A REVIEW OF SELECTED MACROECONOMIC FACTORS IMPACTING BUILDING MATERIAL PRICES IN DEVELOPING COUNTRIES – A CASE OF NIGERIA

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Abstract

High prices of building materials had form a crucial constraint to improving construction procurement in Nigeria. The influence of the macro-economic indicators on this problem cannot be ruled out. This study therefore investigates the impact of macro-economic indicators on the prices of building materials with a view to enhancing construction project procurement and delivery. Questionnaires were administered to respondents which included the Architects, Quantity Surveyors, Builders, Engineers, Bankers/Economist. The study established that inflation, exchange rate, import, interest rate, money supply and demand for money have a significant effect on the prices of building materials. Demand for import, inflation rate, government economic policies, level of foreign currency demand and level of foreign currency supplied were identified as causing a change in exchange rate while factors affecting inflation rate were variation in the value of the naira, demand for goods, changes in real in comes lending interest and import tariffs. On the other hand, factors causing a change in interest rate were government economic policies, demand for money, inflation rate, deregulation of interest rate. It was found that a high relationship existed between exchange rate, inflation rate and interest rate and the prices of building materials. The study recommended reduction in import duties, bringing exchange rate to the barest minimum, reduction in interest rate on banks loans while government should maintain stable inflationary trend.

Keywords: *Macro-Economic factors, Construction projects, Procurement, prices, Building Materials, Delivery*

Introduction

The construction industry is generally responsible for the physical development or the transformation of the environment which makes the built environment very vital to social-economic development of a nation. It comprises of building, civil and heavy engineering works. Ajanlekoko (1990) affirms the industry to be a prime motivator of any economy while in Nigeria; it represents 60 percent of the capital investment. The World Bank attributes the industry to account for between 3 to 8 percent of the Gross Domestic Product (GDP) in developing countries, Nigeria inclusive. Hillebrandt (2000) opines that the sector forms a crucial focus of any nation's economy. In the view of El-Rufai (1993), the sector was referred to in economic term as capital goods industry because its products and services do constitute the basis where other economic activities are built upon. Plessis (2007) views construction as a large sector of the economy responsible for millions of jobs and a significant proportion of GDP in most countries. When allied to other sectors and industries in materials production and distribution as well as services sectors such as transport, finance and the property market, its impact on society and the environment and its influence on the character of the world are tremendous.

A common finding of studies is that cost is affected by a large number of factors essentially demand and supply. However, Ogunsemi (2002) submits that in Nigerian Construction Industry in the recent past, many projects have been subjected to cost and time overruns. Considering the relationship between

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construction industry and the national economy, it becomes necessary that the cost of construction be within the reach of the average citizen. However, some economic indicators are very significant to the overall cost of construction. Some of these indicators include; exchange rate of local currency to other currencies in the world, inflation rate and interest rate charge on loan among others.

About 50 percent of the building materials and components incorporated into construction or parts of the materials ingredients required for the manufacture of the materials are sourced from overseas (Udeh, 1991) and this brings to closer attention the issue of foreign exchange and its inherent problems in construction industry and the need for local sourcing of building materials. In the building construction sector, material as an indispensable resource constitute about 60 percent of the total cost of building (Omange and Udegbe, 2000).

Macro Economic Indicators and the Prices of Building Materials

High construction costs have become a major pointer to the malfunction of the construction industry in Nigeria today (Uwah 1995). This has manifested in low construction activities and abandoned projects with severe consequences on the nation's socio-economic and technological development. Cement productions involve a lot of foreign input in the form of machinery and spare parts, thus when the nation's currency suffers a setback at the foreign exchange market, cement manufacturers simply catch cold. Makoju (1995) observes that the devaluation of the Naira in the past few years had negatively impacted investment in the manufacturing of cement.

Udeh (1991) argues that in the recent years, the value of the Naira has been depreciating and this directly affected the prices of building materials given the fact that up to fifty percent of the materials were imported. In the opinion of Jagboro and Atigogo (2000), the introduction of the foreign exchange market (SFEM/FEM) had further impacted negatively the prices of building materials. Ofoegbu (1998) described the industry as import dependent, since devaluation caused import to be costly, its effect would be enormous to the industry.

Ughamadu (1993) asserts that local currency devaluation was one of the factors that sky-push the cost of construction. Olashore (1991) submits that the devaluation of Nigeria currency would increase cost of production where there was no substitute for imported materials. In the assessment of Makoju (1995) the massive devaluation of Naira had contributed to the cost of procurement of construction resource with manufacturers hiking the prices of their products. Ademoroti (1997) opines that the importation of building materials depleted Nigeria's external reserve, lowered internal productivity, raised the cost of construction and killed the desire to be self-reliant. Increase in the prices of building materials has multipliers effect on the industry in the sense that, it will lead to fluctuation, which could invariably lead to abandonment of projects. In the opinion of Makoju (1995) construction industry has been starved of FOREX allocation whether by commission or omission.

The prices of materials respond to market situation by an economic law of supply and demand. With imported materials such as cement, reinforcement and sanitary ware, prices fluctuate partly as a result of the effect of changing monetary policies such as the second tier foreign exchange market, and partly as a result of changes in their supply. In the case of traditional materials, there is a little scope for innovations or for economics of scale in their manufacture and price increases in the raw materials are placed on in full. The overall effects become very much pronounced when it is appreciated that the cost of imported input of materials for an average construction work may amount to about 50 percent of total material cost.

Methodology

The study analysed the macro-economic indicators impacting the prices of building materials. In achieving this, a questionnaire survey was adopted; the survey targets were limited to the building professionals (architects, builders, quantity surveyor, structural engineers) and bankers/economists. The sampling technique used for data collection for the survey was a random sampling as adopted by Dorothy (2008). A total of 238 questionnaires were administered whole 89 of it were returned. This represents about 31.4 percent of the overall number of questionnaire sent out which was considered sufficient for the study based on the assertion made by Akintoye and Fitzgerald (2000), that the result of a survey could be considered as biased and of little value if the return rate of the questionnaires was lower than 20 percent. Likert scale rating questions using a five point were used to elicit respondents' opinion on the importance of the variables identified. The mean were used to analyse the respondents' opinions which are set out in following sections.

Results and Discussion

Table 1 shows the respondents' assessment of the effect of the macro - economic indicators on the prices of building materials, the rating which fell within 4.47 for inflation and 2.73 for unemployment. The five most significant indicators are inflation, exchange rate, import, interest rate, and money supply. This confirmed the view of Omole (2001), that since the exchange rate of the Naira has been deregulated, the price of all materials and services have been increasing. Ajibade (2009) opined that the depreciation in the value of Naira will have a negative impact on the populace.

The ranking of respondent's opinions of the factors causing change in exchange rate are listed in table 2. For the 26 factors offered to respondents, the mean response rating values range from 4.32 for demand for import and down to 3.38 for debt servicing ratio. It would be seen from this that majority of the factors identified are critical factors influencing exchange rate. However, the most critical ones are demand for imports, inflation rate government economic policies, level of foreign currency demand and level of foreign currency supplied.

Agene (1991) stated that a change in country's import will immediately affect rate of exchange. These therefore buttressed the assessment of Owoeye (2003) that inflation rate was one of the factors influencing exchange rate. Also the findings of Agene (1991) thus supported that a change in a country's imports and exports immediately affects the rate of exchange for its currency.

Table 3 illustrated the respondents rating of the factors that cause change in inflation rate. It fell between 4.10 (variation in naira value) and 3.26 (down sizing of labour force). The factors identified are all critical but the most critical of them are variation in the Naira value, demand for goods, exchanges in real income, lending interest rate and import tariffs.

In table 4, the respondents rating of the factors that cause changes in interest rate fell between 4.13 for government economic policies and 3.46 for rediscount rate. The most critical factor causing the interest rate are government economic policies, demand for money, inflation, deregulation of interest rate and value of money in circulation. In the view of Ajibade (2009), the fall in the value of naira against the dollar would lead to higher interest rates.

Conclusion

The study is set out to collate, synthesise and disseminate industry stakeholders' opinion on the influence of the selected macroeconomic factors on building material prices. This research has revealed that inflation rate, exchange rate, import, interest rate and money supply were the most critical indicators affecting the prices of building materials.

It also revealed that demand for imports, inflation rate, government economic policies, level of foreign currency demand and level of foreign currency supplied were the factors influencing exchange rate in Nigeria while variation in the naira value, demand for goods changes in real income, lending interest rate and import tariffs were the most significant factors influencing change in inflation rate. Furthermore, government economic policies, demand for money, inflation rate, deregulation of interest rate and value of money in circulation were the most critical factors that cause change in interest rate. The study suggests acute need for government to engage in proactive strategic planning and approaches to keep building material prices within reasonable limit for the health of the economy and shelter affordability of the citizens.

Recommendations

This study had shown that exchange rate, inflation and interest rate influence the prices of the selected building materials. It is therefore suggested that government should strive to bring exchange rate to the barest minimum if not at par with the naira. While stability should also be maintained as instability in the naira will lead to instability in material prices and subsequently affect business prospect. Efforts should be geared towards maintaining a stable inflationary trend in Nigeria. As a matter of policy, the financial institution should reduce the interest rate charged on facilities taken from banks or lending agencies because when interest rate is high investment in capital projects development will be hampered. A systemic approach should be adopted to reducing import duties charged on materials used in the building industry. This will have positive effect on the prices of building materials in that it will encourage procurement of building. There is the need to incorporate into tender price the expected exchange rate and inflation, as this will address cost overrun of construction projects.

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Table 1 Macro-Economic Indicators Influencing Prices of Building Materials

Indicator	Mean	Rank
Gross Domestic Product	3.69	7
Exchange Rate	4.44	2
Inflation	4.47	1
Interest Rate	3.96	4
Unemployment	2.73	13
Export	3.17	10
Import	4.01	3
Balance of Payment	3.34	8
Money Supply	3.83	5
Demand for Money	3.70	6
External Debt Service	2.90	12
External Reserve	3.01	11
Unemployment. The five most significant	3.19	9

Table 2 Factors Causing a Change in Exchange Rate

Factors	Mean	Rank
Demand for imports	4.32	1
Supply of exports	3.83	12
Level of foreign currency demand	4.17	4
Levels of foreign currency supplied	4.15	5
Reduction in purchase of local currency	3.94	9
Inflation rates	4.22	2
Balance of payment	3.74	17
Currency speculation	3.52	25
Bank interest on loan	3.75	15
Government economic policies	4.20	3
Structural adjustment programme	3.98	8
Dual exchange market	3.94	9
Countries' level of industrialization	3.92	11
Structural change in the economy	4.00	6
Technological advancement	3.66	18
Political, economic and social instability	4.00	6
Capital movement	3.66	18
Influence of stock	3.75	15
Exchange activities	3.54	24
Level of foreign reserve	3.38	26
Debt servicing ratio	3.43	26
Factors of industrialized importing nation	3.63	21
Capital utilization	3.65	20
Size of domestic market	3.55	23
Level of production	3.78	14
Credit rating	3.63	21
Per capital income	3.85	12

Table 3 Factors Causing Change in Inflation Rate

Factors	Mean	Rank
Changes in real income	4.04	3
Changes in taste	3.69	19
Changes in population's age structure	3.45	28
Changes in prices of substitutes	3.88	9
Taxation policy	3.91	8
Deregulation of the economy	3.76	14
Variation in the Naira value	4.10	1
Import tariffs	3.99	4
Trade liberalization	3.63	22
Trade restriction	3.85	10
Lending interest rate	3.99	4
Market monopoly	3.84	11
Expected price movement	3.63	22
Changes in quantity of money in circulation	3.73	16

Balance of payment	3.36	29
Balance of trade	3.29	30
Debt servicing	3.59	25
Level of industrialization	3.76	14
Industrial capacity utilization	3.71	18
Demand for goods	4.08	2
Supply of goods	3.93	7
Inadequate supply of services	3.74	16
Salaries and wages	3.83	13
Down sizing of labour force	3.26	31
High level of importation	3.63	22
Level of technology	3.64	21
Political climate	3.84	11
Labour productivity	3.66	20
Oil subsidies	3.47	27
Supply of petroleum products	3.54	26
Per capital income	3.72	17

Table 4. Factors Causing Change in Interest Rate

Factors	Rating	Rank
Value of money in circulation	3.94	5
Demand for money	4.09	2
Government economic policies	4.13	1
Deregulation of interest rate	3.97	4
Minimum rediscount rate	3.74	10
Stock exchange	3.47	16
Change of government	3.72	11
Change in national income	3.75	9
Level of investment	3.88	6
Credit constraints	3.78	8
Inflation	4.00	3
Foreign exchange rate	3.83	7
Salaries and wages	3.51	15
Per capital income	3.58	13
Size of domestic market	3.58	13
Level of foreign exchange	3.63	12
Rediscount rate	3.46	17