Determinants of Pharmaceutical Industry's Performance in Nigeria

Wakeel A. Isola
University of Lagos, Nigeria
isolawak@yahoo.com

Ekundayo Peter Mesagan
University of Lagos, Nigeria
profdayoms@yahoo.com

This study focused on the relationships among market structure, efficiency and performance of the Nigerian Pharmaceutical industry. It employed market share and operational efficiency to determine the efficiency of the industry, pre-tax return on asset to measure performance, Herfindahl-Hirschman index to measure market structure. In addition, earnings per share was used in the study as control variable. Data were obtained from the Nigerian Stock Market Factbook covering 1996 to 2010. The panel ordinary least squares technique was employed in estimating the data. Thus over the course of the study, both fixed and random effect results clearly showed that efficiency hypothesis does not hold in the case of pharmaceutical industry in Nigeria. Rather, it is shown that it is structure that determines performance. Consequently, the study recommended that necessary structures must be put in place by the Federal Ministry of Health to enhance the capacity of local pharmaceutical firms in producing the desired quality and quantity drugs needed in the country. It was also recommended that efforts should be geared towards eradicating totally the importation of fake drugs in the pharmaceutical industry.

Key Words: efficiency, structure-conduct-performance, pharmaceutical industry, Nigeria
JEL Classification: L1, D4

Introduction

Literature on industrial economics suggests a negative relationship between market performance and market concentration. To this end, the hypothesis relating market performance to market concentration is what the Structure-Conduct-Performance (scp) paradigm attempts to explain. The theory simply posits that market structure, (such as entry barriers and number of firms) will determine the conduct of firms operating in

the market (in terms of collusion, advertising etc.), while conduct will in turn determine market performance.

With the size of the Nigerian Pharmaceutical industry, which has been estimated to be around $600 million (Business Monitor International 2009), the industry can be placed among the biggest in the Nigerian market. Put differently, Nigeria has one of the most promising and rapidly growing pharmaceutical markets in West Africa with more than 110 pharma formulation manufacturing facilities. The Nigerian pharma industry is growing at 12 percent annually. The market size has been estimated to be USD 717 million in 2011 and it has also been confirmed that about 60 per cent of drug manufacturing in the ECOWAS (Economic Community of West African States) sub-region takes place in Nigeria, giving credence to the huge sub regional market. However, the Nigerian Pharmaceutical industry as it is today is still plagued by series of challenges[1] which has hampered its growth potentials. In an attempt to address these problems, Nigeria in March 2011 signed a Memorandum of Understanding on cooperation in Pharmaceutical Sector with India. This made India exports of pharmaceutical products, including Active Pharmaceutical Ingredients (APIS) and fine chemicals to Nigeria to stand at $307 million as at March 31, 2012 (*Business Day* 2014).

In terms of production, contributions from Pharmaceutical Manufacturing Group of Manufacturers' Association of Nigeria (PMG-MAN) and United Nations Industrial Development Organization (UNIDO) affirm that the local pharmaceutical manufacturing industry in Nigeria is currently able to meet 25 per cent of local demand. The remaining 75 per cent has to be covered with imports from Asian companies, most especially, China. According to UNIDO, Nigerian manufacturers produce liquid preparations, tablets, capsules, ointments, lotions, creams and ophthalmic preparations (UNIDO 2011). Generally, the production flow scheme is in accordance with Good Manufacturing Practice, because production processes as at present are step-by-step, mixed manual and automated with the degree of automation varying between around 30 per cent and 80 per cent (UNIDO 2011). In terms of installed capacity, the average capacity utilization in Nigeria's pharmaceutical industry, as reported by various government committees is 40 per cent (Pharmaceutical Manufacturing Group of Manufacturers' Association of Nigeria 2010). Although this represents a substantial volume of underutilized capacity, it also means that ample spare capacity is available – without extensive new capital investment – if manufacturers can become

more competitive in the aspect of imported products (UNIDO 2010).

The pharmaceutical industry is facing a productivity crisis. Notwithstanding extraordinary scientific achievements such as completing the sequencing of the human genome, the rate at which the industry generates new products appears to be shrinking (Cockburn 2004). This is synonymous with the Nigerian Pharmaceutical market as distribution of medicines is highly problematic. This is because too many organizations and stakeholders are involved. Some major manufacturers contract private logistics organizations to distribute medicines while some international development partners even use the services of courier companies for delivery of medicines. The implication of this is that in some cases, medicines expire before they reach the end users (UNIDO). In the private sector, manufacturers and importers have their own distribution channels and can sell to wholesalers, retailers and hospitals. The result of this is often that medicines and medical supplies are sold in unregistered and unlicensed premises and, in some cases, by non-pharmacists (UNIDO 2010). It is also generally believed that some 17 per cent of essential generic medicines as a whole are routinely imitated. As much as 30 per cent of anti-malarials in the Nigerian market fall under the category of imitated drugs (Pharmaceutical Manufacturing Group of Manufacturers' Association of Nigeria 2010). However, it has been suggested that one way of confronting this problem would be through the introduction of Radio Frequency Identification Technology for Logistics and Tagging (UNIDO).

In 2009, the World Health Organization (WHO), in collaboration with the National Agency for Food and Drug Administration and Control (NAFDAC), developed the 'Nigerian Good Manufacturing Practices' (NGMP). To this end, training workshops were organised by WHO for both PMG-MAN and NAFDAC staff on this subject. The appropriate application of the principles contained in the programme will be able to enhance the standards of local manufacturing and improve the quality of locally produced medicines in Nigeria (UNIDO 2010).

This paper applied industrial economic theory and combined pharmaceutical data to provide a detailed analysis for the market structure, market conduct and performance of the pharmaceutical industry in Nigeria in recent years. This application is done according to the paradigm of the structure-conduct-performance (SCP). The focus of this paper is to take a critical look at the Nigerian pharmaceutical industry to determine what actually drives the performance of the industry, whether it is the structure

of firms as claimed by Mason (1939) and later expanded by Bain (1959), or efficiency, as asserted by Adhikari (2005).

However, there is relatively little research on the issue of SCP and efficiency (market concentration and efficiency) relationship with profitability in pharmaceutical industry. The available research on market structure, efficiency and profitability (performance) relationship mainly focused on either the Indian Pharmaceutical industry with inconsistent results (Adhikari 2005; Praven and Tapan 2005), or the Chinese biopharmaceutical industry (Jiankang 2014).

To our knowledge, the research focusing on the issue of complex relationships among market structure, conduct, performance and efficiency hypothesis of pharmaceutical industry in Nigeria is non-existent. The absence of any study regarding the pharmaceutical industry in the country and observed inconsistency in existing papers encouraged us to pursue the in-depth analysis of the problem. Resolving this inconsistency will be the contribution of this study to the literature.

The paper is organised as follows: Section two reviews the relevant literature that is germane to structure-conduct-performance paradigm and its relevance in different countries. Section three presents the theoretical framework, while section four discusses research methodology. Finally, Section five provides a discussion of the empirical results and concludes with policy recommendations.

Literature Review

THEORETICAL REVIEW

The framework of market structure conduct and performance (SCP) originated from neo classical' attempts to analyse markets. The structure conduct and performance paradigm was developed by the Harvard school of thought and popularized between 1940s and 1960s. Its empirical work, as carried out by Bain in 1951, involved identifying the correlations between industry structure and performance (Olagunju et al. 2012). The structure, conduct and performance empirical study have led in this regard to the implementation of most anti-trust legislation. Peltzman (1976) of the Chicago school of thought in his study on 'General Theory of Regulation' followed suit by emphasizing the rationale for firms becoming big. The study also looked at price theory and econometric estimation.

A comprehensive review of the SCP studies was provided by Schmalensee (1989). Prior to 1990, game theories took the center stage with emphasis on strategic decision making and the Nash equilibrium con-

cept (Tirole 1988). After 1990, however, empirical industrial organization making use of economic theory and econometrics resulted in a complex empirical modeling of technological changes, merger analysis, entry and exit as well as the identification of market power.

The underlying assumption of the market structure, conduct, and performance analysis is the inverse relation between the degree of market concentration and degree of competition. This is so because market concentration encourages collusive behavior among firms. More specifically, the standard structure-conduct-performance paradigm asserts the existence of a direct relationship between the degree of market concentration and the degree of competition among firms. This hypothesis will be supported if there is a positive relationship between market concentration (measured by the Herfindahl-Hirschman Index) and performance (measured by profits), regardless of the efficiency (measured by market share) of the firm. Thus firms in more concentrated industries will earn higher profits than firms operating in less concentrated industries, irrespective of their efficiency.

The scp Paradigm

The theoretical starting point in the explanation of the scp framework originated from the extreme microeconomic theories of market structure; monopoly and perfect competition. The structural characteristics of the perfectly competitive market are a large number of firms with almost equal sizes with no barrier to entry. Long-run equilibrium price equals marginal and average costs with profits at a normal level in perfect competition. Under monopoly, however, the industrial structure is characterized by one player (firm) with high restriction to entry and the outcome of such barrier is that marginal cost is equated with marginal revenue, setting price above the marginal cost and reaping supernormal profits in the process. Consequent upon this, the position of any particular industry can be defined along this spectrum by considering the structure of such industry along the number of firms in such industry, the ease (or otherwise) of entry and from such structure, predict the performance of that industry, especially with respect to profitability or return to assets. In summary, the scp paradigm predicts a positive relationship between the level of concentration in a given market and profits and output prices (Mason 1957).

The link between concentration and performance (profitability) could be modelled from the Cournot oligopolistic behaviour model (Ruthern-

berg 1994). Assuming an industry with N number of firms and each firm with homogeneous products Q, the profit maximization function of a given individual firm could be specified as the difference between revenue and cost (that is $P_Q Q - C_Q$). All firms are assumed to have identical cost functions while it is also suggested that output decisions of all firms are independent of another. The market equilibrium equation of the industry is given as:

$$\frac{P_Q - C(\frac{Q}{N})}{P_Q} = \frac{1}{N}\frac{1}{\eta}, \tag{1}$$

where η is the price elasticity of demand.

   If we further assume that the assumption of identical cost function is relaxed and replaced with an element (λ) which measures the expectations of any firm with respect to rival's reaction of such firms output decisions, the market equilibrium function could be rewritten as:

$$L = \frac{P_Q - MC}{P_Q} = H(1 + \lambda)\frac{1}{N}, \tag{2}$$

where L is the Lerner index and H is the Herfindahl index of concentration. The Herfindahl index is measured as the sum of squared market shares of firms in the industry.

The Efficiency Hypothesis

Challenging the scp framework, the efficiency hypothesis asserts that the efficiency of a firm defines the relationship between the structure and performance of such firm. In other words, if a firm is highly efficient relative to its competitors, it can maximize profit by maintaining its current size and pricing policy or even maintain a price reduction and expanded operations. The efficient-structure hypothesis further states that only firms' efficiency can explain the positive relationship between profits and the concentration or profits and market share. The X-efficiency argument states that firms with superior management or productive efficient technologies enjoy costs reductions (lower costs) and so make higher profits (Demsetz 1973; Brozen 1982; Gale and Branch 1982). The scale efficiency argument contends that firms may have comparable quality of management and technology, but some firms produce at a more efficient scale than other firms, thus they have lower unit costs and higher unit profits. Such firms are assumed to acquire larger market shares, which may result in higher levels of concentration.

EMPIRICAL REVIEW

The subject matter of the relevance of the structure-conduct-performance as well as efficiency theory has been documented in empirical literature. Studies like Demsetz (1973), Berger (1995), Howard and Timothy (1999), Cockburn (2004), Praveen and Tapan (2005) and others are reviewed in this study.

Howard and Timothy (1999), in a study linking SCP paradigm to competence-based competition, looked at how the resource-based view of the firm and the theory of competence-based competition can be used to integrate these perspectives. They concluded by proposing six issues which should motivate future strategy research, and which can help and enhance our understanding of how firms compete.

Nanyang (2003) applied the SCP Framework to analyse the media industry in Singapore. The study restated the constructs and premises of the SCP model, and the orthodox economic notions of market performance as well as the logic that underlies the model are clarified. The paper also discussed conceptualizations and interpretations commonly found in media market studies. Media issues such as content diversity and media concentration, which are often studied through the s–c–p approach, were also reexamined. It further identified and addressed common misconceptions found in using the framework to study the media industry and also expounded how utilization of the model can be enhanced.

Cockburn (2004) researched into the changing structure of the pharmaceutical industry in the United States and found that rising research and development (R&D) expenditures by pharmaceutical firms are consequence of changing industry structure, particularly the rise of the biotechnology sector. The creation of a market for biomedical science and increased vertical competition within the industry are likely to boost innovation and improve productivity. This can also induce socially wasteful spending and weaken academic science within the industry. The study asserted that with innovation increasingly dependent on financially vulnerable firms and complex contractual arrangements, research and development investment may become more sensitive to price controls or other cost containment measures.

Adhikari (2005) studied SCP vs. efficiency approach to carry out an empirical analysis of the Indian Pharmaceutical Industry. The study posited that SCP approach in the pharmaceutical industry is not relevant due to negligible concentration and low barrier to entry. The paper

fundamentally addressed efficiency approach to find out what the factors influencing efficiency of firms in the pharmaceutical industry are. Data of all companies available in prowess database are taken for empirical analysis. Two multivariate techniques of factor analysis and multiple regressions were applied. The result shows that research and development as well as advertising plays no significant role in the efficiency of the firm and thereby advocated that firms should take another look at the return on investment in research or make it more selective than general.

Praveen and Tapan (2005) looked at the relevance of the scp paradigm to the Indian Industry as a whole by elucidating the basic ideas of scp theory, and reviewing studies that used the paradigm, while also exploring its relevance to the Indian industry. They discussed in-depth the relationship between concentration and performance in the Indian industry. The study underscored the increasing significance of the scp paradigm in the post-reform Indian Industry.

Tung, Lin, and Wang (2010) looked at the market structure, conduct and performance paradigm re-applied to the international tourist hotel industry. Due to the shortcomings of previous studies to confirm the causality of the hotel industry, the paper developed a comprehensive model, based on realistic data on hotels, which allowed the analysis of the system through three simultaneous equations, market share, advertising, and profitability. In a sample of 360 Taiwanese international tourist hotels, three-stage least squares results indicate that: (1) two-way causes and effects exist between the market structure and strategic behaviour; (2) a brand positive effect shows on the market share; and (3) a firms' profitability is positively, and significantly, impacted by market share, but is affected negatively by total operating costs and capital intensity, which confirms hotel industry issues regarding capital.

Jiankang (2014) researched into the scp analysis of biopharmaceutical industry in China. The paper analysed the market structure, enterprise conduct and performance of biological pharmaceutical industry in China. It is suggested in the paper that the government need to speed up the industrial restructuring, to optimize the industrial structure, to encourage the similar innovation, to optimize approval procedures of biological generics, etc.

Finally, since the emergence of the neo-classical study of Mason in 1939, which posited that a direct causal link exists between the structure and performance of a firm, series of other studies like Demsetz (1973) and Berger (1995) have refuted the argument by claiming that there can

exist a causality reversal where performance can determine the structure of firms. The lack of consensus reached by these studies has also led Adhikari (2005) to come up with efficiency approach to studying the performance of pharmaceutical firms in India.

This current study will lean on the study conducted by Adhikari (2005) on the performance of pharmaceutical industries in India to determine what really drives the Nigerian pharmaceutical industry, whether it is structure or efficiency. To this end, since studies of this sort especially as it pertains to the pharmaceutical industry are scanty in Nigeria, this paper tries to fill this gap in the literature. It is not only that the main contribution of the research presented in this study is original, as it presents the first study of s–c–p/efficiency relationship in the pharmaceutical industry in Nigeria, but it also contains results that extend and complement those in existing literature on the s–c–p paradigm related to the pharmaceutical industry.

Theoretical Framework and Research Methodology

Several studies have estimated the relationship between market structure and performance by employing the model of Ruthernberg (1994):

$$\pi_{it} = f(\text{H}_{it}, \text{P}\,\text{C}_{it}, \text{NNI}_{it}, \text{R}_{it}, \text{Z}_{it}), \tag{3}$$

where π is a measure of performance; H measures concentration; P C is a proxy for potential competition; NNI measures non-interest income; R is the overall risk all firms are exposed to in the country and z is the vector all other control variables. *i* and *t* represent all pharmaceutical firms and period identifier respectively.

However, to investigate the relationships among market structure, efficiency and performance for the Nigerian Pharmaceutical industry, we established the following equations based on the model of Berger (1995) and Goldberg and Rai (1996).

$$Perf_{it} = \alpha_{10} + \alpha_{11}\text{M}\text{S}_{it} + \alpha_{12}\text{HHI}_{it} + \alpha\text{X}_{it} + v_{it}, \tag{4}$$

where *Perf* (performance), is a measure of Pharmaceutical firms' pre-tax return on asset; M S is the market share which is measured with each Pharmaceutical firms' turnover divided by all Pharmaceutical firms' turnover; HHI is the market concentration measure obtained by summing the squares of market shares of Pharmaceutical firms; X is a set of control variables which are related to the Pharmaceutical industry. In this case, the set of control variables employed E P S (earnings per share) and

OE (Operational Efficiency) obtained by dividing turnover by the operating expenses of all firms in the industry, while v is the stochastic error term which captures the effect of omitted variables. α_{it} represents both the coefficients and slope parameters.

DATA AND MODEL SPECIFICATION

From equation 4 above, the performance measure generally used in empirical studies are net profits, the rate of return on asset (ROA), rate of return on capital (ROC) and rate of return on equity (ROE). However, in this study we make use of pre-tax ROA as measures of pharmaceutical firms' performance. Pre-tax ROA is suitable in this study to proxy pharmaceutical firms' performance since it helps to eliminate the effect of government tax policy on the industry's performance. The model to be estimated in this study is given thus:

$$Perf_{it} = \alpha_{10} + \alpha_{11}\text{MS}_{it} + \alpha_{12}\text{HHI}_{it} + \alpha_{13}\text{EPS}_{it} + \alpha_{14}\text{OE} + v_{it}. \qquad (5)$$

The explanatory variables which enter into the model adopted in the study include: MS is the industry's market share and it is measured by dividing the turnover of each firm by the total turnover of all firms. The a priori expectation is that market share is expected to have positive effect on the industry's performance, HHI is the industry's Herfindahl-Hirschman Index of market concentration and it is calculated by summing the square market shares for the six pharmaceutical firms that feature in the study, EPS is the industry's earnings per share which is expected to positively influence performance and OE is operational efficiency. Both EPS and OE are control variables in the study. The subscript i and t are used to denote the number of firms and the number of years respectively, while v represents the white noise error term. The expectation is that market share and operational efficiency will either positively or negatively impact performance of the pharmaceutical industry which is what the study aims to determine.

SAMPLE IDENTIFICATION AND DATA SOURCE

This study uses six pharmaceutical firms including Eko Corp. plc, Evans Medical plc, May and Baker Nigeria plc, Morrison Industries plc, Neimeth International Pharmacy Plc and Pharma-Deko Plc in the period 1996 to 2010 as samples. All data of empirical tests come from the Nigerian Stock Exchange Statistical Yearbook. The choice of these six firms is due to the

availability of data as only the six firms have sufficient data up to date across the study period.

Empirical Result

In this section, the study presents the empirical result which shows the effect of market share, market concentration, earnings per share and operational efficiency on the performance of the pharmaceutical industry in Nigeria.

The reported fixed effect in table 1 indicates that while holding all explanatory variables constant, the pharmaceutical industry's performance (measured by pre-tax return on asset) is 0.1139. The result also shows that market share as well as organizational efficiency is inversely related to the performance of pharmaceutical industries in Nigeria. This is owing to the fact that a 1% increase in market share will decrease the industry's performance by about 99%. In the same vein, a 1% increase in organizational efficiency will cause the market's performance to decline by about 25%. This is, however, in contradiction to our apriori expectation, where we expect both market share and organizational efficiency to positively influence pharmaceutical firms' performance. Also, the Herfindahl-Hirschman Index (HHI) as well as earnings per share conformed to apriori expectation. This is because we assume that earnings per share should contribute positively to performance while market concentration (HHI) can either have

TABLE 1   Panel Result of Pharmaceutical Firms' Performance

Regressors	Fixed effect		Random effect	
Constant	0.1139**	(0.0000)	1.7499**	(0.0000)
MS	−0.9934**	(0.0000)	−0.8332	(0.7217)
HHI	0.2887**	(0.0000)	0.5035**	(0.0020)
EPS	0.0219**	(0.0080)	0.0345**	(0.0000)
OE	−0.2533*	(0.0120)	−1.3795**	(0.0000)
R squared	0.6266		0.5514	
Adjusted R squared	0.6012		0.5132	
F-statistics	4.8147		16.8072	
Probability	0.0000**		0.0000**	
Hausman Test		12.2**	(0.0031)	

NOTES   *t*-statistics in parentheses. ** and * indicate 1% and 5% level of significance. MS – market share, HHI – Herfindahl-Hirschman Index, EPS earnings per share; OE – operational efficiency.

positive or negative influence on performance. A 1% increase in market concentration will cause performance of the pharmaceutical industry to rise by roughly 29%, while a 1% increase in earnings per share will cause performance to rise by almost 2.2% while other explanatory variables are kept constant. From the result, all the explanatory variables are statistically significant at 1% level with the exception of organizational efficiency, which is statistically significant at 5% level. The *R*-squared value of 0.6266 also showed that the model is a good fit, as all explanatory variables joint explained 62.66% of variation in pharmaceutical industry's performance in Nigeria.

In the same vein, the reported random effect indicates that while holding all explanatory variables constant, the pharmaceutical industry's performance (measured by pre-tax return on asset) is 1.7499. The result also shows that market share as well as organizational efficiency is inversely related to the performance of pharmaceutical industries in Nigeria confirming the fixed effect result. This is owing to the fact that a 1% increase in market share will decrease the industry's performance by about 83%. Similarly, a 1% increase in organizational efficiency will cause the market's performance to decline by about 138% as against our apriori expectation where we expect both market share and organizational efficiency to positively influence pharmaceutical firms' performance. The Herfindahl-Hirschman Index (нні) as well as earnings per share also conformed to apriori expectation as in the fixed effect case. A 1% increase in market concentration (proxied by нні) will cause performance of the pharmaceutical industry to rise by roughly 50%, while a 1% increase in earnings per share will cause performance to rise by almost 3.5% while keeping all other variables constant. From the random effect result however, market share is not statistically significant in the model, but all other explanatory variables are statistically significant at 1% level. The *R*-squared value of 0.5514 also showed that the model is a good fit as all explanatory variables jointly accounted for about 55% variation in the pharmaceutical industry's performance in Nigeria. However, the Hausman test statistics value of 12.2 which is significant means that the study favours the fixed effect model as the most appropriate.

Conclusion and Policy Recommendation

Industrial economics can help firms understand e.g. levels of capacity, output and prices, socially acceptable performance standards, differentiation in the market, investments, desired levels of concentration and

efficiency etc. The empirical results (both from fixed and random effects) interpreted in this study simply indicates that the efficiency hypothesis does not hold in the case of pharmaceutical industry in Nigeria over the course of the study. This is clear from the result as both organizational efficiency and market share, both of which are efficiency measures in this study, tend to impact negatively the industry's performance. More so, the result of the pharmaceutical firms' concentration measure revealed that a high concentration of firms operating in the market will translate into better performance, be it in terms of profitability, return on assets, or both. Hence, this will translate into a better performance of the industry from social point of view, thereby leading to the production of quality drugs and the eradication of fake drugs' circulation in the industry. We can safely infer from this also that Nigeria's pharmaceutical industry's structure determined its performance and so we conclude that within the Nigerian pharmaceutical industry context, over the period of study, that structure-conduct-performance paradigm holds sway (Mason 1939; 1957; Bain 1951; 1959) as against the efficiency approach of Adhikari (2005), which is the study's contribution to knowledge. We can say in a sense that the result of this study supports the structure-performance hypothesis of Mason (1939) and Bain (1959) as against efficiency-performance hypothesis of Adhikari (2005). However, the result is in direct contradiction to Qichang, Zongling, and Dan (2012), which found that neither structure-conduct-performance nor the efficient structure hypotheses hold in Chinese banking industry.

Consequent upon the result of this study, we recommend that necessary policy options be put in place by the Federal Ministry of Health to enhance the capacity of local pharmaceutical firms in producing the desired quality and quantity drugs needed in the country to address the current practice where the country loses over N1.5 billion annually to the importation of Active Pharmaceutical Ingredients (APIS), which is sequel to the fact that almost 90% of domestically consumed drugs are imported from abroad (*Business Day* 2014). In the same vein, to improve efficiency of the industry, efforts should be geared towards eradicating sharp practices (importation of fake drugs) that was the hallmark of the industry before the Late Dr. Dora Akunyili took over as the Director General of National Agency for Food and Drug Administration and Control (NAFDAC) in April 2001. Akunyili's legacy of sanitizing the industry should be strictly adhered to and even improved upon. The environment under which pharmaceutical firms operate in Nigeria should be made more

conducive. In summary, more efforts should be geared towards having regular supply of electricity, which has been the bane of industrialization in Nigeria (Isola 2005).

Notes

1 Despite Nigeria's dominance within the ECOWAS sub-region in drug manufacturing, Nigeria's quest to become self-sufficient in drug production is bleak as it loses over N1.5 billion annually to the importation of Active Pharmaceutical Ingredients (APIS), raw materials used in finished pharmaceutical products which have direct effect in the diagnosis, treatment or prevention of diseases from India, United States of America, Germany, etc, experts have said. While pharmaceutical companies in Nigeria do not locally manufacture APIS such as Paracetamol powder, Ampicillin dry powder etc, the non-availability of APIS would significantly cripple the nation's pharmaceutical sector. Reports have it that Nigeria imports over 85 percent of its needs of APIS as it does not have adequate capacity to produce APIS, with no commitment by the Government to encourage investors in this vital sector of the economy (*Business Day* 2014).

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