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The Effects of Exchange Rates Fluctuations on the Performance of a Manufacturing Concern in a Hyperinflationary Environment: A Case of Delta Beverages Zimbabwe

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Abstract:
This study analyzes effects of exchange rate fluctuations on the performance of manufacturing firms using Delta beverages Zimbabwe as a case study. Delta was preferred as it imports some of its raw materials and capital goods from other countries. A case study was used because it allowed the researchers to concentrate on a real scenario, thus proffering solutions to any business that may want to use the stated findings for improving a real situation. The aims of the study were to assess the effect of exchange rates fluctuations on raw material availability, to assess the relationship between exchange rates and firm performance. The study used mixed research method allowing researchers to use both primary data and secondary data. Primary data was obtained using questionnaires and secondary data was obtained from Delta's financial statements for 2017 and 2018. Results showed that that production output of Delta decreases as the currency depreciate, currency appreciation increases the production output of Delta beverages. Currency depreciation increases labor costs and leads to a fall in productivity of Delta beverages and currency appreciation reduces labor which supports the view that currency depreciation reduces the importation of machinery and equipment which will in turn slow productivity. It was found out that fluctuations of exchange rates in Zimbabwe have a significant effect on the availability of imported raw materials.

Keywords: *Exchange rate, profitability, productivity, currency depreciation, currency appreciation*

1. Introduction

This research analyzes the Zimbabwe Delta beverages as a firm in the manufacturing sector which is importing some of its raw materials and capital goods from other countries. This type of business has exposed Delta beverages to potential losses and gains due to price changes of its raw materials and capital goods on the international market. Studies by Abdallah (2016), Chinyere et al. (2018), Asad et al. (2015) and Hong and Zhang (2019) presented evidence of a significant positive impact of exchange rates on performance of manufacturing firms. Agubata et al. (2018), Tams-Alasia et al. (2018), Toraganli and Yalcin (2016) further offer a greater insight for a deeper understanding of the relationship that exists between exchange rate fluctuation and manufacturing output. These studies specifically indicated that the fall in value of the local currency raises costs of importing raw materials thus lowering the performance of manufacturing firms. A similar study by Akhan et al. (2018), Orij et al (2018), Nagahisarchoghaei et al. (2018) aligned with the outcome of the above studies. It showed that exchange rate appreciation boosts manufacturing output growth. On the other hand, Vazwerner (2014), Kato (2016), Karamollaoğlu (2017) and Rashid (2017), found that there is a negative impact of exchange rate depreciation on the performance of the manufacturing firms. Moreover, Asad et al. (2015), Inyiama and Caroline (2014), Kande (2019), Eugene (2015), Firat and Mustafa(2014), Dhasmana (2014), Huang (2017), Yin and Rajeswari (2014), Luis-Raul and Cristina (2014) found that exchange rate depreciation is beneficial to performance of manufacturing firms as it makes exports cheaper on the international market thus increasing sales of the manufacturers. However, studies by Lewal and Esther (2016) and Delh (2014), did not produce evidence that exchange rates hada role in reducing the performance of the manufacturers. The above researches mainly focused on other countries and in Zimbabwe much focus was on other sectors of the economy thus providing a gap for this study to analyze the effects of exchange rates fluctuations on the performance of manufacturing firms in Zimbabwe using Delta beverages as a case study.

A fall in the value of currency may either have negative or positive impact on the performance of manufacturing sector of a given country. Firms that highly depend on imported raw materials suffer as the currency depreciates since raw materials costs increase and this will result in reduced output (Tams-Alasia et al., 2018). Zimbabwe delta beverages is

experiencing an overall decrease in production output due to the fall in value of Zimbabwean currency. The Table 1below shows the trends of delta beverages production volumes for its three main products from 2016 to 2019.

PRODUCT	2016	2017	2018	2019
Lager beer	1300 000	1150 000	1500 000	1300 000
Soft drinks	1300 000	1200 000	1400 000	670 000
Sorghum beer	3600 000	3390 000	3580 000	3350 000

Table 1: Production Volumes (Hectoliters)
Source: Financial Reports for the Years (2015 To 2019

In the period (2016-2017) the capacities of lager beer and soft drinks fell by 150 000 (11.5%), 100 000(7.7%) and 210 000 (5.8%) hectoliters respectively. This fall in capacity was attributable to shortage of foreign currency to procure raw materials (Delta Annual report, 2018). In the period between (2017 and 2018) an increase in capacities was witnessed on all the products. Lager beer increased by 30% to 1500000 hectoliters, soft drinks increased by 16.7% to 1400 000 hectoliters and Sorghum beer increased by 5.6% to3390 000 hectoliters. This increase was due to heavy political spending towards the general presidential elections(Delta Annual report 2019). The company had an improved foreign currency access and this enabled the firm to source more raw materials for production leading to an increase in capacity. From 2018 to 2019 larger beer capacity decreased by 13.33% to 1300 000 hectoliters, sorghum beer decreased by 6.4% to 3350 000 hectoliters and a massive fall in capacity of soft drinks by 52% to 670 000hectoliters. This decline in capacity was attributed to shortage of foreign currency for raw material procurement (Delta Annual report, 2019). Moreover, the forex allotted to Delta by the government was less than the required amount and also it was expensive to buy forex from the black market (Gowere, 2019).

In addition to fall in production volumes, loss of foreign raw material suppliers is another problem cited by Delta due to acute foreign currency shortage crippling the economy (Makume, 2018). Exchange rate depreciation makes imported raw materials expensive and leads to a shortfall in supplies of inputs (Duc and Zhaoyon, 2019). Delta beverages experienced a lot of challenges in settling foreign supplier obligations in time resulting in an accumulation of foreign debt. Table 2 below shows the trends of delta beverages borrowings from suppliers.

Year	2016	2017	2018	2019
Foreign debt	USD20m	USD28.m	USD40m	USD53m

Table 2: Measurement of Performance of the Company
Source: Delta Annual Financial Reports (2016-2019)

From the Table 2 above it can be demonstrated that in 2016 foreign debt increased by 40% to USD28m in 2017 reason being the shortage of foreign currency to clear foreign creditors, (Delta Annual financial reports,2017). In the period (2017-2018) foreign debt increased to USD40m by 42.9% due to continuous shortage of foreign currencyaccess. In 2019 the debt increased by 32.5% to USD 53m due to continuous depreciation of Zimbabwean currency which led to acute shortage of forex to clear the debts (Delta Annual Financial reports, 2019). The company was failing to meet supplier obligations in time resulting in loss of supply (Gowere, 2019). According to (Patricia, 2019) there were a lot of factory shutdowns for soft drinks between November 2018 and February 2019 due to raw material shortages experienced by the firm.

Apart from loss of supply, increase in production costs is another challenge faced by Delta beverages due to depreciation of the local currency (Delta annual report, 2019).Abdallah (2016) postulates that a fall in domestic currency value triggers costs of production to rise. During the period under reviewmost of the suppliers abandoned the Zimbabwean RTGS dollar and started charging their goods and services in USD which triggered the costs of the firm to rise since the USD conversion rates continued escalating. The Table 3 below shows the trend of raw material costs from 2016 to 2019.

YEAR	2016	2017	2018	2019
Raw material costs (rtgs $)	171 294 000	190 478 928	204 745 000	257 978 700

Table 3: Raw Material Cost Behavior
Source: Delta Annual Financial Reports (2016-2019)

Between the period 2016 and 2017 costs of raw materials increased by 11.2% to RTGS 29 525 000 due to the fall in value of the local currency causing more RTGS dollars to be traded in order to get hard currency. In the period between 2017 and 2018 increased by 7.5% to RTGS 3 926 000 reason being the continuous depreciation of our local currency. Between 2018 and 2019 costs escalated by 26% to RTGS 257 978 700 and this was also attributed to the devaluation of RTGS dollars (Delta Annual report, 2019).

Decline in market share is another challenge which was faced by Delta especially in the beverage segment (Delta Annual report, 2019). Alfaro et al. (2018) found that in less industrialized countries manufacturers mostly depend on imported raw materials and capital goods therefore as the currency depreciate their output declines and results in reduced market share in the domestic market. Recent reports suggest that Delta beverages market share was stable before the entrance of Pepsi in the industry in 2018. According to Nyakazeya (2018) Delta Beverages soft drinks market share fell

from 83% to about 70% percent in 2018 due to Pepsi entrance into the market. Delta beverages hiked prices due to high costs of importing raw materials in 2018 and this gave Pepsi an opportunity to penetrate the market by charging very low prices (Delta Annual report, 2019). Table4 below shows the 2018 average prices of Delta and Pepsi soft drinks which led to a 13% fall in Delta market share.

Product Quantity	330ml	500ml	2litres
Delta Prices	$0.50	$0.95	$2.15
Pepsi Prices	$0.50	$0.65	$1.65

Table 4: Prices charged by Delta and Pepsi in 2018
Source: The Financial Gazette December 2018

Table 4 shows that Delta prices of 500ml soft drinks were higher by $0.30 (46%) due to high production costs. The price of 2-liter bottle of soft drinks of delta is also higher than that of Pepsi by $0.50 (30.3%) due to high production costs and penetration pricing strategies applied by Pepsi in order to gain market share from Delta. Overall Pepsi prices were lower than those of Delta and this gives evidence of a falling market share of Delta and all this was driven by high costs of production experienced by Delta Beverages.

2. Literature Review

2.1. Effects of Exchange Rates Fluctuations on the Financial Performance of Manufacturing Firms

2.1.1. Revenue

Over the years various scholars have tested the relationship between exchange rate and revenue earned by various manufacturing firms in both developed and developing economies. Evidence from some of these studies has not been consistent. Studies by Boroacă and Anttila (2014), Asad et al. (2015), Narayanand and Nguyen (2016), Hooy et al. (2015)and Zimano and Kaseke (2014) looked on the effect of currency depreciation on export sales of manufacturing firms and noted that most firms earn higher revenues as the currency depreciates as it stimulates foreign demand thus increasing sales revenue of exporters. Rashid and Mahmood (2017), Inyiama and Caroline (2014), Xiong (2017) and Akhan et al. (2018) confirmed the same view and further highlighted that that exporting manufacturing firms are highly affected by the exchange rate shocks as compared to non-exporting firms due to international transactions which expose them to foreign exchange rate risks. Moreover, Hanagaki and Hori (2015), Friberg and Sanctuary (2018), Atif et al.(2017), Ilzetzki et al. (2017) and Hayat and Usman (2016) highlighted that in highly industrialized countries most of the firms specialize in exporting business expand as the currency depreciate because their sales become cheap and demand is increased. Furthermore Flota (2014) noted that firms that mainly produce for local consumption records high revenues as the currency depreciates due to the effects of exchange rates which cause them tocharge higher prices in order to safeguard themselves from the shocks of exchange rates.As the currency depreciates sales volume declines due to low production output and high prices charged.

Studies by Cheung and Sengupta (2014),Oluyemi (2015), Soleymani and Chua (2014), Yamashita (2015) and Anubha (2014) mainly looked on the effect of currency appreciation on sales of manufacturing firms and reviewed that a gain in value of the domestic currency makes products of the firm expensive on the foreign market leading to a reduction of firm`s export sales. More so, Nagahisarchoghaei et al. (2018) noted that currency appreciation lowers price competitiveness of exporting manufacturing firms and results in lower sales revenue. Furthermore, Huang (2017) postulates that domestic currency appreciation causes firms to shut down and reduces the export sales of the surviving firms while increasing domestic sales. The overall effect of the shock on sales found to be decreasing due to stiff competition in the domestic market.

Nyeadi et al. (2014) argues that currency appreciation reduces sales revenue of manufacturers by stating that firms that highly depend on imported raw materials record higher sales revenue in response to currency appreciation due to lower production cost which enhances a firm to sale at lower prices in the domestic market thus attracting more customers leading to higher sales. Sai and Zinyemba (2015) further confirmed the same view by stipulating that currency appreciation increases the purchasing power of domestic consumers thus increasing domestic sales of manufacturing firms through increased demand

However, Yokoyama et al. (2015) and Bussière at al. (2015) opined that a gain in the domestic value of the currency does not increase the total sales of raw material importing firms, reason being a speculation that importing firms do not extend production capacity in response to fall in cost, because either they face inelastic domestic product demand. This research will focus on analyzing the effects of exchange rate fluctuations on sales revenue of Zimbabwe manufacturing firms.

2.1.2. Production Costs

The determination and explanation of the relationship between exchange rate movements and production costs is one of the primary objectives studied by researchers, (Ainscow et al., 2014). Studies by Asad et al. (2015), Dogrue et al. (2014), Summers (2017), Duck and Zhaoyon (2019) mainly focused on the effects of currency appreciation on production cost of manufacturing firms and observed that as the currency gains value the costs incurred when importing goods like raw material shipment costs, prices of raw materials and duties becomes more affordable to importing firms resulting to

lower production costs. In addition, studies by Muhammad et al. (2016) and Ayodele (2014) confirmed the same view and further suggested that manufacturing firms that highly dependent on imported raw materials are competing effectively on the markets due to lower production costs derived from currency appreciation.

Studies by Alfaro (2018), Gopinath and Neiman (2014), Friberg and Sanctuary (2018), Akın et al. (2017), Fitzgerald and Haller (2014), Auerbach and Holtz–Eakin (2016), Worstall (2017), Amit (2016) and Ezekiel (2014 and Kandil and Mirzaie (2014) looked on the effects of currency depreciation on production costs of manufacturing firms and found that as the currency devalues firms that import a sizable share of its raw materials experience high production costs. More so, Keythmen (2019), Caglayan and Demir (2014) and Bussière (2015) explained further stating that for a country using USD currency when it depreciates relative to another currency it makes more dollars to get the same amount of that foreign currency. Therefore, dollar depreciation means it is very expensive for a domestic business to convert USD currency to a foreign currency for foreign raw material procurement leading to high production costs. However, other previous studies suggest that currency appreciation has insignificant impacts on production costs. Firat and Mastafa (2014) and Yamashita (2015) observed that firms operate in a closed economy produces goods using local raw materials and they do not benefit much from currency appreciation as they are shielded from foreign exchange risks. In addition, Lebogang and Marinda (2014) suggests that in highly industrialized countries where there is less dependence on imported raw materials their costs are more stable to exchange rate fluctuations.

2.1.3. Profitability

Some of the previous researches done indicate that profitability is positively affected by currency appreciation. Hayat and Usman (2016) and Kituku, (2014), Nagahisarchoghae et al. (2018), Gbesola and Garba, (2014),Krušković (2016),Greenberg and Hodge (2017), Setzer (2017), Summers (2017) and Sai and Zinyemba (2015) are of the view that when domestic currency appreciate firms with higher dependence on imported raw materials benefit through a lower variable cost channel and make high profits. Moreover,Dogrue et al. (2014), Caglayan and Demir (2014) and Bussière (2015) found that real currency appreciation has positive impacts on production costs which enables exporting manufacturing firms to add a higher mark-up on sales to international markets. Furthermore Boroacă and Canttila (2014) and Byung-Joo (2019) highlighted that in international trade, if the currency in which the exporter is paid appreciates (between the time of product selling and the moment of receiving the counter value of those products), the exporter will earn profit, due to the dynamics of the exchange rate. Pettinger (2017) was however of the notion that low production costs enjoyed when currency appreciate does not always guarantee high profits because some firms may have a high portion of fixed costs and this shrinks the profits.

Studies by Alfaro et al. (2018), Rashid and Mahmood (2017), Asad et al. (2015), Narayan and Nguyen (2016) and Hooy et al. (2015) looked on the effects of currency depreciation on profitability of manufacturing firms and reviewed that as the currency depreciates large-sized firms earns more profits reason being that large firms are able to produce in large quantities and make shipments to foreign markets in large quantities resulting to high sales revenue and lower costs. Moreover, studies by Karamollaoğlu (2017), Gopinath and Neiman (2014), Amit (2016) and Ezekiel (2014) indicate that currency devaluation effects profits of the firm differently according to their trade status, they improve the market shares and profits of exporting firms, and reduce market share for firms that imports a special component of its inputs, as their costs rise. However, Okika et al. (2018) postulates that exchange rate movements had an insignificant impact on firm profitability. Moreso, Agubata and Odubuasi (2018) were of the notion that profits are not affected by the exchange rates reasons being that as the currency appreciate suppliers hike prices of raw materials and production costs increase, where the selling price will proportionately be adjusted upwards to conform to the company's profit margin. The above researchers are misaligned with views on profitability in relation to exchange rate shocks.

2.1.4. Foreign Creditors

Sharma (2016) noted that international transactions are more uncertain and time-consuming than domestic transactions, and firms that trade internationally are particularly vulnerable to fluctuations in the exchange rate. Kouladoum (2018), Kumar et al. (2017) and Acheik (2016) suggest that exchange rates significantly affect external debt. Sharma (2016) further noted that most raw material importers are especially reliant on access to external sources of finance like trade credit to meet their working capital requirements and mitigate the effects of sudden shocks to the costs of their imported inputs. Studies byBocola and Lorenzoni(2017),Doepke and Schneider (2017) and Gopinath and Stein (2017) focused on effects of exchange rate shocks on foreign debt of multinational firms and reviewed that multinational firms are in a better position to manage their foreign creditors than firms operating in one country reason being that multinational firms have better access to foreign exchange and hedging strategies.

Studies by Arratibel et al. (2012), Hanafiah et al. (2012), Hardy (2018) and Mundaka (2012) focused on economies with high exchange rate fluctuations and noted that firms facing high exchange rate fluctuations have a high accumulation of foreign credit due to a fall in purchasing power of domestic currency. In addition, Kumar et al. (2019) and Saheed et al. (2015), postulates that instability in exchange rates causes external date accumulation. Furthermore, a study by Manova, (2014) has suggested that firms which highly depend on trade credit are adversely affected by a credit contraction due to high exchange rate instability and any failure to clear debts in agreed time results to foreign credit accumulation. Studies by Rey (2015), Duand and Schreger (2016), Salomao and Varela (2018)Kutan et al. (2015), Bahmani-Oskooee and Hajilee (2012)and Pattillo et al. (2012) looked on the firms facing currency depreciation and found that currency depreciation results in external debt accumulation due to a weak domestic currency which will not have much power in servicing foreign debt. In addition, Nagahisarchoghaei (2018) noted an accumulation of foreign exchange liabilities to firms with smaller market power when the domestic currency depreciates. After the review of the above literature by the

researchers, the writer concludes that all studies tested the relationship between foreign creditors and exchange rate shocks in various countries using real currency but no one among the researchers has checked on the impact of exchange rates on foreign exchange liabilities of firms trading in a country like Zimbabwe which used bond notes as currency of trading thus, giving a gap for the researcher to explore on the effects of exchange rates on foreign creditor's trend of Zimbabwe manufacturing firms.

2.2. How Exchange Rates Influence Productivity of Manufacturing Firms

2.2.1. Production Output

In the recent years various scholars have tested the relationship between exchange rate and output of firms in the manufacturing sector across the world. The evidence found was inconsistent. For instance, while studies by Sani et al. (2016), Gbesola and Garba (2014), Umeora (2014), Lawal and Omotola (2016), Caglayan and Demir (2014) and Bussière (2015) presented evidence of significant positive relationship between currency appreciation and production output. Firms that import raw materials normally produce high quantities as the currency appreciates because the firms will be in a position to source forex for raw material at cheaper rates. Studies by Nyeadi et al. (2014), Demir (2014), Choudhuri and Schembri (2014), Gbesola and Garba, (2014) and Krušković (2016) confirmed the same view and added that as the currency appreciate more manufacturers enters the manufacturing industry reason being cheap raw material costs. The overall effect will increase output of the manufacturing sector. While other studies by Cheung and Sengupta (2014), Choudhri and Schembri (2014), Gnimassoun and Coulibaly (2014) and Atsuyuki (2016) argue the fact that currency appreciation increases production output by stating that exporting manufacturing firms experience shrinkages in output during currency appreciation due to high product costs on the international market which will reduce sales as well as production output. (Bank of Canada Annual Report 2014) is of the notion that currency appreciation reduces manufacturing exports sales and stimulates a high level of competition in the domestic market forcing some small firms or less productive firms to close their operations. The overall effect of exiting firms lowers output of the manufacturing sector. Moreso, Ozcelebi and Yildirim (2014) postulates that firms that produce products with a high domestic content produces less as the currency appreciate since they have a lower dependence on imported raw materials which deprives firms from enjoying costs benefits associated with importing raw materials. A similar study by Henrique and Baer (2014) reviewed that output of firms that produce goods with high domestic content is unaffected by appreciation of currency.
On other hand, studies by Tams-Alasia et al. (2018), Bussière at al. (2015) and Hutson, and Muckley, (2014) noted that as the domestic currency depreciates it impairs the firm`s capacity to import raw material and results to falling output of the manufacturing firms. While others by Atsuyuki (2016) and Belke and Volz (2018), Dellas and Tavlas (2013), Mehdi et al. (2014) and Yin-Wong and Rajeswari (2013) observed that most of manufacturing firms in highly industrialized countries produces more goods when currency depreciates since there is high demand stimulated by high export demand. The above researchers are misaligned with views on the response of production output in relation to exchange rates movements. Some researchers found that appreciation of the currency increases output while others found opposite results. Therefore, the research will then review the effects of exchange rates fluctuation on output of manufacturing firms in Zimbabwe.

2.2.2. Labor

An increase in labor costs cause high unit labor costs which results to lower productivity, Amiti et al. (2014). Baltagi (2013) postulates that productivity is the efficiency with which you generate output using certain inputs. Labor is one of the inputs mostly involved in production therefore as its costs changes the productivity is impacted. The movements in exchange rates have impacts to labor costs and labor supply. Mishra and Spilimbergo (2014) postulates that domestic depreciation of the real exchange rate of a country results to an increase in real wages and slows the productivity of the firm. Moreover, Kurz and Senses (2016) noted that as currency devalues wages are eroded and employees press for pay increments leading to increased unit labor costs which slow productivity. Studies by Schott (2018) and (Melitz and Redding 2014) shed a bit of light on the effects of the exchange-rate shocks on employment and working hours in manufacturing firms and found that an appreciation in domestic currency increases both employment and working hours of raw material importing firms leading to increased wage bill. Moreover, Asano et al. (2013) posited that exchange rate fluctuations mainly affect labor supply of firms that highly depends on imported raw materials than firms specializing in exporting its products.

Hijzen et al.(2015) and Lynsenko (2015) noted that firms specializing in exporting its products cut labor force as the currency appreciate reason being the appreciation of currency which reduces foreign product demand and lowers production capacity simultaneously. More so, Yokoyama et al. (2015), Hosono et al. (2013) and Friberg (2015) suggest that manufacturing firms that highly depend on export sales fails to meet labor costs when the currency appreciate due to low sales revenue. Secondly in terms of labor supply the currency appreciation of the currency decreases the employment of firms that specializing in exporting its outputs. Furthermore, Brambilla et al. (2012) and Hummels et al. (2014) observed that as the currency appreciate firms that export to richer countries employs highly skilled labor in order stay competitive on the international market. Studies by Friberg and Sanctuary (2018), Aghion et al. (2017), Allayannis et al. (2012) Kaiser and Siegenthaler (2016), Baltagi (2013) and Caggese et al. (2016) reviewed that in developed economies firms that face currency depreciation lower the level of skill employed in order to minimize costs of paying highly skilled labor and when the currency appreciate it raises the level of skill and gain a competitive advantage on the international market. Moreover, Nguyen and Duncan (2016) tested the relationship between exchange rate fluctuations and immigrant's

labor market outcomes in manufacturing firms and reviewed that male immigrants reduce their weekly labor supply as the currency appreciates and paid less by the manufacturing firms due to reduced industrial activity.

However, findings by Nucci and Pozzolo (2014) and Ekholm et al. (2012) produced evidence of insignificant relationship between labor costs and exchange rate shocks. Moreover, Michaels et al. (2014) and Autor et al. (2014)did not find evidence which prove significant relationship between labor supply and exchange rates but the scholars cited other factors that affects labor cost and supply like level of technology and the supply and demand of labor .The above scholars mainly focused on developed economies and most of the works that studied the relationship between exchange rate and labor are of foreign origin.

2.2.3. Machinery and Equipment

Machinery and equipment are drivers of productivity in manufacturing firms. Recent researches proved that the process of acquiring and servicing these asserts is mostly affected by the exchange rates. Studies by Victoria (2019), Workman (2019) Smith and London (2014) indicate that in developing countries manufacturing firms import more equipment and machinery as the currency appreciates due to the increase in purchasing power of the domestic currency which in-turn raises the productivity of the firm. Okereke (2017) and Henrique and Baer (2014) noted that firms in less industrialized countries benefit more from appreciation of the domestic currency as it enables firms to import more machinery and equipment which improves the productivity of the firm. More so, Ezekiel (2014) noted that the cost of servicing and maintaining high-tech machinery for production decreases as the currency appreciates.

Studies by Arawomo (2014), Akın et al. (2017) and Amit (2016) noted that following currency depreciation the importation of high-tech machinery by less industrialized countries shrinks leading to reduced productivity in the manufacturing sector. Furthermore, studies byMazol (2015) and Fitzgerald and Haller (2014) emphasized that currency depreciation reduces the quantity of capital goods imported due to high costs of importing. Chete et al. (2014) noted that in most developing countries there is high demand for equipment and machinery since most of the economies are working towards industrialization but the researcher cited currency depreciation as a major barrier to the importation of equipment and machinery for industrial development. However, studies by Aftab et al. (2017), Aftab et al. (2015), Hooyetal (2015) Soleymani and Chua (2014) noted that in highly industrialized countries exchange rates have insignificant impacts on the importation of machinery and equipment as their currencies are stable. After the review of the above literature, the researcher conclude that all studies have examined the relationship between exchange rates shocks and importation of machinery and equipment in various countries but none of the studies has checked the effect in Zimbabwe.

2.3. How Exchange Rates Influence Raw Material Availability

2.3.1. Raw Material Supply

Most manufacturers are now operating in an open economy where raw materials can be sourced abroad, Banton (2019). This brings an issue of exchange rates in to play since firms need foreign currencies to purchase raw materials from another country. Pettinger (2017) noted that as the British currency depreciates the British firms that relies much on imported imports found it expensive to purchase raw materials leading to raw material shortages in the production. According to the (CZI Report 2018) the decline in value of the Zimbabwean currency has caused a short fall in the raw material supply in most manufacturing firms in Zimbabwe due to high exchange rates. Moreover, (ZIA 2018 Annual Report) and the (CZI 2019) reviewed that the supply of imported raw materials to manufacturing firms in Zimbabwe is dwindling due to the devaluation of the Zimbabwean currency.

Studies by Alotaibi (2016), Amit (2016), Turhan et al. (2012), Nishimura and Hirayama (2013) and Oluyemi (2015) mainly focused on the effects of currency appreciation on raw materials supply and findings reviewed that exchange rate has a direct impact on raw material price and supply. Currency appreciation makes imported raw materials cheaper thus making raw materials available in the production as they will be affordable. Furthermore, Giannetti et al. (2018), Hassan, (2013), Salomao and Varela (2018), Zhang et al, (2015) and Hardy (2018) posited that as the currency appreciate the suppliers tend to extend their credit period, thus increasing the supply of raw materials. Studies by Oloyede and Essi (2017), Oriavwote and Eriemo (2012), Okika et al. (2018), Sarac and Karagoz (2016) and Blinov (2016) and Cosmas et al, (2014) suggests that most developing countries have volatile exchange rates and this reduces the supply of imported raw materials thus slowing the industrial growth. (Mugaga 2019) highlighted that the erratic exchange rates fluctuations have caused a shortage of imported raw materials in Zimbabwe manufacturing firms due to shortage of foreign currency to procure raw materials. (Kairiza 2019) posited that the acute foreign currency shortages experienced by Zimbabwe in 2019 has negatively affected raw material supply thereby slowing the production.

However, a study carried by Odili (2015) noted that when the product is very limited or not available on the international market the changes in exchange rates will not bring the product to the international market due to its nature. Therefore, the movements in exchange rates will have no effect on the availability of that scarce imported raw material.

2.3.2. Importation Prices and Costs

The relationship that exists between exchange rate shocks and trade prices of both imports and exports is an important issue to firms. The behavior of trade prices in relation to exchange rate changes also determines the trade quantities to be traded when the exchange rate fluctuate. (The European Central bank annual report 2014) findings reviewed that there is a strong connection between import prices and exchange rates. Sharma (2016) and Lorena et al (2012) noted that foreign suppliers lowers their prices by a small amount than they increase them when their local

currency devalues this means that domestic import prices react more to a depreciation than to an appreciation. Gopinath and Neiman (2014),Amit (2016) and Ezekiel (2014) noted that when there are large appreciations in a foreign country, firms that export in that country face difficulties in lowering prices since they will record lower profits. Therefore, downward price rigidities imply a lower response of export prices following currency appreciation than when currency devalues, which in turn implies, for the countries on the other side of the transaction (domestic country) faces high costs of importing during domestic currency depreciation. Studies by Friberg and Sanctuary (2018), Akın et al. (2017), Fitzgerald and Haller (2014),reviewed that when the currency depreciates importing and exporting manufacturing firms face both higher shipping costs and times, as well as higher uncertainty over payment default compared to firms that only trade in a closed economy. Moreover, (ZIA 2018 Report) and (CZI Report (2018) reviewed that firms are facing high cost during importation of raw materials and capital goods due to the fall in value of the local currency.

Sharma (2016) in his study observed that for firms which import inputs, they suffer more as the currencies depreciate due to higher prices of raw materials and shipment costs. Furthermore, Alotaibi (2016), Jason Van Bergen (2017) and Gatobu, (2013) observed that as the forces of demand and supply for currencies change, the values of the currency also changes When the domestic currency gains value, the imports becomes cheaper leading to high demand of foreign goods and the foreign exchange needed to acquire them. After reviewing the above literature, the writer observed that only few scholars have researched about the effects of exchange rate shocks to importation costs in Zimbabwe. The researchers reviewed the effects of exchange rates fluctuation to the importation costs incurred by manufacturing firms in Zimbabwe when importing goods.

2.3.3. Supplier Credits

According to Engemann et al. (2015) a supplier credit is the period granted by the seller to the buyer of goods so that the buyerhas time to prepare for the payment. Credit period given to customers by suppliers gives the customers access to goods and services when the customer is not financially stable thereby giving the customer time to raise funds to clear the debt, Salomao and Varela (2018).A study by Huangetal. (2018) reviewed that exchange rate shocks affect the credit risk profile of a customer which will result in changes in the supply of goods and services. Studies by Kalemli-¨Ozcan et al (2014), Bruno and Shin (2017), Vonnak (2016) and Bruno and Shin (2018) found that currency depreciation raises the credit risk profile of customers which will in turn shrinks the supply of raw materials due to shorter credit period extended to customers. Giannetti et al. (2018), Zhang et al, (2015) and Hardy (2018) observed that manufacturing firms which highly depend on trade credit experience credit contraction when there are high exchange rate fluctuations and this adversely affects raw material supply to manufacturers. Furthermore, Evans and Outlaw (2017) researched on the impacts of trade credit financing to firms importing raw materials in developing countries and found that following local currency depreciation foreign suppliers shortens credit period due to the fact that their local currency will be weak in servicing external debt thereby, denying firms to access imported raw materials in time.

Moreover, evidence from previous researchers reviewed that interest rates differentials is the key factor when buying foreign goods on credit and as the domestic currency gains value against other currencies it becomes more affordable to pay foreign interest thus enabling buyers to benefit from supplier credit, Klapper et al. (2012), Baskaya et al. (2018) and McCauley et al. (2015). However, to the best of my knowledge, in Zimbabwe manufacturing firms there has not been any study on the extent to which supplier credit changes in response to exchange rate movements.

3. Methodology

The study sought to achieve the research objectives by applying the mixed research approach. The mixed approach uses qualitative and quantitative techniques in the collection of data. Qualitative research is advantageous in the sense that the researchers were able to get the opinions and feelings about a research problem, thereby giving an understanding the effects of exchange rates fluctuation on the performance of Delta beverages Zimbabwe. Rovai et al. (2014) posited that quantitative research is beneficial as it determines the existing relationship between variables thereby showing the effect and cause of the relationship of exchange rate and performance, and the performance of the company measured using profits and sales. The research adopted a case study as a research strategy because some other methods like surveys lack in depth analysis compared to this method. The case study analyzed the effects of exchange rate shocks on the performance of Delta beverages using primary data which was not present on already published financial reports of Delta beverages. The study made use of questionnaires in the collection of primary data. The mixed approach was the most appropriate method in outlining the effects of exchange rates fluctuations on performance of manufacturing firms in Zimbabwe. According to Delta annual report (2019) there has been a significant fall in production output, increase in production costs and foreign debt as a result of high exchange rates fluctuations. Therefore, in this research a quantitative technique and qualitative technique are employed through the use questionnaire and secondary data in order to establish the effects of the variables in numerical values and the illumination of the story behind numbers. Some of the quantitative data gathered by questionnaires is converted into narrative that can be analyzed qualitatively some of the qualitative data gathered is converted into numbers so that it can be statistically analyzed. The researchers targeted a population of 15 top managers that were from various departments within the organization.

For the relationship between exchange rate and sales revenue in dollar terms:

Ordinary correlation coefficient

$$R = [n\sum xy - \sum x \sum y] \sqrt{} [(n\sum x^2 - (\sum x)\ 2\ (n\sum y^2 - (\sum y)^2]$$

Where:

n = represents number periods (there are two periods in a year and each is equal to 6 months)

x = average exchange rates in six months' time

y = sales revenue for half of the year
The formula will produce results which show the relationship between exchange rates and Delta's sales in dollar terms
For the relationship between exchange rate and sales volume:

$$R = [n\sum xy-\sum x\sum y] \sqrt{} [(n\sum x^2-(\sum x)\ 2\ (n\sum y^2-(\sum y)^2]$$

Where:
n = represents number periods (there are two periods in a year and each is equal to 6 months)
x = average exchange rates in six months' time
y = sales volume for half of the year
The formula will produce results which show the relationship between exchange rates and Delta's sales volume
For the relationship between exchange rate and profits (EBITDA):

$$R = [n\sum xy-\sum x\sum y] \sqrt{} [(n\sum x^2-(\sum x)\ 2\ (n\sum y^2-(\sum y)^2]$$

Where:
n = represents number periods (there are two periods in a year and each is equal to 6 months)
x = average exchange rates in six months' time
y = profits for half of the year
The formula will produceresults which shows the relationship between exchange rates and profitability (EBITDA) of Delta.

3.1. Exogenous Factors

These are other drivers that cause a change to the dependent variable. For each relationship established they are calculated to see the portion that directly affects the dependent variable by the following formula

$$=1-R^2$$

Where:
R^2= is the coefficient of determination
The formula will produce results which show the portion of the dependent variable which is affected by other drivers which were hold constant on the correlation relationship.

4. Analysis of Results

4.1. Relationship between Exchange Rate and Production Output

Forty percent (6/15) of those responded to the question strongly agreed and 20% (3/15) agreed that exchange rate depreciation decreases the production output of Delta Beverages. 13.33% (2/15) of the respondents were unsure about the idea. On the disagree side 20% (3/15) disagree the fact that currency depreciation decreases the output of the firm. A modal response of (9/15) 60% agreed that production output of Delta decreases as the currency depreciate. The idea was supported by the literature of Sani et al. (2016) which reviewed that firms that import raw materials produce less quantities as the currency depreciates because the firms will not be in a position to source foreign exchange for raw material procurement at cheaper rates leading to low productivity. More so the overall interview respondents have supported the same view saying that currency depreciation reduces the ability to source foreign currency thereby reducing the supply of imported raw materials and capital goods which drives the output of the firm.

Three of the fifteen 20% of the responses were not sure if currency depreciation reduces production output as they viewed that as the currency depreciates there is no effect on the output of products with high domestic content. This is in line with the view of Henrique and Baer (2014) who noted that output of firms that produce goods with high domestic content is unaffected by the depreciation of the local currency. 20% (3/15) of the responses disagreed the view that currency depreciation decreases output of manufacturers as they view that currency depreciation makes the product cheap on the international market thereby, boosting the demand which will in turn stimulate production output to increase. In the reviewed literature, this was supported by Atsuyuki (2016) who posited that most of the manufacturing firms which exports some of its output produces more as the currency depreciates due to high export demand stimulated by reduced prices on the international market.

4.1.1. Currency Appreciation and Production Output of the Firm

Twenty percent (3/15) of the responses disagreed with the view that currency appreciation increases production output of Delta beverages. 13.33% (2/15) of the respondents were not sure about the idea. (6/15) 40% of the respondents strongly agreed and 26.66% (4/15) generally agreed to the view that currency appreciation increases production output of Delta beverages. A modal response of (9/15) 66.67% agreed that currency appreciation increases the production output of Delta beverages. Their view was motivated by the fact that Delta beverages affords more imported raw materials following currency appreciation due to increase in purchasing power of the local currency. This is in line with Bussière (2015) who presented evidence of significant positive relationship between currency appreciation and production output. Where by firms that import raw materials produce high quantities as the currency appreciates because the firms will be in a position to source more foreign exchange for raw material procurement at cheaper rates.13.33% (2/15) of the responses were not sure if currency appreciation increases the production output of the firm. This is in line with Henrique and Baer (2014) who noted that output of firms that produce goods with high domestic content is unaffected by appreciation of currency since they have a lower dependency on imported raw materials which may give them some cost benefits. On the disagree side, 20% (3/15) of the responses disagreed the view that currency appreciation increases production output of Delta beverages. In the literature reviewed this is in line with the report published by the (Bank of Canada Annual Report

2014) which postulates that currency appreciation reduces the output of firms that exports some of its products since their exports will become expensive thereby, reducing demand as well as the output of the firm.

4.1.2. Labor Costs in Relation to Currency Depreciation

Four of the fifteen 26.67% strongly agreed and (6/15)40% agreed that currency depreciation pushes up labor costs leading to reduced productivity whilst (5/15)33.3% were not sure about the effect. There is no one on the disagreeing side. By aggregation (10/15)66.67% of the responses were in agreement that currency depreciation increases labor costs and leads to a fall in productivity of Delta beverages. In relation to reviewed literature the respondents have the same view with Mishra and Spilimbergo (2014) who posited that currency depreciation raises real wages which increases unit labor cost and results to lower productivity. More so, Kurz and Senses (2016) observed that as the local currency depreciates employee wages become eroded resulting in employees pressing for wage increase thereby increasing labor cost which will further slowdown productivity if the firm fails to meet the costs. This is experienced at Delta Beverages as employees are pressing for wage increase due to falling Zimbabwean currency.(5/15)33.3% were not sure if depreciation in local currency raises labor costs as they viewed that labor costs are affected by other factors such as the level of technology and the supply and demand of labor. This is supported by Autor et al. (2013) did not find evidence which prove significant relationship between labor costs and exchange rates but the scholars cited other factors that affects labor cost and supply like level of technology and supply and demand of labor.

4.1.3. Currency Appreciation on Labor Costs

Six of the fifteen, 40% of the respondents strongly agreed and (3/15) 20% agreed that currency appreciation reduces the labor costs. On another hand (6/15)40% disagreed with the fact that currency appreciation reduces labor costs.A modal of (9/15) 60% were of the opinion that currency appreciation reduces labor costs and they are in line with the views of Mishra and Spilimbergo (2014) who noted that as the currency gains value the prices of goods and services decreases resulting to a reduction in unit labor cost which will in turn improve the productivity of the firm. On another hand, there is 40% (6/15) respondents which were uncertain on whether currency appreciation reduces the labor costs and boost productivity. They are in line with the view of Nucci and Pozzolo (2014) and Ekholm et al. (2012) who observed that as the currency appreciates the employers are reluctant to adjust salaries which affects unit labor costs. This entails that as the currency appreciates the labor costs remain the same.Finally, it is clear that following currency appreciation labor costs decreases as the most frequent response is strongly agree with a rate of 40% (6/15) and those which strongly agreed have been supported by the other 20% (3/15) which agreed to the same view

4.1.4. Relationship between Exchange Rate and Machinery and Equipment Importation

None of the respondents strongly disagreed or disagreed to the idea that currency depreciation reduces the importation of machinery. 40% (6/15) agreed and 60% (9/15) strongly agreed that currency depreciation restrains the importation of machinery and equipment by Delta beverages. No one was uncertain about the idea. The total population which supports the view that currency depreciation reduces the importation of machinery and equipment which will in turn slowing productivity adds up to 100%, that is 40% and 60% in the category of agree and strongly agree respectively. This implies that currency depreciation is restraining the importation of equipment and machinery at Delta Beverages as it was viewed positively by a greater portion of respondents. This is in line with the views of Mazol (2015) whois of the notion that currency depreciation reduces the quantity of capital goods (equipment and machinery) imported due to high costs of importing and therefore the restrain slows down the productivity of manufacturers. All the responses are on the agreeing side with a total of 100% and the most frequent response (mode) is agreeing with 60%. In addition, majority of responses from interviews supported the same view as they stated that the rapid fall in value of the local currency is reducing the company's ability to acquire machinery and equipment which drives the productivity of the firm.

4.1.5. Effects of Exchange Rates on Raw Material Availability of Delta Beverages

4.1.5.1. Imported Raw Materials and Exchange Rate Fluctuation

None of the respondents disagreed with the fact that imported raw material is affected by exchange rates fluctuations. Only one respondent 6.67% (1/15) was not sure about the view. On the agreeing side (3/15) 20% agreed and 73.33% (11/15) strongly agreed to the fact that exchange rates fluctuations significantly affect imported raw material availability. The majority of the respondents have agreed to the view and this is in line with the report published by (ZIA annual report 2018) which stated that the fluctuations of exchange rates in Zimbabwe have a significant effect on the availability of imported raw materials. However, 6.67% (1/15) was unsure if exchange rates fluctuations significantly affect imported raw material availability. This is supported by Odili (2015) who noted that if the imported raw material is very limited on the international market the changes in exchange rates may not bring the product on the market due to its nature therefore the fluctuations of exchange rates have insignificant effects on the availability of imported raw materials. From the response rate obtained the majority (73.3% and 20%) agreed that exchange rate fluctuations have significant effects on raw material availability. This was also supported by the secondary data gathered from the Delta Annual Financial Reports which published that the exchange rates fluctuations have resulted to acute shortage of imported raw materials

4.1.5.2. Currency Depreciation and the Supply of Raw Materials

Eighty of the fifteen (53.33%) strongly agreed and 46.67% (7/15) agreed that as the currencydepreciates the supply of imported raw materials shrinks. On the other hand, no one is uncertain, disagreeing or strongly disagreeing to this idea. From the response rate above it is clear that currency depreciation shrinks the supply of imported raw materials as evidenced by 63% who strongly agreed to the idea and supported by 46.66% who generally agreed to the idea. This is in line with Pettinger (2017) who noted that as the British currency depreciates the British manufacturing firms that relies much on imported imports found it expensive to purchase raw materials leading to raw material shortages in the production thereby, slowing the productivity of the firm. In addition to that, overall interviewed respondents said that the rapid fall in value of the local currency has caused Delta to experience acute raw materials in the production line resulting to temporal factory shutdowns.

4.1.5.3. Currency Appreciation and Raw Material Supply

Five of the fifteen(33.33%) strongly agreed and (10/15) 66.67% agreed to the view that currency appreciation increases the supply of imported raw materials. On another hand, no one was uncertain, disagreeing or strongly disagreeing to this idea.

It is shown that the modal response is agree with a rate of 66.67%, together with the 33.33% which strongly agreed, 100% of the respondents viewed that currency appreciation improves the supply of raw materials. This is in line with Giannetti et al. (2018) and Hassan (2013) who are of the notion that as the currency appreciate foreign suppliers extends their credit period, thus increasing the supply of imported raw materials.

4.1.5.4. Currency Depreciation and Supplier Credit Period

Six of fifteen (40%) strongly agreed and (8/15) 53.33% generally agreed to the view that currency depreciation causes credit contraction to Delta beverages. 6.67% (1/15) of the respondents is not sure about the view. Furthermore, no one from the respondents strongly disagreed or disagreed to the fact that currency depreciation causes supplier credit contraction. This entails that Delta beverages is facing supplier credit contraction during the depreciation of the local currency. This is in line with the suggestions of Kalemli-¨Ozcan et al (2014), and Bruno and Shin (2017) who posited that as the local currency depreciates customer credit risk profile increases and foreign suppliers tightens their credit conditions leading to a reduction in international raw material supply chains that results to low firm productivity. However, 6.67% (1/15) of the respondents is not sure if currency depreciation results to supplier credit period contraction. This view is in line with Du and Schreger (2016) who did not find any evidence that shows that local currency depreciation causes credit contraction.

4.1.5.5. Currency Appreciation and Supplier Credit Period

Six of fifteen (40%) of the respondents strongly agreed and (9/15) 60% generally agreed to the view that supplier extends their credit period as the currency appreciates. There is no one on the disagreeing side as well as the neutral side. The total population of 100% (60%+40%) agreed and strongly agreed that as the domestic currency gains value foreign suppliers tend to extent their credit period leading to an increased access to imported raw material which will in turn raise the productivity of the firm. This view was supported by Baskaya et al. (2018) and Acharya et al. (2015) who are of the opinion that as the domestic currency gains value against other currencies it becomes more affordable for firms to pay foreign interest and creditors thus reducing the credit risk profile which will in turn increase the chances for foreign suppliers to extend their credit period. Moreover, this view was supported by 100% of the respondents who interviewed by the researcher.

4.1.5.6. Currency Depreciation and Importation Costs and Prices

Sixty percent (9/15) strongly agreed and 40% (6/15) agreed that as the currency depreciate the raw material importation costs and prices increases. On the other hand, no one is uncertain, disagreeing or strongly disagreeing to this idea. From the response rate above it is clear that currency depreciation results to increased raw material importation prices and costs as evidenced by 60% who strongly agreed to the idea and supported by 40% who generally agreed to the idea. This is in line with Sharma (2016) who noted that firms which import inputs suffer more as the currency depreciate since the local firms will be paying more of their local currency in order to meet the raw material purchase price and shipment costs. The ability to import raw materials is impaired leading to raw material shortages in the production thereby, slowing the productivity of the firm.Data is skewed to the agreeing side and this was also supported by data from (Delta Annual Financial Report, 2018) which published that the depreciation of the local currency is increasing the costs of importing raw materials. In addition, the majority of the interview respondents who said that production cost increases following currency depreciation due to increases in raw material procurement costs.

4.1.5.7. Currency Appreciation and Importation Costs and Prices

Five of the fifteen (33.33%) of the respondents strongly agreed and 66.67% (10/15) agreed that as the currency appreciates the raw material importation costs and prices decreases. On the other hand, no one is uncertain, disagreeing or strongly disagreeing to this idea. From the response rate above it is apparent that currency appreciation results to decreased raw material importation prices and costs as supported by 60% who strongly agreed and 40% who generally agreed to the idea. This is in line with Van Bergen (2017) who posited that when the domestic currency gains value, imports becomes less expensive due to the fact that foreign exchanges will become cheaper to buy resulting to reduced costs of importing foreign goods. The appreciation in currency decreases importation costs and prices.

4.1.6. The Relationship between Exchange Rates and Sales Revenue

Simple linear regression analysis was used by the researcher to determine the relationship between exchange rates and sales revenue of the firm by analyzing the data gathered from secondary sources. The analysis will test the relationship between sale revenue for sparkling beverages. The sparkling beverages were used because they are mostly affected by the exchange rates. The exchange rate was used as the independent variable while sales as the dependent variable holding constant other determinants of sales revenue

	Average Exchange Rate (X)	**Sales Revenue(Y)**	**(X2)**	**(XY)**	**(Y)**
Time (n)		$000'000		$000'000	$000'000
First half 2017	1.86	250.066	3.4596	62533.00436	62533.00436
Second half 2017	2.47	322.161	6.1009	795.73767	103787.7099
First half 2018	2.23	341.417	4.9729	761.35991	116565.5679
Second half 2018	5.068	380.967	25.6845	1930.740756	145135.8551
Totals	11.628	1294.611	40.2180	3952.961096	428022.1373

Table 5 Sales Revenue Schedule
Source: Delta Beverages Annual Reports

R= [4(3952.961096**)**-11.628(1294.611)] / √ [4(40.2180)-135.21] (4(428022.1373)-(86795.64132]
R^2=0.117
Exogenous factors
=1-0.117
=0.886/ (88.6%)

Table 5 indicates (R^2) of 0.117. A result of 0.117 implies that there is a weak positive relationship that exist between revenue recorded and an increase in exchange rates. The revenue increases slightly as the currency depreciate at Delta beverages (after controlling other revenue drivers). The result is also supported by the interview data. More so, Flota (2014) also noted that firms that mainly produce for local consumption records high revenues as the currency depreciates due to the effects of exchange rates which causes the firm to charge high prices in order to safeguard themselves from exchange rate shocks. The result was also in the same line with responses from majority of interviewed respondents who explained that sales recorded in terms is increasing following currency depreciation due to increases in prices in order to cover exchange rates risks.

However, exogenous factors were calculated and 0.886 (88.6%) was obtained which means that 88.6% of the changes in sales revenue is due to other factors which are not exchange rates.

	Average Exchange Rate (X)	**Sales Volume) (Y)**	**(X^2)**	**(XY)**	**(Y^2)**
Time (n)		HLS'000		$000'000	$000'000
First half 2017	1.86	588	3.4596	1093.68	345744
Second half 2017	2.47	586	6.1009	1447.42	343396
First half 2018	2.23	602	4.9729	1342.46	362404
Second half 2018	5.068	195	25.6845	988.26	38025
Totals	11.628	1971	40.2180	4871.82	1089569

Table 6: Sales Volume (Hectoliters) Schedule
Source: Delta Beverages Annual Reports

R= [4(4871.82)-11.628(1971)]/√ [(4(40.2180)-135.210) (4(1089569)-3884841)
R= -0.984, R^2= (-0.984*-0.984) =0.968/ 96.8%
Exogenous factors
=1-0.968=0.031(3.1%)

Table 6 indicates (R) of -0.984 that implies that there is a negative relationship that exist between sales volume and an increase in exchange rates. (R^2) is also indicated which shows that 96.8% of the sales volume is due to changes in exchange rates. However,(3.1%) of the changes in sales volume are as a result of other factors which are not exchange rates. The sales volume of Sparkling Beverages is declining following the depreciation in currency. The result is also supported by the interview data which reviewed that Delta`s sales volume for the sparkling beverages is falling in relation to the depreciation of the local currency due to the fact that local currency is weak to secure foreign currency for raw material procurement. More so, Flota (2014) also noted that depreciation in currency reduces production output and cause an in increase in prices which have negative impact on sales volume.

4.1.7. The Relationship between Exchange Fluctuations and Profitability (EBITDA)

The relationship was also regressed to establish the relationship between exchange rates shocks and profitability of the firm. The data used for the analysis was gathered from secondary sources. The average exchange rate was used as

the independent variable while operational profits as the dependent variable holding constant other determinants of Delta operational profits.

	Average Exchange Rate (X)	Operational Profits(Y)	(X^2)	(XY)	(Y^2)
Time (n)		$000'000		$000'000	$000'000
First half 2017	1.86	41.13	3.4596	76.5018	1691.6769
Second half 2017	2.47	53	6.1009	130.91	2809
First half 2018	2.23	81.8	4.9729	182.414	6691.24
Second half 2018	5.068	97.7	25.6845	495.1436	9545.29
TOTALS	11.628	273.63	40.2180	884.9694	20737.2069

Table 7: Operational Profits (EBITDA) Schedule
Source: Delta Beverages Annual Reports

R= [4(8849694)-11.628(273.63)/ √ [4(40.2180)-135.210] [4(20737.2069)-74873.3769
R= 0.7867, R^2= (0.7867*0.7867),R^2=0.6189/ 61.89%

Table 7 above indicates (R2) of 0.7867. A result of 0.7867 implies that there is a strong positive relationship that exist between Operational profits (EBITDA) and an increase in exchange rate. The profits are increasing as the currency depreciates at Delta beverages (after controlling other drivers). This is in line with the views of Alfaro et al. (2018) and Rashid and Mahmood (2017) who looked on the effects of exchange rate depreciation on profitability of manufacturing firms and reviewed that as the currency depreciates large-sized firms earns more profits reason being that large firms are able to produce in large quantities and make shipments to foreign markets in large quantities resulting to high sales revenue and lower costs.

The study reviewed that as the currency depreciates the financial performance of Delta is adversely affected through the increase in production costs, foreign debt and the decline in value of sales and profits and the decrease in sales volume. On the other hand, currency appreciation found to be improving the performance of Delta beverages through low production cost, increased sales volume and an increase in the value of profits and sales. More so, the study reviewed that following depreciation of the local currency the productivity of Delta beverages falls due to a reduction in the supply of imported raw materials and high-tech machinery and equipment and an increase in labor costs. As the currency appreciates productivity improves due to increased supply of imported raw materials, machinery and equipment for production thus, the researcher concludes that the fluctuations in exchange rates affects the performance of Delta beverages. Furthermore, the study reviewed that negative balance of payments, government policies, political sanctions, interest rates, corruption and inflation are the main causes of high exchange rates fluctuations in Zimbabwethus, the study concludes that the high exchange rates fluctuations in Zimbabwe are caused by negative balance of payments, corruption, inflation and government policies, political sanctions and interest rates.

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