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A FIRM-LEVEL ASSESSMENT OF THE EFFECT OF MACROECONOMIC UNCERTAINTY ON GHANA'S NON-TRADITIONAL EXPORT PERFORMANCE

Emmanuel Owusu-Afriyie[1]

Abstract

The presence of macroeconomic uncertainty poses potential and veritable risk to real sector activity. Thus, this study set out to examine how Non-traditional Export (NTE) firms in Ghana respond to macroeconomic uncertainty. The study conducts a survey on NTE firms in Ghana to elicit responses, which are used to construct subjective measures for export performance and the key predictors including macroeconomic uncertainty. Eighty-seven (87) firms respond to the survey, representing a response rate of 45.8 percent. The study also employs both descriptive and econometric analyses (ordered logistic regression) for the investigation. The study finds that moderate to average and high levels of macroeconomic uncertainty are more likely to predict low export performance, and less likely to predict average to high levels of export performance. In addition, firms demonstrating moderate to average levels of export commitment and at the same time displaying moderate to average levels of product development capabilities are less likely to report low export performance. Furthermore, average to high levels of export performance are more likely to be predicted by firms that demonstrate a high adoption rate of export promotion programmes. The policy implication for this study is that any coordinated set of policies aimed at boosting NTE performance in Ghana must include specific policies measure aimed at addressinig conditions that evoke macroeconomic uncertainty.

Keywords: *Non-traditional Exports, Exchange Rate Uncertainty, Ordered Logistics Model, Ghana*
JEL Classification: *F19, F31, C25, O55*

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1.0 INTRODUCTION

The importance of improved export performance in stimulating robust external sector position, enhanced economic growth and dynamic structural transformation for improved standard of living of the general population has been extensively espoused in the international trade literature (Kahiya el at, 2010; Pineda and Manuel, 2017; and Reis and Forte, 2014). The imperatives for promoting improved export performance may not be relevant for the survival of export firms alone, but also for governments in terms of reining in the benefits as aforementioned. Ayan and Percin (2005) argued that in a competitive international market where firms must stay afloat, there is the need for them to identify the factors that instigate success in export ventures, improve efficiency in production and at the same time help in the attainment of their financial and strategic targets. On the other hand, many emerging market and developing countries including Ghana witness considerable macroeconomic instability and uncertainty (for instance exchange rate volatility) with potential deleterious implications for export performance.

Ghana's current vision for an improved and diversified export base is anchored on a robust Non-traditional Export (NTEs) performance enshrined in the Ghana National Export Strategy document, launched in 2012, with an implementation period spanning five years, starting from 2013. The strategic document envisaged a Non-traditional Export target of US$ 5billion by the end of 2017. But by the end of 2017, data from the Ghana Export Promotion Authority (GEPA) suggests that total NTEs amount to US$ 2.56 billion compared to US$ 2.36 billion at the end of 2012[2]. Thus, suggesting that the pace of growth in the NTEs has slowed down and the US$ 5 billion target expected by the end of 2017 has been under shot.

Though varied reasons may be assigned for the slowdown in NTE performance, it is imperative to subject this phenomenon to some empirical test in the light of what the extant literature prescribes as the key drivers of export performance at the firm-level. According to Dijk (2002), the importance of understanding the factors that influence export performance will help policymakers in the formulation of trade and industrial policies aim at stimulating export growth. He further argues that the availability of micro-datasets has reshaped the focus on export performance at the industry and country levels to firm-level analysis.
Against this backdrop, the following pertinent questions are raised for investigation: What are the key drivers of firm-level export performance in Ghana? Does the potential risk emanating from macroeconomic uncertainty, has any role to play? A study to investigate the above issues will help inform future policy design and implementation.

On the critical issue of the role of macroeconomic uncertainty and the potential influence on firm-level export performance, one of the ways to observe this phenomenon is to look at the historically trajectory of Ghana's exchange rate developments, and the volatility it evokes. The exchange rate instability has dire implications for other macroeconomic conditions[3]. This in addition to other adverse macroeconomic conditions can create uncertainty likely to discourage risk taking ventures such as exporting.

In a related development, these unstable macroeconomic conditions can equally affect credit assessors' perceived risk of real sector activities such as exporting.

[2] *Check appendix figure 1 for trends on Ghana's Nontraditional Exports and the components*
[3] *Refer to appendix figure 2 for trends in Ghana's exchange rate depreciation/appreciation.*

Table 1: Sectoral Shares of Outstanding Credit for Commerce & Finance

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
COMMERCE & FINANCE	100	100	N/A	100	100	100	100	100	100	100	100	100
(i) Import Trade	15.1	15.4	N/A	18.4	33.9	30.1	33.8	37.8	35.2	25.8	22.8	13.1
(a) Motor Vehicle Import & Declaration	4.5	3.9	N/A	5.2	7.5	6.0	5.4	3.8	4.4	4.1	3.7	3.8
(b) Machinery & Heavy equipment	1.0	1.7	N/A	3.0	3.6	2.4	1.6	1.3	1.3	1.0	0.9	1.4
(c) Other Import Items	9.6	9.8	N/A	10.2	22.8	21.7	26.8	32.7	29.5	20.7	18.1	8.0
(ii) Export Trade	5.2	4.1	N/A	6.2	4.4	4.3	4.3	3.9	2.0	3.4	3.3	1.4
(a) Cocoa Exports	1.8	1.4	N/A	2.8	1.6	1.0	1.7	1.5	0.6	0.8	0.4	0.4
(b) Timber Export	0.8	0.5	N/A	0.3	1.0	0.9	0.9	0.5	0.2	0.4	0.2	0.1
(c) Other Export Items	2.6	2.2	N/A	3.1	1.8	2.4	1.8	1.9	1.2	2.2	2.6	0.9
(iii) Cocoa Marketing	8.5	5.3	N/A	9.4	9.9	8.4	5.9	5.5	11.2	11.5	12.8	7.9
(iv) Timber Marketing	0.1	0.4	N/A	0.5	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0
(v) Diamond Marketing	0.1	0.0	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
(vi) Mortgage Financing	4.6	4.5	N/A	4.6	5.4	5.4	5.4	5.2	5.1	4.8	5.0	11.8
(vii) Other Financial Institutions	2.3	1.9	N/A	4.8	2.7	5.0	4.9	3.1	2.2	3.3	3.9	6.3
(a) Hire Purchase Companies	1.4	1.1	N/A	1.1	1.2	1.0	0.9	0.4	0.4	2.0	0.8	2.5
(b) Insurance Companies	0.1	0.2	N/A	0.4	0.2	2.0	2.6	1.6	0.9	0.8	2.6	3.0
(c) Building bodies and Corporations	0.8	0.6	N/A	3.3	1.2	2.0	1.4	1.1	0.8	0.5	0.4	0.8
(viii) Other Unclassified	64.1	68.4	N/A	56.3	43.4	46.5	45.4	35.0	34.1	45.6	47.2	51.9

Source: Bank of Ghana and Author's calculations

Table 2: Lending Rates

i. Agriculture, Forestry & Fishing	23.8	27.3	32.8	27.6	25.9	25.7	25.6	29.0	27.5	31.7	29.3	26.9
ii. Export Trade	24.3	27.3	32.8	27.6	25.9	25.7	25.6	29.0	27.5	31.7	29.3	26.9
iii. Manufacturing	24.3	27.3	32.8	27.6	25.9	25.7	25.6	29.0	27.5	31.7	29.3	26.9
iv. Mining & Quarrying	24.3	27.3	32.8	27.6	25.9	25.7	25.6	29.0	27.5	31.7	29.3	26.9
v. Construction	24.3	27.3	32.8	27.6	25.9	25.7	25.6	29.0	27.5	31.7	29.3	26.9
vi. Others	24.3	27.3	32.8	27.6	25.9	25.7	25.6	29.0	27.5	31.7	29.3	26.9
Average Lending Rates	24.2	27.3	32.8	27.6	25.9	25.7	25.6	29.0	27.5	31.7	29.3	26.9
C. Base Rates (%)	18.8	27.2	31.4	25.8	22.5	21.5	21.5	25.7	26.9	26.7	24.9	21.9

Source: Bank of Ghana and Author's calculations

Evidence from Tables 1 and 2 above suggest that both the general levels of interest rates (costs of capital) and the volumes of credit allocated to support export activity have been adversely affected. In terms of credit allocation to the various sectors of the economy, the Commerce and Finance sector gets the lion's share, attracting an average of 28.5 percent of the total outstanding banking sector credit to the economy. Table 1 presents how the portion of total credit allocated to the commerce and finance sector is distributed to various activities under that sector for the period 2007 to 2018. Because of the perceived high risk of export activities, the sector is starved of credit compared to import activities[4]. An average of 25.6 percent of the total outstanding credit allocated to the Commence and Finance sector is deployed to support import trade, which compares with an average of 3.9 percent for export trade, for the period 2007 to 2018. For the same period, the average lending rate for export trade is 27.8 percent, (check Table 2). These developments suggest scarcity of financial

resources to support export trade as well as exorbitant costs of mobilising these resources to the sector. Together with other debilitating factors as reflected in the World bank's document on high costs of doing business in Ghana, the competitiveness of the products exported by Ghanaians to the global market is adversely affected. Apart from the profitability of doing export business standing the chance of being impinged by these factors, potential investment plans can equally be stalled.

A lot of academic studies have been conducted to investigate the relationship between export performance and its key predictors (Beleska-Spasova, 2014; Carneiro, Rocha, and Silva, 2011; Katsikeas and Morgan, 2014; and Nazar and Saleem, 2011; Sharma, 2003). For these studies, both internal and external factors have been considered and identified as the likely drivers of export performance. Studies like Carneiro et al. (2011) and Chetty and Hamilton (1993) have examined how the combination of the external environment, firm characteristics and firm strategy impact on firm-level export performance. In considering the external factors, the studies focus largely on the structure and the type of industries within which firms operate with less emphasis on macroeconomic conditions that may evoke uncertainties. In analysing firm-level characteristics, Carneiro et al. (2011) fail to go beyond the attitude of managers towards risk and tolerance for ambiguity. Also, part of the study of Beleska-Spasova (2014) make reference to the economic similarity in discussing export market characteristics, however, the study stop short of discussing the dimensions of this economic similarity construct.

Thus, the issue of uncertainty as pertained to adverse macroeconomic conditions with a specific focus on exchange rate volatility has not been given much prominence or explicit consideration in the extant literature on firm-level predictors of export performance. Though a lot of studies have explored the relationship between exchange rate volatility representing macroeconomic uncertainty and export performance using broad national statistics largely at the macroeconomic level, there is paucity of research on the same subject matter at the firm-level. The fact remains that Ghana's external position has been highly susceptible to the vagaries of global commodity prices because of being a major producer of natural resources and primary commodities. Accordingly, the exchange rate must normally adjust in line with swings in the external position; thus, rendering the exchange rate quite volatile. The exchange rate volatility further interacts with other prevailing weak domestic and external macroeconomic conditions (such as fiscal slippages, monetary accommodation, terms of trade shocks, global financial crisis among others) to engender uncertain conditions. The ensuing uncertainty is likely to hurt economic activity in Ghana, especially that of the NTEs. Non-traditional exporters may suffer in terms of predicting the profitability of their export ventures or activity.

From the foregoing, the objective of this study is to investigate how firms in the non-traditional export sector in Ghana respond to macroeconomic uncertainty.

The rest of the paper is organised as follows. Section 2 presents a brief literature review. Section 3 examines the empirical strategy used for the analysis. Section 4 focuses on the analyses of the econometric results and Section 5 concludes.

2.0 LITERATURE ON DETERMINANTS OF FIRM-LEVEL EXPORT PERFORMANCE

2.1 Theoretical Literature

From the theoretical perspective, the factors that influence export performance at the firm-level are generally categorised into two. These are the internal (controllable/firm-specific) factors and external (uncontrollable/environment-specific) factors (Beleska-Spasova, 2014 and (Pineda et al., 2017). These two key categories are based on two main theories. The internal factors are explained by the resource-based view (RBV) whilst the external factors are explained by the industrial organization or

contingency theory (Beleska-Spasova, 2014; Pineda, Manuel, Hurtado and Manuel, 2017). The basic assumption underlying the RBV is that the factors influencing export performance are subject to the control of the firm and its management. The original proponents of this theory are Penrose (2009), who perceives a firm as bunch of resources but not of products, and as such the growth of a firm is a product of the dynamic and creative interaction between the available resources and market opportunities, and Barney (1991) and Birger (1995), who examine how a firm's resources can be used to secure sustained competitive advantage. Accordingly, the proponents argue that the ability of a firm to effectively exploit the diverse and accumulated stock of capabilities secured over the years can be translated into improved export performance. In other words, firms can take advantage of their own resources (natural, human and capital) and capabilities to achieve efficiency and competitive advantage in production and create value, (Barney et al, 2001 and Kraaijenbrink et al. 2009). On the other hand, the external factors hinge on the industrial organization theory which is also consistent with the contingency theory. In this case, the proponents argue that the survival of a firm largely depends on its ability to adapt to environmental pressures with an appropriate strategic response (Beleska-Spasova, 2014, Calantone et al. 2006, and Pineda et al. 2017). In other words, the theory highlights a firm's ability to redefine its strategic focus in the light of evolving environmental and technological conditions, by creating new strategies or innovative policies to take advantage of the challenges and opportunities emerging, in order to to keep business afloat.

2.1.1 Internal Determinants of Export Performance

In the literature, the internal determinants or firm controllable characteristics find expression in various dimensions. In some instances, the firm controllable characteristics may reflect management's perception of risk, tolerance for ambiguity, organizational culture, proximity to scarce resources as well as managerial commitment and competence, (Carneiro et al. 2011). Closely related to the above is the firm's export strategy, comprising its competitive strategy, use of intermediates, product mix, product development, pricing, and promotional activity. The internal factors can equally be classified as the characteristics of an organisation (size, international experience, competitive advantage, etc.), manager's characteristics (age, formal education, experience, knowledge of foreign language, etc.), and manager's expectations (both positive and negative), (Aaby & Slater, 1989; Carneiro et al., 2011, and Zou and Stan, 1998).

2.1.2 External Determinants of Export Performance

Donaldson (2001) uses the theory of structural contingency to shed some light on the external determinants of export performance. He argues that organisations adapt to changing environmental conditions that affect their operations by redefining its future course of actions with implications for success. This view is consistent with the position of other researchers who assert that these external determinants are largely outside the domain of the firms and may find expression either at the macro environment level in terms of political, economic, social, and technological and geo-climate factors or some micro conditions emanating from suppliers, competitors, intermediaries, and customers (Calantone et al., 2006, and Dragnic, 2014). Roxo et al. (2014) summarise the external conditions that may affect a firm's performance into; foreign market characteristic (legal regulation, cultural dynamics, local business conventions, channel accessibility, and market competition), foreign environmental characteristics (political and legal aspect, global economic/financial condition) and domestic market characteristics (export assistance and other enabling macro-environmental conditions). But for empirical work, some composite indices are created to represent such constructs.

The nexus between macroeconomic uncertainty and export performance is examined within the context of how uncertainty affects the pace of investment with ultimate impact on firm performance, (Bernanke, 1983; Caballero, 1991; Zhang, 2017). There are various dimensions and conditions under which uncertainty adversely impacts on investment decisions which can extend to underperformance.

Caballero (1991) argues that the combined effects of risk aversion, incomplete markets, and asymmetric adjustment costs can render the relationship between uncertainty and irreversible investment negative. It is equally suggested that uncertainty emanating from the macroeconomic environment can potentially constrain the ability of executives to predict firm-specific information relating to relevant parameters for considering appropriate investment decisions resulting in slack in the pace of investment. Furthermore, it is argued that uncertainty can undermine the prediction of cash flow, an important factor for corporate finance. At the same time, it can affect the risk perception of creditors, inducing them to call for more compensation for risk exposure, leading to increasing costs of financing investment and ultimately retarding the pace of investment growth. Zhang (2017) and Bernanke (1983) argue that in a state of flux, where new information keeps evolving, determining the optimal current level of investment is no more a function of long term expected return, underscoring the role of uncertainty. All these arguments support the position that macroeconomic uncertainty (in this case exchange rate volatility interacting with domestic and external deteriorating economic conditions) is likely to lead to firms adopting a wait and see attitude toward investment planning, resulting in a loss in output due to sub-optimal investment as well as overall stunted performance.

2.2 Empirical Literature

Several empirical studies have been conducted to ascertain the predictors of export performance at the firm-level in different jurisdictions. Dijk (2002) found the impact of firm size on export performance to be u-shaped, suggesting economies of scale helps firms to enter foreign markets but only up to a certain threshold. In the same study foreign ownership of firms was also found to have a positive impact on the propensity to export. Another study by Bekele and Kaur (2018) on exporting firms in Ethiopia established that firm demographics such as firms' size and age as well as the export managers' overseas experience, years of overseas business and the firm's capital ownership have positive and significant effects on export performance. Wolf (2007) conducted a study on the determinants of propensity to export by non-traditional exporters in Ghana, where in line with scale economies, size was identified as one of the key determinants, however, the effect of size became negative once firms entered the export market. In the same study, the age of the firm did not have any significant impact on export intensity. Brancati et al. (2018) found among Italian exporters that structural characteristics, such as firms' size and productivity have a positive and significant impact on export performance. Additional factors that boosted the firm's internationalisation were innovations and R&D, where the same factors equally affected external competitiveness both directly and via productivity improvements.

Boubakri et al. (2013) examined how the perception of export stimuli influences the export performance of industrial firms in Tunisia. The study found that proactive stimuli reflecting the deliberate propensity of the firm to export tended to have a positive impact on export performance. A study by Anand et al. (2016) on South Africa's export performance found that contrary to the view that exchange rate depreciation encouraged export performance, this relationship was impaired by the existence of structural factors such as electricity bottlenecks, limited product market competition, and labour market constraints. However, firms that diversified their export activity benefited from currency movements.

The role of export promotion programmes, as an essential component of governments' industrial policy to prop up export performance has been highlighted in the literature, (Helleiner, 2001). Freixanet (2012) undertook an evaluation of the collective effects of export promotion programmes on export performance by considering a variety of impact dimensions, whilst at the same time differentiating their respective effects on each program. Critical among some of the dimensions examined were: the use of sponsored foreign trade shows, trade missions, foreign trade offices and

information programs; degree of program adaptation to company needs; perception about usefulness of the programs depending on manager's ethical origin; costs and benefits analysis of the export support system; mismatch between company needs and government's assistance priorities based on manager's perceptions; and the level of company's international involvement. At the general level, a positive relationship between export promotion programs usage and export diversification as well as several intermediate outcomes was established. However, the study did not find any significant relationship between export promotion programs and export performance. A similar result was found by Wolf (2007) who investigated into factors that influence export performance of the horticultural industry in Ghana. The study attributed this finding to the possibility of the low quality of the services provided. However, Munch and Schaur (2015) found that in the case of small exporters, export promotion activities boosted export performance, raised value addition, employment and productivity. This was a study conducted to examine the effects of Denmark's export promotion programmes on firm-level export performance.

In general, there seems to be paucity of research studies on the role of macroeconomic uncertainty with a focus on exchange rate volatility on firm-level export performance. Some references can be made to a study by Garret and Andrea (2016) on the effects of exchange rate uncertainty on firms' investment plans using Swiss Survey data. They argued that a sudden erratic movement in the exchange rate did not only result in a first-moment effect but also resulted in a substantial increase in uncertainty about the future exchange rate. As a key determinant of foreign market prices, the uncertainty evoked by movements in the exchange rate could affect the firm's investment decisions directly. Conditioned on the real-option theory, the study found uncertainty to hurt irreversible investments in equipment and machinery. It also found uncertainty to have an immediate effect, which led to a downward adjustment of firms' investment plans in equipment and machinery.

The current research is similar to the work of Sraha, Raman, and Crick, (2017) in terms of exploring the predictors of the performance of NTEs in Ghana. However, the points of divergence emanate from the different methodologies applied and the role of macroeconomic uncertainty as a key predictor of export performance at the firm-level in Ghana. The former study used the Partial Least Square Structural equation modelling whilst this research used the Ordered Logistic modelling for analysis. Also, whilst the role of macroeconomic uncertainties was absent in the former study, it is the focal point for this study.

3.0 EMPIRICAL STRATEGY

This section focuses on the data generation processes and the methodology that is adopted to address the objectives of this study.

3.1 Survey and Data Collection

Data for this study was extracted from primary sources for the period August 2018 to February 2019. A survey was conducted on non-traditional exporters mainly within Accra, Tema, Kasoa, Nsawam, Kumasi, and Takoradi[5]. Responses from these exporters constituted the data for constructing the measures for export performance and its determinants. Primary data source was used because of the absence of secondary data readily available to address the objectives of this study. Currently, the most reliable firm-level data is provided by the Enterprise Survey data conducted by the World Bank. However, this survey does contain specific questions on macroeconomic uncertainty (especially with a focus on exchange rate volatility) and how it affects firm-level export performance. The survey was governed by a comprehensive and integrated process involving the design of questionnaire, pretesting

[5] *The choice of location was influenced by concentration of exporters in Accra and Tema*

of the instrument, and ethical clearance from the University of Ghana Ethics committee and eventual data collection from the fieldwork.

3.1.1 Questionnaire Design

A structured questionnaire for the exporting firms was designed to elicit responses to a variety of statements that helped in constructing both the measure of export performance and the key predictors as highlighted under the literature review and used for this study. Since the study adopted subjective measures for both the export performance indicator and the predictors, the Likert (1932) rating scale framework that reflects people's revealed perception of issues was used. The framework has been employed in similar studies seeking to construct measures for both the export performance and the determinants by asking respondents to indicate their degree of agreement or disagreement to some set of statements, (Bekele and Kaur, 2018; Boubakri et al., 2013; Egyir et al., 2012; Sraha et al., 2017). To increase the extent of variability in the data for analysis, and to enhance the validity of the results, a five-point scale was adopted. There is a raging debate in the literature amongst researchers as to whether one can use a parametric test to analyse the Likert scale due to its ordinal nature. Some have argued that parametric test is rendered less useful because it requires data of interval or ratio nature but not ordinal, and the fact that means and standard deviations relative to the Likert scale are unclear, (Sullivan and Artino, 2013; and Wadgave and Khairnar, 2016). On the other hand, other researchers like Norman (2010) have argued that parametric test is more robust than non-parametric test regarding the use of ordinal data and this was the position subscribed by this study.

The survey instrument was pretested to ensure clarity and comprehension of the questions. A drop-and-pick approach was used to administer the survey instrument. This approach was adopted because anecdotal evidence suggests that most respondents in Ghana generally tend not to be receptive in responding to questionnaires either by posting or using the internet through emails. This could also be attributed to the fact that Ghana does not have a good postal address system as well as weak internet infrastruture.

3.1.2 Sampling Method

Since the focus of the study was on non-traditional exporting firms in Ghana, the population for the study emerged from a list of regular NTE exporters provided by the Ghana Export Promotion Authority (GEPA) and a list of exporters extracted from the database of the Ghana Community Network Services Limited (GCNET). In all, the population was 329 exporters, comprising 273 of regular exporters from the GEPA list and 56 exporters extracted from the GCNET database.
To determine the sample size, the following formula in Ozer (2014) was used

$$n = \frac{NPQZ^2}{(N-1)d^2 + PQZ^2}$$

n= sample size
N= Population of regular exporters and some exporters from GCNET database
P= Probability of Occurrence for a given event
Q= 1-P
Z= test statistic at a level of (1- σ) where σ = Significant level
d= tolerance
The sample size considered with standard statistics for the above variables was therefore

$$\frac{329(0.5)(0.5)(1.9)^2}{(328-1)(0.05)^2 + (0.5)(0.5)(1.9)^2} = 183$$

The sample size calculated was rounded off to 190 exporters.

A combination of stratified random sampling and a purposive sampling were adopted to implement the survey. The stratified random sampling was based on the activity of the firms, i.e., agriculture, manufacturing, and handicrafts. The sample also covered a broad range of firm sizes in terms of employment, where 1- 5 employees are considered as Micro enterprise, 6-29 employees as small enterprise, 30-99 employees as medium enterprise and above 99 employees as large enterprise. The purposive sampling approach involved identifying relevant managers with experience in exporting in the various firms as the respondents.

3.1.3 Construction of Indicators for Export Performance and its Determinants

This section presents how the data generated from the survey responses are used to construct a measure of export performance and the determinants of export performance used for the quantitative analysis.

3.1.3.1 Constructing the Measure of Export Performance

The indicator for the export performance measure is a latent variable derived from subjective questions directed at exporting firms. A composite measure of export performance (EXPERFORM) is constructed by using some indicators of export performance suggested in the literature such as export sales volume, export market share, export profitability, return on investment, and export sales intensity. Specifically, respondents were asked to choose on a scale from 1 representing low to 5 representing very high, a rating of their performance. Based on the responses, a composite indicator of export performance is constructed by incorporating and consolidating variations in all the indicators (export sales volume, export market share, export profitability, return on investment, and export sales intensity). To generate the threshold values for the export performance measure, the study adopts the cumulative frequency approach of categorizing indicators by Al Rubaish (2010). With this approach, after consolidating the items on the Likert scale responses, values that exceed 80 percent are rated as "High Performance", values between 60 percent and 80 percent are rated as "Average Performance" and values below 60 percent are considered "Low Performance". This categorisation scheme is selected because it is considered superior to the mean approach that treats categorical variables as if they are continuous values, thus rendering them meaningless and lending credence to the criticism of using a Likert scale.

3.1.3.2 Constructing Measures for Determining/Predicting Export Performance

From both the perspective of the resource-based view and the contingency theories that motivate this research, the determinants of firm-level export performance can be categorised into firm demographics, firm's competence reflecting capabilities and the external environmental factors. For the firm demographics, the variables considered are firm age, firm size, ownership structure and qualification of export managers. Under the firm's competence, we consider managerial international experience, export commitment, and product development capabilities. Finally, the factors considered under external conditions are macroeconomic uncertainty, export promotion programmes, and locational factors. Notwithstanding this plethora of factors adduced as the predictors of firm-level export performance, four key factors, export commitment, product development capabilities, macroeconomic uncertainty (which is the variable of interest) and export promotion programs are used for model estimation and analysis.[6] The basis for this position was due to data constraints reflecting the limited number of observations secured in the survey and the need to secure a parsimonious model after undertaking some exploratory exercises, where most of the predictors were

[6] *Macroeconomic uncertainty here comprises the following elements: Exchange rate volatility, deterioration in external demand conditions, deterioration in global financial conditions, distorted incentive regime from Government's fiscal policy and unfavourable Monetary and financial conditions*

identified not to produce robust statistical results. Since the same Likert scale framework was used to elicit responses to construct the four predictors used for estimating the model, the same cumulative frequency approach was used to categorise the measures for predicting export performance.

Export commitment (the first independent variable) is expected to have a positive impact on export performance. It demonstrates the export manager's propensity to proactively initiate efficient and effective actions that translate to boosting the performance of exporting firms. The dimensions of export commitment reflects in firms establishing appropriate organisational structures that deal with all export activities as well as ensuring that the firm's executives undertake frequent travels to export markets. Firms are also expected to make available adequate funds to develop overseas markets, whilst demonstrating a deep commitment to learning about export procedures and documentation. All these factors ensure that export activities are accorded high priority, which ultimately translate into improved performance (Sraha et al., 2017; Zou and Stan, 1998).

Similarly, product development capabilities (the second independent variable) are expected to translate into improved export performance. This variable finds expression in improved innovative capabilities with dimensions such as learning, research and development, marketing, organisation, resource allocation and strategic planning (Guan & Ma, 2003). Thus, the firm's capabilities to develop new products for its customers, research into new products and speedily develop new products for the export market are considered. Prominence is equally accorded the firm's capabilities to improve or modify existing products as well as its malleability to adapt to new methods or ideas in production. Collectively, these actions enhance the quality and the competitiveness of export products, leading to improved performance, (Nazar, Mujtaba, & Saleem, 2009).

Export promotion programmes represent the third independent variable. Gathering information on market access, trade facilitation issues, access to trade finance and participation in trade fairs, among others is a herculean task not only for startups but also in most cases for established firms. This is more germane in the case where the sunk costs for mobilising enough data to prospect for new markets and other trade support services may compromise firms' ability to secure extra resources to focus on their core operations. Though the current state of the literature on the effect of export promotion programmes is mixed, it is expected that for developing countries like Ghana, the availability of such trade backstops managed by authorities on a more coordinated and sustainable basis provide the necessary impetus to prop up export activity. Thus, it is more likely that firms that avail themselves of the opportunities provided by the Ghana Export Promotion Authority and adapt them extensively will experience improved export performance. The export promotion activities include organising export seminars/conferences, training activities specialising in exporting, training on export documentation, provision of counselling advice on export business, general knowledge about doing business in a specific country and linking to easy sources of financing export business, (Nazar et al., 2009).

The last independent variable is macroeconomic uncertainty. Stable macroeconomic environment, anchored on sound and effectively coordinated monetary and fiscal policies, supported by benign external conditions translate into stability in the key prices of the goods, money, and foreign exchange markets, being the inflation rate, interest rates, and exchange rates. These favourable macroeconomic conditions boost investment by way of enhancing long term planning and assurance of some certainty on returns on investment. It is against this background that macroeconomic uncertainty induced by the combined effects of deteriorating domestic economic conditions and exacerbated by unfavorable external conditions are likely to negatively affect the sentiments of exporters and restrain their propensity to invest in export business. These developments will ultimately undermine export performance. Since the focus of this study is to investigate the role of macroeconomic uncertainty on firm-level export performance, we also consider the view that uncertainty can be a composite

construct of various dimensions. Therefore, exchange rate volatility interacts with other potential uncertainty induced conditions such as distortions in the incentive regime by the government's fiscal policy, unfavourable monetary and financial conditions, deteriorations in external demand and financial conditions to assess how they collectively affect export performance.

3.2 Methodology

For this study, we adopt a quantitative approach comprising descriptive analysis involving frequency distributions and Cross-tabulations, and an econometric modelling analysis.

3.2.1 Descriptive Analysis

For summary descriptive statistics on the firm's demographics, measures of both the dependent and the independent variables, one may have to refer to appendix Tables 3a and 3b.

On the next layer of descriptive analysis, cross-tabulations are used to establish some relationship between the dependent variable (EXPERFORM) and the other independent variables. From table 4, about 51.7 percent of the firms that post a low level of export performance either agree or strongly agree to the assertion that exchange rate volatility has adverse effects on export performance. This compares to 26.6 percent of the firms that post a high level of export performance. Similarly, from table 5, whilst 50.6 percent of the firms that post low level of export performance subscribe to the view that macroeconomic uncertainty has moderate to high adverse effect on export performance with only 24.1 percent of the firms that post high performance subscribing to that position. This may suggest that exchange rate volatility as well as weak macroeconomic conditions that evoked uncertain conditions may have hurt low performing exporters more than the high performing ones. In other words, there may be some asymmetries in the effect of macroeconomic uncertainty on the low and high export performers. Hence, it can be inferred that the adverse effects of deteriorating macroeconomic conditions can be muted with increased productivity-enhancing measures that boost firms' performance.

Table 4: Cross-tabulation between Exchange Volatility item and Export Performance Measure

Adverse Effect of Exchange Rate Uncertainty on NTEs Peformance	Measure for Export Performance Using Cummulative Frequency Threshold			
	Low Performance	Average Performance	High Performance	Total
Strongly disagree	0.00	0.00	2.30	2.30
Disagree	4.60	0.00	2.30	6.90
Neutral	4.60	0.00	1.15	5.75
Agree	21.84	2.30	6.90	31.03
Strongly Agree	29.89	3.45	20.69	54.02
Total	**53**	**5**	**29**	**87**
	60.92	5.75	33.33	100.00

Note: All values are in percent except the bold figures on the total row representing the number of respondents. Source: Author generated from Survey on Exporting Firms

Table 5: Cross-tabulation between Measures of Macroeconomic Uncertainty and Export Performance

Measure for Macroeconomic Uncertainty	Measure for Export Performance Using Cummulative Frequency Threshold			
	Low Performance	Average Performance	High Performance	Total
No Adverse Effect	10.34	0.00	9.20	19.54
Moderate to Average Effect	12.64	2.30	3.45	18.39
High Adverse Effect	37.93	3.35	20.69	62.07
Total	**33**	**5**	**29**	**87**
	60.92	5.75	33.33	100

Note: All values are in percent except the bold figures on the total row representing the number of respondents.
Source: Author generated from Survey on Exporting Firms

Tables 6 to 10 present the relationship between export performance and some productivity-enhancing measures such as management's export commitment, managerial international experience, product development capabilities, and locational factors. In general, for both the low and high performing firms, a relatively higher proportion believe that moderate to high levels of these qualities have positive effects on export performance.

Table 6: Cross-tabulation between Measures of Export Commitment and Export Performance

Measure for Export Commitment	Measure for Export Performance Using Cummulative Frequency Threshold			
	Low Performance	Average Performance	High Performance	Total
No Commitment	16.09	0.00	2.30	18.39
Moderate to Average Commitment	8.05	3.45	5.75	17.24
High Commitment	36.78	2.30	25.29	64.37
Total	**53**	**5**	**29**	**87**
	60.92	5.75	33.33	100

Source: Author generated from Survey on Exporting Firms

Table 7: Cross-tabulation between Measures of Managerial International Experience and Export Performance

Measure for Managerial International Experience	Measure for Export Performance Using Cummulative Frequency Threshold			
	Low Performance	Average Performance	High Performance	Total
No Experience	20.69	1.15	4.60	26.44
Average Experience	8.05	0.00	4.60	12.64
Substantial Experience	32.18	4.60	24.14	60.92
Total	**53**	**5**	**29**	**87**
	60.92	5.75	33.33	100.00

Source: Author generated from Survey on Exporting Firms

From table 7, it is suggested that a substantially high level of managerial international experience translates into high performance. However, if other conditions are not enabling this factor alone may not be enough. It must also be noted that within the categories, 52.8 % of those reporting low performance have substantial managerial experience whilst 72.4% of those reporting high performance have substantial managerial international experience.

Table 8: Cross-tabulation between Measures of Product Development Capabilities and Export Performance

Measure for Product Development Capabilities	Measure for Export Performance Using Cummulative Frequency Threshold			
	Low Performance	Average Performance	High Performance	Total
No Capabilities	16.09	0.00	4.60	20.69
Moderate to Average Capabilities	2.30	0.00	2.30	4.6
High Capabilities	42.53	5.75	26.44	74.71
Total	**33**	**5**	**29**	**87**
	60.92	5.75	33.33	100

Source: Author generated from Survey on Exporting Firms

From Table 8, within the categories, those with high product development capabilities reporting low performance constitute 69.9 % but the proportion for high performance is 79.3%.

Table 9: Cross-tabulation between Measures of Location Factors and Export Performance

Measure for Location Factors	Measure for Export Performance Using Cummulative Frequency Threshold			
	Low Performance	Average Performance	High Performance	Total
No Externalities	6.90	0.00	0.00	6.9
Average to Moderate Externalities	5.75	0.00	1.15	6.9
Positive Externalities	48.28	5.75	32.18	86.21
Total	**53**	**5**	**29**	**87**
	60.92	5.75	33.33	100

Source: Author generated from Survey on Exporting Firms

From Table 9 by focusing on the categories one will realise that those suggesting positive externalities for locational factor and at the same time reporting low performance constitute 79.2% , which compares with 96.5% for those reporting high performance.

Table 10: Cross-tabulation between Measures of Export Promotion Programmes and Export Performance

Measure for Export Promotion Programmes	Measure for Export Performance Using Cummulative Frequency Threshold			
	Low Performance	Average Performance	High Performance	Total
No Adoption	33.33	1.15	8.05	42.53
Moderate to Average Adoption	9.20	0.00	5.75	14.94
High Adoption	18.39	4.60	19.50	42.53
Total	**53**	**5**	**29**	**87**
	60.92	5.75	33.33	100

Source: Author generated from Survey on Exporting Firms

Table 10 presents the extent of adoption of the export promotion programs on export performance. From the results, whilst most of the low performing firms suggest the absence of adopting the export promotion programmes, the reverse is the case for firms with high performance. This may suggest that these low performing firms are likely to either have some constraints in accessing these export promotion programmes, or the export promotion programs may not be relevant for their purposes.

Also, a comparison within categories reveals that those with high rate of adoption of the export promotion programmes reporting low performance constitute 30.2%, which is 58.6% for those reporting high performance.

3.2.2 The Econometric Modelling

The descriptive analysis suggests that there are some linkages between the three categories of the export performance measures (low, average, and high) and the various categories of independent variables examined above. Hence, an econometric analysis is employed to investigate the extent of the association and whether these relationships are statistically significant.

The preferred econometric technique is the ordinal logit model because the export performance measure is an indicator variable with more than two categories. The values of the categories are arranged in sequential order, from the higher values to the least, where the intervals between categories may not necessarily be equal. In this case, we are dealing with polychotomous responses as opposed to dichotomous responses. When response variables assume this nature, Least Square regressions suffer from some shortcomings such as heteroscedasticity and predicted probabilities are likely to lie outside the unit interval. Thus, the appropriate model selected for this analysis is the Ordered Logit model.

3.2.2.1 Logistic Regression Model

In the spirit of Sterlacchini (2001), the model employed is not supposed to be an empirical counterpart to a theoretical model, but rather the coefficients are estimates of the parameters of the cumulative probability of predicting a particular categorical variable given the whole set of independent variables. Hence, we seek to probe further the distribution of the independent variables across the three categories of the response variable by using the Ordered logistic estimator. Following Boes, Winkelmann, and Liu (2009) the logistic regression model can be specified as:

$$Ln\left(Y^{*}\right) = \log it\left[\pi(x)\right] \quad 1$$

$$= \ln\left[\frac{\pi(x)}{1-\pi(x)}\right] \quad 2$$

$$= \phi + \theta_1 X_1 + \theta_2 X_2 + ...\theta_p X_p \quad 3$$

where θ_i are regression coefficients and X_i are independent variables.

To estimate the ln (odds) of being at or below the j^{th} category, the logistic model can be written as:

$$\log it\left[\pi(Y \le j \mid x_1, x_2, ..., x_p\right] \quad 4$$

$$= \ln\left[\frac{\pi(Y \le j \mid x_1, x_2, ..., x_p}{\pi(Yj > \mid x_1, x_2, ..., x_p}\right] \quad 5$$

$$= \phi_j + (-\theta_1 X_1 - \theta_2 X_2, ... - \theta_p X_p) \quad 6$$

Hence, according to them, this model predicts cumulative logits across j-1 responses categories. The estimated cumulative odds and the cumulative probabilities of being at or below the j^{th} category can be obtained by transforming the cumulative logits.

4.0 ANALYSIS OF ECONOMETRIC RESULTS

Table 11 reports the regression results for both the ordered logit model and the odds ratios. The log-likelihood ratio chi-square test with 8 degrees of freedom, $LR\chi^2_{(6)} = 18.91$, $p = 0.0153$, suggest that the model with four predictors produces a better fit than the null model with no independent variables in predicting the cumulative probability for export performance. The $Cut1 = 1.686$ and $Cut2 = 1.990$ are the cut points for the latent variable Export Performance measure (EXPERFORM)). They are used to differentiate the adjacent levels of categories of export performance. In this case, when the response category reflects low performance, the export performance measure falls at or below the first cut point. The export performance measure falls between the first cut point and the second cut point in the case of the average performance category. In addition, the export performance measure falls beyond cut 2 in the case of the high-performance category (Boes et al., 2009).

The signs for the coefficients of the predictors are consistent with their a priori expectations. The standard errors are reported in parenthesis. We initially focus on the first column that reports the coefficients in log odds, where the magnitudes do not matter for inferential analysis, but one can only indicate either the more likelihood or less likelihood to be in any of the categories, be it low, average, or high levels of export performance.

According to the results, the log odds of export performance improve (from low to average and high performance) with moderate to average improvement in export commitment controlling for other factors. This relationship is statistically significant at 10 percent. Though the same could be said of a high level of export commitment being more likely to be associated with high export performance, this relationship is not statistically significant.

Table 11 Results of Ordered Logit Model and Odd Ratios for Export Performance

Export Performance	Ordered Logit Coefficients	Odd Ratios Coefficients
Export Commitment		
Moderate to Average Commitment	1.8591*	6.4177*
	(1.0320)	(6.6228)
High Commitment	0.6906	1.9949
	(0.9409)	(1.8770)
Product Development Capabilities		
Moderate to Average Capabilities	2.1929*	8.9609*
	(1.2772)	(11.4451)
High Capabilities	0.8089	2.2320
	(0.7202)	(1.6074)
Macroeconomic Uncertainty		
Moderate to Average Adverse Effect	-2.2056**	0.1102**
	(1.0207)	(0.1125)
High Adverse Effect	-1.4270**	0.2400**
	(0.6908)	(0.1658)
Export Promotion		
Moderate to Average Adoption	0.8971	2.4525
	(0.8151)	(1.9991)
Hiigh Adoption	1.7106 ***	5.5323 ***
	(0.6522)	(3.6081)
/Cut 1	1.6858	1.6858
	(0.9891)	(0.9891)
/Cut 2	1.9900	1.9900
	(0.9946)	(0.9946)
Iteration 0: log likelihood	-72.409766	-72.40977
Iteration 1: log likelihood	-63.430336	-63.43034
Iteration 2: log likelihood	-62.956615	-62.95662
Iteration 3: log likelihood	-62.953762	-62.95376
Iteration 4: log likelihood	-62.953763	-62.95376
Number of Observations	87	87
LR chi2 (8)	18.91	18.91
Prob > chi2	0.0153	0.0153
Pseudo R2	0.1306	0.1306

i. standard deviation in brackets

ii. where ***,**,* are 1% ,5%, 10% levels of significance respectively

The supposition that some moderate to average improvement in the level of export commitment may enhance the likelihood of predicting high export performance is consistent with studies like, Sraha et al. (2017) and Aaby and Slater (1989) who argue that improvement in export commitment affects resources release to support export enhancing activity.

Similarly, improved export performance is more likely to be associated with moderate to average level of product development capabilities all other things held constant. This relationship is equally significant at 10 percent level. This outcome is consistent with the view that in a world of increasing competition with evolving consumer taste and preferences coupled with the desire for varieties, producers must correspondingly innovate their products and processes to increase their productive capabilities which will help them stay afloat in business (Guan and Ma, 2003; Rajapathirana and Hui, 2018). Related to this, Aaby Slater (1989) argue that depending on the export destination, if the recipients of the export products are from developed countries, they are likely to be interested in improvement in product development and innovations that improve the level of technology associated with the exported products, whilst recipients of export from developing countries are likely to be more inclined to improved product development capabilities that reflect in competitive prices.

The results further suggest that export performance dampens (reversing from high to average and low levels of performance) with elevated levels of macroeconomic uncertainty, all other factors held constant. In this case, both moderate to average and high adverse effects from macroeconomic uncertainty are more likely to predict low levels of export performance. For both categories, the relationships are statistically significant at 5 percent level. This is consistent with the argument that risk emanating from adverse macroeconomic conditions can potentially cause producers to be less sanguine and entertain negative attitude towards returns on investments and planning for future execution. Export performance is eventually compromised because firms hold back on investments, more especially for irreversible investments. This situation is worsened where producers either lack the financial capabilities to mitigate against risk from the effects of macroeconomic uncertainty or such schemes for risk mitigation may not be available (Garret and Andrea, 2016).

The results also suggest that the increased pace of adopting export promotion programmes is more likely to predict improvement in export performance (from low to average and high levels of performance), holding other factors constant. The association between a high rate of adoption of export promotion programmes and high export performance is statistically significant at 1 percent. This result is at variance with the findings of Wolf (2007), where such a relationship is absent in a study conducted to examine the relationship between export promotion programmes and export performance of the horticultural industry in Ghana. The result is rather consistent with the findings of Munch and Schaur (2015) that suggest that export performance is boosted among small exporters in Denmark who resort to export promotion activities.

Another way of examining the relationship between the export performance categories and the predictors is to look at the odds ratios reported in the second column of Table 11. From the results, the odds in favour of reporting high export performance (from low to average, then to high) increases by 6.4 units with a unit increase in export commitment (in whatever units it is measured), going from low to moderate and average level of export commitment, given that all the other variables in the model are held constant. Likewise, it can be suggested that the possibility of reporting high export performance (from low to average, then high) increase by 8.96 units with a unit increase in product development capabilities, going from low to moderate and average product development capabilities levels, given that all other variables in the model are held constant. Also for export promotion programmes, it would be observed that the possibility of predicting a high level of export

performance increased by 5.5 units owning to a unit increase in the adaptation rate of export promotion programmes from low to high, with other variables held constant.

However, the odds in favour of reporting high export performance level (from low to average, then high) deteriorated by 89 percent with each incident of moderate to average effect of macroeconomic uncertainty, holding other variables constant. Similarly the odds in favour of reporting high export performance level deteriorate by 76 percent with each additional incidence of a high effect of macroeconomic uncertainty. These revelations, in addition to the outcome of the relationship established between export performance on one side and macroeconomic uncertainty on another side, under the descriptive analysis, demonstrate that the risk imbedded in macroeconomic uncertainty is high and potentially detrimental to any effort to improve export performance. This requires some critical examination of the various dimensions of the conditions that precipitate macroeconomic uncertain, with the view to seeking the appropriate coordinated set of policy measures to subdue their harmful effects.

Table 12 reports on a question asking firms to rank in order of importance the factors that constraint export business in Ghana.

Table 12 Ranking of factors Constraining Export Business in Ghana

Rank	Factors
1	Limited access to finance or loan
2	Exchange Rate volatility
3	Monetary Conditions
4	Government's Fiscal Policy
5	Limited access to Land
6	Limited access to techology
7	Problems with electricity supply
8	Inadequately educated workforce
9	Problems with the water supply

Source: Author generated from Survey of NTE firms

The evidence above supports the fact that these macroeconomic conditions are ranked among the first four most important factors that are of concern to exporters. Reinforcing the need to find ways to address the unfavourable macroeconomic conditions that pose risk to exporting activity as well as discouraging investment into that sector.

Marginal Effects

Table 13 reports the marginal effects of the ordered logit model. The marginal effects logit model helps in identifying how changes in each of the independent variables predict a category of the export performance (low, average and high performances).

Table 13 Marginal Effects for The Ordered Logit

Export Performance	Low Performance	Average Performance	High Performance
Export Commitment			
Moderate to Average Commitment	-0.41378**	0.03084	0.38294**
High Commitment	-0.13097	0.01959	0.11138
Product Development Capabilities			
Moderate to Average Capabilities	-0.49171*	0.02227	0.47090*
High Capabilities	-0.16062	0.02205	0.13857
Macroeconomic Uncertainty			
Moderate to Average level	0.48203***	-0.03223	-0.44979***
High level	0.34196**	-0.01010	-0.33186**
Export Promotion			
Moderate to Average adoption rate	-0.17034	0.025046	0.14530
High adoption rate	-0.36890***	0.035093*	0.33381***[a]

*Level of Significance: ***= 1%, **= 5%, *= 10%*

In other words, the marginla effects reflect the changes in the slope of the various response categories relative to the predicted variables. In this case when a particular independent variable is less likely to predict a particular response category then it stands to reason that it may be more likely to predict a different category, in which case the net effect will be zero.

The results suggest that a unit improvement in the moderate to average level of export commitment decreases the probability of predicting low export performance by 41 percent and at the same time increases the probabilities of predicting both average and high levels of export performance by 3 percent and 38 percent respectively and this is statistically significant at 5 percent[7]. This reinforces the position adduced earlier that firms that put in place concrete measures, such as scaling-up resources to export activity, having a dedicated outfit involved in market explorations and other such engagements to demonstrate a commitment to export activities are the ones likely to be posting average to high levels of export performance.

Likewise, an improvement in the moderate to average levels of product development capabilities is less likely to predict low export performance category by 49 percent, but more likely to predict both average and high-performance categories by 2 percent and 47 percent respectively[8]. Suggesting that firms that aspire to improve on the level of their export performance have to differentiate themselves by way of investing in innovations that enhance their product development capabilities. The results also suggest that the probabilities of moving into the average and high export performance categories increase by 4 percent and 33 percent respectively with a unit increase in the high adoption rate of export promotion programmes, but the probability of moving into the low export performance category decreases by 37 percent with a unit improvement in the high adoption rate of export

[7] *Though the marginal impact for the average performance is not statistically significant*
[8] *The marginal effect for the average performance is not statistically significant*

perfection[9]. This supports the need for GEPA to step up their operations to avail their services to the NTE firms so as to prop up their performance.

Turning to the issue of macroeconomic uncertain, the results suggest that a unit deterioration from moderate to the average effect of macroeconomic uncertainty increases the probability of predicting low export performance by 48 percent, but decreases the probabilities of predicting average and high export performances by 3 percent and 45 percent respectively. This is statistically significant at 1 percent. Similarly, a unit deterioration due to a high effect of macroeconomic uncertainty increases the probability of predicting low export performance by 34 percent but decreases the probabilities of predicting both average and high export performance by 1 percent and 33 percent respectively. This is also statistically significant at 5 percent[10].

This analysis suggests that macroeconomic uncertainty poses a significant risk and a veritable threat to export performance. The risk is of great concern to exporters because it erodes the possibilities of enhancing export performance. Firms' ability to predict both their income flows and investment schedules is unduly undermined during conditions of macroeconomic uncertainty. Hence their performances are equally constrained under such adverse conditions. It further suggests that any coordinated set of export strategic plan that does not have as an essential component, critical policy measures to address conditions that evoke macroeconomic uncertainty may not succeed. Of equal importance is ensuring that constraints that inhibit exporters from increasing the rate of adoption of export promotion programmes are contained to the barest minimum. Likewise, authorities must ensure they implement policy measures that encourage firms to scale up resources to activities that demonstrate their commitment to export and also establish an industrial policy regime that encourages innovations aimed at upscaling the product development capabilities of firms.

Comparing Predicted Probabilities with Actual Probabilities

To determine if the model reasonably fits the data, the predicted probabilities for each category of the response variable are compared to the actual probabilities. Table 14 reports both the predicted and actual probabilities. The results suggest that the variances between the predicted means (probabilities) and the actual means (probabilities) are minimal. This suggests that the model fits the data quite well.

Table14: Results of Predicted and Actual Probabilities

Dependent (Response) Variable	Predicted Mean	Actual Mean
Low Export Performance	0.6138	0.6092
Average Export Performance	0.0570	0.0575
High Export Performance	0.3292	0.3333

Testing for Proportional Odds Assumption

A key assumption underlying the ordered logistic regression is that the relationship between each pair of outcome groups is the same. This assumption is often violated. According to Fullerton (2009) a violation of the proportional odds assumption results in biased estimates with possible implications

[9] The marginal effects for the low and high performances were statistically significant at 1% but that for average performance was 10%

[10] The marginal effects for the average performance are not statistically significant

for hypothesis testing. To find out whether this assumption has been violated, Brant (1990) proposed a Wald test, which tests for the equality of all the coefficients θs, collectively and separately. The underlying null hypothesis is that the relationship is proportional; that is, parallel[11].

Table15 Results on OLogit model to Test Proportionality Assumption

	Ordered Logit
Export Performance	Coefficients
Export Commitment	0.2093
	(0.3570)
Product Development Capabilities	0.2599
	(0.3180)
Macroeconomic Uncertainty	-0.3704
	(0.2998)
Export Promotion	0.6687 b
	(0.2860)
/Cut 1	1.3757
	(0.7459)
/Cut 2	1.6569
	(0.7512)
Iteration 0: log likelihood	-72.409766
Iteration 1: log likelihood	-66.845834
Iteration 2: log likelihood	-66.75296
Iteration 3: log likelihood	-66.757089
Number of Observations	87
LR chi2 (4)	11.31
Prob > chi2	0.0233
Pseudo R2	0.0781

i. standard deviation in brackets

ii. where a,b,c are 1% ,5%, 10% levels of significance respectively

Table 15 reports the logit model and the associated Brant wald test results for the coefficients collectively and individually.

Approximate Likelihood-ratio test of proportionality of odds across response categories

chi2 (4)	5.15
Prob > chi2	0.2719

[11] We adopted a user written command, omodel logit introduced by Wolfe (1997) to implement this test.

Detail Brant Test of Parallel Regression Assumption

Variable	chi2	Prob > chi2
All	7.37	0.117
Export Commitment	1.42	0.233
Product Development Capabilities	5.25	0.022
Macroeconomic Uncertainty	0.01	0.940
Export Promotion	2.18	0.140

Since the chi-square results for the likelihood ratio test for all the coefficients and the brant test results for the individual coefficients (except for the product development capability measure) are not significant, one can generally conclude that the proportional assumption has not been violated.

5.0 CONCLUSIONS

The growth of the non-traditional export sector to enhance export performance with benefits such as a diversified export base, improved foreign exchange supply and sustainable wealth creation for inclusive growth has been highlighted in the literature. However, for a small open economy like Ghana buffeted with varied adverse internal and external conditions that tend to evoke macroeconomic uncertainty, limited space in the academic literature has been accorded to studying how NTE firms react under conditions of macroeconomic uncertainty. Hence, considering the imperatives for boosting non-traditonal exports consistent with Ghana's National Export Strategy, and the need to achieve these within a sound macroeconomic environment, this study set out to investigate the key drivers of NTEs performance in Ghana with focus on macroeconomic uncertainty. From the descriptive analysis, there is some evidence of a positive correlation between the measure for export performance and almost all the predictors except macroeconomic uncertainty where a negative and apparent asymmetric relationship based on whether a low or high export performance is reported. To infuse some rigor into the analysis, an econometric approach, Ordered Logistic model, is applied to further examine the extent and significance of the relationships. After some exploratory analysis and with limited sample size, four out of the six predictors are used to achieve some parsimony.

The results suggest that moderate to average and high levels of macroeconomic uncertainty (comprising high exchange rate volatility, distorted fiscal regime, unfavourable monetary and financial conditions, deteriorations in both global financial and demand conditions) are more likely to predict low export performance and less likely to predict average to high levels of export performance. This outcome is corroborated by a question that sought to ask firms to rank some debilitating macroeconomic conditions. The firms ranked these conditions within the four topmost constraints affecting their business. Thus, giving credence that macroeconomic uncertainty with its various ramifications pose a severe threat and can potentially hurt export business in Ghana. As such any coordinated set of policies aimed at boosting export performance in Ghana must include specific policies measure to address the debilitating macroeconomic conditions that potentially evoke macroeconomic uncertainty.

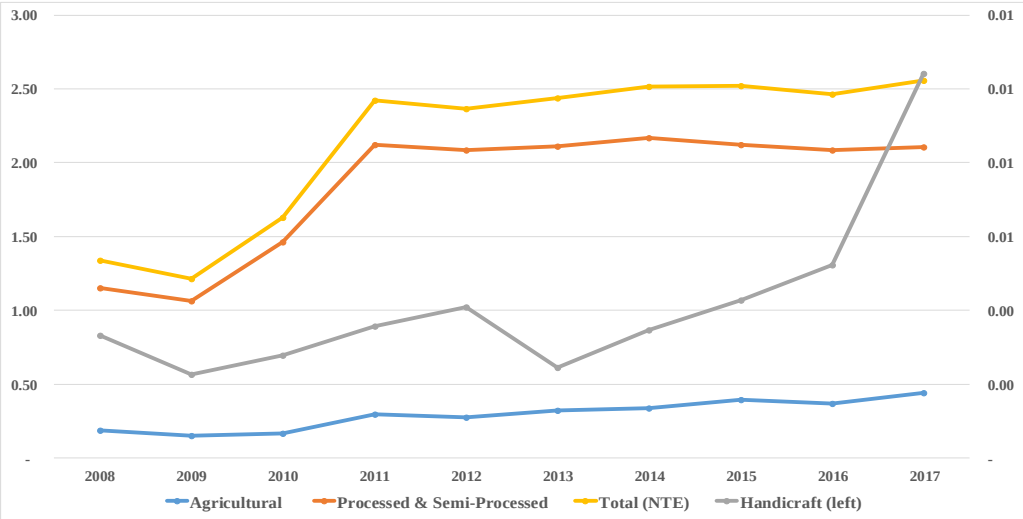
The study also suggests that NTE firms that demonstrate moderate to average levels of export commitment and at the same time display moderate to average levels of product development capabilities are less likely to report low export performance but are more likely to predict average to

high levels of export performance. At the same time, average to high levels of export performance are more likely to be predicted by firms that demonstrate a high rate of adopting export promotion programmes.

The issue of macroeconomic uncertainty must be addressed from different fronts. The Ministry for Finance and Economic Planning, and the Central Bank must effectively coordinate to address issues of fiscal excesses coupled with monetary accommodation resulting from increased fiscal deficits that fuels debt dynamics and end up in buidling uncertainties in the horizon. Indeed, the government must contain its expenditures within its resource envelope by respecting best practices for public financial management and improve efficiency in budget implementation through a fair and transparent procurement process. The government's fiscal policy must not promote rent-seeking activity but must encourage resource deployment to the productive sectors of the economy.

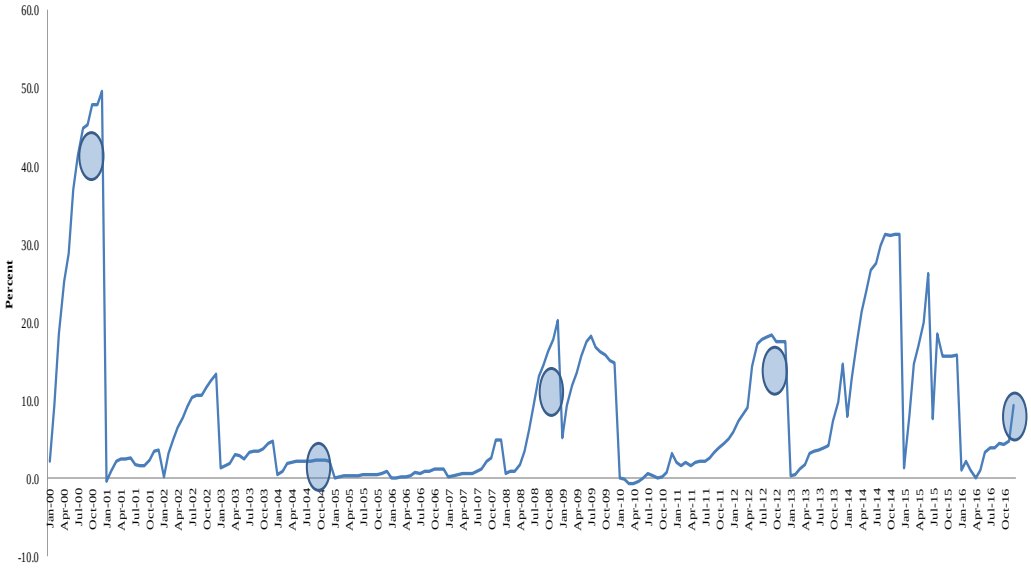
APPENDIX

Fig 1: Ghana's Non-traditional Export (in US$' billion)



Source: GEPA and Author's Calculations

Fig 2: Monthly Exchange Rate Depreciation/Appreciation[12] Jan 2000- Dec 2016



Source: Bank of Ghana and Author's calculations

[12] *The exchange rate is defined as Cedi/$, therefore an increase in percentage suggests a depreciation and a decrease in percentage suggest an appreciation.*

Table 3a: Frequencies of Both Dependent and Independent Categorical Variables[13]

VARIABLES	DETAILS	CODES AND VALUE NAMES	RESPONSES PERCENT
RESPONSE VARIABLE			
EXPERFORM	Measure of Export Performance using cumulative percent to derive threshold values	2= High Performance	**33.3**
		1= Average Performance	**5.8**
		0= Low Performance	**60.9**
PREDICTORS			
FirmSize	Size of firm measured by the number of employees	1=Micro Enterprise	24.1
		2 =Small Enterprise	31
		3 = Medium Size Enterprise	13.9
		4=Large Enterprise	31
Qualification	Educational qualification of Export Managers	0 =No Education	1.2
		1= Basic Education	4.6
		2= Secondary Education	8.1
		3= Vocational training	5.7
		4= Tertiary	55.2
		5= Professional"	25.3

Source: Author generated from Survey on Exporting Firms

[13] *In all, 87 firms responded to the survey, representing a response rate of 45.8 percent.*

Table 3b: Frequencies of Both Dependent and Independent Categorical Variables

VARIABLES	VARIABLES	CODES AND VALUE NAMES	RESPONSES PERCENT
Ownership	Ownership structure of firms	1 =Wholly Ghanaian owned	64.4
		2 = Wholly Foreign owned	19.5
		3 =Joint Venture (Foreign and Ghanaian)	10.3
		4 = Foreign subsidiary	4.6
		5 = "Other"	1.2
Firm Age	Number of years in operation		
MAINEX	Managerial International Experience	2= Substantial Experience	60.9
		1= Average Experience	12.6
		0= No Experience	26.5
EXPCOM	Export Commitment	2= High Commitment	64.4
		1= Moderate to Average Commitment	17.2
		0= No Commitment	18.4
PRODEVCA	Product Development Capabilities	2= High Capabilities	74.7
		1= Moderate to Average Capabilities	4.6
		0= No Capabilities	20.7
UNCERTY	External and Internal Conditions that evoke Uncertainties	2= High Adverse Effect	62.1
		1= Moderate to Average Effect	18.4
		0= No Adverse Effect	19.5
LOC	Locational factors	2= Positive Externalities	86.2
		1= Average to Moderate Externalities	6.9
		0= No Externalities	6.9
EXPRO	Export Promotion Programmes	2= High Adoption	42.5
		1= Moderate to Average Adoption	15
		0= No Adoption	42.5

Source: Author generated from Survey on Exporting Firms

REFERENCES

Aaby, N. E., & Slater, S. F. (1989). Management influences on export performance: a review of the empirical literature 1978-88. *International Marketing Review*, *6*(4), 7–26.

Al Rubaish, A. (2010). On the Contribution of Student Experience Survey Regarding Quality Management in Higher Education: An Institutional Study in Saudi Arabia. *J. Service Science & Management*, *3*, 464–469.

Anand, R., Perrelli, R., Zhang, B., Papi, L., Koeva Brooks, P., Allard, C., … Medina, L. (2016). *IMF Working Paper: South Africa's Exports Performance: Any Role for Structural Factors?*

Ayan, T. Y., & Percin, S. (2005). A Structural Analysis of the Determinants of Export Performance : Evidence from Turkey. *Innovative Marketing*, *1*(2), 106–120.

Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, *17*(1), 99–120.

Barney, J., Wright, M., & Ketchen, D. J. (2001). The resource-based view of the firm: Ten years after 1991. *Journal of Management*, (27), 625–641.

Bekele, D. S., & Kaur, N. (2018). Firm Characteristics on Export Performance (Case of Ethiopian Exporting Firms). *International Journal of Management Studies*, *1*(2). https://doi.org/10.18843/ijms/v5i1(2)/05

Beleska-Spasova, E. (2014). *Determinants and Measures Of Export Performance – Comprehensive Literature Review*. *JCEBI* (Vol. 1).

Bernanke, B. S. (1983). Irreversibility, Uncertainty, and Cyclical Investment. *The Quarterly Journal of Economics*, *98*(1).

Birger, W. (1995). The Resource-Based View of the Firm: Ten Years After. *Strategic Management Journal*, *16*(3), 171–174.

Boes, S., Winkelmann, R., & Liu, X. (2009). Ordinal Regression Analysis: Fitting the Proportional Odds Model Using Stata, SAS and SPSS. *Journal of Modern Applied Statistical Methods*, *8*(2), 632–642.

Boubakri, W. B., Zghidi, A. B. Y., & Zaiem, I. (2013). The Effect of Export Stimuli on Export Performance: The Case of the Tunisian Industrial Firms WAFA. *International Review of Management and Business Research*, *2*(1).

Brancati, E., Brancati, R., Guarascio, D., Maresca, A., Romagnoli, M., & Zanfei, A. (2018). Firm-level Drivers of Export Performance and External Competitiveness in Italy. *European Commission Directorate-General for Economic and Financial Affair , DISCUSSION PAPER*, *087*(September).

Brant, R. (1990). Assessing Proportionality in the Proportional Odds Model for Ordinal Logistic Regression. *Biometrics*, *46*(4), 1171–1178.

Caballero, R. J. (1991). On the Sign of the Investment-Uncertainty Relationship. *The American Economic Review*, *81*(1), 279–288.

Calantone, R. J., Kim, D., Schmidt, J. B., & Cavusgil, S. T. (2006). The influence of internal and external firm factors on international product adaptation strategy and export performance : A three-country comparison. *Journal of Business Research*, (59), 176–185.

Cameron, A. C., & Trivedi, P. K. (2005). *Microeconomitrics Methods and Applications*. Cambridge University Press.

Carneiro, J., da Rocha, A., & da Silva, J. F. (2011). Determinants of Export Performance : a Study of Large Brazilian Manufacturing Firms. *BAR. Brazilian Administration Review*, *8*(2), 107–132.

Chetty, S. K., & Hamilton, R. T. (1993). Firm-level Determinants of Export Performance: A Meta-analysis. *International Marketing Review*, *10*(3).

Dijk, V. (2002). *The determinants of export performance in developing countries : the case of Indonesian manufacturing*.

Donaldson, L. (2001). *Chapter 2: The Contingency Theory of Organizational Design: Challenges and Opportunities*.

Dragnic, D. (2014). Impact of Internal and External Factors on the Performance of Fast -growing

Small and Medium Businesses. *Management*, *19*(1), 119–160.
Egyir, I. S., Mensah, E. C., & Agyei-Sasu, F. (2012). Factors Influencing the Intensity of Export Success in Ghaha's Horticultural Industry. *International Journal of Business*, *2*(7).
Freixanet, J. (2012). Export promotion programs: Their impact on companies' internationalization performance and competitiveness. *International Business Review*, *21*, 1065–1086.
Fullerton, A. S. (2009). Framework for Ordered Logistic Regression Models. *Sociological Methods & Research*, *38*(2), 306–347.
Garret, B., & Andrea, D. (2016). *A Service of zbw. ECONSTOR*. https://doi.org/10.3929/ethz-a-010691509
Guan, J., & Ma, N. (2003). Innovative capability and export performance of Chinese firms. *Technovation*, *23*(9), 737–747.
Helleiner, G. . (2001). Introduction. In *Non-Traditional Export Promotion in Africa* (pp. 1–18). Retrieved from https://www.wider.unu.edu/publication/non-traditional-export-promotion-africa
Kahiya, E., Dean, D., & Heyl, J. (2010). Firm-Level Factors Associated with Export Performance. *Australian and New Zealand Marketing Academy (ANZMAC) Conference*, (December 2010), 1–12.
Kalaj, E. (2015). Determinants of Albanian Exports : A Firm Level Evidence, (1).
Katsikeas, C. S., & Morgan, N. A. (2000). Assessing Firm-level Export Performance: A Framework, Evaluation, and Research Directions. *Journal of the Academy of Marketing Science*.
Kraaijenbrink, J., Spender, J. C., & Groen, A. (2009). The resource-based view: A review and assessment of its critiques The RBV: a Review and Assessment of its Critiques. *Munich Personal RePEc Archive*.
Likert, R. (1932). A Teschnique for the Measurement of Attidues. *Archives of Pschology*, *22*, 5–55.
McCullagh, P. (1980). Regression Models for Ordinal Data. *Journal of the Royal Statistical Society: Series B (Methodological)*.
Munch, J. R., & Schaur, G. (2015). The Effect of Export Promotion on Firm-Level Performance. *American Economic Journal: Economic Policy*, *10*(July), 1–45.
Nazar, M. S., Mujtaba, H., & Saleem, N. (2009). Firm-Level Determinants. *International Business & Economics Research Journal*, *8*(2), 105–112.
Nazar, M. S., & Saleem, H. M. N. (2011). Firm-Level Determinants Of Export Performance. *International Business & Economics Research Journal (IBER)*, *8*(2).
Norman, G. (2010). Likert scales, levels of measurement and the "laws" of statistics. *Advances in Health Sciences Education*, *15*(5), 625–632.
Ozer, H. (2014). *Econometric Models with Qualitative Variables*. Nobel Publishing.
Penrose, E. (2009). *The Theory of The Growth of The Firm. Oxford University Press* (Revised, Vol. 53).
Pineda, B., & Manuel, J. (2017). Export Performance : An Analytical Focus on the Study of the Empirical Contributions of this Variable. *European Scientific Journal*, *7881*(May), 290–310.
Pineda, B., Manuel, J., Hurtado, R., & Manuel, J. (2017). Export Performance: An Analytical Focus on the Study of the Empirical Contributions of this Variable. *European Scientific Journal*, 1857–7881.
Rajapathirana, R. P. J., & Hui, Y. (2018). Relationship between innovation capability, innovation type, and firm performance. *Journal of Innovation & Knowledge*, *3*(1), 44–55.
Reis, J., & Forte, R. (2014). The Impact of Industry Characteristics on Firms' Export Intensity. Retrieved from http://wps.fep.up.pt/wps/wp524.pdf
Roxo, M., Costa Silva, S., & Lisboa, A. (2014). *The influence of internal and external variables in the export performance*.
Sharma, K. (2003). Factors determining India's export performance. *Journal of Asian Economics*, *14*(3), 435–446. https://doi.org/10.1016/S1049-0078(03)00036-8
Sraha, G. A. K. (2016). *Export Performance of Ghanaian Firms in the Agricultural. Handicraft and Manufacturing Industries*.
Sraha, G., Raman, S. R., & Crick, D. (2017). Ghanaian exporters' international experience and performance: the mediating role of export commitment. *Journal of Strategic Marketing*, *25*(4), 353–

365.

Sterlacchini, A. (2001). The Determinants of Export Performance : A Firm-Level Study of Italian Manufacturing. *Weltwirtschaftliches Archiv*, *137*(3), 450–472.

Sullivan, G. M., & Artino, A. R. (2013). Analyzing and Interpreting Data From Likert-Type Scales. *Journal of Graduate Medical Education*, 541–542.

Wadgave, U., & Khairnar, M. R. (2016). Parametric tests for Likert scale: For and against. *Asian Journal of Psychiatry*, *24*(August), 67–68.

Wolf, S. (2007). Firm Characteristics of Non-traditional Exporters in Ghana. *The European Journal of Development Research*, *19*(5), 391–411.

Wolfe, R. (1997). OMODEL: Stata modules to perform tests on ordered probit and ordered logit models. Boston College Department of Economics.

Zhang, H. (2017). Uncertainty, Incentive and Over/Under-Investment. *Open Journal of Business and Management*, *5*, 450–457.

Zou, S., & Stan, S. (1998). The determinants of export performance : a review of the empirical literature between 1987 and 1997. *International Marketing Review*, *15*(5), 333–356.