database.[29] Tariff rates applied to imports from the EU were equivalent to MFN tariffs until 1999 and fell below the MFN level after the trade agreement came into force in 2000. Data is available from 2004 onwards. For the years 2000-2003 we imputed data based on the 1999 and 2004 tariff rates and the legal texts of the trade agreement. We then aggregated the tariff data at ISIC-4 level. Data on imports and exports were obtained form the UNIDO Industrial Supply and Demand database[30] and supplemented with data from UN Comtrade where necessary. Four-digit sector-level industry data (number of firms, employment, wages, output, value added, and gross fixed capital formation) was taken from the UNIDO Industrial Statistics database. Unfortunately, this data is only available from the year 2000 onwards.

Data on political connections, NTMs, tariffs and industrial characteristics was then merged at the ISIC-4 sector-year level.[31] The resulting panel consists of 121 manufacturing sub-sectors. Putting the different data elements together, Figure 2 provides a schematic overview of the set-up and data sources used for our analysis.

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[29]Accessible at http://tariffdata.wto.org/

[30]INDSTAT 2, ISIC Rev 3. Available at https://stat.unido.org/

[31]Both firm sectors and product-level data had to be reclassified into a unique and consistent nomenclature in order to merge data from different sources. To ensure compatibility of classification schemes, we used Revision 3 of ISIC's sector classification and the HS1988/1992 classification of 6-digit product codes where required.

FIGURE 2: Schematic representation of key data inputs
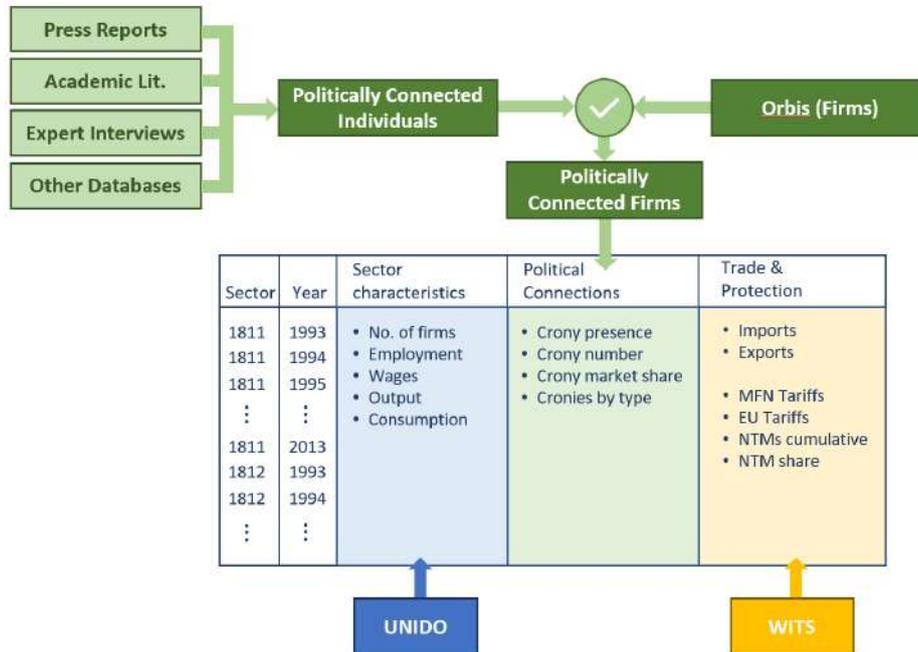
3.4 Descriptives

Table 1 provides a snapshot of the presence of PCFs across different manufacturing sub-sectors defined at the ISIC-2 level. There is considerable variation in sectoral exposure to crony activity. For example, in basic metals, chemicals, paper, and leather production over two thirds of all sub-sectors have at least one PCF. Other sectors, such as tobacco products, optical instruments, or apparel exhibit no crony activity. Summary statistics for all variables in the dataset are shown in Table 3. Firms in connected sectors are typically larger with higher output and market shares. Tariff levels are also slightly higher, on average, for crony sectors. Generally, sectors that initially enjoyed higher tariff protection experienced substantial tariff reductions in the wake of the EU agreement. Tariff cuts were strongly correlated with pre-liberalization tariff levels (correlation coefficient is 0.67). Although, when averaged over the estimation period, the NTM coverage ratio is fairly similar across crony and non-crony sectors, exploratory evidence in Figure 3 shows that the increase in NTMs was highly uneven between connected and unconnected sectors, with the former disproportionately benefiting from higher levels of NTM protection after the EU Agreement.

FIGURE 3: Evolution of the NTM coverage, by connected and unconnected sectors
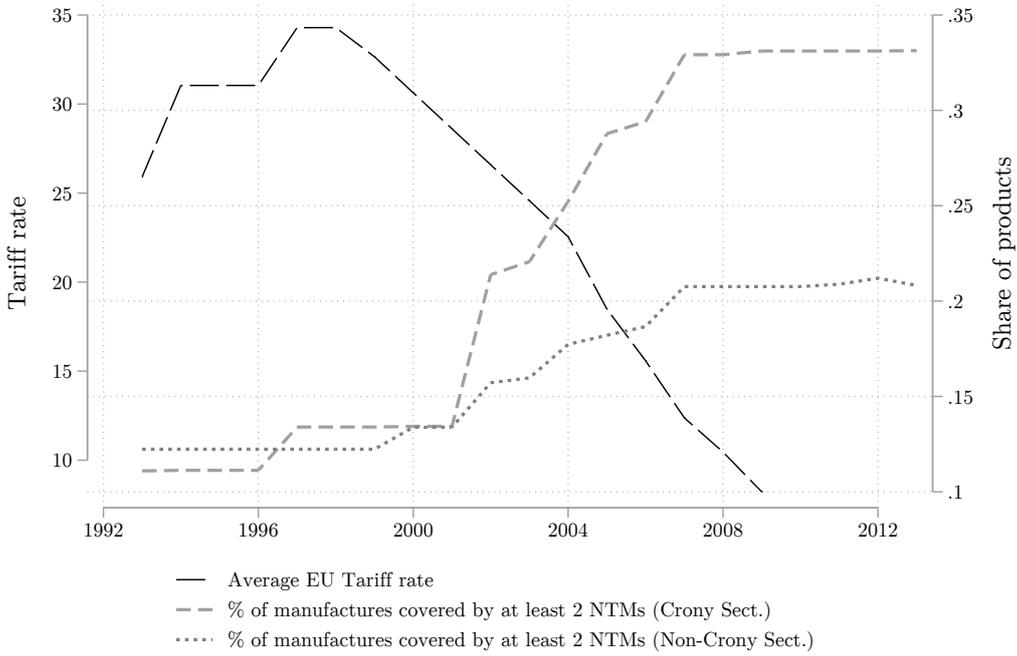
4 Empirical Analysis

4.1 DID set-up

To empirically examine the impact of political connections on trade protection we utilize the timing of Morocco's FTA with the EU, and estimate the following DID specification using our annual panel dataset covering all manufacturing sectors from 1993 to 2009:

$$y_{it} = \beta treated_i I_t^{post} + \mu I_t^{post} + \mathbf{X}'_{i,t}\phi + \gamma_i + \rho_t + \theta_i \lambda_{i,t} + \epsilon_{i,t} \tag{1}$$

where $y_{i,t}$ is the measure of NTM coverage for sector i and year t; I_t^{post} is an indicator variable equal to one for the post-FTA period; $treated_i$ is a dummy variable that equals one for politically connected sectors; $\mathbf{X_{i,t}}$ is a vector of time-varying sector-level characteristics; and (γ_i) and (ρ_t) denote the sector and year fixed effects, respectively. The former should control for unobserved sector-specific characteristics that are relatively time-invariant.[32] The year fixed effects control for annual shocks that are common across sectors. We also include sector-specific time trends ($\lambda_{i,t}$) at the ISIC two-digit sector-level. Finally, to account for potential within-sector correlation of outcomes, we cluster standard errors at the sector-level. Our main

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[32]These would include, among others, import-demand and export-supply elasticities.

coefficient of interest is β that estimates the effect of political connections on the post-FTA evolution of NTM coverage.

As is customary in DID analysis, the key assumption that must be satisfied by treatment and control groups is that they are independent of potential outcomes (i.e. NTM protection). There are at least two main reasons why this assumption could fail. Firstly, there might be self-selection of cronies into sectors based on information they obtained due to their political connections that these sectors would receive higher levels of trade protection. The second reason why the sorting into treatment and control groups might not be independent of potential outcomes relates to sectoral characteristics. Even if cronies did not anticipate the outcome of future trade negotiations, they could have intentionally or unintentionally entered into sectors that were systematically predisposed to receiving greater trade protection in future. Our empirical strategy will aim to address these concerns. We discuss below the precise classification of treatment and control groups and the parsing of our estimation period into pre- and post-periods. Figure 4 schematically illustrates the overall set-up for our analysis.

FIGURE 4: Sequence of events and set-up for the baseline DID model
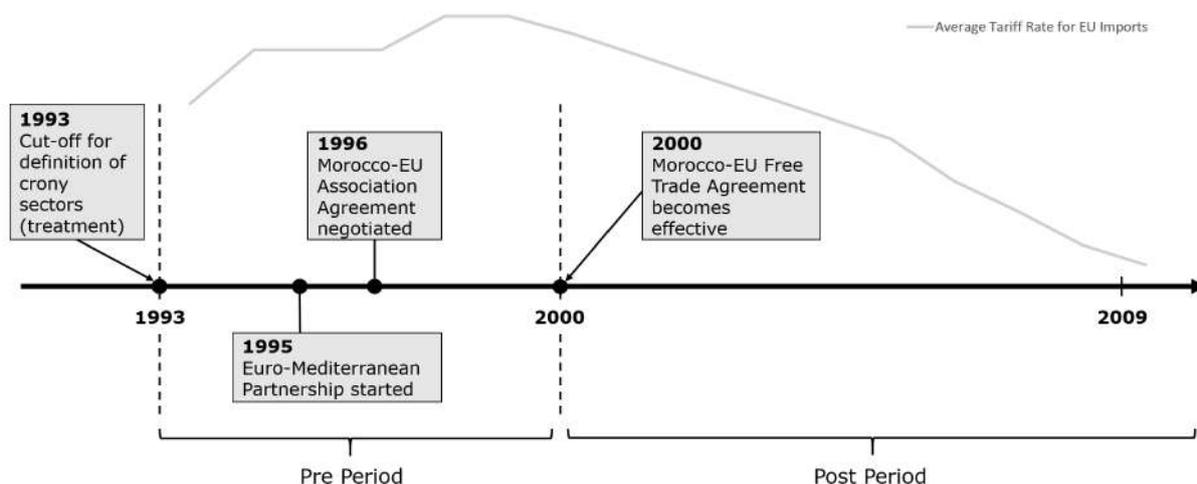
Sectors are classified as treated if cronies were present in the sector in 1993. This early cut-off date is chosen so as to precede Morocco's entry into the WTO in 1994/1995, the signing of the Morocco-EU agreement in 1996, and the coming into force of this trade agreement in the year 2000. This should assuage at least some concerns of self-selection. With a cut-off date as early as 1993, the top-down nature of state-business relations, and high levels of policy uncertainty, it is quite unlikely that cronies could have anticipated future changes in trade policy and selected into sectors likely to receive greater trade protection in future. We know that cronies continued

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to enter in manufacturing sectors in large numbers after 1993. By assigning these sectors into the control group, we are actually tipping the scales against our hypothesis.

The validity of our research design also depends on the assumption that patterns of trade protection for treatment and control groups would have followed a similar trajectory after the EU agreement had it not been for prior exposure to cronyism. In this context, it is important to show that the sectors classified as "crony" and "non-crony" follow a similar path with respect to outcome variables in the pre-period. As a first indication, Figure 5 considers four different measures of NTM coverage and shows evidence that treatment and control groups satisfy the parallel trends assumption. Panel A plots the unweighted number of NTMs, counted at the product level, for the two sub-groups. Panel B charts the evolution of the average number of NTMs applied to products covered by NTMs, which captures the intensity of NTM protection at a more granular level. Panels C and D plot the trajectory of the average share of products in a given sector that are subjected to at least one and two NTMs, respectively. The dashed vertical line indicates the year 2000 in which the EU agreement became effective. There is a noticeable spike in levels of NTM protection after the EU agreement. Importantly, for each measure there is strong graphical evidence of parallel trends before the cut-off date and substantial divergence afterwards between crony and non-crony sectors. In subsequent sections, we will present more rigorous statistical evidence on the absence of pre-trends.

FIGURE 5: Evolution of NTM protection across connected and unconnected sectors
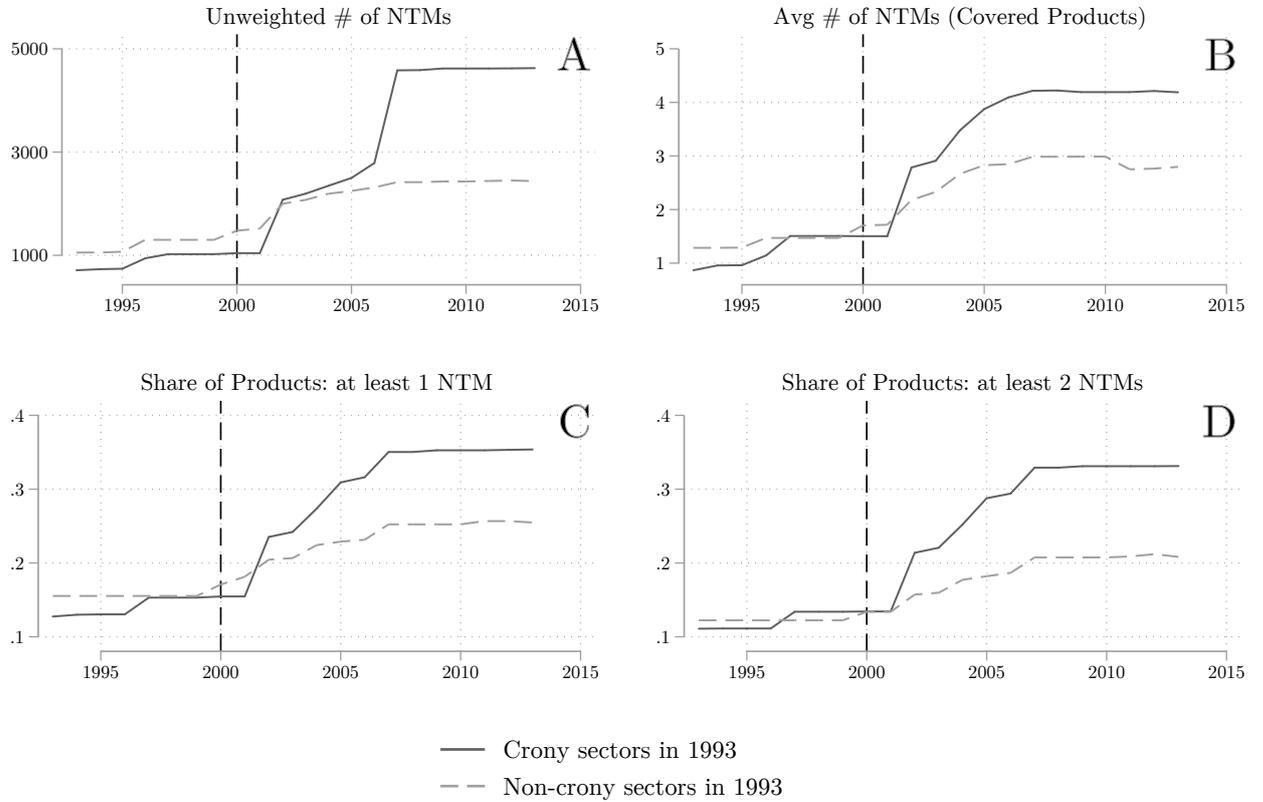
Beyond establishing the broad similarity of treatment and control groups in the evolution of NTMs prior to the EU agreement, it is also important to control for sector-level characteristics that could determine the potential for NTM introduction after the agreement. To address this we firstly control for sector fixed effects at the ISIC-4 level in all specifications. Without these fixed effects we would be concerned that our results might be driven by the fact that some manufacturing sub-sectors are especially attractive for cronies in Morocco and could be prone to NTM protection (e.g. textiles, food, and auto mobiles). Secondly, we include sector-by-year interactions at the ISIC-2 level, which should capture dynamic sector-wide shocks that affect products within a sector equally. For instance, any EU-induced regulatory harmonization over time that operates at this broad sectoral level should be captured by these sector trends.

Thirdly, we control for several time-varying sectoral characteristics that could be correlated with crony presence and determine the potential for NTM protection. All our regressions include the average MFN tariff rate and the average tariff rates charged for imports from EU. By including these tariff measures we allow for the possibility that sectors with higher tariff pro-

tection prior to the EU agreement, many of which are also crony sectors, are more likely to be compensated through NTMs in the post-period. We know that the level of of tariff protection was higher in crony sectors and the resulting change was also more pronounced in these sectors (see Online Appendix, Table 1).

Informed by prior literature on the determinants of trade protection, we also control for imports and exports, both weighted by number of products in an ISIC-4 sector. Given that crony sectors have noticeably higher import levels we take care to include the import share in our specifications (see Table 3).[33] In some of our regressions, we are able to include the extended set of industry-level controls obtained from the INDSTAT dataset. Since the INDSTAT data covers Morocco only from 2000 onwards, we collapse the dataset into a two-period panel, where the first period represents an average of the pre-period and the second period represents an average of the post-period.[34]

We include two key dimensions of trade protection relating to business and labour interests. For business interests, commonly suggested variables are the concentration of seller and buyer firms, as well as measures of domestic entry barriers. For labour interests, commonly suggested variables are the number of employees in a sector, the unionisation rate, sectoral unemployment, the average tenure of employees, and measures of occupation (e.g. skilled versus unskilled workers). Unfortunately, the data for Morocco is not rich enough to include all of these dimensions. However, the UNIDO INDSTAT database provides information on the number of employees and the number of firms operating at ISIC-4 level. If the government is concerned with protecting jobs, a higher number of employees in a sector should lead to greater trade protection. The number of firms in a sector can be taken as a rough proxy for seller concentration.

Apart from being able to include additional controls, a collapsed two-period DID models can also help to mitigate common concerns about inconsistent standard errors in DID regressions. Using annual panel data may result in serial correlation in the errors terms thereby leading to biased standard errors. Bertrand, Duflo, and Mullainathan (2004) show that collapsing pre and post periods is an effective way of eliminating this bias. At the same time, collapsing the dataset leads to a loss of efficiency since variation is compressed. As a result, the bar for obtaining statistically significant results is higher.

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[33]Ideally, we would like to estimate the NTM equation jointly with an import equation. (Trefler, 1993; Goldberg and Maggi, 1999; Lee and Swagel, 1997). Previous studies typically use factor shares to specify the import equation. However, this data is not available for Morocco. We therefore have to rely on including actual imports in the NTM equation.

[34]Since the cut-off between pre and post periods is 2002, this allows us to use two years of INDSTAT data for the pre-period.

4.2 Flexible specification

An important aspect in operationalizing the DID framework is the specification of the cut-off date between pre- and post-periods. Considering the sequence of historical events (see Figure 4), the choice of cut-off date is not obvious ex ante. Although the agreement was signed in 1996, it came into force only in 2000, and its impact was visible only two years later in 2002 (see Figure 5). This is unsurprising as the effects of a policy shock emerge with a time lag. To establish the appropriate cut-off date empirically and to provide a formal test of parallel trends assumption, we follow (Nunn and Qian, 2011) and estimate a fully flexible specification that includes interactions of the treatment variable with year dummies:

$$y_{it} = \sum_{j=1993}^{2013} \beta_j treated_i I_t^j + \mathbf{X}'_{i,t}\phi + \gamma_i + \rho_t + \epsilon_{i,t} \qquad (2)$$

where $y_{i,t}$ is the measure of NTM coverage, $\mathbf{X_{i,t}}$ is a vector of time-varying sector characteristics (we initially include imports, exports and the MFN tariff rate), and the first term on the right-hand side interacts the treatment indicator with a year dummy. I_t^j takes the value 1 if $t = j$ and 0 otherwise. Finding β_j coefficients that are indistinguishable from zero for years in the pre-period would indicate that our NTM measure followed a similar trajectory for treated and control groups prior to the EU Agreement.

Figure 6 plots the point estimates of the β_js together with their 95% confidence bands, using the share of products covered by at least two NTMs as the dependent variable.[35] As Figure 6 shows, the coefficients are small and statistically insignificant before 2002 and become positive and statistically significant after 2002. We do not observe any clear patterns prior to the EU agreement but a clear discontinuity, both in size and significance of the coefficients, can be discerned from 2002 onwards when the EU agreement begins to have an impact. Guided by these flexible estimates, we choose 2002 as the appropriate cut-off date for defining the pre- and post-periods in our DID analysis.[36] We will subsequently demonstrate the robustness of our results to e cut-off date to 2000 or 1996.

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[35] The results are similar for other NTM measures.
[36] I.e. 2002 is the first year included in the post period.

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FIGURE 6: Flexible estimates of the relationship between Cronyism and non-tariff protection
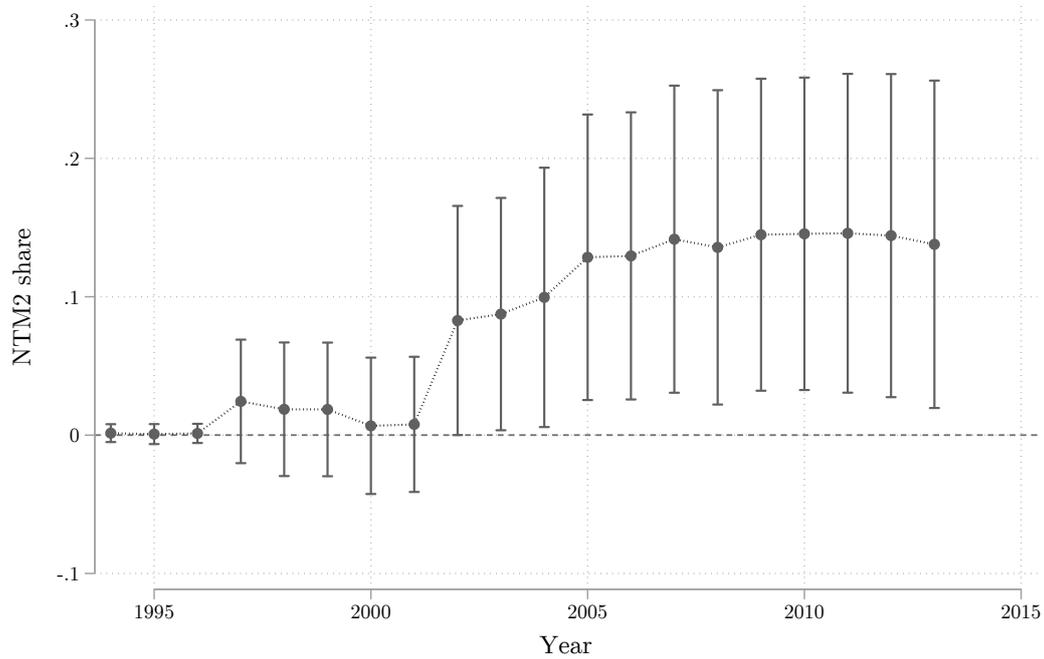
Notes. 95% confidence bands for the coefficients on the interaction between treatment and year dummies. Dependent variable is the the share of products covered by at least 2 NTMs.

4.3 Main Results

In this section we present results for the baseline specification in equation 1 for different measures of NTM protection. Table 4 documents the results for the share of products covered by NTMs (unweighted coverage ratio). All specifications include the share of imports and exports, weighted by the number of products, and the MFN and EU tariff rates. Columns 1-3 shows results for all NTMs. In columns 4-6 we re-estimate our baseline model by replacing the dependent variable with a more refined NTM type, the share of products covered by the technical barriers to trade (TBTs).

Beginning in column 1, a positive and statistically significant coefficient on the post-period dummy suggests that there was a significant increase in NTMs after the EU agreement across the board. The coefficient on the interaction between treatment dummy and post-period dummy, capturing the main DID effect, is positive and statistically significant. However, the inclusion of ISIC-2 level sector time trends renders the coefficient on DID interaction insignificant in column 2. In column 3 we present the estimates for a collapsed two-period DID model with additional controls. The coefficient on DID interaction is now marginally significant at 10 per-

cent level. Overall, there is some modest evidence to suggest that crony sectors benefited from a greater NTM protection post-EU agreement than unconnected sectors.

We expect greater compensation for connected sectors through specific NTM types rather than generalized NTM protection. The bulk of NTMs in Morocco comprise technical barriers to trade (TBTs) that are more amenable to political manipulation and are more clearly geared towards trade protection.[37] Proceeding to results for TBTs in columns 4-6, the coefficient on the treatment term is positive and statistically significant at 5% level in both the annual panel (cols. 4-5) and the collapsed model (col. 6). This provides strong evidence in favour of our hypothesis that crony sectors received disproportionately higher levels of NTM protection through TBTs in the wake of EU-induced tariff cut.

These results are robust to controlling for tariff rates. In our annual DID regressions both the MFN and EU tariff rates turn up as significant. The coefficient on the EU tariff rate is negative while that on the MFN tariff rate is positive, both being statistically significant. This is in line with the hypothesis that NTMs were substitutes for declining EU tariff rates, but suggests that they were complements with the MFN tariff rate. This is plausible since EU tariff reductions were imposed by the trade agreement, while there was more leeway for MFN rates. Hence, policy makers could use both to compensate for the loss in protection.

Our results are obtained after controlling for imports and exports. As (Trefler, 1993) pointed out, the amount of imports is endogenously related to the level of trade protection. If a high potential for imports leads to a higher level of trade protection, this will lower the actual level of imports. On the other hand, there is a negative and statistically significant impact of exports in the TBT regressions. This supports the intuition in (Lee and Swagel, 1997) that exporting firms might be afraid of retaliation by their trading partners and therefore lobby the government against trade protection in their sector. Additionally, it could simply reflect the fact that export-oriented sectors are systematically predisposed to less trade protection.

Extended UNIDO controls.—In the collapsed two-period model (columns 3 and 6), we are able include a more extended set of industry characteristics, some of which differ across treatment and control groups (see Table 3).[38] We initially include two sector-level characteristics that

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[37]Around 11.5% of NTMs in the manufacturing sector are export-related measures and 17.4% are sanitary and phytosanitary measures (SPS) that may also apply to domestic producers, and apply to food products that had a special status in the EU agreement.

[38]Even when covariates are similar across the two groups, there could be important underlying differences. For example, the two comparison groups have similar averages for number of employees. This is driven, however, by a single unconnected sector, the garment manufacturing sector, which employs almost 34% of Moroccan manufacturing workers and is made of many SMEs by new entrepreneurs rather than the established business elite. This skews the mean, hiding the fact that most connected sectors employ a significantly higher number of workers. Employment is thus an important control variable to distinguish between the need to protect connected firms and to protect workers.

capture the role of labour and business interests: number of employees and number of firms. If job protection is an important concern for the government, we would expect that a higher number of employees in an ISIC-4 sector should be associated with greater trade protection. We use the number of firms as a proxy for seller concentration in a given sector. Sectors with higher seller concentration can facilitate lobbying and collective organization, thereby influencing trade protection. The coefficient on employees is negative but indistinguishable from zero, whereas the number of firms is a negative and statistically significant predictor of NTM protection. The cronyism effect also survives the inclusion of additional covariates, such as value-added per firm and sectoral concentration of employees and output (see Online Appendix, Table 4).

Intensity of NTM Protection.—Beyond exploring the impact of political connections on NTM coverage, we also probe their impact on the intensity of NTM protection. To do so, we replace the dependent variable with two possible measures capturing the breadth and intensity of NTM protection: the share of products covered by at least two NTMs ($NTM2\_share$) and the average number of NTMs for products that are covered (NTM_avg2). The results are reported in Tables 5 and 6, respectively. Beginning with the results for $NTM2\_share$ we find a highly consistent set of results, whereby the coefficient on the treatment effect is statistically significant whether the outcome variable is defined for all NTMs (columns 1-3), restricted to TBTs (columns 4-6), or estimated for a collapsed DID (columns 3 and 6). There is strong evidence that politically connected sectors received a disproportionately higher level of NTM protection after the EU-induced tariff cut. The pattern of coefficients on imports, exports, the MFN and EU tariff rates is unchanged relative to baseline results.

In Table 6, we re-estimate our main specification for an alternative measure of the intensity of NTM protection, defined as the average number of NTMs applied to products that are covered by NTMs in a given sector. As the results show, the treatment status is a strong predictor of the evolution of overall NTM burden in the post-period in all specifications. The coefficient on the interaction between treated and Post is positive and statistically significant whether the dependent variable corresponds to all NTMs (columns 1-3) or restricted to TBTs (columns 4-6). The basic empirical patterns for TBTs are preserved if this measure is replaced with the average number of NTMs applied per product in a sector (see Online Appendix, Table 3).

Overall, our results provide strong evidence that politically connected sectors received significantly higher levels of compensatory trade protection through NTMs in the wake of the EU-induced tariff cut than the unconnected sectors. This finding is particularly robust and consistent with regards to technical barriers to trade that are more susceptible to political abuse. Controlling for the conventional determinants of trade protection suggested by previous literature does not diminish the strength of this finding. In fact, the estimates suggest that the impact

of political connectedness is large relative to that of other factors such as labour interests or business concentration. Admittedly, data limitations do not permit controlling for all relevant factors we might have wished for. Nonetheless, the set of control variables is relatively rich, and sector-level fixed effects account for additional unobserved heterogeneity.

In terms of substantive significance, the effect is quantitatively large. The presence of political connections increase the average NTM coverage ratio of a sector by around 10-11% in the post-period. Products that receive NTM protection have on average 1.5 additional NTMs in connected sectors in the post period. Furthermore, restricting the focus of our analysis to products covered by NTMs, results suggest that connected sectors received, on average, roughly one additional NTM relative to those in unconnected sectors. This is substantial considering that the average product in the entire sample space receives only one NTM. Relative to the average of 1.6 NTMs per covered product our results suggest an increase in NTM protection of almost two-thirds in connected sectors.

4.4   Royal versus Non-Royal Crony Firms

The finding that cronyism was a major factor behind the differential burden of NTM protection after the EU agreement came into force could be consistent with several political economy explanations. The rents generated from trade policy can be used to co-opt elites in support of the regime. These rents can also be generated by the royal family for personal enrichment. Given the fact that the royal family has vast business interests, and their firms are included as politically connected firms, both interpretations are possible. To distinguish between these explanations, we disaggregate crony firms into royal and non-royal firms and analyse the differential trajectory of NTM protection in sectors populated by these firms.

This exercise has the additional advantage of exploring a potential empirical concern linked with the role of Moroccan monarchy in both negotiating the FTA with the EU and acting as owner of a major business conglomerate. Our findings could thus be the result of the royal family attempting to enrich itself rather than the impact of lobbying efforts by connected businessmen and considerations of rent generation for co-optation. The former would be in line with (Rijkers, Baghdadi, and Raballand, 2015) who find that firms owned by the Ben Ali clan systematically evaded taxes and fees, thereby enriching the ruling family.

To distinguish between the two possibilities we disaggregate politically connected firms into royal firms and two non-royal groups of cronies, the *Makhzen* and Politicians, based on the classification of political connections outlined in section 3.1. For simplicity we group foundation board members and royal advisers together as the *Makhzen*. As a first cut, Figure 7 separately plots the evolution of tariff rates for the three types of crony sectors over time. Over-

all, there appears to be a convergence of tariff rates across the three groups over time. There is no evidence, for example, that sectors populated by royally-owned firms were liberalised more slowly. If at all, sectors with politician-owned firms seem to have retained higher levels of tariff protection after the EU agreement. This would lend further support to the argument that the differential pattern of NTM protection was driven by political influence, and underlines the importance of including tariff levels in our regressions.

FIGURE 7: Evolution of average EU tariff rates, by crony type
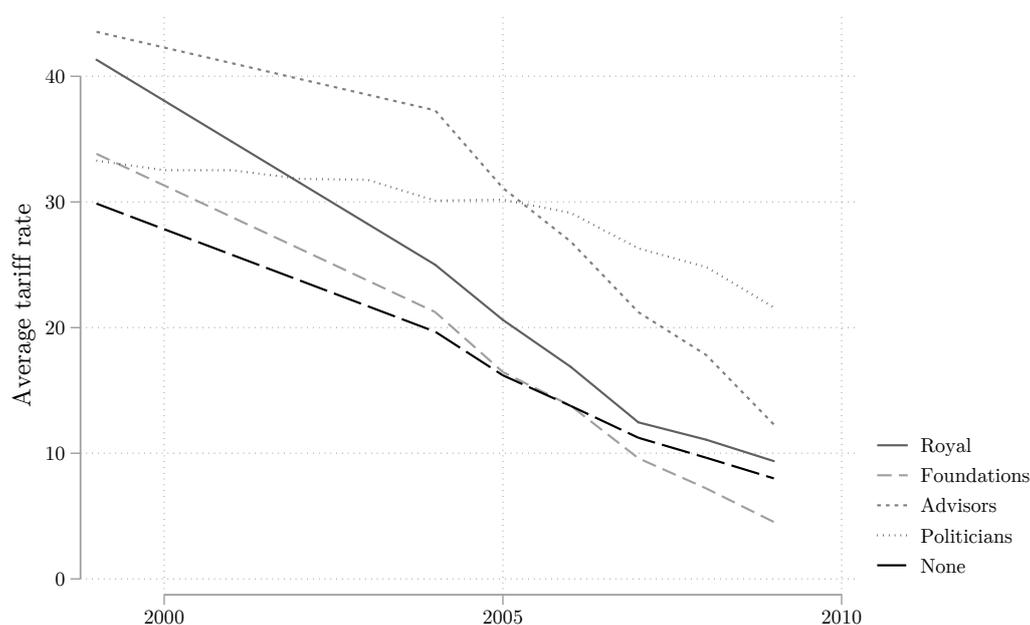
Note: Data imputed for 2000-2003 and missing after 2009. Rate was the same as MFN in 1999.
Royal Business Functionaries averages over two sectors only.

Since tariff rates in sectors with royal presence appear to have fallen by at least as much or more than those in non-royal sectors, an obvious possibility is that the increase in NTMs was driven by sectors with direct royal presence. Note that this would not be an endogeneity concern. It would simply show that the monarchy was forced to accept tariff liberalisation in negotiations with the EU, but compensated itself through other measures. Plotting the evolution of NTM coverage (see Figure 8 for the share of products in a sector covered by NTMs) suggests that this was not the case. In fact, NTM protection for royal crony sectors evolved very similarly to unconnected sectors. Instead, it was principally the sectors populated by politicians-owned firms and, to a lesser extent, the *Makhzen*, that disproportionately benefited from NTM protection after 2002.

To further support the graphical evidence in Figures 7 and 8, we re-estimated our core specifications for separately for royal and non-royal cronies. Table 7 reports the results for this exercise

FIGURE 8: Average share of products covered by NTMs, by crony type
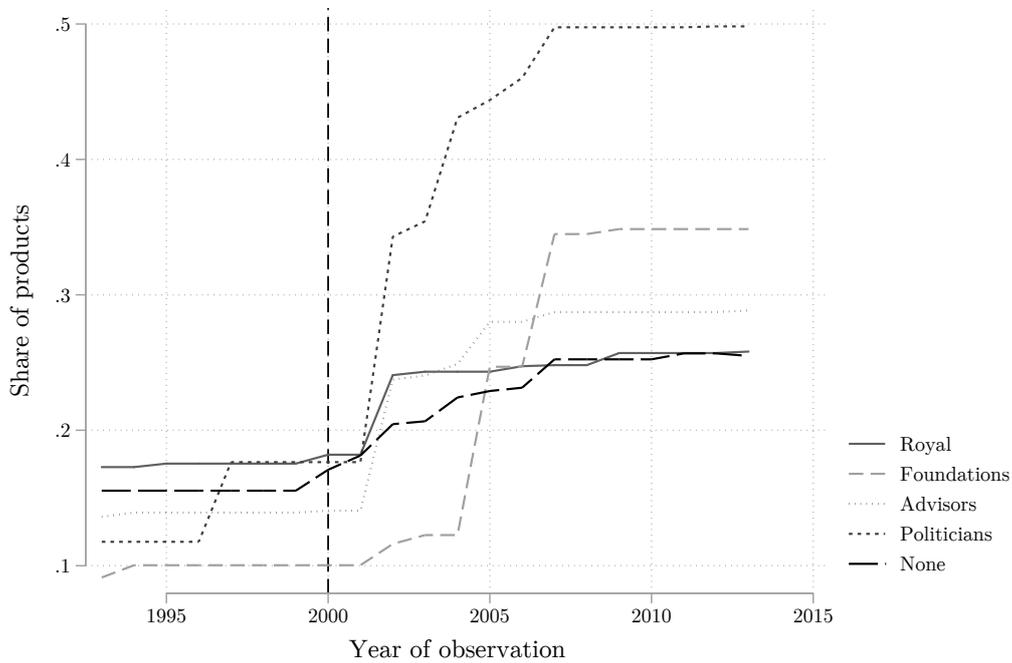
for our two main NTM measures defined for technical barriers to trade. Results are presented both for panel and collapsed DID models. In columns 1-4 we classify treated sectors as those with non-royal crony presence where firms connected with politicians, advisers and foundation board members operated. The remaining sectors were re-classified as non-crony. In columns 5-8 we re-estimate the main DID specifications using an alternative crony classification that defines crony sectors as those with royal crony presence. For this purpose we dropped other crony sectors from the sample, which reduces total number of sectors in our sample from 116 to 80.

The results are instructive. The treatment coefficient is only statistically significant for specifications with non-royal crony classification (columns 1-4). When cronies are defined as royal cronies only in columns 5-8, the coefficient on the treated interaction term is statistically indistinguishable from zero. This suggests that there was no statistically significant difference in the burden of NTM protection between the royal crony sectors and non-crony sectors in the post-EU agreement period. These estimates provide confirmatory evidence that our results are primarily driven by non-royal cronies, and it is these sectors that disproportionately benefited from higher NTM protection in the post-EU agreement period.

These results suggest that royally-owned firms in the Moroccan economy are not the principal driver of trade policy, and that the surge in non-tariff measures after 2002 was not orchestrated

to protect the royal sectors from trade liberalisation. Rather, NTMs seem to afford protection to industries that generate rents for the monarchy's ruling coalition, which includes advisers, friends and politicians. Some explanation for this pattern might lie in the fact that the monarchy has a more significant presence in the services and financial sectors (e.g. real estate, banking, and insurance). Cronies in these sectors are more reliant on licenses and regulations rather than NTMs. Indeed, evidence suggests that the monarchy and its entourage have substantially expanded their presence in non-tradables over time, leaving the manufacturing sectors to be principally dominated by politicians and former cabinet ministers (see Online Appendix, Figure 1).

4.5 Placebo Tests

In section 4.1 we have offered suggestive evidence that NTM protection in connected and unconnected sectors was trending fairly similarly prior to the EU agreement. To provide more rigorous evidence in support of the parallel trends assumption, we now perform some placebo tests. For example, we re-estimate the baseline model using only data from the pre-period (1993-2002), and set a placebo treatment date in 1997.[39] Table 8 reports the results for our two main NTM measures, and for all NTMs (columns 1-2) and TBTs (columns 3-4). As expected, our coefficients of interest on the DID term are all close to zero and statistically insignificant across all specifications. Reassuringly, these results show that the effect of treatment on trade protection was mainly a post-2002 phenomenon.

4.6 Varying the Cut-Off

In defining the pre- and post-periods for our baseline model we were guided by the fully flexible specification in section 4.2. While the EU agreement was negotiated in 1996 and came into force in 2000, its true effect appeared with a lag. Indeed, our results have suggested a clear break between 2001 and 2002. Nevertheless, it is important to probe whether our findings are robust to choosing alternative cut-off dates for defining the pre- and post-periods. To this end, we first move the cut-off date to 2000 rather than 2002, otherwise maintaining our focus on the two NTM measures defined for TBTs. The results, documented in Table 9 (columns 1-2), are essentially unchanged. Our coefficients of interest are statistically significant at 5% level.

Next, we shift back the cut-off date further to the year 1996 when the EU agreement was originally negotiated. The plots in figure 5 suggest that there was little change in the non-tariff regime between 1996 and 2002, so we would expect to obtain weaker results for this exercise.

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[39]We also performed regressions with other placebo treatment dates. The outcomes were very similar and qualitatively unchanged.

Table 9 (columns 3-4) confirm this prior. The treatment coefficients are now noticeably smaller in size, and are only significant at the 10% level. Nonetheless, even though the data suggests that the real pick-up in NTMs happened only several years later, using a very early cut-off date still provides evidence that sectors exposed to politically connected firms benefited from relatively higher levels of NTM protection after the EU agreement. Overall, the results in Table 9 provide reassuring evidence that our core finding is not sensitive to the choice of the cut-off date.

5   Discussion and Conclusion

In this paper we utilize a large trade policy shock, triggered by Morocco's Association Agreement with the EU, to investigate the politics of trade protection. The EU Agreement induced an across-the-board tariff cut that was followed by a wave of non-tariff protection that was unevenly distributed across sectors. This paper shows that sectors exposed to politically connected firms disproportionately benefited from this trade policy substitution. Our difference-in-differences analysis suggests that both the incidence and intensity of NTM protection was considerably higher for politically connected sectors relative to unconnected sectors in the wake of the EU agreement.

Disaggregating the analysis by types of NTMs, we showed that politically connected sectors were primarily compensated through technical barriers to trade. Drawing on the fine-grained information on types of cronies compiled in our database, we were able to distinguish between sectors exposed to firms owned by royal family and non-royal firms. Although the King himself is one of the largest businessmen in the country, our results suggest that these differential patterns of NTM protection in the post-EU agreement period were not driven by royal firms. Instead, they are mainly attributable to the role of non-royal firms owned by influential businessmen in the ruling coalition, comprised of cabinet members, royal advisers, and friends of the royal family.

Our results contribute to the understanding of drivers of non-tariff measures. In this regard, our evidence on the use of technical barriers to protect politically connected actors holds special relevance. A growing share of the global product space is now covered by technical barriers to trade. In Morocco, TBTs constitute 44% of all NTMs. Within these TBTs, there is an overwhelming reliance on conformity assessments and labelling requirements, which together comprise 96% of total TBTs (see Online Appendix, Figure 2). These are more amenable to political manipulation, since they depend on administrative oversight and require inspections from government officials.

Enforcing such regulations can be especially challenging in weak institutional contexts. This is particularly true for Middle Eastern countries that are widely recognized for their weak implementation capacity and highly discretionary and unpredictable enforcement environment. In such institutional settings, regulatory requirements that appear innocuous on paper can effectively end up as trade frictions, drawing precisely the sort of wedge between de jure rules and de facto practice that is emphasized by Hallward-Driemeier and Pritchett (2015). Selective enforcement of trade regulations can make compliance with NTMs more burdensome and costly for unconnected firms. Global evidence suggests that the costs associated with compliance and conformity assessment weigh particularly heavy on developing countries and small firms (UNCTAD, 2012b).

As Disdier, Fontagné, and Cadot (2015) show, North-South harmonization of technical regulations can negatively impact trade between southern bloc countries. Importantly, the effect is shown to be primarily driven by regional trade agreements signed by the EU with developing countries. A recent survey of Arab firms provides further evidence in this regard. The survey shows that NTMs are regarded as burdensome by 44% of all Arab companies engaged in imports and exports. Importantly, survey findings show that NTMs act as a significant barrier to the expansion of regional trade among Arab economies, a long-standing barrier to prosperity in the region International Trade Center (2015). In this context, preferential protection of politically connected sectors through NTMs can undermine competition, curb growth of small and medium enterprises, and adversely affect private sector development.

The welfare implications of the increase in non-tariff protection studied here are thus likely to be substantial. Although updated estimates of the ad-valorem equivalents (AVEs) of non-tariff protection are unavailable for Morocco, the country had one of the highest AVEs of NTMs among the global sample of 78 countries in early 2000s when such estimates were compiled (Kee, Nicita, and Olarreaga, 2009).[40] Even though it is difficult for us to precisely pin down the welfare implications, the massive wave of NTM protection since 2002 is likely to have further escalated trade protection in Morocco.

Our empirical findings also bear important relevance for the literature studying the political foundations of trade policy. We show how authoritarian regimes can agree to sign international trade agreements but neutralize the political risks of doing so by continuing to reward cronies through partial trade liberalization. Substituting one form of trade protection with another simply tends to foster re-regulation, which favours politically entrenched actors. The ensuing

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[40]To analyse the overall welfare implications of this change in the structure of protection, it would be necessary to estimate AVEs of NTM protection for several years both before and after the increase in NTM protection Morocco has witnessed. This would make it possible to construct an index of overall trade restriction based on the theory provided by (Anderson and Neary, 1996). The data variation required to estimate AVEs would require the construction of a cross-country panel dataset with a sufficiently large number of countries to allow inference.

rents from trade protection can feed members of the ruling coalition whose support is crucial for authoritarian stability. The evidence presented in this paper highlights the remarkable resilience of rent seeking constituencies in the face of trade liberalization.

As many Middle Eastern states initiated trade liberalization in the late 1990s it generated renewed hopes that such liberalization would undercut the power of rent seeking groups. Such optimism is best summed up in the following quote from a former Syrian Minister:

> "They (rent seeking networks) are still around, and they are powerful, but they are undergoing a change...They used to set the rules, we admit that, but they can no longer do so. It is the WTO (World Trade Organization) that they have to keep up with. So far, they have been feeding on government projects. Now they have to start competing." (Abdallah Al-Dardari quoted in Haddad, Bassam (2011))

This paper shows that such optimism is misplaced in the Moroccan context. For developing countries more generally, an implication of our findings is that genuine trade reform is unlikely to take place without taking due account of the underlying politics of trade protection.

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TABLE 1: Distribution of cronies in manufacturing sectors in 1993

ISIC 2-dgt	Description	Cronies	No of Sub-Sec	Share of Crony Sub-Sec
17	Textiles	26	7	0.43
15	Food products and beverages	19	17	0.41
24	Chemicals and chemical products	11	9	0.67
36	Furniture; manufacturing n.e.c.	9	6	0.33
19	Tanning and dressing of leather; Leather bags	9	3	0.67
28	Fabricated metal products, except machinery	8	7	0.57
25	Rubber and plastics products	7	3	0.33
26	Other non-metallic mineral products	6	8	0.38
21	Paper and paper products	5	3	0.67
27	Basic metals	4	4	0.75
29	Machinery and equipment n.e.c.	3	15	0.13
34	Motor vehicles, trailers and semi-trailers	3	3	0.67
31	Electrical machinery and apparatus n.e.c.	3	6	0.50
35	Other transport equipment	2	7	0.29
20	Wood and of products of wood and cork	2	5	0.20
23	Coke, refined petroleum products and nuclear fuel	1	3	0.33
18	Wearing apparel; dressing and dyeing of fur	1	2	0.00
22	Publishing, printing and reproduction of recorded media	1	7	0.14
33	Medical, precision and optical instruments	0	5	0.00
32	Radio, television and communication equipment	0	3	0.00
16	Tobacco products	0	1	0.00
37	Recycling	0	2	0.00
30	Office, accounting and computing machinery	0	1	0.00

TABLE 2: Main Moroccan business groups and their owners. Adapted from (Saadi, 2013) and supplemented with data on political connections from our own research. Revenue converted at the 2011 average exchange rate of 0.12 MAD/USD.

Holding	Year of Incorp.	# of Firms	Main Activities	Revenue (2011, est. Mio USD)	Owner	Political Connection
ONA/SNI	1980/81	>70	Manufacturing, finance, real estate, mining, retail	4,476	King Mohammed VI	Royal Family
SAFARI	1968	17	Manufacturing, finance, real estate, trading	>360	Mohammed Karim Lamrani	Politicians & Family
AKWA	1993	60	Energy, media, real estate	2,640 (2010)	Aziz Akhannouch	Foundation Board Members
Ynna holding	1970s	16	Manufacturing, Construction, Public works, Real-estate, Tourism, Retail	2,316	Miloud Chaabi	Politicians & Family
Finance.com	1995	31	Insurance, Transport, Tourism, Manufacturing	1,680	Othman Benjelloun	Foundation Board Members
Douja promotion / Addoha Group	1996	17	Real estate, Tourism	1,116	Anas Sefrioui	Royal Advisors & Friends
SAHAM Group	1995	20	Insurance, Health, Offshoring	708	Moulay Hafid Elalamy	Politicians & Family
HOLMARCOM	1978	23	Finance, Agroprocessing, Retail, Airways, Real estate	396	Mohamed Hassan Bensalah	Foundation Board Members
HMMA	1948	14	Manufacturing, Real estate	384	Moulay Messaoud Aggouzal	Royal Family
Alliances Developpement Immobilier	1994	60	Real estate, Construction, Public works, Tourism	312 (2010)	Mohamed Alami Lazraq	Royal Advisors & Friends
El Alami Group	1950	25	Manufacturing	120	Abdelh. El Alami	Politicians & Family
Sopar Group	1970s	–	Textile, Agriculture, Real estate, Household appl.	–	Kettani Family	Foundation Board Members

TABLE 3: Summary statistics of main variables by crony and non-crony sectors using the 1993 cut-off (cross-sectional view, year 2000)

| | Manufacturing | | | |
| | Crony | | Non-Crony | |
Variable	Mean	Std.Dev.	Mean	Std.Dev.
Avg MFN Tariff Rate	35.22	12.64	29.23	20.68
Avg EU Tariff Rate	34.92	13.71	28.11	21.09
Avg NTMs / Product	1.03	2.83	1.19	3.16
Avg NTMs / Covered Product	1.50	3.18	1.68	3.89
At least 1 NTM (product share)	0.15	0.32	0.17	0.34
At least 2 NTMs (product share)	0.13	0.30	0.13	0.30
At least 3 NTMs (product share)	0.13	0.30	0.12	0.29
Imports (in mio USD)	112	167	46	85
Exports (in mio USD)	54	150	47	241
Crony Firms (1993)	2.68	2.84	0.00	0.00
Crony Firms (2000)	3.28	3.69	0.04	0.19
Crony Market Share (2013)	0.36	0.37	0.01	0.11
Firms	71.01	81.73	53.84	168.15
Employees	4,607	5,311	3,795	19,132
Employees / Firm	95.22	105.05	74.46	107.94
Avg Wage (in USD)	6,032	3,248	5,040	3,279
Productivity (in USD)	56,905	84,534	41,420	50,242
Output (in mio USD)	222.61	296.72	81.95	192.72
Consumption (in mio USD)	328.38	378.99	93.89	137.20
Value Added (in mio USD)	62.99	74.34	34.03	104.54
Capital Formation (in mio USD)	14.53	15.56	5.47	13.35
Number of Sectors	44		77	

TABLE 4: Main results – Determinants of the NTM coverage ratio (NTM share) for full and refined NTM sets, panel and collapsed

	(1) All NTMs (Panel)	(2) All NTMs (Panel)	(3) All NTMs (Collapsed)	(4) TBTs (Panel)	(5) TBTs (Panel)	(6) TBTs (Collapsed)
Post	0.0735**	0.0850***	-0.0294	0.0404	0.0811***	-0.0631
	(0.0293)	(0.0291)	(0.0522)	(0.0272)	(0.0280)	(0.0471)
Post X Treated	0.0993**	0.0616	0.0883*	0.116***	0.0914**	0.110**
	(0.0432)	(0.0378)	(0.0490)	(0.0426)	(0.0368)	(0.0478)
Log Imports (wt)	-0.00923	-0.00448	0.0655	-0.00449	-0.00216	0.0669
	(0.0267)	(0.0164)	(0.0606)	(0.0266)	(0.0167)	(0.0603)
Log Exports (wt)	-0.0342	-0.0302	-0.0711	-0.0474	-0.0453*	-0.0874**
	(0.0322)	(0.0240)	(0.0453)	(0.0323)	(0.0232)	(0.0438)
MFN Tariff Rate	0.00504***	0.00525***	0.00778	0.00469**	0.00482***	0.00660
	(0.00192)	(0.00177)	(0.00641)	(0.00187)	(0.00169)	(0.00619)
EU Tariff Rate	-0.00511**	-0.00364**	-0.0127**	-0.00525***	-0.00363**	-0.0126**
	(0.00201)	(0.00157)	(0.00640)	(0.00195)	(0.00151)	(0.00604)
Employees			-0.00435			-0.00304
			(0.00758)			(0.00758)
Firms			-0.00235**			-0.00263**
			(0.00115)			(0.00104)
Constant	0.164***	-2.870	0.423***	0.0536**	0.640	0.348***
	(0.0251)	(3.902)	(0.136)	(0.0243)	(3.638)	(0.127)
Sector FEs	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Sect*Yr FEs	No	Yes	No	No	Yes	No
Sectors	119	119	116	119	119	116
Periods	17	17	2	17	17	2
NxT	2,023	2,023	229	2,023	2,023	229

Notes: Observations are at the sector-year level. The dependent variable is the NTM coverage ratio (NTM share) in a given sector-year. All regressions include year and sector fixed effects. Coefficients are reported with robust standard errors, clustered at the sector level, in parentheses. The sample is restricted to the manufacturing sector. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 5: Main results – Determinants of combined breadth and intensity of NTM coverage (NTM2 share) for full and refined NTM sets, panel and collapsed

	(1) All NTMs (Panel)	(2) All NTMs (Panel)	(3) All NTMs (Collapsed)	(4) TBTs (Panel)	(5) TBTs (Collapsed)	(6) TBTs (Collapsed)
Post	0.0620** (0.0288)	0.0859*** (0.0287)	-0.0330 (0.0505)	0.0370 (0.0272)	0.0790*** (0.0281)	-0.0675 (0.0474)
Post X Treated	0.108** (0.0426)	0.0790** (0.0377)	0.0996** (0.0485)	0.114*** (0.0426)	0.0898** (0.0368)	0.106** (0.0478)
Log Imports (wt)	-0.00909 (0.0267)	-0.00309 (0.0167)	0.0606 (0.0612)	-0.00431 (0.0266)	-0.00222 (0.0166)	0.0672 (0.0602)
Log Exports (wt)	-0.0366 (0.0323)	-0.0403* (0.0240)	-0.0722 (0.0456)	-0.0485 (0.0323)	-0.0460** (0.0231)	-0.0899** (0.0437)
MFN Tariff Rate	0.00488** (0.00188)	0.00518*** (0.00173)	0.00766 (0.00633)	0.00477** (0.00187)	0.00490*** (0.00169)	0.00758 (0.00621)
EU Tariff Rate	-0.00502** (0.00196)	-0.00376** (0.00156)	-0.0122* (0.00623)	-0.00530*** (0.00196)	-0.00365** (0.00151)	-0.0135** (0.00607)
Employees			-0.00398 (0.00774)			-0.00280 (0.00764)
Firms			-0.00231** (0.00117)			-0.00261** (0.00104)
Constant	0.139*** (0.0247)	-0.653 (3.697)	0.387*** (0.133)	0.0306 (0.0242)	0.679 (3.644)	0.325** (0.127)
Sector FEs	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Sect*Yr FEs	No	Yes	No	No	Yes	No
Sectors	119	119	116	119	119	116
Periods	17	17	2	17	17	2
NxT	2,023	2,023	229	2,023	2,023	229

Notes: Observations are at the sector-year level. The dependent variable is the NTM coverage ratio (NTM2 share) in a given sector-year. All regressions include year and sector fixed effects. Coefficients are reported with robust standard errors, clustered at the sector level, in parentheses. The sample is restricted to the manufacturing sector. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 6: Main results – Determinants of the intensity of NTM coverage (NTM_cum_avg2) for full and refined NTM sets, panel and collapsed

	(1) All NTMs (Panel)	(2) All NTMs (Panel)	(3) All NTMs (Collapsed)	(4) TBTs (Panel)	(5) TBTs (Collapsed)	(6) TBTs (Collapsed)
Post	1.591***	1.086***	0.896	0.739**	1.166***	-0.285
	(0.409)	(0.355)	(0.597)	(0.326)	(0.269)	(0.431)
Post X Treated	1.124**	0.774*	1.284**	1.356***	1.083***	1.498***
	(0.453)	(0.410)	(0.515)	(0.391)	(0.311)	(0.447)
Log Imports (wt)	-0.0232	0.0807	0.185	-0.000554	-0.0936	0.346
	(0.223)	(0.211)	(0.588)	(0.182)	(0.158)	(0.440)
Log Exports (wt)	-0.0698	-0.0580	-0.254	-0.316	-0.0718	-0.656**
	(0.264)	(0.216)	(0.442)	(0.208)	(0.144)	(0.309)
MFN Tariff Rate	0.0553**	0.0341*	0.0480	0.0371*	0.0236	0.112*
	(0.0255)	(0.0201)	(0.0704)	(0.0189)	(0.0145)	(0.0595)
EU Tariff Rate	-0.0391	-0.0204	-0.0598	-0.0415**	-0.0198	-0.150***
	(0.0246)	(0.0210)	(0.0655)	(0.0194)	(0.0152)	(0.0554)
Employees			0.173***			0.195***
			(0.0555)			(0.0524)
Firms			-0.0104			-0.0210***
			(0.0128)			(0.00616)
Constant	0.756**	-90.91**	1.600	0.248	-0.895	1.599
	(0.347)	(43.39)	(1.364)	(0.221)	(29.60)	(1.062)
Sector FEs	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Sect*Yr FEs	No	Yes	No	No	Yes	No
Sectors	119	119	116	119	119	116
Periods	17	17	2	17	17	2
NxT	2,023	2,023	229	2,023	2,023	229

Notes: Observations are at the sector-year level. The dependent variable is the intensity of NTM coverage (NTM_cum_avg2) in a given sector-year. All regressions include year and sector fixed effects. Coefficients are reported with robust standard errors, clustered at the sector level, in parentheses. The sample is restricted to the manufacturing sector. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 7: Robustness test – Dif-in-Dif: Royal versus other cronies

	Non-Royal Cronies				Royal Cronies			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Panel	Panel	Collapsed	Collapsed	Panel	Panel	Collapsed	Collapsed
	NTM Share	NTM2 Share	NTM Share	NTM2 Share	NTM Share	NTM2 Share	NTM Share	NTM2 Share
Post	0.0811***	0.0790***	-0.0631	-0.0675	0.0410**	0.0410**	-0.0779	-0.0779
	(0.0280)	(0.0281)	(0.0471)	(0.0474)	(0.0174)	(0.0174)	(0.0509)	(0.0509)
Post X Treated	0.0914**	0.0898**	0.110**	0.106**	0.0821	0.0821	-0.0182	-0.0182
	(0.0368)	(0.0368)	(0.0478)	(0.0478)	(0.0811)	(0.0811)	(0.0510)	(0.0510)
Log Imports (Wt)	-0.00216	-0.00222	0.0669	0.0672	0.0266	0.0266	0.134*	0.134*
	(0.0167)	(0.0166)	(0.0603)	(0.0602)	(0.0162)	(0.0162)	(0.0705)	(0.0705)
Log Exports (Wt)	-0.0453*	-0.0460**	-0.0874**	-0.0899**	0.00247	0.00247	0.0492	0.0492
	(0.0232)	(0.0231)	(0.0438)	(0.0437)	(0.0248)	(0.0248)	(0.0705)	(0.0705)
MFN Tariff Rate	0.00482***	0.00490***	0.00660	0.00758	0.00384**	0.00384**	0.00106	0.00106
	(0.00169)	(0.00169)	(0.00619)	(0.00621)	(0.00154)	(0.00154)	(0.00442)	(0.00442)
EU Tariff Rate	-0.00363**	-0.00365**	-0.0126**	-0.0135**	-0.00329**	-0.00329**	-0.00575	-0.00575
	(0.00151)	(0.00151)	(0.00604)	(0.00607)	(0.00144)	(0.00144)	(0.00470)	(0.00470)
Employees			-0.00304	-0.00280			-0.0176	-0.0176
			(0.00758)	(0.00764)			(0.0119)	(0.0119)
Firms			-0.00263**	-0.00261**			-0.00279**	-0.00279**
			(0.00104)	(0.00104)			(0.00138)	(0.00138)
Constant	0.640	0.679	0.348***	0.325**	4.223	4.192	0.257**	0.229**
	(3.638)	(3.644)	(0.127)	(0.127)	(3.725)	(3.725)	(0.112)	(0.112)
Sector FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector*Yr FEs	Yes	Yes	No	No	Yes	Yes	No	No
Sectors	119	119	116	116	83	83	80	80
Periods	17	17	2	2	17	17	2	2
NxT	2023	2023	229	229	1411	1411	157	157

Notes: Observations are at the sector-year level. Cut-off between pre- and post-periods set at 2002. The dependent variable is the NTM coverage ratio (NTM Share) in a given sector-year. All regressions include year and sector fixed effects. Coefficients are reported with robust standard errors, clustered at the sector level, in parentheses. The sample is restricted to the manufacturing sector. For the regressions including royal cronies only, sectors classified as crony compare sectors with royal family connections to unconnected sectors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 8: Placebo test – Pre-period (until 2000) only, using 1996/7 as cut-off

	All NTMs		**TBTs**	
	(1)	(2)	(3)	(4)
	NTM Share	NTM2 Share	NTM Share	NTM2 Share
Post	-0.000230	-0.000657	-0.000734	-0.000734
	(0.000960)	(0.000919)	(0.000917)	(0.000917)
Post X Treated	0.0228	0.0222	0.0221	0.0221
	(0.0220)	(0.0221)	(0.0221)	(0.0221)
Log Imports (wt)	0.00435	0.00471	0.00470	0.00470
	(0.00502)	(0.00508)	(0.00508)	(0.00508)
Log Exports (wt)	-0.000502	-0.00114	-0.00113	-0.00113
	(0.00311)	(0.00304)	(0.00303)	(0.00303)
MFN Tariff Rate	0.0000152	-0.0000300	-0.0000296	-0.0000296
	(0.0000640)	(0.0000761)	(0.0000759)	(0.0000759)
Constant	0.143***	0.117***	0.0215***	-0.000892
	(0.00626)	(0.00637)	(0.00637)	(0.00637)
Sector FEs	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes
Sect*Yr FEs	No	No	No	No
Sectors	119	119	119	119
Periods	7	7	7	7
NxT	833	833	833	833

Notes: Observations are at the sector-year level. All regressions include year and sector fixed effects. Coefficients are reported with robust standard errors, clustered at the sector level, in parentheses. The sample is restricted to the manufacturing sector. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 9: Varying the cut-off for DID Analysis

	2000 Cut-Off		1996 Cut-Off	
	(1)	(2)	(3)	(4)
	NTM Share	NTM2 Share	NTM Share	NTM2 Share
Post	-0.101***	-0.0985***	-0.0540***	-0.0532***
	(0.0300)	(0.0300)	(0.0172)	(0.0172)
Post X Treated	0.0703**	0.0690**	0.0537*	0.0528*
	(0.0294)	(0.0294)	(0.0278)	(0.0278)
Log Imports (wt)	-0.000961	-0.00105	0.000777	0.000657
	(0.0163)	(0.0163)	(0.0159)	(0.0159)
Log Exports (wt)	-0.0467*	-0.0474**	-0.0479**	-0.0486**
	(0.0237)	(0.0237)	(0.0241)	(0.0240)
MFN Tariff Rate	0.00500***	0.00506***	0.00490***	0.00497***
	(0.00171)	(0.00171)	(0.00177)	(0.00177)
EU Tariff Rate	-0.00386**	-0.00388**	-0.00385**	-0.00386**
	(0.00151)	(0.00151)	(0.00154)	(0.00154)
Constant	-22.55***	-21.92***	-17.25***	-16.83***
	(6.052)	(6.022)	(4.874)	(4.855)
Sector FEs	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes
Sect*Yr FEs	Yes	Yes	Yes	Yes
Sectors	119	119	119	119
Periods	17	17	17	17
NxT	2,023	2,023	2,023	2,023

Notes: Observations are at the sector-year level. All regressions include year and sector fixed effects. Coefficients are reported with robust standard errors, clustered at the sector level, in parentheses. The sample is restricted to the manufacturing sector. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Online Appendix for Ruckteschler, Malik and Eibl 2019

Evolution of crony presence by sector.—Appendix Figure 1 visually depicts the changing sectoral presence of cronies in traded versus non-tradable sectors. Figure 1 shows a growing presence of cronies over time in non-tradable sectors of the Moroccan economy. Separately, our database suggests that, within the non-tradable sectors, cronies significantly increased their presence in real estate and finance. During the period 1993-2013, the number of crony firms operating in the real estate sector grew from around 60 to 450; the corresponding number for finance-related firms increased from 40 to 110 during the aforementioned period. Majority of firms operating in these sectors were royally-owned firms. Although our empirical analysis focuses on the manufacturing sector, the trends highlighted by the above statistics and Figure 1 provide an important backdrop to interpreting the results in section 4.4 of the paper.

FIGURE 1: Changing sectoral presence of crony firms
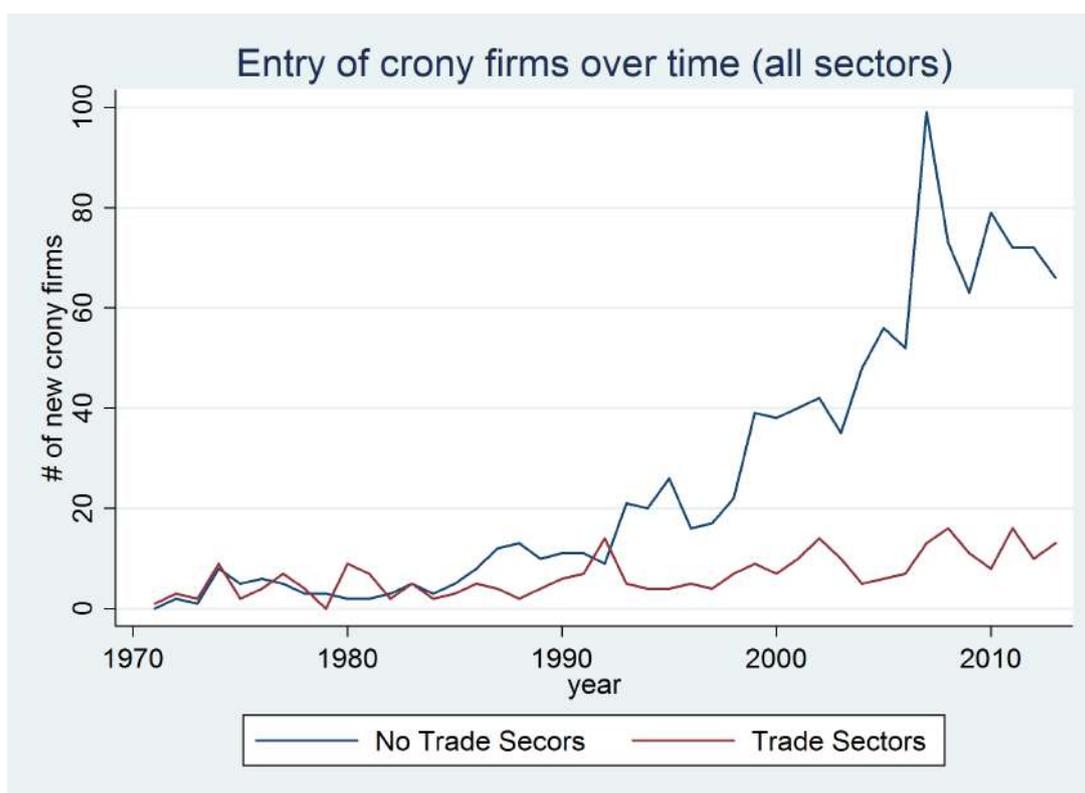
The distribution of TBTs by sub-type.—Appendix Figure 2 provides a breakdown of technical barriers to trade (TBT) according to various sub-types. The numbers are expressed as share of total TBTs. As Figure 2 shows, the overwhelming majority of TBTs related to conformity assessments and labelling requirements. These are essentially non-tariff measures that require administrative oversight.

FIGURE 2: TBT sub-types, share of total
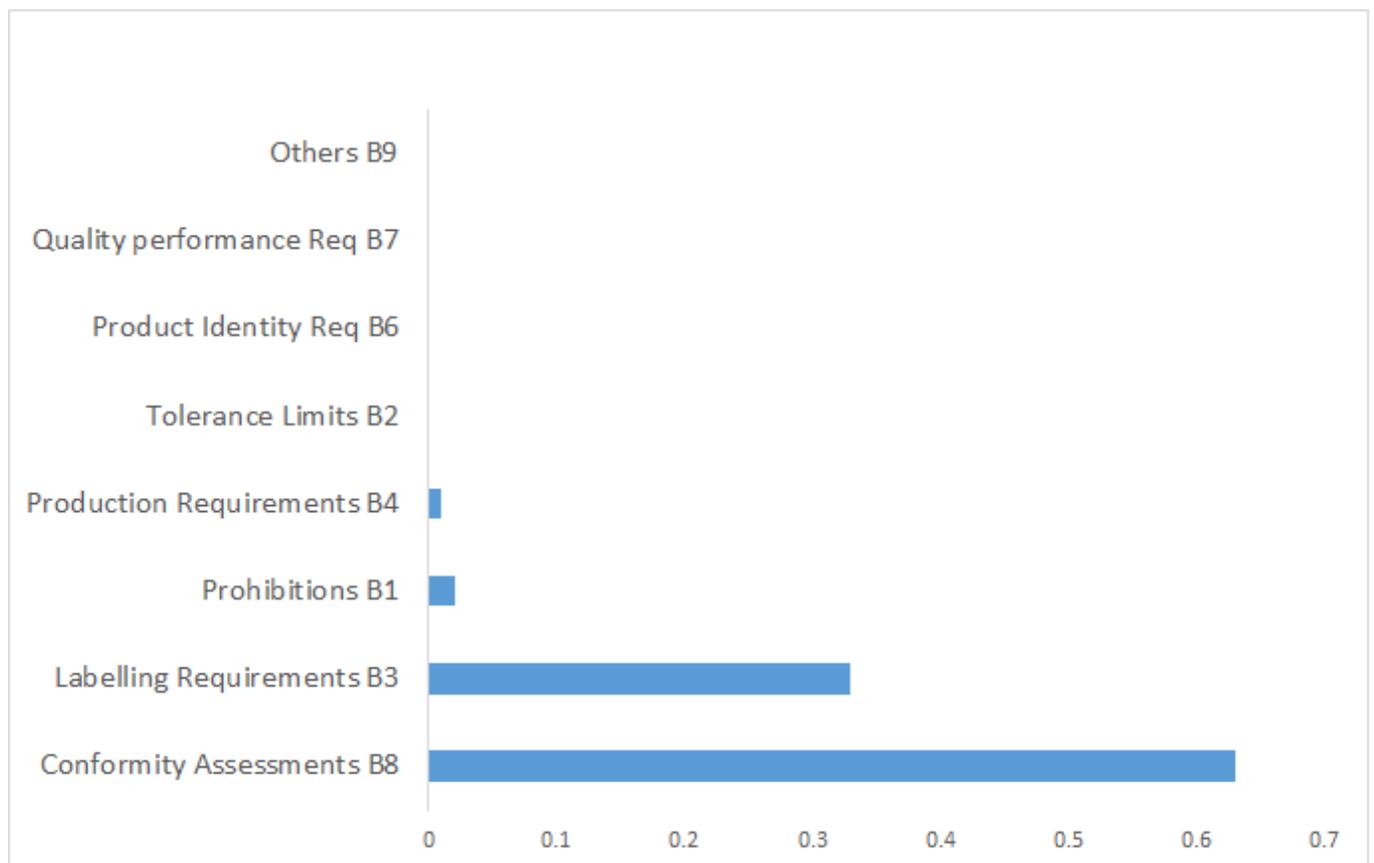
Industry characteristics and the EU-induced tariff-cut.—In Appendix Table 1 we explore the relationship between the tariff cuts with the pre-EU Agreement industry characteristics at the ISIC-4 level. The dependent variable in column 1 is the change in the EU tariff rate between the years, 2000 and 2009. In column 2 we replace the dependent variable with the difference between the MFN and EU tariff rates in the year 2009. Apart from the standard controls, we include the total number of employees, number of firms, value added per firm, and productivity per firm. All variables are measured prior to the year when the EU Agreement came into force. Data for these controls has been obtained from the INDSTAT4 database (UNIDO, 2013). As the results in column 1 show, treatment status (measured as whether a sector had crony presence in 1993) is a strong predictor of the change in tariff during the 2000-09 period. This suggests that treated sectors appear to have witnessed a more significant tariff cut. However, none of the industry-level characteristics, other than imports, turn up as statistically significant predictors of the subsequent EU-induced tariff cut. Accordingly, all our main regression specifications include the EU tariff rates and imports.

Alternative measure of NTM intensity.—In Appendix Table 3 we use the average number of NTMs applied per product in a given sector as an alternative measure of the intensity of NTM coverage. Repeating the basic empirical set up, we first define this measure for all NTMs (first panel) and, subsequently, for technical barriers to trade (second panel). As the results suggest, treated sectors witnessed a significantly higher intensity of trade protection via TBTs in the post-EU Agreement period.

UNIDO controls.—In Appendix Table 4 we include additional industry characteristics using UNIDO's INDSTAT4 database. Since the UNIDO dataset covers shorter time period, we include the additional controls in the two-period DID model. Besides the total number of employees, number of establishments, we successively add in columns 3-5, output per firm, employees per firm, and value-added per firm. In cols. 6-7, we add measures of sectoral concentration of output and employees in a sector. Employment concentration is defined as employees in an ISIC-4 sector as a share of total manufacturing employment. Similarly, output concentration is defined as output in an ISIC-4 sector as a share of total manufacturing output. When included separately, coefficients on both concentration measures are negative and statistically significant, suggesting that sectors with greater concentration of output or employment witnessed relatively lower NTM protection in the post-period. Importantly, in most specifications, the coefficient on treatment interaction with Post remains statistically significant.

TABLE 1: Relationship of tariff cuts with pre-EU Agreement sector characteristics

	(1) Delta EU Tariff Rate 2000-2009	(2) Delta EU to MFN Tariff Rate 2009
Treated (1993 crony presence)	5.103**	1.134
	(2.398)	(1.506)
Log Imports (wt)	-4.197**	-2.349*
	(1.895)	(1.190)
Log Exports (wt)	3.006	1.248
	(1.974)	(1.240)
Employees	0.0000240	-0.0000395
	(0.000133)	(0.0000835)
Firms	0.0117	0.0122
	(0.0121)	(0.00761)
Value-Add	-0.00755	0.00812
	(0.0181)	(0.0114)
Productivity	0.0118	-0.00121
	(0.0224)	(0.0141)
Constant	23.42***	13.00***
	(2.259)	(1.418)
N	106	106

Notes: Coefficients are reported with robust standard errors, clustered at the sector level, in parentheses. The sample is restricted to the manufacturing sector. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 2: Universally applied non-tariff measures

Measure	Start Year	Chapter	Code	Title	Source	Description
1374	1977	F - PCMs	F220	Merchandise handling or storing	Customs Code	General customs code (updated by Finance Laws since)
1375	1984	F - PCMs	F220	Merchandise handling or storing	Decree 2-84-29 (B. O. n3736)	Sets usage taxes for ships at several ports (per ton)
1381	1986	F - PCMs	F410	General sales taxes	Law 30-85 on Value Added Tax	Establishment of VAT tax for domestic production and imports. Application on imports is the responsibility of the Customs and Excise Department.
1387	1994	G - Finance	G300	Regulation on official foreign exchange allocation	Order 1308-94 of the Ministry of Foreign Trade	Determining the list of goods subject to quantitative import or export restrictions and are therefore subject to licensing
1444	1994	P - Export	P900	Export measures n.e.s.	Order 1308-94 of the Ministry of Foreign Trade	Determining the list of goods subject to quantitative import or export restrictions and are therefore subject to licensing
1380	1995	F - PCMs	F390	Additional charges n.e.s.	Decree 2-94-734	Establishment of the parafiscal import tax (0.25% ad valorem) for financing the promotion and inspection of exports.
1377	1995	F - PCMs	F290	Service charges n.e.s.	Decree 2-95-772	Introduced a levy on the use of the computer systems of the Customs and Excise Department (e.g. 100DH per import declaration).

TABLE 3: Determinants of the intensity of NTM coverage (NTM_cum_avg) for full and refined NTM sets

	(1) All NTMs (Panel)	(2) All NTMs (Panel)	(3) All NTMs (Collapsed)	(4) TBTs (Panel)	(5) TBTs (Collapsed)	(6) TBTs (Collapsed)
Post	1.123***	0.257	0.969**	0.152	0.249**	-0.284
	(0.285)	(0.247)	(0.455)	(0.127)	(0.122)	(0.183)
Post X Treated	0.374	0.107	0.365	0.484***	0.392***	0.473**
	(0.270)	(0.241)	(0.303)	(0.164)	(0.142)	(0.187)
Log Imports (wt)	-0.108	0.0851	-0.0314	0.00155	0.0158	0.314
	(0.153)	(0.129)	(0.398)	(0.103)	(0.0756)	(0.239)
Log Exports (wt)	0.0670	-0.178	0.0581	-0.220*	-0.201**	-0.414**
	(0.204)	(0.163)	(0.346)	(0.117)	(0.0930)	(0.164)
MFN Tariff Rate	0.0227*	0.0253**	-0.0301	0.0203**	0.0195***	0.0289
	(0.0118)	(0.0126)	(0.0526)	(0.00777)	(0.00675)	(0.0220)
EU Tariff Rate	-0.00706	-0.0135	0.0344	-0.0219***	-0.0159**	-0.0513**
	(0.0122)	(0.0127)	(0.0531)	(0.00793)	(0.00649)	(0.0213)
Employees			-0.0154			0.00531
			(0.0495)			(0.0217)
Firms			0.00236			-0.00922***
			(0.0110)			(0.00336)
Constant	0.356	-92.04***	0.701	0.121	-2.573	1.123**
	(0.271)	(34.24)	(0.969)	(0.109)	(15.79)	(0.463)
Sector FEs	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Sect*Yr FEs	No	Yes	No	No	Yes	No
Sectors	119	119	116	119	119	116
Periods	17	17	2	17	17	2
NxT	2,023	2,023	229	2,023	2,023	229

Notes: Observations are at the sector-year level. The dependent variable is the average number of NTMs applied per product in the sector (NTM_cum_avg) in a given sector-year. All regressions include year and sector fixed effects. Coefficients are reported with robust standard errors, clustered at the sector level, in parentheses. The sample is restricted to the manufacturing sector. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 4: DID model with individual UNIDO controls - NTM2_share

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post	-0.0349	-0.0290	-0.0530	-0.0476	-0.0525	-0.0550	-0.0316	-0.0252
	(0.0327)	(0.0325)	(0.0374)	(0.0376)	(0.0371)	(0.0372)	(0.0323)	(0.0341)
Post X Treated	0.0961**	0.111**	0.101**	0.101**	0.103**	0.0944**	0.0852*	0.0958**
	(0.0461)	(0.0445)	(0.0477)	(0.0481)	(0.0476)	(0.0462)	(0.0463)	(0.0459)
EU Tariff Rate	-0.00823**	-0.00805**	-0.00923**	-0.00882**	-0.00903**	-0.00948**	-0.00792**	-0.00804**
	(0.00335)	(0.00323)	(0.00375)	(0.00362)	(0.00366)	(0.00369)	(0.00328)	(0.00335)
Employees	-0.0170							
	(0.0115)							
Establishments		-0.00261***						-0.00199**
		(0.000970)						(0.000860)
Output/firm			-0.0000727					
			(0.0000974)					
Employees/firm				-0.120				
				(0.126)				
Value-add/firm					-0.0000217			
					(0.0000456)			
Output concent.						-10.47**		-1.777
						(4.785)		(3.619)
Employee concent.							-10.40**	-5.102
							(4.936)	(3.402)
Constant	0.333***	0.413***	0.296***	0.293***	0.291***	0.394***	0.345***	0.436***
	(0.114)	(0.129)	(0.112)	(0.108)	(0.109)	(0.129)	(0.107)	(0.121)
Sector FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sectors	115	115	113	114	113	114	115	114
Periods	2	2	2	2	2	2	2	2
NxT	229	229	226	227	226	228	229	228

Notes: The dependent variable (NTM2_share) is constructed based on the restricted NTM set (TBTs only). Panel dataset collapsed to pre- and post-periods. All regressions include sector fixed effects. Coefficients are reported with robust standard errors, clustered at the sector level, in parentheses. The sample is restricted to the manufacturing sector. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.