

Firms' Strategic Responses to Non-Tariff Measures: The Case of Malaysian Exporters

Arumugam Sithamparam^a, Evelyn S. Devadason^b, Santha Chenayah^c

Abstract: *This paper examines strategic responses by exporters to non-tariff measures (NTMs) in major export destinations, based on a newly constructed representative firm-level survey. The responses are examined for exporting firms, with differing levels of trading intensities, given prior evidence that NTMs disproportionately affect exporters. The assessment accounts for products and structural characteristics of the exporting firm, namely size, ownership and age of firm. The key findings of the study show that most firms choose to comply with the NTMs. Of concern, is, irrespective of the response strategy, the general approach taken by these exporters is largely reactive. Further, the most negative approach, which is a combination of 'exit' and 'reactive', is prevalent among the resource-based, small-sized and young firms that are Malaysian-owned, relative to their counterparts within the different groups of exporters. The findings of the study bring to the fore the importance of capacity building for firms to maximise their strategic options through a proactive approach, and for engaging more exporters to use the 'voice' strategy.*

Keywords: non-tariff measures; strategic responses; proactive; reactive; exporters; Malaysia

JEL Classification: F14, F23, F60

Article Received: 19 May 2017; Article Accepted: 31 July 2017

1. Introduction

Many countries have adopted standards and regulations, known as non-tariff measures (NTMs). The imposition of NTMs in importing countries has raised concern among exporters (UNCTAD, 2013; WTO, 2012; Cadot and Malouche, 2012; Beghin, Disdier, Marette & Van Tongeren, 2012; Mohan,

^a Department of Economics, Faculty of Economics and Administration, University of Malaya, 50603 Kuala Lumpur, Malaysia. *Email:* gсарumuga@gmail.com

^b Corresponding author. Department of Economics, Faculty of Economics and Administration, University of Malaya, 50603 Kuala Lumpur. *Email:* evelyns@um.edu.my

^c Department of Economics, Faculty of Economics and Administration, University of Malaya, 50603. *Email:* santha@um.edu.my

Khorana & Choudhury, 2012). If exporters cannot meet these regulatory requirements, their products cannot enter those markets. This concern is especially relevant to countries in Southeast Asia (Pasadilla, 2007; Phetmany & Phimmavong, 2016), including Malaysia (Sithamparam, Devadason & Chenayah, 2017; Sithamparam & Devadason, 2016; Noor Aini, 2011; Rabiul, Shaharuddin & Chamburi, 2010), that are export-dependent. For Malaysia, international¹ requirements for compliance with standards, among others, have been identified for the recent decline in the export performance of its manufacturing sector. The country's share in world trade had declined by 0.3 percentage points between 2000 and 2013 from 1.5% to 1.2% (World Bank, 2014). Though marginal, this decline has received national attention as manufactured goods dominate total exports at 82%, based on the 2015 statistics (EPU, 2015).

While recognising that NTMs can impede exports, recent studies show that, in certain circumstances, it can form the basis for competitive positioning of firms (Neeliah & Neeliah, 2014; Lemeilleur, 2013; Diaz Rios & Jaffee, 2008), resulting in export enhancement. Thus, competitive positioning has, in turn, provided different options (or room for manoeuvre) for exporters to respond to NTMs. However, in the discussion on the role of NTMs in explaining the behaviour of exports, not much attention has been given to understand how exporters (namely the private sector) have responded to global standards and regulations. The question as to who complies with standards and regulations, and who does not, remains unaddressed. Additionally, there is a dearth of primary firm-level data available for undertaking research on NTMs, particularly for Malaysia. This study therefore provides micro-level evidence based on a specially designed representative firm-level survey on strategies taken by different groups of exporters when faced with NTMs in major markets. The findings can serve as an input to national stakeholders', to ensure that assistance is targeted to the specific group of exporters that face compliance issues.

This paper is organised as follows. Section 2 contextualises NTMs as a strategic issue for economic agents and reviews the literature on theories related to firm behaviour and strategic responses, to frame the analytical procedure in Section 3. Section 3 details the analytical framework adopted for the study and describes the survey data while Section 4 presents and discusses the results. Section 5 summarises key findings and provides some policy implications.

2. Literature Review

2.1 NTMs as a strategic issue

There is a plethora of studies that have sought to quantify the effects of NTMs on trade. Some studies conclude NTMs have a negative impact on trade. Gebrehiwet, Ngqangweni and Kirsten, (2007), Chen, Otsuki & Wilson, (2006; 2008), Fontagne, Mimouni & Pasteels, (2005), Iacovone (2005), Otsuki, Wilson and Sewadeh, among others. Conversely, Foletti and Shingal (2014), Bratt (2014), Disdier et al. (2008a, 2008b), Masakure, Henson and Cranfield (2009), Moenius (2004, 2006), Swann, Temple and Shurmer (1996) offer evidence against theoretical predictions of NTMs as barriers to trade as they provide information on both product requirements and consumer preferences (see also Maskus, Wilson & Otsuki, 2001; Chen et al. 2008) in import markets for potential exporters. Thus, compliance costs associated with those measures are more than offset by reduced information costs (see Athukorala & Jayasuriya, 2003). This theoretical explanation based on a signalling argument (see also Masakure et al. 2009), provides an alternative perspective to the mainstream literature on NTMs as barriers to trade. The current literature frequently alludes to the signalling theory.

The main implication from the empirical literature is that NTMs either have an ambiguous effect on trade or no impact at all, while others indicate NTMs may facilitate trade or restrict it (see also WTO, 2005; Schlueter et al. 2009). The positive impact of NTMs on trade is also gaining wider empirical support with recognition of the competitive repositioning of some sectors facing stringent standards and regulations in importing countries.

In the case of India, Mehta and George (2003) find that the constraining market access of the SPS (Sanitary and Phytosanitary Standards) regime for food products in developed countries is the reason why some exporters are exploring alternative markets, while the need to comply with technical regulations by firms in China restricts market diversification possibilities (Chen et al., 2006). Likewise, Jaffee and Henson (2004) describe the success of exporters of fresh produce from Kenya and the exporters of asparagus from Peru who complied with the European Union (EU) requirements and thus, improved their access to those markets.

The competing notions of NTMs as either impeding trade or creating opportunities for it, suggest that they are an issue to be reckoned with by exporters. Exporters therefore, respond differently to NTMs either viewing them as challenges ('barriers') or opportunities ('catalysts'). Their response behaviour or choice of strategic options could also be conditioned on several other factors that are specific to the country, market, firm, product and the requirements arising from the NTMs, thereby exerting disproportionate

effects to different groups of exporters (Sithamparam et al., 2017; Chemnitz, 2011; Henson and Jaffee, 2008; Henson and Heasman, 1998). Henson and Jaffee (2008) therefore, propose a strategic framework (see also Hirschman, 1970; 1978) to analyse and assess the alternative responses to the evolving standards. This is discussed in depth in the following section.

2.2 *Firms' strategic options*

The Hirschman (1970) model has become a reference in any discussion on the behaviour of exporters when faced with NTMs. The response strategies widely adopted in the field of trade are attributed to Hirschman's study of the behaviour of individuals, members of organisations and collective actors in the context of them facing deteriorating situations. Hirschman derived three options as response behaviours - 'exit', 'voice' and 'loyalty'.

According to Hirschman (1970), the 'exit' option is pursued when outside options are available. In the case of organisations, the 'exit' choice of the current situation seems viable when other operating environments are available. The 'voice' response behaviour is when organisations are faced with constraints in specific market environments but do not wish to exit. In this scenario, the organisations will voice their concerns in order to influence the constituents to improve the environment. For instance, Neeliah and Neeliah (2014) report that exporters participate in counter notifications at committee levels, such as the SPS committee to complain or negotiate using the World Trade Organisation (WTO) dispute settlement channel or participate in standard-setting. Following which, countries such as Gambia and India have gained through the 'voice' action to trigger revision of standards. The third option is 'loyalty'. It is pursued when organisations decide to comply with constraints imposed on them by the business environment. In such a context, organisations remain in business. An example of the 'loyalty' strategy is the case of firms in developing countries like China and Latin America that chose to comply with the stringent 2007 EU's imposition of aflatoxin requirements by improving their production and supply chains (Diaz Rios & Jaffee, 2008).

In adapting Hirschman's (1970) model, Henson and Jaffee (2008) add that strategic responses may take the form of compliance or non-compliance (exit, diversion, compression² (see Haveman, Nair, Reichert & Thursby, 2003), and can have a time dimension. They cite the case of Kenyan and Indian firms that responded with an exit strategy, as these firms had done so reactively. Accordingly, Henson and Jaffee (2008) used the response strategies of Hirschman (1970) but included specific dimensions to his framework, namely ex-ante 'proactive' behaviours (anticipating standards) or ex-post 'reactive' behaviours (waiting and adapting). For them, the 'exit'

and ‘reactive’ combination of behaviours are considered to be the most negative options. With these dimensions added to Hirschman’s model, the behaviour options are expanded into six options: ‘exit-reactive’, ‘exit-proactive’, ‘loyalty-reactive’, ‘loyalty-proactive’, ‘voice-reactive’ and ‘voice-proactive’.

Worth noting here is that, in reality, the strategic responses may not neatly fit into a dichotomy of compliance/ non-compliance. Henson and Heasman (1998) find that small firms in the United Kingdom (UK) were more likely to choose partial compliance. A study (Lemeilleur, 2013) on the mango sector in Peru shows that the GlobalGap private standard requirement for production and export of fresh mangoes to the EU resulted in only 8% of the Peruvian farmers complying with the requirement and pursuing the ‘loyalty’ response, while 24% of the exporters exited the market.

The progression in the empirical studies on response behaviour began with the expansion of Hirschman’s work (1970), focused primarily on the discontent with the performance of a firm, but subsequent studies went ahead with the roles of exit, loyalty and voice in different contexts.

3. Methodology

3.1 Framework of analysis

In this study, the analytical framework on the strategies pursued by firms in addressing NTMs is based on Hirschman (1970) and Henson and Jaffee (2008). The framework combines the three response strategies of Hirschman - ‘exit’, ‘loyalty’ and ‘voice’ – and the “reactive-proactive” dimensions of Henson and Jaffee that indicate time for compliance efforts. The strategic responses to NTMs are presented in Table 1 and explained below.

Table 1: Strategic responses to NTM

	Reactive	Proactive
Exit	Wait for NTMs and give up	Anticipate NTMs, impact and leave some markets or make other commercial shifts
Loyalty	Wait for NTMs and then adopt measures to comply	Anticipate NTMs and comply ahead of time
Voice	Complain about existing and new NTMs	Participate in NTM creation before they are imposed

The 'exit' strategy refers to cessation of exports of specific products and/or exports to specific markets, diverting exports to other markets (switch customers), and switch products or segments that have less regulations. This happens when the compliance costs are high and losing competitiveness to the affected exporter. In the context of this study, the exit strategy does not include the ceasing of exporting activities and serving the domestic market solely, as the firms surveyed are all engaged in exporting activities. Alternatively, 'loyalty' means complying with NTMs in major export destinations. This could involve compliance/adaptation costs in the form of resources and infrastructure. The strategies of 'exit' and 'loyalty' are considered mutually exclusive. Parallel with strategies of 'exit' and 'loyalty', exporters can choose a strategy of 'voice' to influence the prevailing standards and regulations, by complaining. Exporters may question the specific NTM imposed and attempt to come to some compromise to meet the requirements. The 'voice' can also be defined as a residual of 'exit', as it is the only way through which discontented exporters can react when the exit option is unavailable.

Based on Henson and Jaffee (2008), the approach to all three strategies can be decided or implemented at the time the NTM comes into force ('reactively'), or ahead of time in view of expectations, namely how NTMs are likely to evolve in the future ('proactively'). Across the 'exit' and 'voice' strategies, being 'proactive' is strategically more desirable. Likewise, for the 'loyalty' strategy, a 'proactive' approach brings strategic gains and minimises negative consequences to the firm. Based on the framework in Table 1, the most positive and desirable strategy is a combination of 'voice' and 'proactive'. On the contrary, the most negative approach is a combination of 'exit' and 'reactive'.

The various options available to exporters, as discussed above, will depend on multiple factors at the firm-level. This study therefore, takes into account product (resource and non-resource based products) and firm characteristics (size, ownership and age of firm).

3.2 Survey data collection and analytics

3.2.1 Sample survey

The survey on Malaysian exporters, based on the list provided by the Malaysia External Trade Development Corporation (MATRADE), was conducted between June and December 2014. A total of 300 questionnaires were distributed to manufacturing firms, both resource-based (38%) and non-resource based (62%) that are engaged in exports. Only 143 questionnaires were usable. The sample is fairly representative of the structure of trade in Malaysia as resource-based firms make up

approximately 43% of the total number of establishments. Many of the firms surveyed have been in operation for 10 years and thus, considered mature. The characteristics of the sampled firms are presented in Table 2.

Table 1: Sample of firms

Firm characteristics	Sample*	Population**
Firm type		
Resource	38.0	42.9
Non-Resource	62.0	57.1
Firm ownership		
Malaysian	87.4	26.6
Foreign	12.6	73.4
Firm experience (years in operation)		
Less than 5 years	18.9	n.a.
5-10 years	20.3	n.a.
More than 10 years	60.8	n.a.
Firm size		
Small	62.5	} 93.3
Medium	34.4	
Large	3.1	6.7

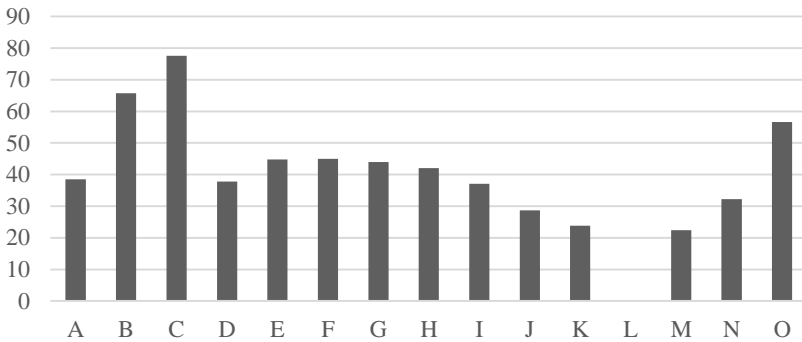
Notes: Data reflect the share in total firms (%). The population refers to national-level statistics for manufacturing. n.a. – not available.

Sources: *Sample data are obtained from the survey of the study.

** Population data are derived from the Annual Survey of Manufacturing Industries, Malaysia.

All the firms surveyed cited one or more of the selected export destinations (United States (US), EU, Japan, China and the Association of Southeast Asian Nations (ASEAN)) as their major market(s). The major markets, the US, EU³ and Japan, are considered important ‘standard setters’. Further, all firms have experienced different (minimum more than one) NTMs in those major markets (see Figure 1). With the exception of subsidies, all firms encountered 14 NTMs. Nevertheless, the study only considers the strategic options to NTMs in general.

Interviews were conducted to verify some of the results obtained from the survey. A total of 20 exporters, namely export specialists and senior-level managers, were interviewed. They represented 11 small-sized firms, 6 medium-sized firms and 3 large-sized firms. In terms of the type of business, the exporters that were interviewed were mainly resource-based firms (65%), and the remaining 35% were non-resource-based firms.

Figure 1: Incidence of NTMs for firms surveyed (%)

Notes: Response by firms based on the number of NTMs encountered in global trade. Most firms faced more than one type of NTM. The chapters are defined as: A - SPS; B - TBT; C - Pre-shipment inspection and other formalities; D - Contingent trade protective measures; E - Non-automatic licensing, quotas, prohibitions and quantity-control measures other than for SPS or TBT reasons; F- Price control measure; G - Finance measures, H - Measures affecting competition; I - Trade-related investment measures; J - Distribution restrictions; K - Restriction on post-sales services; L - Government procurement restrictions; M - Intellectual property; N - Rules of origin; and O - Export measures.

Source: Based on the survey.

3.2.2 *Survey instrument*

The survey questionnaire consisted of 4 sections. Part 1 profiles the firm and its major products and export markets. Part 2 details the stringency of NTMs (public measures only) in the major export markets (US, EU, Japan, China and the ASEAN). Part 3 details the stringency of private measures in major export markets. Part 4 is on the response strategies of the exporters' compliance with public and private NTMs. (This paper, however, only draws on the information in Parts 1 and 4 of the questionnaire). Only public NTMs are considered for the study as not all firms surveyed have been subjected to private measures. The NTM classification used in the questionnaire is based on UNCTAD (2013), which includes 15 types of import measures in the destination countries.

Prior to administering the survey, the questionnaire was reviewed with the relevant government official, namely the Ministry of International Trade and Industry (MITI), to ensure content and face validity of the instrument. The feedback and discussion was useful in refining the questionnaire.

3.2.3 Analytical procedure

The information sourced from Part 1 of the questionnaire is used to classify firms into specific groups. The focal point of the study is to examine the strategic responses of exporters of firms with varying export intensities (or exposure to international business). The level of integration with global markets is considered a salient feature in influencing strategic options by exporters. Thus, the firms surveyed are classified into four groups with varying export orientation, measured as the proportion of exports to sales⁴: 'less than 25%', '26% to 50%', '51% to 75%' and 'more than 75%'.

To further differentiate within the exporter groups, the products and structural characteristics of the firm are taken into consideration. The national classification systems for the manufacturing sector is applied within each of the four export categories. Resource-based firms include food, beverages and tobacco, wood products, paper products, chemicals and related industries, plastic products, petroleum products, rubber products and non-metallic mineral products. Non-resource based firms refer to textiles and apparel, basic metal, machinery, electrical and electronics, transport equipment and others.

Small firms refer to establishments with full-time employees of 5 - 74 persons, medium-sized firms 75 - 199 employees and large firms 200 or more full-time employees. Firm size is defined solely based on the number of employees. Foreign-owned firms are those with more than 50% foreign equity. There is no standard classification for firm experience or firm age. Therefore, the firms are classified based on their years of operation, < than 5-years in operation, 5 - 10 years, and > than 10 years in operation; the latter are considered to be established or mature firms.

3.2.4 Challenges and data caveats

The challenges of the NTMs survey include limited sample frames due to unavailability of interviewers, which led to several postponements for interviews and denial for interviews. Additionally, the nature of the survey method, which sought views of export firms located in Malaysia for "external NTMs", i.e. importing countries (Phetmany & Phimmavong, 2016), meant the questionnaire had to be carefully administered only to respondents involved in export to ensure that information obtained was sufficient and reliable.

There are several noteworthy details regarding the data. First, most of the firms surveyed were local firms and therefore, not reflective of the ownership structure of the Malaysian manufacturing sector. This however, does not limit the study. In fact, information on the strategic responses of NTMs by local firms are important for the government to provide necessary targeted

assistance that yields favourable outcomes. Second, private NTMs are not considered in this study. This again does undermine the purpose of the study as it is noted that there is substantial heterogeneity even within public measures across countries, despite international coordination, development of multilateral regulations and common conformity assessments by international institutions (Foletti & Shingal, 2014).

4. Findings and Discussion

The surveyed firms, based on their experience in dealing with NTMs in major export markets, were asked to provide their strategic responses (see Table 3 which shows the strategic options by export levels).

Table 3: Response options, by export levels
(Percentage of total firm surveyed)

Response	< 25%	26% - 50%	51% - 75%	> 75%
Exit - Reactive	18	11	4	0
Exit - Proactive	2	1	1	0
Loyalty - Reactive	60	78	88	75
Loyalty - Proactive	20	10	7	25
Voice - Reactive	24	17	11	4
Voice - Proactive	6	5	4	1

Notes: Only 'exit' and 'loyalty' are mutually exclusive, and therefore, the four indicative responses across both options total 100% within the groups with differing export levels.

Irrespective of the intensity of exports, most firms opted for the combination of 'loyalty' and 'reactive' strategy. The 'exit' strategy was obviously not an option for firms which are largely dependent on external markets (export intensities of more than 75%). This finding confirms Schlegelmilch and Crook (1988) who noted that firms with high export intensities tend to be cost effective due to economies of scale and are therefore, able to sustain their export performance. In contrast, 20% of firms with low levels of exports (less than 25%) opted for the 'exit' strategy. Through the interviews, it was noted that the form of 'exit' for the less-export intensive firms involved switching customers, that is, diverting their exports of the specific affected segments to other markets. These firms chose this strategy given that the quality restrictions⁵ of NTMs in the advanced markets (namely the US, EU and Japan) were too costly and stringent. They stated that the costs of compliance⁶ were too high to be borne by their firms. Worth noting here is that the 'exit' option in itself can be a costly choice for exporters (see Gehlback, 2006). This particular group of exporters are also those that mostly chose the parallel strategy of 'voice'. However, the reactive

approach sought by most exporters reflects the culture of ‘stonewalling’ until the threats become ‘real’ (Henson and Jaffee, 2008).

The strategic responses by exporters of firms with varying export intensities are further analysed by disaggregating within the four groups to account for product type and other firm characteristics. This within group disaggregation would provide indications on the variations in those responses by firms with different exposure to internationalization. Table 4 shows the disaggregated responses of exporters by resource- and non-resource based products.

The non-resource based exporters, whose products face a higher incidence of NTMs, are more likely to strategise in response to NTMs, relative to the non-resource-based industries, across all groups of exporters. They comply with the NTMs, but in a reactive manner. Through the interviews, it is noted that the resource-based firms, namely the exporters engaged in the food business, attributed their reactive mode to information asymmetry in food trade. Most of these firms are small-sized, which are recipients of information, but unable to internally generate information (see also Chemnitz, 2011; Fairman and Yap, 2004). For example, more than 80% of the total number of firms in the food processing industry are small and medium enterprises (Hayati & Khairul, 2009). Further, many of these firms are not part of a global supply chain⁷, and therefore they lack the knowledge and information that is often transmitted through those supply chain channels (Michida, Ueki & Nabashima, 2014). Table 4 shows that the resource-based industries that opt to ‘exit’, are firms that are less dependent on external markets.

Table 4: Response options, by export levels and firm type
(Percentage of total firms surveyed)

Response	< 25%		26% - 50%		51% - 75%		> 75%	
	RB	NRB	RB	NRB	RB	NRB	RB	NRB
Exit - Reactive	17	1	10	1	3	1	0	0
Exit - Proactive	1	1	1	0	1	0	0	0
Loyalty - Reactive	56	4	76	2	86	2	72	3
Loyalty - Proactive	16	4	7	3	5	2	19	6
Voice - Reactive	21	3	16	1	9	2	3	1
Voice - Proactive	5	1	4	1	3	1	1	0

Notes: Only ‘exit’ and ‘loyalty’ are mutually exclusive, and therefore the four indicative responses across both options and by firm type total 100% within the groups with differing export levels. RB – resource-based; NRB – non-resource-based.

From Table 5, it is encouraging to note that even small-sized firms comply with NTMs in major export destinations, despite the fact that the compliance is again reactive (see also Williams, 2011; Majocchi, Bacchiocchi & Mayrhofer, 2005; Henson & Heasman, 1998). Contrary to

expectations, it was noted through the discussion with small-sized firms that they are willing to comply mainly because they do not want to face the risk of producing for the less demanding and less profitable markets. Obviously risks of market exclusion is driving the ‘loyalty’ options of small firms. For the small – and medium-sized firms, exporters that are most likely to comply with a proactive approach are confined to the group that has the highest export intensities.

Table 5: Response options, by export levels and firm size
(Percentage of total firms surveyed)

Response	< 25%			26% - 50%			51% - 75%			> 75%		
	S	M	L	S	M	L	S	M	L	S	M	L
Exit - Reactive	15	2	1	9	1	0	3	1	0	0	0	0
Exit - Proactive	1	1	0	1	0	0	1	0	0	0	0	0
Loyalty - Reactive	50	5	5	62	10	6	76	6	6	62	7	6
Loyalty - Proactive	5	10	5	1	5	4	2	2	3	10	10	5
Voice - Reactive	17	5	2	14	2	1	8	3	0	3	1	0
Voice - Proactive	4	1	1	3	1	1	3	1	0	1	0	0

Notes: Only ‘exit’ and ‘loyalty’ are mutually exclusive, and therefore, the four indicative responses across both options and firm size total 100% within the groups with differing export levels. S – small; M- medium; L - large.

In terms of ownership (Table 6), foreign-owned firms that are highly export-oriented (with export intensities of more than 75%) have positioned themselves to comply with the NTMs proactively. Consequently, foreign-owned firms are less engaged in the voice strategy relative to local firms, as they have no complaints on the public measures in global markets (see also Graner & Isaksson, 2009). In the interviews with foreign-owned firms, it was found that compliance with public (state-centered) NTMs was no longer an issue as their focus has shifted towards global-firm based standards in response to globalised production systems.

Table 6: Response options, by export levels and firm ownership
(Percentage of total firms surveyed)

Response	< 25%		26% - 50%		51% - 75%		> 75%	
	M	F	M	F	M	F	M	F
Exit - Reactive	18	0	9	1	3	1	0	0
Exit - Proactive	1	1	1	1	1	0	0	0
Loyalty - Reactive	55	5	76	4	85	3	81	3
Loyalty - Proactive	15	5	6	2	5	2	7	9
Voice - Reactive	21	3	16	1	10	1	3	1
Voice - Proactive	5	1	4	1	4	0	1	0

Notes: Only ‘exit’ and ‘loyalty’ are mutually exclusive, and therefore, the four indicative responses across both options and firm ownership total 100% within the groups of differing export levels. M – Malaysia; F – foreign.

Finally, it was noted that young firms (< 5 years in operation) mostly strategise ('loyalty' option) when faced with NTMs, which is similar to the 'voice' strategy (Table 7). Across the established firms (> 10 years in operation), the proactive approach to compliance is higher for exporters trading more than 75% of their sales internationally, as they already sell large quantities to the markets that are highly regulated. These firms therefore, take on the proactive mode to compliance, fully understanding that there would be cost reductions and higher sales through optimised input/ technological change.

Table 7: Response options, by export levels and firm age
(Percentage of total firms surveyed)

Response	< 25%			26% - 50%			51% - 75%			> 75%		
	<5	5-10	>10	<5	5-10	>10	<5	5-10	>10	<5	5-10	>10
Exit - Reactive	15	2	1	9	1	0	3	1	0	0	0	0
Exit - Proactive	1	1	0	1	0	0	1	0	0	0	0	0
Loyalty - Reactive	50	5	5	62	10	6	76	6	6	62	7	6
Loyalty - Proactive	5	10	5	1	5	4	2	2	3	10	10	5
Voice - Reactive	17	5	2	14	2	1	8	3	0	3	1	0
Voice - Proactive	4	1	1	3	1	1	3	1	0	1	0	0

Notes: Only 'exit' and 'loyalty' are mutually exclusive, and therefore, the four indicative responses across both options and firm age total 100% within the group of differing export levels. Firm age refers to the years in operation.

5. Conclusions and Implications

The study has shown that strategic responses vary between groups of exporters with different exposure to international trade, reflecting prevailing capacities and perspectives on NTMs. However, for the disaggregated assessment within those groups of exporters into product, firm size, firm ownership and firm age, a consistent pattern emerges in the strategic choices made.

The core findings of the study are summarised as follows. First, exporters with different exposure to international markets mostly choose to comply ('loyalty' option) with NTMs in a reactive manner. The 'exit' strategy, however, is a popular option, in relative terms, among the firms that export 50% and below of their total sales. Second, within groups of exporters with varying exposure to international business, competitive positioning through compliance is higher among the resource-based firms, small-sized firms,

Malaysian-owned firms and younger firms, relative to their counterparts. Again, compliance (and exit) takes on a reactive approach by those exporters. Third, the 'voice' option, as a parallel strategy for firms, namely with export intensities of 50% and below, is also adopted in a reactive manner. As in the 'loyalty case, the 'voice' strategy within groups of exporters is also more prominent among resource-based firms, small-sized firms, Malaysian-owned firms and younger firms, relative to their respective counterparts.

What do the above stylised facts on the strategic choices made by exporters imply for the competitive positioning of firms seeking market access globally? First, there is a need for capacity building in all firms to enable to maximise the scope of strategic options through the 'proactive' approach. A 'proactive' approach will enable exporters to minimise negative consequences/ spill-overs of NTMs to their firms. As Henson and Jaffee (2008) point out, acting proactively through 'loyalty' provides greater scope and flexibility to test and apply alternative production technologies, employ and adopt varied administrative resources and build the needed infrastructure. Potential first mover advantages could also be derived by proactive firms with the afore-mentioned sunk costs borne earlier than their competitors. Similarly, firms that 'exit' in a proactive manner may avoid unnecessary costs associated with sunk investments and other transactions.

Second, there is a need to address the most negative approach, combination of 'exit' and 'reactive', taken by the affected exporters, namely to help this category of firms from incurring losses and improving market access (that is not to be excluded from highly regulated markets). Given that the small-sized and younger firms from the exporting group of 50% and below are completely reliant on external information, many of them attributed information asymmetry as the key reason for their reactive behaviour. Many exporters in this group were not aware of some of the new measures that prevailed in the developed markets and the extent of stringency of those measures. This also explains their active engagement in the 'voice', though again reactive. Though it is advocated here that the problem of asymmetric information needs attention, this alone does not suffice to ensure that the firms that opted for the 'exit' strategy would subsequently be able to comply with the requirements when there is a better exchange of information. However, it can help these firms to shift to a proactive mode in the choices made. Herein, policymakers should identify this targeted group of exporters to ensure that they receive updated information on the measures and requirements in major markets. The 11th Malaysia Plan has earmarked the Department of Standards Malaysia to increase collaboration with manufacturers to identify international standards (EPU, 2015). This is a step in the right direction to ensure better flow of information between policymakers and businesses (and industry associations).

Third, there is a need to engage more exporters to exhibit the 'voice' strategy, as only a small proportion of the exporters seem to adopt this option as a parallel strategy in their choices. More importantly, there should be active participation of exporters that choose the 'exit' strategy, as their discontent gives more scope to 'voice'. The 'voice' strategy is indeed the defining link between exporters (businesses) and the policymakers to ensure that the needs of the former are taken up at the government-to-government level or by the government through international institutions as the WTO.

Notes

1. Though domestic requirements prevail, they are considered low hanging fruits, and not a major issue for exporters relative to global (public) regulations that differ between countries.
2. Diversion refers to shifting exports away from specific markets; and compression involves limiting exports to few partners or limiting export segments to existing partners (compression in products or trading partners). The latter issue is taken up through studies that underscore the effects of NTMs on the extensive margins (new products and new markets) of exporters.
3. Market penetration into the EU has become even more difficult for Malaysia as she has been delisted from the EU Generalized System of Preferences (GSP) in 2014.
4. Firms surveyed were more comfortable to share information on export proportion to sales than net profits.
5. Quality restrictions refer to health, safety and technical standards (Haveman et al., 2003).
6. These costs could include physical and human capital upgrading of the firm, management costs, variable costs and other social costs.
7. Exporting firms that are part of a global supply chain receive support from their buyers to meet standards and regulations (Michida et al., 2014).

References

- Athukorala, P. & Jayasuriya, S. (2003). Food safety issues, trade and WTO rules: A developing country perspective. *World Economy*, 26(9), 1395-1416. <https://doi.org/10.1046/j.1467-9701.2003.00576>
- Beghin, J-C., Disdier, A-C., Marette, S. & Van Tongeren, F. (2012). Welfare costs and the benefits of non-tariff measures in trade: A conceptual framework and application. *World Trade Review*, 11(33), 356-375. <https://doi.org/10.1017/S1474745612000201>

- Bratt, M. (2014). Estimating the bilateral impact of non-tariff measures, *Working Paper Series No. 14-01-1*, University of Geneva: Switzerland.
- Cadot, O. & Malouche, M. (eds.) (2012). *Non-Tariff Measures – A Fresh Look at Trade Policy's New Frontier*. World Bank: Washington DC.
- Chemnitz, C. (2011). *The impact of food safety and quality standards on developing countries agricultural producers and exports*, unpub. PhD dissertation, Humboldt-Universität zu Berlin: Germany.
- Chen, M.X., Otsuki, T & Wilson, J.S. (2006). Do standard matters for export success? *World Bank Policy Research Working Paper 3809*, World Bank: Washington DC.
- Chen, M.X., Wilson, J.S. & Otsuki, T. (2008). Standards and export decisions: firm-level evidence from developing countries. *Journal of International Trade & Economic Development*, 17(4), 501-523. <https://doi.org/10.1080/09638190802250027>
- Diaz Rios, L.B. & Jaffee, S. (2008). Barrier, catalyst, or distraction? Standards, competitiveness, and Africa's groundnut exports to Europe. *Agriculture and Rural Development Discussion Paper No.39*, World Bank: Washington DC.
- Disdier, A.C., Fontagne, L. & Mimouni, M. (2008b). The impact of regulations on agricultural trade: evidence from the SPS and TBT agreements. *American Journal of Agricultural Economics*, 90(2), 336-350. <https://10.1111/j.1467-8276.2007.01127.x>
- Disdier, A-C., Fekadu, B., Murillo, C. & Wong, S.A. (2008a). Trade effects of SPS and TBT measures on tropical and diversification products. *ICTSD Paper No. 12*, International Centre for Trade and Sustainable Development (ITCSD): Geneva.
- Economic Planning Unit (EPU) (2015). *Energising manufacturing sector, Strategy Paper No.19*, EPU: Putrajaya.
- Fairman, R. & Yapp, C. (2004). Compliance with food safety legislation in small and micro-businesses: enforcement as an external motivator. *Journal of Environmental Health Research*, 3(2), 44-52.
- Foletti, L. & Shingal, A. (2014). Stricter regulation boosts exports: the case of maximum residue levels in pesticides, *NCCR Trade Working Paper No. 2015/22*, National Centre of Competence in Research on Trade Regulation (NCCR), University of Bern: Switzerland.
- Fontagne, L., Mimouni, M. & Pasteels, J-M. (2005). Estimating the impact of environmental SPS and TBT on international trade. *Integration and Trade*, 29(19), 7-37.
- Gebrehiwet, Y., Ngqangweni, S. & Kirsten, J.F. (2007). Quantifying the trade effect of sanitary and phytosanitary regulations of OECD countries on South African food exports, *Agrekon*, 46(1), 23-39. <https://doi.org/10.1080/03031853.2007.9523759>

- Gehlback, S. (2006). A formal model of exit and voice. *Rationality and Society*, 18(4), 395-418. <https://doi.org/10.1177/1043463106070280>
- Graner, M. & Isaksson, A. (2009). Firm efficiency and the destination of exports: Evidence from Kenya plant level data. *The Developing Economies*, 47(3), 279-306. <https://doi.org/10.1111/j.1746-1049.2009.00087.x>
- Haveman, J.D., Nair, Reichert U. & Thursby, J. (2003). How effective are trade barriers? An empirical analysis of trade reduction, diversion and compression. *Review of Economics and Statistics*, 85(2), 480-485. <https://doi.org/10.1162/rest.2003.85.2.480>
- Hayati, H.A.T. & Khairul, A.M.A. (2009). An overview of Malaysian food industry: the opportunity and quality aspects. *Pakistan Journal of Nutrition*, 8(5), 507-517. <https://doi.org/10.3923/pjn.2009.507.517>
- Henson, S. & Heasman, M. (1998). Food safety regulation and the firm: understanding the compliance process. *Food Policy*, 23(1), 9-23. [https://doi.org/10.1016/S0306-9192\(98\)00015-3](https://doi.org/10.1016/S0306-9192(98)00015-3)
- Henson, S. & Jaffee, S. (2008). Understanding developing country strategic responses to the enhancement of food safety standards. *World Economy*, 31(4), 1-15. <https://doi.org/10.1111/j.1467-9701.2007.01034.x>
- Hirschman, A. (1970). *Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States*. Harvard University Press: Cambridge MA.
- Hirschman, A. (1978). Exit, voice, and the State. *World Politics*, 31(1), 90-107. <https://doi.org/10.2307/2009968>
- Iacovone, L. (2005). The analysis and impact of sanitary and phytosanitary measures. *Integration and Trade Journal*, 9(22), 97-140.
- Jaffee, S & Henson, S. (2004). Standards and agro-food exports from developing countries: Rebalancing the debate. *World Bank Policy Research Working Paper No. 3348*.
- Lemeilleur, S. (2013). Smallholder compliance with private standard certification: The case of Global GAP adoption by mango producers in Peru. *International Food and Agribusiness Management Review*, 16(4), 159-180.
- Majocchi, A., Bacchiocchi, E. & Mayrhofer, U. (2005). Firm size, business experience and export intensity in SMEs: A longitudinal approach to complex relationships. *International Business Review*, 14(6), 719-738. <https://doi.org/10.1016/j.ibusrev.2005.07.004>
- Masakure, O., Henson, S. & Cranfield, J. (2009). Standards and export performance in developing countries: Evidence from Pakistan. *Journal of International Trade & Economic Development*, 18(3), 395-419. <http://dx.doi.org/10.1080/09638190902986538>

- Maskus, K.E., Wilson, J.S. & Otsuki, T. (2001). Quantifying the impact of technical barriers to trade: A framework of analysis. *Policy Research Working Paper No.2512*, World Bank. Washington DC.
- Mehta, R., & George, J. (2003). Processed food products exports from India: an exploration with SPS regime. *ANU Research Publications*
- Michida, E., Ueki, Y. & Nabeshima, K. (2014). Impact of Asian firms on product-related environmental regulations through global supply chains: a study of firms in Malaysia. *IDE Discussion Paper No. 453*, Institute of Developing Economies (IDE), JETRO: Chiba.
- Moenius, J. (2004). Information versus product adaptation: The role of standards in trade. Available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=608022
- Moenius, J. (2006). The good, the bad and the ambiguous: standards and trade in agricultural products. Available at: http://bulldog2.redlands.edu/fac/johannes_moenius/content/moenius_agriculture_trade.pdf
- Mohan, S., Khorana, S. & Choudhury, H. (2012). Barriers to prosperity - developing countries and the need for trade liberalization, *IEA Discussion Paper No. 44*, Institute of Economic Affairs (IEA): London.
- Neeliah, H. & Neeliah, S.A. (2014). Changing agro-food export composition and SPS compliance: Lessons for Mauritius. *The Estey Centre Journal of International Law and Trade Policy*, 15(1), 92-114.
- Otsuki, T., Wilson, J.S., & Sewadeh, M. (2001). Saving two in a billion: quantifying the trade effect of European food safety standards on African exports. *Food Policy* 26(5):495-514. [https://doi.org/10.1016/S0306-9192\(01\)00018-5](https://doi.org/10.1016/S0306-9192(01)00018-5)
- Pasadilla, G.O. (2007). Non-tariff measures faced by Philippine agriculture exporters, Policy Notes 2007-10, Philippine Institute for Development Studies (PIDS): Makati.
- Phetmany, T. & Phimmavong, B. (2016). Non-tariff measures faced by exporters of Lao PDR: A field survey report. Second Trade Development Facility Project No. P130512.
- Rabiul, I., Shaharuddin, M.I. & Chamhuri, S. (2010). Analyzing of trade barriers to timber trade policy. *American Journal of Environmental Sciences*, 6(1), 95-102.
- Schlegelmilch, B.B. & Crook, J.N. (1988). Firm-level determinants of export intensity. *Managerial and Decision Economics*, 9(4), 291-300. <https://doi.org/10.1002/mde.4090090408>
- Schlueter, S., Rau, M-L., Wieck, C., Humphrey, J., Colen, L. & Heckelei, T. (2009). Analytical framework for the NTM-impact project, *NTM Impact Working Paper No.09/02*, European Commission, available at: https://www.researchgate.net/publication/265561450_Analytical_framework_for_evaluating_the_productive_impact_of_cash_transfer_prog

- rammes_on_household_behaviour_Methodological_guidelines_for_the_From_Protection_to_Production_Project
- Sithamparam, A.G. & Devadason, E.S. (2016). Do non-tariff measures in the EU, Japan and the ASEAN matter for export consignments from Malaysia. *Institutions and Economies*, 8(2), 1-25.
- Sithamparam, A.G. & Devadason, E.S. and Chenayah, S. (2017). Stringency of non-tariff measures in partner countries: the perspective of Malaysian exporters. *Malaysian Journal of Economic Studies*, 54(1), 1-21.
- Swann, P., Temple, P. & Shurmer, M. (1996). Standards and trade performance: the UK experience. *Economic Journal*, 106(438), 1297-313. <https://doi.org/10.2307/2235522>
- UNCTAD (2013). Non-Tariff Measures to trade: Economic and policy issues for developing countries. United Nations Conference on Trade and Development (UNCTAD): Geneva.
- Williams, D.A. (2011). Impact of firm size and age on the export behaviour of small, locally owned firms: Fresh insights. *Journal of International Entrepreneurship*, 9(2), 152-174.
- World Bank (2014). *Malaysian Economic Monitor: Boosting Trade Competitiveness*. World Bank: Washington DC.
- World Trade Organization (WTO) (2005). *Exploring the Links between Trade, Standards and the WTO*. World Trade Organization: Geneva.