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The effects of Multi Bank Trading Platforms on the Foreign Exchange Market: The case of South Africa

By

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Thesis submitted in fulfilment of the requirements for the degree of Master of Management

in Finance and Investment

in the

FACULTY OF COMMERCE LAW AND MANAGEMENT

WITS BUSINESS SCHOOL

at the

UNIVERSITY OF THE WITWATERSRAND

SUPERVISOR: PROFESSOR DOCTOR E. SCHALING

DECLARATION

I, Basia Lebata, declare that the research work reported in this dissertation is my own, except where otherwise indicated and acknowledged. It is submitted for the degree of Master of Management in Finance and Investment in the University of the Witwatersrand, Johannesburg. This thesis has not, either in whole or in part, been submitted for a degree or diploma to any other universities.

Signature of candidate Date

Abstract

Since the floating of Foreign Exchange rates in the 1970's, the global foreign exchange market has seen a transformation and evolution led largely by the invention of Electronic Trading. The Foreign Exchange market, which was previously opaque, has now been transformed in a manner that now makes the market cheaper to transact in as well as being more transparent than it was previously.

This paper analyses the impact of Foreign Exchange Electronic Trading Platforms, with a focus on Multi Bank Trading Platforms, by companies in South Africa. Though this topic has been written about quite a lot from a global or developed market perspective, not much research has been done on this topic in the South African context.

A corporate online survey questionnaire was sent out to more than 200 companies operating in South Africa to generate responses with regards to the respective companies views, opinions and beliefs with regards to Electronic Trading. Similarly, a bank online survey questionnaire was sent to all banks in South Africa who can buy and sell Foreign Exchange to corporates in order to gauge the respective banks' views, opinions and beliefs with regards to Electronic Trading.

The research suggests that Multi Bank Trading Platforms would be a welcome addition to treasury departments of companies operating in South Africa. Though Straight Through Processing is the desired state in using Multi Bank Trading Platforms, usage of the platforms without implementing Straight Through Processing is beneficial as the platforms lead to increased price transparency, better audit trail in terms of checking that FX deals are being concluded at the best possible rate, cost reductions, reductions in process risk and efficiency gains when transacting Foreign Exchange deals.

The purported disadvantages of the platforms that they increase volatility, that they negatively affect liquidity and that they are bad for the FX market structure seem to be invalid with a majority of corporates and banks disagreeing with the purported disadvantages.

Keywords: Foreign Exchange, Electronic Trading, Multi Bank Trading Platforms, Straight Through Processing.

Contents

List of Abbreviations and Acronyms ……6

List of Figures ……7

List of Tables ……7

CHAPTER 1……8

1.1 Introduction……8

1.2 Problem Statement ……20

1.3 Research Objectives……22

1.4 Research Question……23

1.5 Significance and Relevance of Study……23

1.6 Synopsis of the Research Method……23

1.7 Structure of Research……24

CHAPTER 2: Literature Review……25

2.1 Introduction……25

2.2 Theoretical Literature Review……25

CHAPTER 3: Methodology……47

3.1 Research Methodology……47

3.2 Survey Approach Limitations……48

CHAPTER 4: Survey Results……50

4.1 Corporate Survey Results……50

4.2 Bank Survey Results……66

CHAPTER 5: Conclusion……77

5.1 Summary of Findings……77

5.2 Conclusion……80

5.3 Further Research Suggestions……82

Bibliography……..……..….....83

Annexures…….…….....87

Annexure 1…….....87

Annexure 2 ……...……92

Annexure 3 ……...……97

Acronyms and Abbreviations

AFS	Annual Financial Statements
BIS	Bank of International Settlements
CLS	Continuous Linked Settlement
CGFS	Committee on Global Financial System
EBS	Electronic Broking Service
ECN	Electronic Communication Network
e-FX	Electronic Foreign Exchange
ET	Electronic Trading
ETP	Electronic Trading Platform
ERP	Enterprise Resource Planning
FX	Foreign Exchange
FXC	Foreign Exchange Committee
HFT	High Frequency Trading
IMF	International Monetary Fund
MBTP	Multi Bank Trading Platform
OTC	Over the Counter
PB	Prime brokerage
PWC	Price WaterHouse Coopers
SBTP	Single Bank Trading Platform
STP	Straight Through Processing
SME	Small and Medium Enterprise
TMS	Treasury Management System
USD	United States Dollar

List of Figures

Figure 1: Market participants interaction prior to electronic trading……..……10

Figure 2: Market participants interaction after the introduction of electronic trading……..14

Figure 3: FX turnover in the USA by execution method……..……27

Figure 4: Integration of SBTPs and Corporate TMS…….29

Figure 5: FX trading process with multi-bank online marketplace……30

Figure 6: Market structure gravitation to electronic trading relationship-driven OTC model...35

Figure 7: Global FX trading: System usage trends……..…….36

Figure 8: Electronic market development by asset class……...……38

Figure 9: Strengths of SBTP and MBTP can be complementary……...……...40

Figure 10: Disruptive waves of technological innovation in FX trading...…….……43

List of Tables

Table 1: Foreign Exchange market turnover by execution method – 2007……26

Table 2: Global FX market turnover by execution method……...27

Table 3: OTC FX turnover by execution method in 2013 vs 2016, ‘net-net’ basis……...34

The effects of Multi Bank Trading Platforms on the Foreign Exchange Market: The case of South Africa

Chapter 1

1.1 Introduction

This research analyses the impact of Foreign Exchange (FX) electronic trading platforms (ETPs), with a focus on multi bank trading platforms (MBTPs), by companies in South Africa. The benefits, drawbacks, as well as uptake of electronic trading by South African based corporates will be investigated.

This paper will not elaborate on various well know financial market definitions. The definitions can however be found in Appendix 3.

Historically, the process of dealing in foreign exchange for companies has been achieved by voice trading with banks. The FX market has since evolved as below.

1.1.1 Electronic Trading revolution

Electronic trading has been a major contributor to the transformation of the FX market's structure by improving transparency while reducing transaction costs at the same time. In this introduction, the focus will be on the transformation of the FX market with an interest in how telephone trading was replaced by electronic trading platforms and how market players have developed previously unexpected ways to exploit new technology.

a) The Telephone Era

After the floating of exchange rates in the 1970's; FX trading in the over-the-counter (OTC) market was performed telephonically.

The process of FX dealing involved the following:

Customer to Bank FX dealing market

A customer wanting to trade FX would telephonically call an FX dealer at a bank to request current bid and offer quotes. Based on the quotes provided by the bank, the customer could decide whether they wanted to trade at the quoted rates either buying or selling the base or quoted currency.

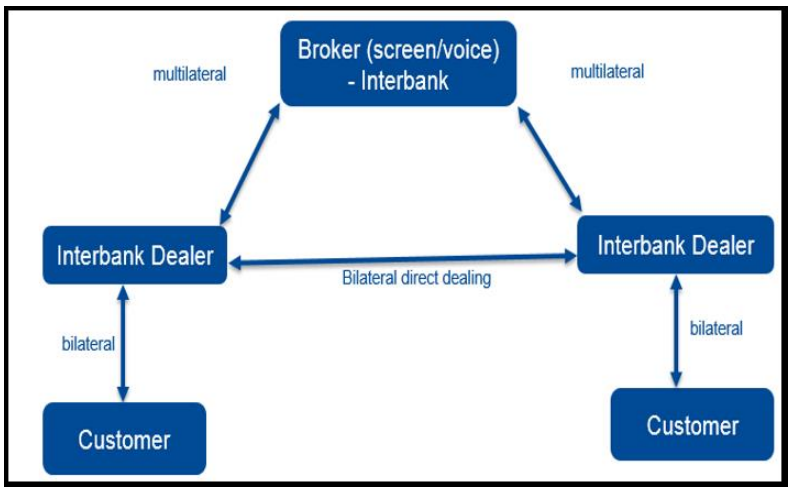
If the customer decided to trade on the rates quoted, what then followed was a confirmation process between the back offices of the bank and customer. The confirmation process, which involved the physical exchange of the documentation for the FX deal concluded, is now largely considered as prone to human error and being cumbersome.

Bank to Bank FX dealing market

In the interbank market, dealers could telephonically call each other or they could decide to remain nameless by placing an FX order with a voice broker. The voice brokers would then take the nameless FX order and place it in the market by shouting the price into open multi bank phone lines. The bank dealers would then be able to hear voice broker prices via voice speakers, referred to as 'squawk boxes', on each of the bank dealers' desks.
In both the above-mentioned markets, data relating to FX deals done was the proprietary of the two counterparties to the FX deal. The continuous announcements of FX quotes by the voice brokers was the only market wide source of information. Major banks tended to quote each other tight bid-offer spreads with the smaller banks being quoted wider spreads.

Bank dealers would often telephonically call each other to gather information by requesting bid offer rates, resulting in sometimes concluding FX deals. The bank dealers also tendered to pass off unwanted positions to second dealer at another bank, and the second dealer to the third dealer if the second dealer did not also want the position and so on, this process is generally known as hot-potato trading (Lyons, 1997). During this period, interbank dealing dominated the FX dealing market.

Figure 1: Market participants interaction prior to electronic trading



Source: Committee on the Global Financial System (CGFS)

b) The Rise of the Computer

The interdealer market was initially transformed by computers in the late 1980s and reached the customer market in the 1990s. This transformation had an effect of merely replacing the telephone. The FX dealer-customer relationship was left largely the same as before.

Interbank Electronic Trading

Reuters is lauded with having launched the first electronic system in 1987. The system, referred to as Thompson Reuters Dealing, catered for bilateral trades between two bank dealers. The system quickly dominated the interbank dealing market as dealers considered it quicker and more efficient as well as enhancing the operational efficiency by creating electronic records. – though principally, typed messages replaced telephone conversations (Rime,2003).

A Reuters product, the 'FXFX'page, is largely credited with increasing transparency in the interbank FX dealing market. For several years, the 'FXFX' page was the interbank dealers main source of up to date price quote information as the page provided indicative quotes for liquid currencies in real time.

Thomson Reuters matching was then introduced in 1992, providing the first electronic limit-order market to FX. A similar platform, the Electronic Broking Service (EBS), was introduced in 1993 by a consortium of banks worried that Reuters would dominate the interdealer trading market.

The two competing platforms allowed interbank dealers to trade anonymously and electronically. One of the key reasons for the preference of the systems was the anonymity of the platforms that allowed the dealers to trade out a position without notifying the competitors. The fact that the platforms were quicker and more operationally efficient led to them being preferred over voice brokers.

The electronic broking systems dominated the interbank market in the 1990s with regards to liquid currencies. Though the importance of voice brokers has declined from the heights of the 1970s, in 2010 they still accounted for a portion of the global spot FX trading. Voice brokers are still deemed important for the less liquid currencies which are generally not traded with electronic brokers.

Trading costs for small banks were reduced by the introduction of limit-order markets as the anonymity of trading could not permit price discrimination. Market transparency was enhanced by the electronic brokers as limit-order prices are firm and as such the brokers best bid-offer quote was a more dependable signal of 'the market' than the FXFX page indicative quotes. An enhancement of post trade transparency was achieved as trade reporting was more efficient with electronic brokers as opposed to voice brokers. Though the effect of electronic brokers on volume of trading is vague, electronic brokers were more efficient and helped reduce passing of unwanted positions among dealers (hot-potato trading). More speculative trading was encouraged by the reduction of execution costs on electronic broking systems.

Trade processing as well as trade settlement is included in the electronic revolution of FX. Settlement risk (also known as Herstatt risk) is the highest regarded operational risk in FX. As the FX market is interconnected, a failure or delay in settling a large FX trade had the possibility of triggering several defaults.

A consortium of 74 banks in 1997 started developing an electronic settlement system that would address Herstatt risk. The collaboration of the 74 banks led to the establishment of Continuous Linked Settlement (CLS) in 2002. (Galati, 2002). CLS managed to reduce settlement risk by settling both legs of the trade simultaneously. CLS also had a process of netting payments across member banks prior to the funds being transferred, a process also known as multilateral netting. Because of the multilateral netting; only 4 percent of the aggregate value traded needed physical transferring to finalise the settlement. In today's FX market, CLS has become an integral part. The reduction of settlement risk by CLS bank was further illustrated by the smooth handling of FX trades in September 2008 following the bankruptcy of a leading FX dealing bank, Lehman Brothers.

CLS settlement is now also available for corporates where participating companies can reap benefits in terms of risk management, time value of cash assets, straight-through processing as well as improved accuracy and reliability (Butterfield, 2007).

End-customer Electronic Trading

The bid-offer spreads on FX trades had narrowed in the interbank market but had largely remained unchanged for the end customers in the 1990s. This allowed interbank dealers to reap high profits. The high profits that were being generated by the interbank dealers on the end customers led to increased competition for customers trade flow and encouraged the development of several new electronic trading systems to target end-customers. These new electronic trading systems virtually relegated telephonic dealing to the verge of irrelevance with regards to liquid currencies. The electronic systems impacted the structure of the market by making it complex and multi-layered.

With the development of multibank trading systems and FX Prime brokerage (PB); the firm separation between the two tiers of the FX market (Interbank dealing and customer dealing) broke down.

Banks also developed single bank trading platforms (SBTP) that allowed end customers to directly trade with the said bank. The drawback of these systems is that they could only be connected to one bank and not to multiple banks as in the case of Multi Bank Trading Platforms (MBTPs).

FX Connect, launched in 1996 by State Street, was an electronic trading system developed for end customer market segment. The platform merely served to replace the telephonic dealing; and did thus not have a major impact on the transparency nor the pricing in the FX markets. The system made it possible for State Street and its customers to trade more efficiently and reduce operational risk.

Towards 1999, there were a large number of independent (non-bank) firms that began a more significant shift in the FX markets by developing and introducing MBTPs which allowed end customers to trade directly with a wide range of interbank dealers over proprietary computer networks. Currenex, the first MBTP was launched in 1999, extending the then existing FX market in a natural direction. With Currenex, end customers now had the ability to send one request for a quote to multiple FX dealers simultaneously whereas the old process entailed calling individual banks in sequence in order to source the best quote. Interbank dealers were required to respond with a quote within seconds with the end customer choosing which price and bank they wanted to transact the FX deal with. FX connect was turned into a MBTP in the year 2000 when State Street extended the usage of the system beyond its own customer base.

Electronic limit order markets, which allowed end customers to trade anonymously, were developed and introduced by other new entrants such as Hotspot FX in 2000 and Lava in 2001. These platforms allowed the end customers to make liquidity by being able to place limit orders as well as being able to take the orders. As the supply of liquidity could potentially dry up, these platforms would contract with banks to continuously provide FX quotes.

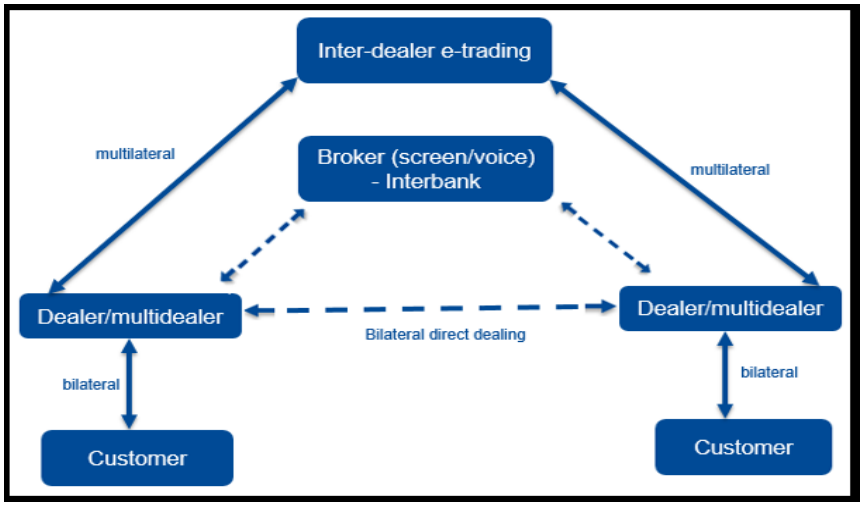
The major banks, being wary about the competition from these new entrants, responded in various ways. The first step was for the bank dealers to band together in order to develop their own competitive entrant. FXall, created by a consortium of banks, became a major multibank trading system when launched in 2001. Additionally, a consolidation happened as some early existing MBTPs purchased some of the independent platforms as evidenced by the acquisition by State Street of Currenex in 2007 and that of Lava by FXall in 2010.

Major banks then went on an exercise, at a significant cost, of developing proprietary trading platforms for their customers. FX trader was launched by UBS in 2000, followed

the Barclays version, BARX, in 2001. Deutche Bank's system, Autobahn, which was developed in 1996 with the aim of allowing real time trading of US treasury securities also added the FX trading capability in 2002. Goldman Sachs launched its own system in 2003 while CitiBank launched in 2006.

The creation of end customer focused electronic trading has resulted in a significant distribution across platforms as evidenced by figure 2. The development of end customer electronic trading has had a positive effect on most measures of market quality whilst at the same time increasing market concentration among dealers. These consequences are covered in the following sections:

Figure 2: Market participants interaction after introduction of electronic trading



Source: Committee on the Global Financial System (CGFS)

Improved Transparency

As prices on single bank and multibank trading are continuously being streamed, pre-trade transparency is significantly greater. End customers now have the ability to monitor the latest developments in FX markets directly without having to rely on their bank dealers. Additionally, transparency has been improved by the extensive real-time information about limit-order books that are available on some of the anonymous platforms.

Customers on the electronic platforms are allowed to record the market prices at the time of trade execution and the price impact on the FX trades concluded. This ability provides the

customers with an opportunity to conduct a transaction cost analysis, a practice whereby agents examine their transaction costs with the aim of identifying potential sources of efficiency. Analysis of transaction costs, already common in equity markets, was now a possibility in the FX market.

Improvement of Operating Efficiency

Electronic trading enables the possibilities of Straight Through Processing (STP) where SBTP and MBTP can be connected to the corporates' Treasury Management System (TMS) enabling FX trades that can be entered, cleared and settled electronically. As STP involves no paperwork and little human intervention; it results in less errors and thus significantly reduces operational costs as well as operational risks.

Narrowing of Bid-Offer Spreads

Narrower spreads quickly became a reality with the introduction of electronic trading for customers. In the early years before electronic trading, spreads paid by end user customers were significantly much higher than the spreads paid by interbank dealers. In some instances, the end customer spreads were as high as 20 times the interdealer spreads (Goodhart, Love, Payne and Rime, 2002; Bjonnes and Rime, 2005). In 2001, corporate spreads on some FX trades were at least three times the interbank dealer spreads. In current times, the difference in pricing between the two FX market segment has virtually disappeared.

In 2009, numerous lawsuits were filed by end customers claiming that the global custodian banks had overcharged them on previously concluded FX deals. The costs of non-negotiated FX trades by global custodians in 2010 declined by 63% in comparison to earlier years (Diamond, 2011).

Rising market concentration among dealers

Electronic trading by customers has resulted in an increase in concentration among FX Interbank dealers. The fact that banks have been forced to invest heavily in technology while at the same time quoting tighter bid-offer spreads, has led to small banks finding it not profitable to make pricing in the major currencies. Per information from the annual Euromoney

FX survey (Euromoney, 2011), the top three banks share of FX trading increased from 19 percent to 40 percent from 1998 to 2010. Small and regional banks have tendered to continue to make markets in their local currencies, with profits mainly being derived from their local knowledge and comparative advantage with regards to credit provision for customers.

c) Electronic trading developments

With the advent of electronic trading, which effectively replaced telephone trading; traders began to find inventive new methods to fully exploit the potential of electronic trading. The major banks began to profile their customers as well as moving to internalise FX trades with some measures like prime brokerage services being offered to hedge fund customers as well as white-labelling of the proprietary trading platforms by regional-bank customers. Algorithmic trading was also born during this period as independent proprietary firms established inventive ways of trading on electronic platforms.

1) Major dealing banks modernisations

White Labelling

Though a number of small banks have stopped market making (a process of providing FX trade quotes) in the most liquid currencies, they still have a customer base that requires access to Liquidity.

White labelling advantages for the major banks are as follows:

- The major banks are able to see the small banks trading flows
- New revenue stream for major banks that enables them to further invest in the SBTPs

Internalization of customer trades

Due to the increased share of the major banks, the banks now had the capability to internalise FX customer trades. Banks are then able to capture the bid-offer spreads using algorithms and thereby increase profitability on electronic trading. Internalization

has been identified as a major reason for the decline in the interbank dealing section of the FX market.

Customer profiling

Electronic trading has allowed dealers to analyse and profile the end customers. Dealers analyse and scrutinise the information statistically in order to differentiate between the following FX trades:

Directional Flow FX Trades

Dealers use the information that these trades give them to either guide their risk speculation or to offload any unwanted positions.

Non-Directional Flow FX Trades

Dealers tend to hold onto the non-directional trades as they have the possibility of setting off the deals against other customer deals, providing the dealers with an opportunity of earning the full bid-offer spread.

Predatory High-frequency FX trades

HFT dealers' profits are in most cases the interdealers loss and as such banks tend to weed out such predatory dealing using algorithms that profile end-customers based on their dealing activity. There are some banks however that encourage HFT on banks systems as the trading provides supplementary liquidity which is then used to feed internal pricing engines.

Prime Brokerage

Through the use of prime brokerage agreements with the bid dealers, some investors have started trading directly in the interbank markets.

Large institutional investors tend to trade with other dealers with the prime broker's existing credit lines with the investors paying a trading volume fee for the privilege. As part of the arrangement, any FX deals concluded with FX dealers other than the prime broker are then taken up by the prime broker who then becomes a counterpart to both legs of the FX deal.

There are several benefits for the end -customers, namely:

- Leverage
- Consolidated clearing, settlement and reporting services
- Access is provided to new counterparties and platforms as the prime broker has solid credit history
- Operational and settlement risk is reduced as a more efficient use of collateral for margin relationships as positions can be netted
- Prime brokerage provides anonymity as the trade is in the name of the prime broker.

Major banks welcome prime brokerage agreements as it allows them to generate new, fee-based income which enables the banks to leverage their technology and operating infrastructure.

2) End-customer modernisations

Algorithmic trading

The development of Algorithmic trading is as a result of end-customers having access to sophisticated electronic trading systems. In 2003, banks started to receive streaming price quotes electronically after electronic broker EBS provided an automated interface to the banks.

This development lead to algorithmic trading in the interbank markets. As a result of competition from MBTPs, Reuters and EBS extended the service to Bank's big and/or large customers. As a result of bank's big and/or large customers having access, hedge funds and other proprietary traders gained access to the interbank market for the first time.

High Frequency trading (HFT)

This new form of trading called HFT has arisen as a result of Algorithmic trading. Major banks are generally happy to accommodate HFT on MBTPs by using prime brokerage agreements. Customers are normally charged for using the credit line of the bank with this type of agreements.

High Frequency traders enter into the market in order to make a profit with no obligation of providing liquidity, though they are a source of liquidity for the market. After the collapse of Lehman Brothers, the spot market remained liquid with spreads widening a lot. HFT traders are highly active in the spot market (Baba and Packer, 2009; Melvin and Taylor; 2009).

Retail Aggregators

Retail trading, which was considered small in 2001, had reached an estimated USD 125 – USD 150 billion per day by 2010; an increase of 8 to 10 percent of global spot turnover (King & Rime, 2010).

Dealers provide pricing and liquidity to retail aggregators at enticing rates as retail traders are generally classified as not informed, on average. Thus, the adverse-risk selection is minimal with dealers happy to hold onto the retail flows to match against future transactions.

The rapid growth of this sector of the market has led to increased regulation. The regulation that was introduced in turn lead to consolidation of retail platforms. In the US, retail platforms reduced from 47 to 11 in the period between 2007 and 2011 while in Japan, the number reduced from over 500 to 70 in the period between 2005 and 2011.

Liquidity Aggregators

There was a worry that liquidity would become fragmented and make the markets inefficient as trading was spread across competing platforms. Liquidity aggregators have provided a solution to the above-mentioned concern.

1.2 Problem Statement

Foreign exchange (FX) is vital and has a significant impact for the operation of the world economy. For numerous companies, buying goods and materials or selling products to different countries is part of their business and as such the companies have inherent FX risk as they have to work with receivables and/or payables denominated in foreign currencies. The companies more often than not use derivatives to hedge their foreign exchange exposures.

FX trading and tools used for trading falls under the ambit of a company's treasury department. Corporate treasury departments provide a critical role with the role constantly changing due to an evolving environment in which companies operate in. The department is a key element of financial strategy as it is an interface between business and its financial providers. All companies face treasury topics; even if there is no dedicated treasury department like in small and medium enterprises (SMEs). When treasury is referred to in this paper; it may be a separate department or part of the responsibilities of the wider team depending on how each organisation is set up.

This study serves to investigate the advantages of multi bank trading platforms, analysis of how widely used MBTPs are and finally if MTBPs would be a welcome addition to treasury departments of South African companies.

FX hedging is important due to the uncertainty that exists regarding FX rate movements, especially in the short term. Currency hedging is said to reduce volatility, but the hedging does not necessarily reduce risk. Active currency hedging is likely to provide a better return with lower risk than passive hedging.

Earnings predictability, protection of the business value and the volatility reduction of foreign currency cash flows can be improved by hedging. Stable share price and valuation can be achieved by the reduction of the overall volatility of the business.

As hedging cannot be done with the benefit of hindsight, a corporate's hedging strategy needs to be carefully created and must consider a broad range of likelihoods and outcomes – the majority of which are very difficult to predict. FX risk management policies are expanding and

are now including more strategic and tactical methodologies such as assessing the impact of FX on key indicators like earnings, debt, etc.

It is only when a risk management policy is developed that the manner in which a company hedges its exposures is determined. The policy needs to be re-evaluated and updated periodically so that the dynamics of the changing financial market and the evolving business needs can be captured in the FX risk management process. Due to the ever-changing geopolitical landscape, it is vital to ensure that the company's risk management process encapsulates the currency risk that the company faces. Regular re-evaluation and updating of the risk management policy will lead to more optimal and efficient hedging.

The five core elements of a treasury department role (Association of Corporate Treasurers & Chartered Accountants Australia and New Zealand, 2015) are:

- Funding and Capital Markets

  This relates to which funding methods are available to the company, how the funds to finance the business are to be raised as well as on which terms can such funding be acquired and managed at.

- Cash and Liquidity Management

  This role is about ensuring that the cash needs of the organization are met in the most cost-effective manner – commonly referred to as optimum funding.

- Corporate Financial Management

  Ensuring that the corporate and financial strategies are aligned is one of the key roles of treasury and is covered under this section.

- Risk Management

  Under this element, the financial risks that are being undertaken by the company need to be understood and quantified. This element also ensures that appropriate risk management techniques are deployed as well as ensuring that that the returns the business generates are adequate.

- Treasury Controls and Operations

  This last element is about implementing the previous four elements into practice in a comprehensible and fittingly managed manner.

MBTPs essentially have an impact on the last two core elements – risk management as well as treasury controls and operations. Under risk management, corporate finance theory suggests that the value of a company can be increased if the risk of the organisation is reduced or eliminated. For many companies, FX risk is an inherent aspect of conducting business and often the risk cannot be eliminated but should rather be managed. One of the tools the company can use to manage this risk is by hedging their exposure through the use of MBTP to transact FX hedges.

With regards to treasury controls and operations, technology that is available for the automation of processes is of growing importance. These technological advances like MBTPs allow treasury departments to perform their duties faster, more efficiently, at a lower cost, with greater transparency and with the possibility of reducing process risk.

1.3 Research Objectives

The purpose of this thesis is to analyse the impact of electronic trading platforms, with a focus on MBTPs, on companies in South Africa. The study will cover how companies in South Africa are concluding FX deals with their banking counterparts.

Further to the above, this paper will look to establish if the purported advantages and disadvantages of electronic trading with MBTPs are valid. Advantages of MBTPs are said to be increased transparency, improvement of audit trail, time savings, cost reductions and the reduction of process risk. Disadvantages are said to be that MBTPs have a negative impact on the structure of the market, that they increase volatility and negatively affect liquidity. The paper will also investigate if electronic trading via MBTPs is only beneficial to a company if STP is achieved.

1.4 Research Question

The research being conducted seeks to impart answers the below questions:

a) Would MBTPs be a good addition to corporate treasury departments of South African based companies?
b) Should companies only use MTBPs when STP has been achieved or can MBTPs add value for corporate treasuries even if STP is not achieved?
c) Are there advantages of concluding FX deals via MBTPs for South African based companies?
d) Are the touted disadvantages of MBTPs on the South African FX market valid?

1.5 Significance and relevance of study

The study explores if South African based companies can benefit by implementing and executing FX transactions via MBTPs. Additionally, should South African companies only use MBTPs when STP can be achieved or is the use of MBTPs without achieving STP still a beneficial solution.

Though this topic has been written about quite a lot from a global or developed market perspective, not much research has been done on this topic in the South African context that this researcher could find.

1.6 Synopsis of Research Method

A primary research method will be conducted for the thesis. An online survey is developed and distributed to treasury departments of private companies, public companies, multinational companies, state owned enterprises as well as banks operating in South Africa who buy and sell foreign exchange from/to companies mentioned above. An online distribution method of the survey was done.

1.7 Structure of Research

The structure of the thesis is as follows: Chapter 2 will review the literature covering electronic trading in the FX market. Empirical and theoretical literature focusing on electronic trading platforms will be looked at in detail.

In Chapter 3, we will present the research methodology used to investigate and analyse the impact of electronic trading platforms while Chapter 4 will cover the results of the investigation of the use of said platforms in the South African market. Lastly, the paper will conclude with Chapter 5 which will cover the summary of the findings, limitations of the research, conclusion as well as suggestions for further research.

Chapter 2: Literature Review

2.1 Introduction

In this section of the paper, the theoretical framework that has previously been conducted on this topic will be presented. Additionally, empirical and other literature on the topic will be presented and discussed in the following sections of the thesis. The main aim of presenting the above-mentioned literature is to identify the gaps by investigating previous work done by others on the topic as well as the application of research methodologies.

As mentioned in the prior section, several studies on this topic have been previously undertaken and completed. The studies that have been completed are more global or focus on the developed countries. Very little research has been conducted on this topic in a South African context.

2.2 Theoretical Literature review

Gallardo & Heath (2009) examined the methods in which foreign exchange deals are transacted based on the 2007 BIS Triennial survey data (BIS, 2007) and provided certain quantitative estimates on the importance of electronic trading across transaction counterparties, types and economies.

Based on the above-mentioned data, three main observations have been made:

a) Electronic means of trading is commonly used for spot FX deals. These deals are more standardized and can be more readily automated.

b) Electronic trading has increased significantly between foreign exchange dealers and financial customers like hedge and pension funds.

c) The adoption of electronic trading differs significantly across economies. Industrialized economies have the highest distribution of electronic trading with the lowest being among smaller financial centres.

Execution methods used in FX markets across economies was first analysed in the 2007 Triennial survey data set. Banks were requested to provide information on whether FX transactions were transacted with another bank dealing in FX, directly with a customer, indirectly through a voice broker or indirectly through electronic (MBTP or SBTP) means. According to the data, a third of all FX deals were executed electronically.

Table 1: Foreign Exchange market turnover by execution method[1] – 2007

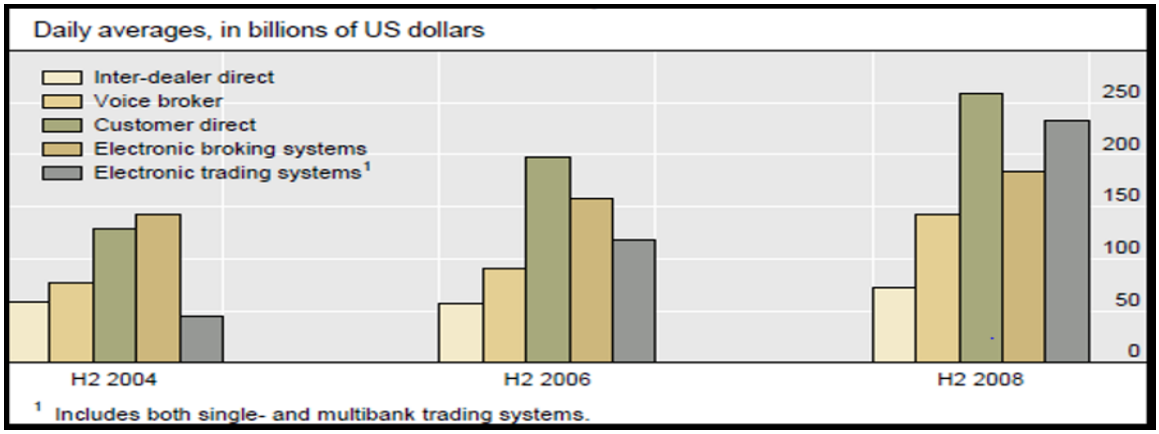
Daily Averages in April 2007, percentage share by transaction type									
					Electonic Methods				
	Inter-dealer direct	Voice broker	Customer Direct	**Sub-Total**	Broking systems	Multibank trading systems	Single-bank trading systems	**Sub-Total**	**Grand Total**
Spot transactions	13	2	28	**43**	32	8	17	**57**	**100**
Outright forwards	17	8	45	**70**	7	11	12	**30**	**100**
FX Swaps	22	27	26	**75**	13	6	6	**25**	**100**
OTC FX options	26	16	50	**92**	4	2	2	**8**	**100**
Total	19	17	30	**66**	17	7	10	**34**	**100**
[1] Adjusted for local and cross-border inter-dealer double -counting, 'net-net'.									

Source: BIS Triennial Survey (2007)

Evident from the data was that more than 30% of transactions between banks and their non-financial customers take place electronically (around 50% of these transactions were concluded using SBTPs) with the other 70% being between the reporting bank and the customer.

The data seems to suggest that turnover through electronic trading (MBTPs and SBTPs) increased at a faster pace than the transactions concluded on electronic broking systems. According to data from the Foreign Exchange Committee (FXC), turnover through electronic means has grown at a fast pace. Data from the Foreign Exchange Committee supports the observations from the 2007 BIS Triennial survey.

Figure 3: FX turnover in the USA by execution method



Source: Foreign Exchange Committee (2009)

There is a significant variance regarding the use of electronic trading across different economies. In some economies, the use of electronic trading is consistently low across all instruments and counterparties. Whilst in other economies, use of electronic trading is high across all instruments and counterparties

Table 2: Global FX market turnover by execution method[1]

Daily averages in April 2007, percentage share by location

	Inter-dealer direct	Voice	Customer direct	Electronic methods	Economy share[2]
United Kingdom	22,9	18,8	27,9	30,4	34,1
United States	12,2	15,7	31,9	40,2	16,6
Switzerland	8,9	22,4	14,5	54,2	6,1
Japan	31,5	18,8	17,4	32,3	6,0
Singapore	64,4	17,5	12,4	35,6	5,8
Hong Kong SAR	45,5	19,5	9,9	25,0	4,4
Australia	33,0	20,2	15,2	31,6	4,3
France	16,6	33,3	16,7	33,4	3,0
Germany	22,6	2,2	12,4	63,7	2,5
Denmark	67,2	1,4	17,2	14,1	2,2
Canada	29,2	11,3	26,7	32,8	1,5
Russia	28,1	9,5	27,6	34,8	1,3
Other Industrialised[3, 4]	35,0	8,4	22,2	34,4	6,7
Other Asia[3, 5]	29,8	17,2	26,2	26,8	2,4
Latin America[3, 6]	24,3	14,3	36,7	24,7	0,6
Central and Eastern Europe[3,7]	40,7	6,9	25,0	27,5	0,8
Other[3, 8]	32,1	5,4	18,6	43,8	0,5
Average[3]	32,8	11,5	23,8	31,8	-
Aggregate	19,1	16,7	30,2	34,0	-

[1] Adjusted for local double-counting, "net-gross", [2] Total country turnover as a share of global turnover, [3]Average of component shares, [4]Austia, Belgium, Finland, Greece, Ireland, Italy, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain and Sweden. [5] Chinese Taipei, India, Indonesia, Korea, Malaysia, Phillippines and Thailand. [6] Brazil, Chile, Colombia, Mexico and Peru. [7] Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovenia and Turkey. [8] Bahrain, Saudi Arabia and **South Africa**

Source: BIS Triennial Survey (2007)

Gallardo & Heath (2009) say the development of electronic trading is representative of the most significant catalyst of structural change in the FX market. They used comprehensive data in order to enable the importance of the electronic trading trend to be quantified. The survey confirms that the frequency of electronic trading declines as the complexity of the instrument increases with more than half of FX deals being executed electronically as opposed to FX options where only one tenth was traded electronically.

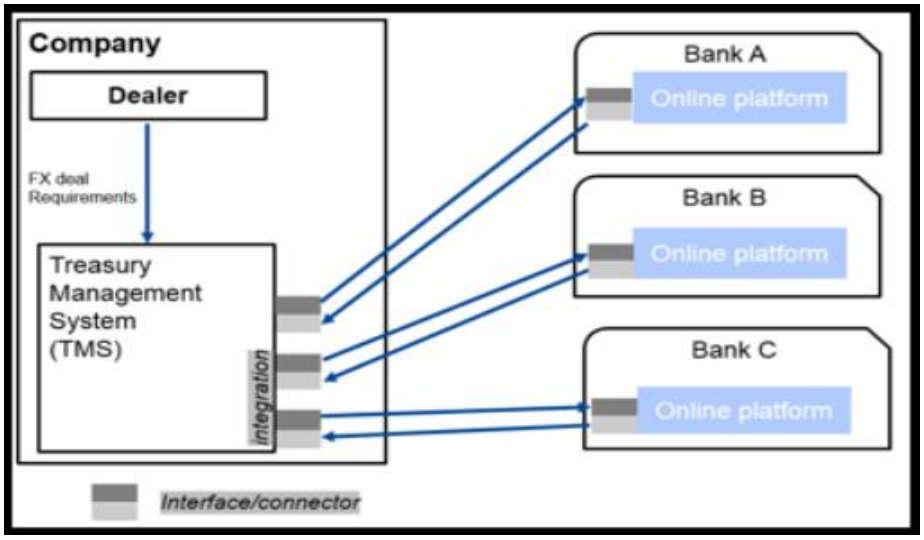
The survey results also revealed that some economies, notably Switzerland and Germany, have a consistently high share of electronic execution methods across market segment. In other economies, electronic execution methods were less used.

South Africa, Saudi Arabia and Bahrain together have a 43,8% electronic trading rate. An electronic trading rate is a measure used to calculate how much trading is done electronically out of all trading methodologies all the trading done (i.e. all trading executed using electronic trading divided by all possible methodologies). This rate is rather low when one considers the electronic trading rate of the other countries, especially the developed markets and economies.

According to Vo, Weinhardt and Wojciechowski (2005) online foreign exchange platforms benefit corporates via better transparency and price discovery. Vo et al. (2005) state that online market places only become truly valuable if there are possibilities of integration into the corporates hedging process thereby enabling Straight Through Processing (STP). STP is the possibility of achieving end-to-end processing of a financial transaction from initiation to settlement through the automation of the financial processes related to the transaction. The only manual intervention would be required at the start of the transaction.

The paper evaluated the multibank online market places and identified the complex integration challenge as the main reason for the reluctance to see more trading taking place using this trading methodology. The below figure illustrates the situation where various SBTPs are integrated into the companies' TMS through the use of custom built interfaces.

Figure 4: Integration of SBTPs and Corporate TMS

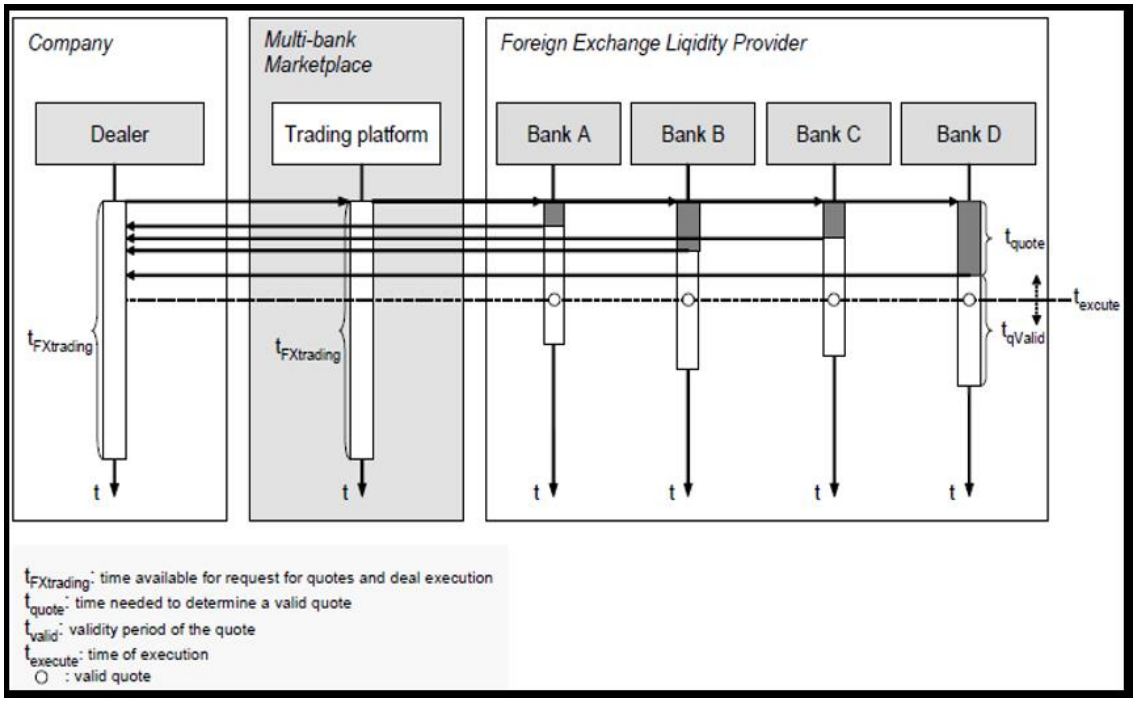


Source: Vo, Weinhardt and Wojciechowski (2005)

Since each bank maintains its own SBTP, the company will thus have to integrate n SBTPs for n counterparties. As an example, if a company has three SBTPs that it concludes FX deals on, it would mean that the company would need to have an interface for each of the platforms to the TMS in order to achieve STP. The building and maintenance of the interfaces between the SBTPs and the companies' TMS is a costly exercise leading to a reality that a limited number of SBTPs can be integrated and maintained. Once integration has been achieved for the various SBTPs or MBTP, the corporate FX dealer would only need to specify the trade details once.

From an intermediator point of view, MBTPs add value to the buy and sell side customer through coordination services. By integrating the liquidity providers, MBTP help overcome the compatibility issue of connecting the heterogeneous systems (one interface has to be built and maintained) but also offer the corporate company a single FX market with the accumulated liquidity of participating relationship banks.

Figure 5: FX trading process with multi-bank online marketplace



Source: Vo, Weinhardt and Wojciechowski (2005)

Relationship banks tend to not have motivation to join MBTPs as the banks benefit from the corporate business in the traditional state. Though increased operational efficiency is often touted as the central benefit of electronic trading, it is a double-edged sword. Companies can improve their FX trading process by using trading platforms (SBTPs or MBTPs), the integration process to enable STP can be complex and is considered a major huddle in the adoption of electronic trading.

The integration process is a process whereby, once integration has been achieved for the various SBTPs or MBTP (figures 4 and 5), the corporate FX dealer would only need to specify the trade details once. The TMS would then connect with all the different SBTPs or the MBTP, request quotes and provide requested quotes at the same time to the corporate dealer. The corporate dealer would execute at the best rate quoted, confirmation process would take place and settlement on maturity of the FX trade. This whole process would happen without human intervention, bar the requesting of the quote and choosing of the best rate from the quotes provided.

In order to achieve noteworthy cost savings, Vo et al. (2005) state that it is imperative to integrate the new electronic trading process into the company's entire FX trading process. Important drivers pushing STP initiatives are:

a) The elimination of needless manual interactions reduces the number of errors and consequently increases efficiency and reduces operational risk.

b) Financial transactions can be completed quicker and a higher number of transactions can be processed without a reduction in quality

c) Financial strategy changes can be completed quicker and more accurately.

d) Operational cost is reduced thereby realizing time savings and increased operational efficiency.

One needs to also consider the risks that come with STP. With STP, manual interventions are reduced to a minimum alongside errors. Manual interventions also serve as checks along the transaction life and detect possible errors. It is suggested that exception handling procedures be implemented in case of errors, or there is a risk that unrecognised errors may lead to a cascading amount of erroneous transactions. Therefore, a possibility to interrupt the automated process should be developed and implemented.

Vo, Weinhardt and Wojciechowski (2005) evaluated electronic FX trading via multi bank trading platforms. Through this dealing method, the corporate dealer benefits from better transparency and price discovery as the dealer has access to pricing from several market makers. The possibility of achieving higher operational efficiency is only realized when integrating the electronic trading into the company's trading process reflecting the true motivation behind the uptake of the trading method.

Mirek (2000) states that the bank-to-bank FX market is highly efficient due to the rise of electronic broking systems that were established in the early 1990s. The bank to corporate and fund FX market was at the time still very inefficient relying on non-competitive, proprietary bank one to one electronic trading systems or the older telephone based trading methods. These processes have preserved an environment of operational inefficiency.

For a number of reasons which are beyond the control of the corporate dealer like the buyer not having adequate credit for immediate payment, funds not being available for payment, etc., FX trades may fail. The trades should however not fail to settle due to non-communication of instructions in a timely or proper manner. FX deals that do not settle and the potential consequences of non-settlement can have significant negative implications for any organisation. Significant infrastructure and human resources are required to address those trades that do not settle.

To overcome the challenge of failed FX deals, corporate dealers and fund managers investigated possibilities of mitigating this risk with on-line FX trading platforms. Those corporates that had moved onto online trading were at the time still looking for processes that would allow for an improvement in productivity, reduction of costs and the integration of new information systems.

Corporate FX dealers were demanding a greater transparency about FX deals and the ability to deal FX faster with more competitiveness. The desired systems were not only those that could enable FX execution but also the ability to manage all the details of the FX deal settlement with STP, thereby improving productivity and performance in the wake of increasing transaction volumes and reducing settlement cycles.

The introduction of electronic trading for corporates had the possibility of reducing errors, ensuring segregation of duties, streamlining trading and settlement processes as well as creating a complete audit trail. Elimination of paperwork and inefficiencies was also a big possibility. MBTPs provided corporate companies with the possibility of executing trades through a single point of access achieving STP and back office integration. Back office integration offers the biggest area of potential savings in FX operations. The inefficiencies gained by implementing STP serve to reduce costs, benefiting all FX market participants.

MBTPs and SBTPs enable and simplify the process of sharing trading data. The recording of the FX deals for audit purposes was not ideal before the use of electronic trading platforms. By trading telephonically, dealers could not document that the rates traded at were indeed the best rate at that point in time and could not provide an audit trail of rates used to transact FX deals. It was impossible for corporate dealers to prove that they had transacted at the best possible rate for each FX deal concluded. Electronic trading platforms provided the possibility of

automatically creating an electronic audit trail, detailing all deals and rates quoted. These platforms enabled organisations to track and measure FX performance easily, demonstrate to management and auditors that the traders have fulfilled their fiduciary duties of trading at the best possible rate at the time the deals were concluded.

STP provides effective settlement risk management for both parties to the FX deal, reducing trade failures and amendments. The other benefit if that of significant cost and aggregation savings, eliminating the need to pass on the costs to customers, directly or indirectly.

As many companies do not have the facilities to host a STP at their sites, they tend to outsource STP to qualified exchanges. In outsourcing settlement delivery and reconciliation to exchanges, corporate traders can then focus on increasing productivity and performance while also making improvements with regards to reporting and auditing.

Moore, Schrimpf & Sushko (2016) used the 2013 Triennial Central Bank Survey by the BIS to investigate the evolution of trading volumes and structural shifts in the global FX market. They identified that a change in the composition of market participants, liquidity provision and risk-sharing in the FX markets had gone hand in hand with changes in trade dealing methodologies.

The 2013 BIS Triennial Survey (BIS, 2013) results were indicating that the structure of the FX markets is slowly moving from anonymous trading towards a more relationship-based form. The traditional structure of the FX market (over-the-counter) has been generally strong, although in a sophisticated electronic form as opposed to the previous simpler form of telephone trading. Within the electronic FX trading market, there seems to be a sizable move from indirect electronic execution via multilateral trading platforms to bilateral trading between the dealer and a counterparty.

An example of indirect electronic execution is the usage of platforms such as Reuters Matching and EBS that have centralized limit order books as the core trading protocol. Through the use of prime brokerage relationships, non-banks also have the ability to access the above-mentioned platforms. MBTPs which allow corporate dealers to trade directly with a range of dealers is another example of indirect electronic execution.

Dealer banks appear to have focused more on a retentive relationship-driven market structure where bilateral over-the-counter transactions dominate. Proprietary SBTP operated by FX dealing banks or electronic price streams via an application programming interface connectivity are the primary methods in which bilateral FX dealing takes place.

As can be seen from Figure 6, the solid growth in direct electronic trading is largely due to a 6% rise in the share of total FX trading via SBTPs. Total FX trading is all FX trading conducted through telephone and electronic platforms; adjusted for local and cross-border inter-dealer double counting, i.e. 'net-net' basis; share of FX trading adjusted for local inter-dealer double-counting, i.e. 'net-gross' basis (Moore et al., 2016). This is indicative of active competition by major FX dealer banks to attract buy-side customers onto their respective platforms.

Table 3: OTC FX turnover by execution method in 2013 vs 2016, 'net-net' basis*

Daily averages, in millions of US Dollars

	Voice				Electronic											
					Direct				Indirect							
	Direct		Indirect		Single Bank proprietary trading system		Other		Reuters Matching / EBS		Dark pools		Other electronic commnication networks		Undistributed	
	2013	2016	2013	2016	2013	2016	2013	2016	2013	2016	2013	2016	2013	2016	2013	2016
Spot	517 563	410 394	187 665	142 103	282 011	414 215	481 411	289 936	313 118	208 184	62 081	17 880	167 662	146 920	34 648	22 718
Outright forwards	214 864	257 563	91 434	60 717	87 558	111 039	126 515	115 789	33 276	35 160	31 717	5 758	73 341	97 827	21 289	15 822
Foreign Exchange swaps	578 190	589 904	435 357	472 605	271 109	376 935	256 406	301 641	360 396	283 965	79 013	23 887	189 316	266 612	57 841	65 754
Currency Swaps	17 555	28 667	8 607	17 812	3 664	3 450	9 882	13 499	2 768	2 837	3 709	295	4 024	11 323	3 813	4 268
FX options	146 712	122 915	62 070	62 161	21 383	25 423	49 911	14 286	15 475	9 598	1 922	538	31 671	15 338	7 601	4 154
Other products	not provided	65	not provided	...	not provided	...	not provided	...	not provided	...	not provided	...	not provided	...	not provided	-
All instruments	1 474 884	1 409 508	785 134	755 398	665 725	931 062	924 124	735 151	725 032	539 744	178 442	48 358	466 014	538 020	125 192	109 717

* Data may differ slightly from national survey data qwing to differences in aggregation procedures and rounding. Adjusted for local and cross-border interdealer double-counting (ie "net-net' basis).

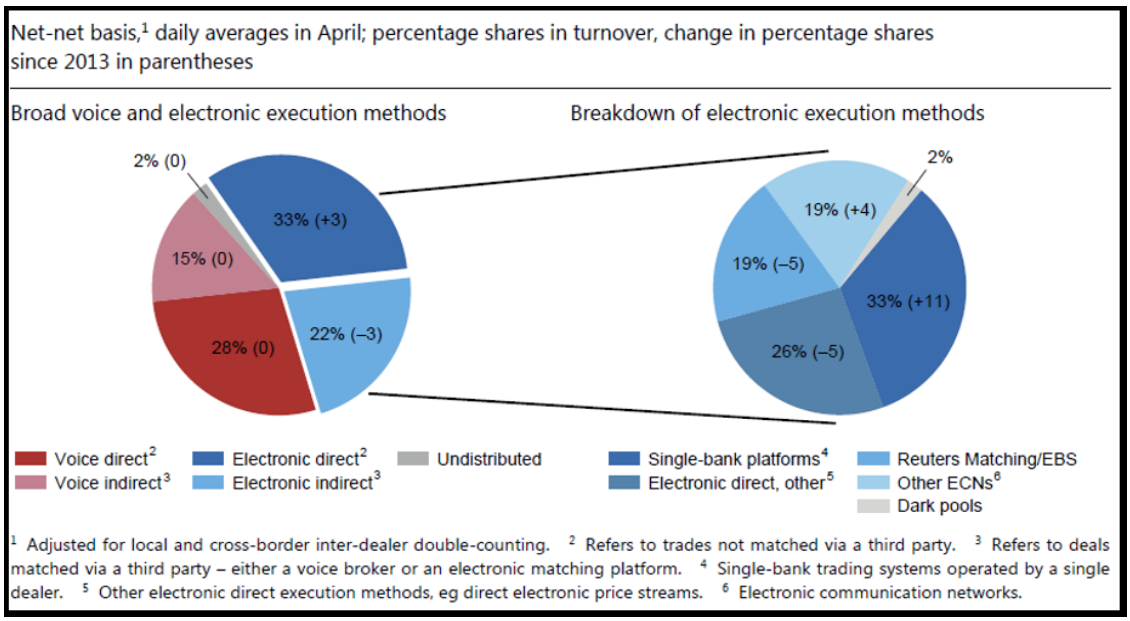
Source: BIS Triennial Survey (2013 and 2016)

Investments in SBTP by major banks is indicative of the banks' position as liquidity providers as well as internalisers of large trade flows. When providing liquidity via electronic platforms (SBTPs and MBTPs); banks are able to quote tighter spreads compared with anonymous primary electronic venues such as EBS and Reuters due to the lower risk of them trading with a more informed counterparty. Banks also have the ability to offer multiple price streams to different types of clients, i.e. quote bigger corporate clients a better rate than the smaller corporate clients. This type of price discrimination allows the banks to extract higher returns from market making and remain profitable.

FX volumes, the amount of FX traded, have also moved to other electronic communication networks (ECNs). Dealers on MBTPs can stream prices and respond to request for quotes. This

has led to MBTPs like Currenex, 360T, FXall and Hotspot increasing their share of the electronic trading market.

Figure 6: Market structure gravitation to electronic relationship-driven OTC model

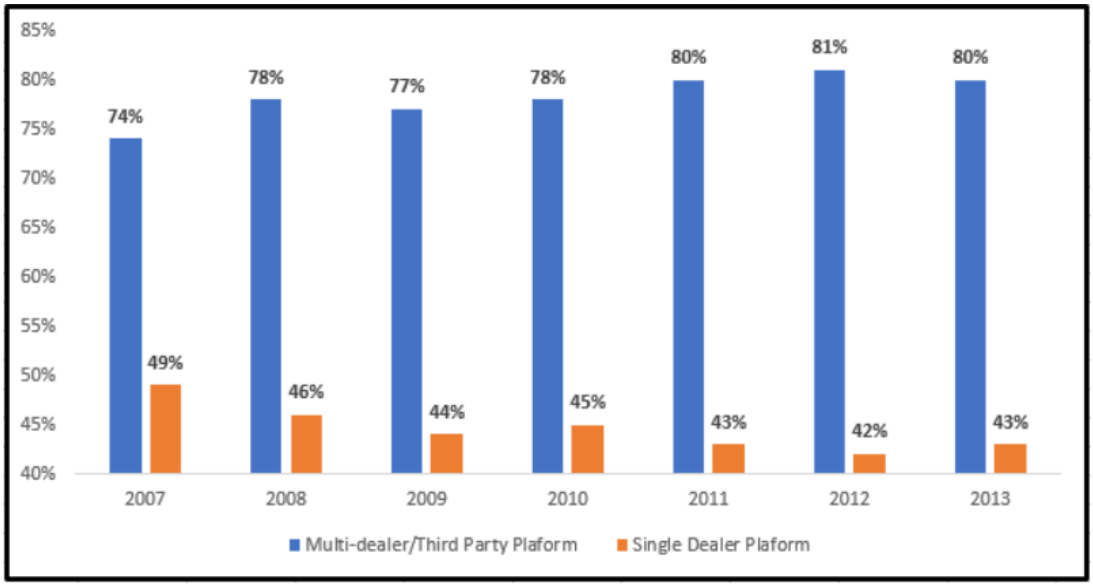


Source: BIS Triennial Central Bank Survey: authors' calculations (2016)

Awad, Canaday, D'Amario, Feenstra, Jones & McPartland (2014), conducted a study whereby the findings of the 2016 Triennial Central Bank Survey (BIS, 2016) are supported by the findings of the 2013 Greenwich Associates survey (Greenwich Associates, 2014). Interviews with 1,584 top tier users of FX at large and financial institutions in North America, Latin America, Europe, Asia, Australia as well as Japan were conducted by Greenwich Associates.

The top tier FX users reversed a well-established trend with market participants reducing the amount of trading executed on MBTPs and increased the amount of trading executed via SBTPs. Awad et al. (2014) state that the reversal of the well-established trend was largely due to regulations. New derivative rules such as the necessity of MBTPs having to register as swap execution facilities in the US encouraged FX market participants to revert back to SBTPs.

Figure 7: Global FX Trading: System Usage Trends



Source: Greenwich Associates; 2005 – 2013 Global Foreign Exchange Services Study

The decrease of the market's $50 billion plus crowd, firms that generate more than $ 50 billion in annual FX trading volume, from 36% in 2012 to 31% in 2014 lead to a decrease in terms of the volume of trades concluded on MBTPs. The big drivers of the change were hedge funds and retail aggregators both of whom increased the value of trades executed on SBTPs and reduced the amount and number of trades concluded on MBTPs. Aggregators can be defined as electronic tools which are used to collect streaming prices from diverse sources including but not limited to electronic brokers, FX dealers and MBTPs

Awad et al. (2014), go on to predict that the reduction of trades concluded via MBTPs was a temporary one with the shift expected to resume its upward trajectory as market participants adjust to the new market framework.

A trading method that has been identified as unlikely to experience a resurgence in the near future is telephonic trading. The survey revealed that the FX trading volume that was transacted through the telephone reduced to just over 12% of the total FX volume traded.

9% of the respondents advised at the time that they had an intention of doing more trades telephonically in comparison with 14% that planned to be more active on Reuters and

Bloomberg. The largest portion of the respondents planned to increase their trading on MBTPs and SBTPs.

The survey respondents reinforced the notion that electronic trading is maturing. 50% of the big players in the market, those that are concluding more than $ 50 billion in FX trades, planned to increase the amount of FX traded via MBTPs going forward while 21% of the big players intended to execute more FX trades on SBTPs. These numbers may be an indication that growth at the top end of the electronic FX market could be slowing.

According to Kennedy, Gilbert, Rai, Forrest, Chrispin, Teow, Fisher and Churcher (2015); ETPs can improve liquidity by matching sellers and buyers more effectively. This is due to, as theory suggests, the removal of the geographical limits and allowance of multilateral interaction. Some literature has provided evidence to suggest that ETPs increase trading volumes (Orlowski, L.T. (2015)), lead to a reduction in volatility (Al-khouri, Al-Ghazawi, 2008) as well as a reduction in spreads (Aitken, Frino, Hill, Jarnic, 2003). That said, there are some worries over the performance of ETFs in difficult liquidity conditions (IMF, April 2015).

Kennedy et al (2015) state that there are numerous factors that limit the effectiveness of ETPs on market liquidity, primarily in quote-driven markets. These factors are:

- Structural market factors

  Smaller size transactions and standardised products, for which a sufficiently large number or orders can be matched on a regular basis, are best suited to trading platforms. This is the case for spot FX markets for the most liquid currencies.

- Fragmentation of liquidity

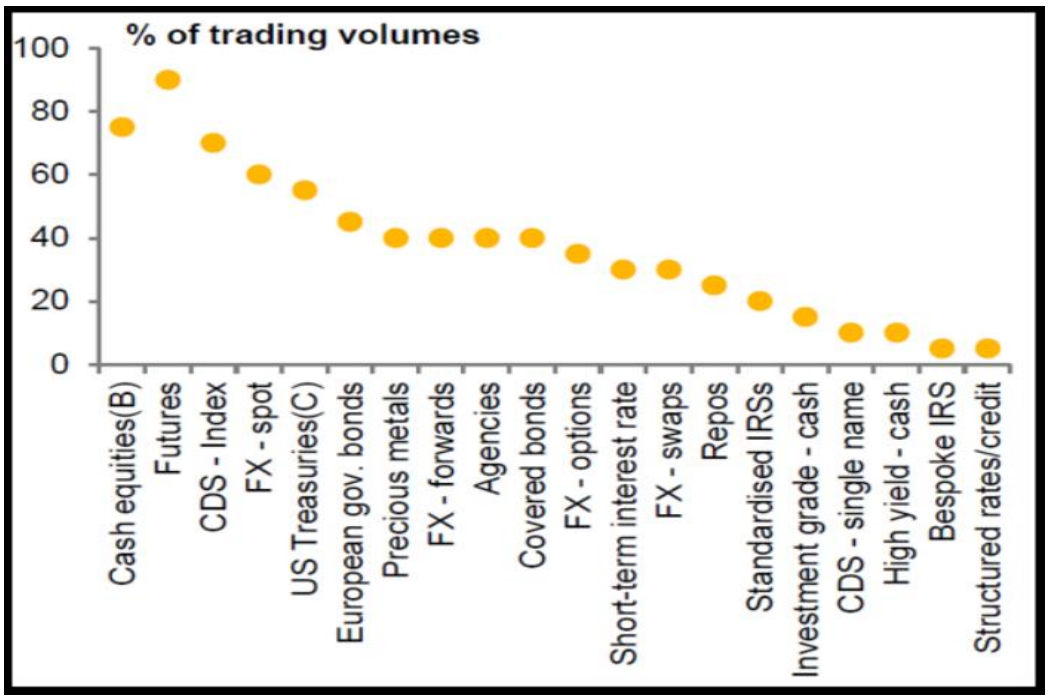
  ETPs growth, driven to a certain extent by regulatory changes, has led to a rise in the fragmentation of liquidity resulting in the liquidity of main markets being diffused across substitute trading venues. The result of this is more competitive markets with less ability for a specific venue to absorb large trades, lessened efficiency and reduced-price discovery.

- Stress event liquidity

  Currently there is some skepticism with regards to the ability of ETPs to maintain market liquidity in situations of stress.

There is a large variation in the use and adaptation of trading on ETPs across asset classes. As can be seen from Figure 8 below, the adoption of ETPs per asset class varies with a distinct relationship of lower electronic trading levels for more customised products and higher electronic trading levels for more standardised products.

Figure 8: Electronic Market Development by Asset Class, 2012



Source: Fair and Effective Markets Review, Consultation document, 2014

- Note: includes multi-dealer Request For Quotes (RFQ)

The 2016 Price Waterhouse Coopers (PWC) report on electronic trading platforms (Gaswirth, Horowits, Corvo & Jha, 2016) looked at trends urging firms and/or banks to rethink their client-facing technology and suggests that SBTPs and MBTPs can co-exist within the same institution. Firms are looking to offer their clients more value by introducing gateways that make it easier to navigate the bank's entire range of offerings. This has led to SBTPs evolving from execution only trading to SBTPs offering pre- and post-trade capabilities.

One of the reasons firms have been unable to achieve targeted returns on SBTPs is that while the platforms address the banks' desire to further entrench their relationships with the clients and retain clients; there are difficulties in adapting to the changing demands of clients. An

identifiable customer trend is for basic and low-cost products. Though an all-encompassing SBTP has value, the platform alone may not be enough to ensure client brand loyalty.

Banks should thus become more strategic regarding proprietary technology and should rather focus on custom development in areas that add value to a relationship. Where additional value is not being added, banks should work with peers, other financial institutions and third parties to add value. By following this process, banks can be in a position where they can better serve their clients at a lower cost than that required to maintain all customer dealings within SBTPs.

Gaswirth et al. (2016) looked at trends driving the convergence of SBTPs and MBTPs and go on to say that the treatment of SBTPs and MBTPs enables a hybrid approach that takes the best of each. In this way the customer relationship intimacy of SBTPs and the greater liquidity, shared cost, and diversified risk advantages of MBTPs.

A view that is currently under tremendous pressure is the general feeling that for investment banks, trading is a core strength. As more and more clients explore the use of market utilities, it has become more difficult for banks to keep making significant investments in SBTPs.

The reasons for this is that banks have their own mandate of electronification to reduce costs. Though costs have dropped, in a number of cases the fees and commissions that banks tend to charge have decreased at a faster rate resulting in margins being squeezed. The increasing usage of electronic trading has created opportunities for tech disruptors that compete on speed of execution and price.

As FX has a high degree of electronification, the largest share of trading volumes is now flowing through MBTPs. The trend of MBTPs having the largest share is expected to increase as more and more customers increasingly look to multiple dealers as opposed to concluding all orders with one bank using a SBTP. A higher value is now being placed on transparency, a sign that there is increased regulatory scrutiny on the back of past FX fixing scandals.

Based on developing trends, customers had a choice of either moving onto shared technology (MBTPs) or further entrenching the use of SBTPs. This has led to some banks increasing customer development for their SBTPs and the expansion of their respective proprietary technology. In terms of differentiation, some SBTPs have added new features like the ability

of customers to access bank research. Other banks have however been opening up their electronic platforms as well as working with peers, other financial institutions and third parties to develop shared technology. The shared technology is then made available to customers as a library of open source components which have the ability to simplify SBTPs or as a separate MBTP utilities that have the capability of replacing parts of SBTPs.

According to Gaswirth et al. (2016), SBTPs and MBTPs are complementary and can be combined in a hybrid model that leverages the strong points of both types of platforms.

Figure 9: Strengths of SBTP and MBTP can be complementary

Delivery Plaform Characteristics	SBTP	MBTP
Access to real time market insights, research, and analyst views	Stronger	Weaker
Social Networking and live interactive chats with experts	Stronger	Weaker
Support for custom pricing and trading abstract products	Stronger	Weaker
Support for flexible trading anonymity or disclosure	Stronger	Weaker
Access to portfolio management and financing tools	Stronger	Weaker
Access to diverse set of pricing sources and adress best execution requirements (MiFID)	Weaker	Stronger
Access to multiple sources of liquidity - banking and non banking	Weaker	Stronger
Access to wider set of trade execution venues and consolidation ticker	Weaker	Stronger
Support for broker neutrality	Weaker	Stronger
Shared cosy and diversified risk across participants	Weaker	Stronger

Source: Price Waterhouse Coopers (2016)

Gaswirth et al. (2016) go on to state that a large number of firms can benefit from a hybrid platform that mixes the functionality of SBTPs and MBTPs. It no longer makes sense to view SBTPs and MBTPs as mutually exclusive. This view is based on work done for PriceWaterhouseCoopers (PWC) clients.

A hybrid MBTP/SBTP approach can lead to an improvement of a firms digital cost-to-income ratio by as much as 45%. The improvement arises from reduced cost drive through the adoption

of shared technology as well as increased revenue of which it is mainly driven by enhancements focused on where the biggest payoff is.

Barth, Remolona & Wooldridge (2002) state that the establishment of electronic trading platforms as a viable substitute to traditional ways of trading was a far-reaching development in financial markets. Electronic trading has influenced the functioning of financial markets to a large extent, even though the implementation of electronic methods across different markets has been very uneven.

Financial markets have been affected by technological developments and innovations in two fundamental ways. Firstly, electronic platforms are significantly reducing the costs of transacting and gaining information. That is; transactions can be speedily concluded, complete automation of settlement can be achieved as well as the ability of some platforms to allow for automatic hedging and arbitrage through direct links with the futures markets.

Secondly, electronic trading platforms are changing the relationship between bank dealers and end investors. The separation between the inter-dealer and customer-dealer markets is being blurred by electronic trading systems. Certain platforms do not allow for dealers and thereby maintain the traditional demarcation. SBTPs perpetuate the separation of the markets. MBTPs and open systems are open to all participants who meet the minimum eligibility requirements to trade on the platforms. Though one should note that where open systems allow software application participants to quote prices, MBTPs only allow bank dealers to post prices (price makers) with the rest of the participants being price takers.

Though there are a number or electronic trading platforms, electronic trading is likely to be concentrated on a few platforms. The type of platform that emerges as a favorite electronic trading platform could have an impact on the market functioning.

The result of ETP on liquidity is an unanswered question as there are two sides to it. One on side, the ETPs can increase participation in markets and reduce transaction costs through better efficiency and cost effectiveness. This could serve to improve the liquidity of the market as there will be more market makers providing pricing. On the other side, the lessening of the informational advantage traditionally enjoyed by dealers could lead to dealers no longer having the appetite or incentive to make markets. In the over the counter markets, dealers were

traditionally better informed than customers and so enabling price discovery to take place at the inter-dealer section of the market. ETP can enable a broader set of participants to know when the best prices are quoted at any point in time resulting in less profitable and attractive market-making. Market depth, the number of price makers and price takers, could deteriorate even as tightness improved.

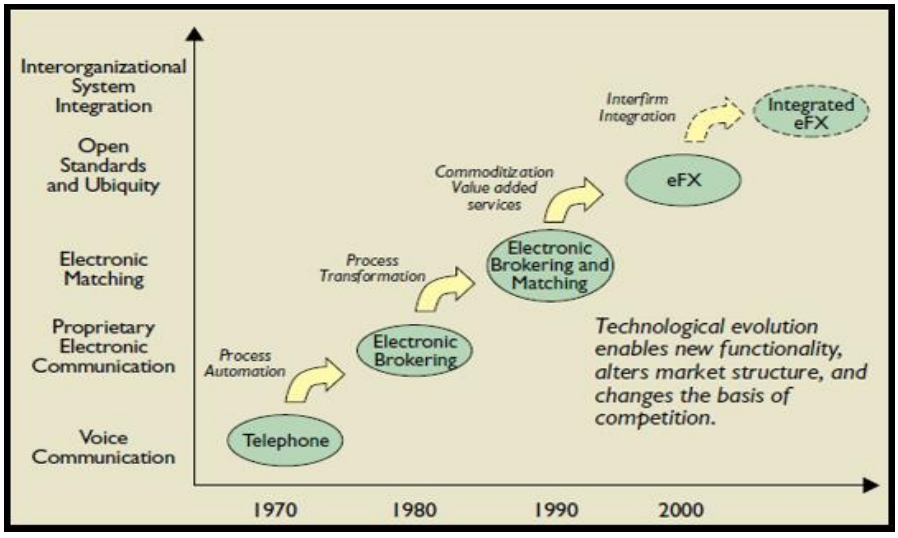
The Committee on the Global Financial System; part of the BIS organisation monitoring developments in financial markets and previously known as the Euro-Currency Standing Committee; has concluded that electronic platforms had been able to successfully handle occurrences of sharp price adjustments.

Further, the increasing role of ETPs in foreign exchange markets present numerous strategic questions for intervening central banks. On one side, the transparency of quotes in a screen based currency dealing system makes it difficult for central banks to intervene anonymously. On the other side, ETPs may be a good tool to use for central banks when they need to be seen to be intervening in the market.

Gallaugher & Melville (2004) state that ETPs are driving foreign exchange markets towards complete transparency, improved efficiency, commoditization (a process whereby currencies ultimately become simple commodities in the eyes of consumers and/or market) as well as end-to-end automation via straight through processing. That said, the advantages of partaking within various sections of the buy and sell side groups, are still uncertain. Buy side are those customers purchasing FX for their own or clients' needs while sell side are market makers who execute trades for buy side clients and also speculatively trade for themselves. Successful ETPs should look to solve the nontrivial technical issues, institute incentives to sustain a viable, liquid exchange that has the ability to generate adequate return to justify the investment.

Following patterns that have happened in industries as varied as retail merchandising and computer hardware, the commoditization of FX may end up pushing competition to extremes of scale-based efficiency or the provision of value added services. This is illustrated in Figure 10.

Figure 10: Disruptive waves of technological innovation in FX trading



Source: Gallaugher & Melville, (2004)

For entities with the scope to leverage FX (buy from one customer and sell same amount to another customer) in cross complementary markets, electronic foreign exchange may turn out to be a peripheral contributor or a loss leader. Though, given an opportunity to exploit switching costs and network effects, those few platforms that are likely to remain will in all probability yield benefits similar to those of classic examples of strategic electronic marketplaces. Benefits of electronic market places are said to be:

- Increased opportunities for buyers and/or suppliers to establish new trading partnerships

- Increased transparency in the purchasing or selling process as availability and prices are all accessible in an open environment.

- Possibility of operating on a round-the-clock basis as time constraints and problems with different office hours are then removed.

According to Wilsher (2016), only South Africa and the Rand have made it onto the BIS Triennial Central Bank Survey of foreign exchange and OTC derivatives markets in 2016. One statistic about sub-Saharan Africa that motions the way forward for the development of electronic Foreign Exchange is the mobile penetration which is on an upward trajectory, with the population looking to overcome the short comings of local fixed line telecoms.

In its 2016 report, GMSA; an association representing the interests of mobile operators worldwide; states mobile internet adoption in Africa continues to grow rapidly. Mobile internet subscriber numbers tripled to 300 million from 2010 to 2015. Roughly 150 million of these subscribers connect to the internet through the use of high speed mobile broadband networks. GMSA estimates that from 2015 to 2020, an additional 250 million subscriptions to mobile interest service are expected with the majority of new subscribers connecting via a mobile broadband network.

Subscribers in Africa are increasingly moving towards mobile broadband services which are being driven by network rollouts as well as mobile operator device and data strategies. Mobile has emerged as the platform of choice for creating, distributing and consuming innovative digital solutions and services in Africa. The reasons for this trend in the regions is due to the expansion of advanced mobile networks, the convenience of access to real-time information, the growing adoption of smart devices, feature-rich content and services on the go as well as the under development of alternative technologies, notably the fixed-line connectivity.

Wilsher (2016) states that in sub-Sahara Africa, one size does not fit all with the advancement of the FX market across the region differing from country to country. On one hand, there are the South African and Nigerian FX markets which are fairly advanced with electronic trading playing a big role in FX execution. Nigeria is touted to have a sophisticated retail speculation community (individuals trading FX online for speculative purposes) while the South African institutional and corporate client set is sophisticated. While on the other hand, there are countries (e.g. Mozambique and Tanzania) that are relatively unsophisticated in comparison to Nigeria and South Africa.

According to Wilsher (2016), the following corporate and institutional client challenges were considered by Absa bank in the successful rollout of BARX (an online FX trading platform for corporate clients of Barclays/Absa bank -a SBTP) to 12 countries across the region:

- The network and IT infrastructure challenges in the less developed and remote rural areas.

- The state of FX markets development outside of South Africa, where for example in a number of countries trading of FX is often on a same day basis (i.e. trading FX deals for

same day value as opposed to spot or forward value date FX dealing) with no appetite or desire for any other product.

- Liquidity. Most markets tend to trade their own onshore currencies in FX, which in certain instances can trade at a different level in comparison to the offshore market. This situation can make the sourcing of onshore liquidity a challenge due to limited liquidity and limited participants. Currencies that are traded both onshore and offshore have different market players which result in different prices for the same asset. An example of this is the Ghanaian Cedi.

- Exchange controls and Regulation. There is a wide spectrum where in certain countries there are no exchange controls while other countries have strict exchange controls.

The above-mentioned factors have a big impact on what can and what cannot be achieved with electronic FX in the African space. Buy side clients (those customers purchasing FX for their own or clients' needs) are said to be moving very quickly towards e-trading (a method of trading foreign exchange electronically) and systems that would be identifiable (e.g. FXall, FX connect, 360T, Hotspot FXi, etc) anywhere in the world.

According to Hutchinson (2016), Standard Bank's head of e-FX, the bank had 55% of all their FX flow being done by customers on the SBTP in 2016. He states that currently, customers are pulling solutions from the bank whereas previously the bank were pushing solutions to customers. The bank's focus on price formation, liquidity sourcing, distribution and risk management has led to a significant increase in electronic trading over the last three years.

Exchange controls have been identified as a barrier to entry to multiple quote competing trading platforms that are widespread in other parts of the world. Though there are several SBTPs that have been growing in South Africa and Sub-Sahara Africa; the accessibility to competing MBTPs is very limited. MBTPs, which have become the norm in developed economies, are generally said to be only used by large multinationals or by banks in Africa.

Electronic trading's proven ground in Sub-Saharan Africa is South Africa due to its high sophistication (its FX market is comparable to developed countries FX markets in terms of

products, liquidity, settlement, etc.) and being connected to the rest of the world. One though needs to note that South Africa does have its own infrastructure issues that need to be addressed.

It is important to note that those companies that do business in Africa need to appreciate the fact that e-FX solutions are different on the African continent as opposed to other regions like Europe, Asia and the Americas. An example of this is when treasurers have an internal policy that the companies need to use MBTPs to execute trades. In a lot of African countries, given the sensitive nature of liquidity in the said markets, making a number of liquidity providers aware of customer interest may be negative for best execution. Reason being that in markets with limited liquidity, requesting a price from multiple parties' results in all parties being aware of the interest in the market and may lead to the market moving higher and the transaction being concluded at a higher rate. This would mean that for those customers looking for the advantages of electronic trading, they would need to consider SBTP to execute trades on and this would go against the internal company policy of obtaining a certain number of quotes in executing FX deals.

Electronic trading of FX will continue to naturally grow in countries where there is a presence of free and open markets where access to liquidity is high. An uptick of eFX in countries like Kenya, Uganda, Botswana and Mauritius is already been seen and the expectation is for the growth pattern to continue to rise. Markets with restrictive exchange controls and where liquidity is unavailable (the likes of Angola and Mozambique) will continue to lag in the development of eFX.

Though it is highly unlikely that all African currencies can be freely traded; international businesses, whether indigenous or from outside the continent, are using electronic trading platforms and the platform capabilities widely and successfully.

According to Woolcomp (2008) the increase of electronically transacted asset classes will be driven by market demand, however banks will continue to offer more services through their SBTPs. Ultimately, the objective is for a TMS to be fully integrated with an electronic platform making it possible for regional treasuries to transfer their FX requirements to a central hub which would then lodge one netted FX trade with the bank.

The result will be more clients with more time to focus on other responsibilities. Woolcomp (2008) states that while electronic trading will never be able to replace the conversation with the bank dealer, it will rather solidify the relationship, increasing efficiency, speed of action and consistency.

According to Caning (2008) a trend towards electronic trading in the corporate space was well underway with the number of users having grown consistently over several years. The main catalyst for this growth started with banks though the growing corporate acceptance was the dominant factor.

Since the introduction of SBTPs, the banking sector has been seeking the most efficient and inexpensive method to manage the FX flow business on transactions which are standard. Banks use electronic trading to minimise errors, minimise cost and the creation of STP that is inclusive of settlement. The trend towards handling these types of transactions was expected to grow as transaction volumes increased.

With regards to the corporate side, it is not the cost efficiency by rather the time efficiency pushing the trend higher. A spot FX deal which can take 15 – 20 minutes from calling the dealer at the bank to capturing it onto the back-office system with no errors. Several of these deals a day can lead to a lot of time being spent on this process. Electronic trading with a back-office interface can result in the whole process being completed in as little as 2 minutes.

Increasing the trend for greater use in the corporate environment is supported by factors relating to technological improvements and to a certain extent, to internal factors that relate to compliance, management controls and audit. Electronic trading is said to bring a number of advantages and can lead to efficiency gains in the corporate treasury environment with STP being the biggest advantage. Electronic trading platform providers also now offer standard interfaces to front and back offices which allow real end-to-end STP to be achieved as opposed to earlier years when the platforms only offered access to trading.

Chapter 3: Methodology

3.1 Research Methodology

To carry out the proposed study, we have conducted a survey which was addressed at treasury departments of private companies, public companies, multinational companies as well as state owned entities. A survey was also sent to banks that are able to buy and sell foreign exchange to corporate companies. According to Leedy and Ormond (2005), the purpose of the study, the process used in the collection of the data, analysis of the data as well as the reporting of the findings are, distinguishing features that assist in designing the methodology of the research.

As mentioned earlier, the purpose of the study is to analyse the impact of electronic trading platforms, with a focus on MBTPs, on corporates in South Africa. The study will cover how companies in South Africa are concluding FX deals with their banking counterparts. The survey technique has been identified as the best method suited to this study as the purpose is one of determining the perception of the identified companies and banks.

It is the objective of this study to understand opinions with regards to the use of electronic trading platforms, MBTPs in particular. In line with Baxter, Hughes & Tight (2004) the data collection process involves the development of a questionnaire to gauge the views, opinions and perceptions about the research purpose. Hofsee (2010, pg 122) states that an excellent way to discover opinions, desires and attitudes is via a survey method.

A survey is considered as the ideal method to this study as there is no prior research that could be found on the topic in South Africa. The published research on this topic is from a global or developed market perspective. Examples are in Europe, the United Kingdom and the United States of America amongst others.

The online survey was sent to all respondents via email with a link to the survey in the mail. Most of the respondents were contacted telephonically prior to the email with the link being sent to make the respondents aware of the survey. Two further reminders were sent to the respondents to complete the survey as a high response rate was sought and achieved.

The results of the surveys are presented in Chapter 4.

3.2 Survey approach limitations

The use of a survey method has advantages and disadvantages which need to be recognised and provided for in the design (Burns, 2000.) The limitations that will be discussed are those relating to the research methodology and design. Though tremendous care and effort were expended to develop the best possible research methodology and design, limitations tend to always exist due to the type of methodology and design used. The sample size may not be ideal, due to resource and time frame challenges, but it is large enough to provide reliable and valid observations. A range of sample sizes has been recommended as ideal sizes. A sample size of 25 to 75 respondents has been suggested by Converse and Presser (1986), Fowler (1995) recommends a sample size of 15 to 35 respondents, Sheatsley (1983) advises 10 to 25 respondents while Sudman (1983) proposes a size of 20 to 50. The corporate respondents to the survey are more than the 75 suggested by Converse and Presser (1986) (De Leeuw, Hox & Dillman, 2008, International handbook of Survey Methodology, page 188). A very high response rate was received from the banks with responses received from all South African founded banks as well as most multinational banks who are permitted to buy and/or sell FX from and/or to SA companies.

This study seems to be the first of this nature in the South African context. A lot of the global and developed market research on this topic was used and linked with the South African perspective. There was thus a limitation in completing the research as there was nothing to base the study on from past research or to identify a previously used methodology.

As the questionnaire was sent to all respondents via email, some ethical considerations needed to be taken into account. In all the emails sent to the respondents, a cover note was attached advising of the nature of the research, the contact details of the researcher as well as the fact that participation was to be offered by all respondents at their own discretion and own time. An assurance made by this researcher to the respondents in the cover note was that the results would not reveal any of the respondents (companies) completing this survey by name.

Chapter 4: Survey results

4.1 Company Survey Results

In this chapter, we focus on the results of the survey. The survey was conducted online, comprises of 21 questions, sent to personnel responsible for FX trading at various companies (private, public, multinational, state owned and SMEs) operating in South Africa. In the remainder of the chapter a summary of responses to the survey is provided followed by a detailed analysis of the responses, with some grouped per unifying theme, is provided.

Question: Organisation Type?

#	Answer Options	%
1	Multinational	62%
2	South African operations only (Private and Public)	28%
3	State Owned Company	10%
	Total	100%

Question: What is your organisations' current operating model for managing FX?

#	Answer Options	%
1	Centralised	83%
2	Decentralised	17%
	Total	100%

A centralized treasury model is a model whereby the financial, cash management, investment and foreign exchange decisions, along with other strategic matters are made and controlled by a team. A decentralised treasury model on the other hand is a model whereby the financial management structure is managed by different teams in different locations. In this model, each subsidiary or unit is responsible for its own operations and has complete freedom from the headquarter or central office.

The trend over the last few years is to move towards centralisation which involves a move from a local treasury operation to a regional structure. Cash pooling is said to be a major contributing

factor to centralisation with the centralisation move facilitated by technological advances. Cash pool, which can be notional or physical, is a structure that involves several related bank accounts whose balances (debit and credit) are aggregated in order to optimise the interest received or paid and thereby improving liquidity management. Another key factor to have contributed to this trend is said to be new regulations such as Sarbanes-Oxley and the International Accounting Standard.

Cost savings, improved exposure monitoring, economies of scale, exposure netting and staff specialisation are benefits that can be derived from centralisation. Centralisation also has some disadvantages in that it can have a negative impact of staff morale due to job losses, loss of autonomy within the local units and increased head office costs. The big benefit of a decentralised model is that the local team can react faster to exposure changes.

83% of the survey respondents advised that they operate a centralised treasury model which goes hand in hand with the trend that has been developing for a number of years now. 73% of Multinationals, 62% of the sample, have centralised operations. State-Owned Entities (SOEs) and SA based companies have responded with a 100% centralised model.

Question: How many banking partners does your organisation conclude FX deals with?

#	Answer Options	%
1	1	12%
2	2	14%
3	3	6%
4	more than 3	68%
	Total	100%

12% of the respondents advised that they only conclude FX deals with 1 banking partner, 14% with 2 partners and 6% with 3 partners. A significant majority of respondents, 68%, have advised concluding FX deals with more than three banking partners.

As most of the respondents have more than 1 banking partner for FX dealing purposes, it would seem to suggest that the companies are looking for the best possible price. It would thus not be

surprising if the respondents with more than 1 banking partner engage in competitive bidding between banks in order to conclude the FX deal at the best possible rate. 84% of multinationals have more than 3 banks they conclude deals with while the rates are 50% and 38% for SOE's and SA companies respectively.

Question: What is your organisations' primary FX hedging strategy?

#	Answer Options	Rarely	Sometimes	Mostly	Always	Total
1	Static/annual hedging (most hedges placed annually; typically coinciding with the budget FX rate-setting process)	73%	13%	7%	7%	100%
2	Rolling Hedge – hedging on a frequency basis (per week, month, quarter, etc.)	24%	11%	35%	30%	100%
3	Rolling but layering hedge – hedging an increasing amount of exposure over time to achieve an 'average' rate for item or buckets hedged	32%	25%	32%	11%	100%
4	Ad hoc/situational hedging	16%	36%	21%	27%	100%

Question: What is your organization's Primary FX Hedging objectives?

#	Answer Options	Strongly Agree	Agree	Strongly Disagree	Disagree	N/A - No hedging done	Total
1	Reduce income statement volatility	49%	30%	0%	4%	17%	100%
2	Protect cash flows in group reporting currency	30%	36%	2%	15%	17%	100%
3	Protect consolidated reported earnings in your Group reporting currency	26%	23%	6%	28%	17%	100%
4	Minimize FX gains and losses due to re-measurement of FX denominated assets and liabilities in each period	36%	36%	4%	7%	17%	100%
5	Protect subsidiaries local currency cash flows	15%	42%	4%	23%	17%	100%

6	Protecting shareholder value	26%	36%	4%	17%	17%	100%
7	Protect/achieve annual budget FX rates	11%	30%	17%	25%	17%	100%
8	Maintain marketplace competitive advantage	37%	32%	5%	9%	17%	100%
9	Manage year on year financial performance	22%	33%	4%	24%	17%	100%
10	Mitigating sub's net equity/capital balance sheet translation impacts on parent's AFS	11%	26%	9%	37%	17%	100%

For most corporate treasurers and/or financial managers, their primary role is the management of financial risk. With regards to FX, this financial risk can be defined as the degree to which a company can incur losses as a result of adverse movement of foreign exchange rates. The above questions which are related to hedging are important in determining if companies undertake FX hedging and the methodology used by companies to conclude FX trades.

Previously it was a common process for companies to set budget rates and execute most if not all hedges for the year at the beginning of the financial year. Upon completion of these hedges, companies would generally consider themselves as having completed a majority of their hedging activity. Companies also tendered to layering hedges throughout the year in order to develop coverage from exposed assets, liabilities and cashflows. As the coverage increased for the existing forecasts, formation of new forecasts would occur with hedges then extended forward into future periods. The longer duration, layered and rolling practice has made the exposure creation and risk management process into a continuous exercise that is different from the annual hedge strategy mentioned earlier.

For example, if hedges are placed once a year (annually), or ad hoc/situational hedging is undertaken; then there would be little need for companies to execute the trades electronically and implement STP. The reason for this is that the cost of implementing electronic trading with interfaces that enable STP would far outweigh the benefit to be derived from electronic trading with STP possibilities. Companies using the above-mentioned FX dealing frequency would most likely not mind the manual efforts of concluding an FX deal (telephone quoting, manual

confirmation, manual processing and manual settlement) as it typically would only happen once a year or on an ad hoc basis.

73% of the respondents rarely do annual/static hedging. 65% perform rolling hedges mostly and always while rolling but layering hedges are mostly and always performed by 43% of the respondents. Due to the reduced volatility between periods and the continuous rolling visibility of future FX rare achieved, it is understandable that 65% or respondents use the rolling approach. Ad hoc and/or situational hedging is done mostly and always in 48% of the cases. The different approaches may be linked to the nature of the business and thus the profile of the FX exposures.

With regards to primary hedging objectives, a total of 79 % of respondents strongly agree and agree with the reduction of income statement volatility making this a crucial hedging objective. 66% strongly agree and agree that protection of cash flows in group reporting currency is also key. 72% strongly agree and agree that the reduction of FX gains and losses due to re-measurement of FX denominated assets and liabilities in each period making this objective key as well.

Other key objectives based on the total responses received with strongly agree and agree are the protection of subsidiaries cash flow (57%), protection of the shareholder value (62%), maintenance of market place competitive advantage (69%) and finally the management of year on year financial performance at 55%.

17% of the respondents have advised that their respective organisations do not undertake any hedging activity.

Question: What is the organisations' FX Risk Management approach?

#	Answer Options	Rarely	Sometimes	Mostly	Always	Total
1	Hedging using derivative instruments	9%	11%	41%	39%	100%
2	Natural management through matching costs and revenue in the same currency in same entity	15%	28%	44%	13%	100%
3	Natural management via pass-through to suppliers or customers	38%	28%	28%	6%	100%
4	No FX risk management undertaken	61%	22%	11%	6%	100%

The companies risk management approach is important in order to gauge if the respective companies are using derivative instruments for hedging purposes. If for example no FX hedging is undertaken by companies, or there us a natural management through matching costs and revenue in the same currency and in same entity for companies; then it is very unlikely that these companies would use electronic trading platforms to hedge their FX exposures as the companies do not undertake FX hedging. Corporate companies need to have a flexible approach to managing the risk strategy so that when the market conditions change, the strategy adopted can keep pace.

80% of the respondents mostly and always use derivative instruments for hedging, which is not surprising and was largely expected. Also, it is good to see that 57% of the respondents mostly and always use natural management techniques such as exposure matching and cash flow netting. 66% rarely and sometimes use pass-through to suppliers and customers which is not that surprising as companies would like to keep hold of customers by not adjusting prices continually based on FX rate movement and changes.

17% mostly and always do not engage in FX risk management practices. 9% of respondents here were multinationals, while 40% of SA companies undertake no FX risk management. SA companies not undertaking FX risk management is rather surprising considering that the ZAR is considered one of the most volatile currencies and is often used as a proxy for emerging market currencies.

Question: Which FX instruments are used in hedging programs?

#	Answer Options	Yes	No	N/A - No FX hedging done	Total
1	FX forwards	80%	3%	17%	100%
2	FX options (vanilla, collars, straddles, etc.)	33%	50%	17%	100%
3	FX swaps	59%	24%	17%	100%

Question: FX instruments traded on electronic platforms?

#	Answer Options	Yes	No	N/A - Not using electronic platforms	Total
1	FX Forwards	63%	0%	37%	100%
2	Non-deliverable forwards	0%	63%	37%	100%
3	FX Swaps	60%	3%	37%	100%
4	FX options (vanilla, collars, straddles, etc.)	5%	58%	37%	100%

Question: Are there more products that you would like to trade electronically?

#	Answer Options	%
1	Yes	16%
2	No	47%
3	N/A - Not using electronic platforms	37%
	Total	100%

Question: How many banks are your liquidity providers on Multi bank trading platforms (e.g FXall, FX connect, 360T, Hotspot FXi, etc.)?

#	Answer Options	%
1	1 - 2 providers	34%
2	3 - 5 providers	39%
3	More than five providers	27%
	Total	100%

Of the respondents who conduct FX hedging, 80% use FX forwards (FECs). This was largely to be expected as vanilla forwards are easy to use instruments, provide no problems from an accounting perspective, protect against adverse currency movements and are cost efficient as they have no upfront costs. 59% of respondents use FX swaps which is a significant amount when one considers that 17% of the respondents do not undertake any FX hedging.

Only 33% of the respondents use FX options to hedge their exposure which is not surprising as FX options are deemed expensive as they attract a premium. If the option is not exercised, it basically holds no value on expiry. Despite the fact that options offer flexibility and protection, many companies find the cost and the ease of use in comparison to FECs not attractive.

63% of entities use electronic platforms with all of them trading FX forwards on electronic platforms, none of them trading Non-deliverable forwards, 60% of the 63% of users of electronic platforms trade FX swaps and only 5% of the 63% trading FX options.

47% of the respondents have advised that they are content with the product range of products they trade on electronic platforms while 16% of the respondents advised that there are more products they would like to trade on the platforms. This may have to do with electronic platforms not offering the same suite of products to customers that can be traded electronically. One platform may have more derivative products that can be traded electronically while another platform may have less derivative products.

In terms of the number of banks that respondents use to conclude FX deals with; 39% use 3 to 5 banks, 27% use more than five providers whilst 34% of respondents use 1 – 2 banks. The fact that 66% of the respondents use more than 3 bank counterparties to conclude FX deals with is an indication that companies want to be able to trade at the best rate. That said, there is a cost vs benefit aspect that must be considered for using too many banks. The higher the number of banks used the more controls needed, increased interfaces if all providers integrated for STP purposes and will likely also lead to a high bank cost charge.

Question: How long is the hedging period?

#	Answer Options	Yes	No	N/A – No FX hedging done	Total
1	Less than I month	52%	31%	17%	100%
2	1 to 6 months	72%	11%	17%	100%
3	6 -12 months	50%	33%	17%	100%
4	More than 12 months	33%	50%	17%	100%

A number of factors should be taken into consideration when choosing a hedging tenor. A hedging tenor is the duration (length) of the hedging period. Some of the factors to be considered include credit availability (tenor and credit line use), potential revaluation impact, the cost of hedging, projections certainty, accounting implications, liquidity protection, counterparty risk and credit value adjustment. The setting of a tenor limit is beneficial as for example if a company sets a tenor of one year, it would mean that no FX trades can exceed a maturity date of more than 12 months. The effect of the tenor is firstly to reduce the unexpected volatility due to the shortening of the time horizon between execution and settlement of the trade. Secondly, the cost of hedging is reduced as less forward premium for longer dated hedges is applicable and the reduction of the options cost due to the time value of the option.

With 17% of the respondents not exercising any FX hedging, 52% hedge for less than 1 month; 72% hedge up to 6 months; 50% from 6 to 12 months and 33% hedge for more than 12 months. It is not surprising that hedges between 1 month and 6 months are concluded by 72% of the respondents as in South Africa, no underlying commitment is required to transact an FX deal with a tenor of up to 6 months. This is generally known as dynamic hedging.

Tenor of more than 12 months are likely to be used in situations of capital expenditures where a local currency budget needs to be adhered to and the fixing of the rate becomes crucial.

Question: What is the organizations' FX dealing method?

#	Answer Options	Yes	No	Total
1	Telephonic	67%	33%	100%
2	Electronic - single bank (e.g. Citi Pulse (Citibank), Pace/ Barx (ABSA), Straight2Bank (Standard Chartered), etc)	38%	62%	100%
3	Electronic – Multi Bank (e.g FXall, Burrenex, FX connect, 360T or Hotspot FXi)	37%	63%	100%
4	No FX dealing – automatic conversion by bank	12%	88%	100%
5	Reuters and/or Bloomberg	27%	73%	100%

67% of respondents use the telephone to transact FX deals, 38% use SBTP, 37% use MBTP and 27% using Reuters and/or Bloomberg.

Interesting to note that 12% of the respondents allow the banks to automatically convert FX payments and receipts. 16% of multinationals and 17% of SOEs allow banks to automatically convert. A possible answer as to high this percentage seems so high is that often companies allow for banks to convert amounts automatically below a certain threshold amount with the companies specifically taking out hedges for exposures above the threshold amount.

Question: To what extent is the FX risk management process automated within the Treasury Management System and or financial risk system?

#	Answer Options	Yes	No	Total
1	Deal capture	55%	45%	100%
2	Operations and confirmations	53%	47%	100%
3	GL and accounting postings	43%	57%	100%
4	Dealing	38%	62%	100%
5	Market data capture and valuations	43%	57%	100%
6	Reporting and limit management	47%	53%	100%
7	Exposure capture	45%	55%	100%
8	Analytics	36%	64%	100%

The extent of automation of FX dealing processes provides a guidance on the companies' approach to automation. According to Vo et al. (2005), electronic trading is only truly beneficial if it also encompasses STP. In asking this question, we try to determine the extent of automation and thereby the ease with which companies can implement STP. If for example most of the above processes are already automated, then it would not take much effort for the companies to implement full STP with electronic trading platforms as most or some of the processes are already automated.

Automation provides treasury departments of companies with an opportunity to improve the effectiveness of their internal controls as well as the implementation of best practices. Highly manual and labour intensive control procedures that are sources of errors, omissions or fraud risks can be eliminated by automation.

55% of respondents have automation with regards to deal capture, 53% with operations and confirmations, 43% with general ledger and accounting postings while 38% of respondents have automation with regards to FX dealing.

Market data capture and valuations is automated by 43% of respondents, 47% with reporting and limit management. 45% with exposure calculation and 36% with analytics.

The more automation the company has embedded within its FX trading process, the more likely the company is to use electronic platforms for trading FX. From a multinational point of view, 57% have automated deal capture, 54% have automation of operations and confirmations, 49% for general ledger and accounting postings with 40% automation for dealing. Market data and valuations is automated with 49% of the respondents, 24 5 have automated reporting and limit management, 46% have automated exposure calculation and 40% have automated analytics.

SA based companies' automation is at 50% for deal capture, 58% operations and confirmations, 25% for general ledger and accounting postings, 33% for dealing, 33% for market data capture and valuations, 25% for reporting and limit management, 50% for exposure capture and 25% for analytics.

SOE responses with regards to automation was 50% deal capture, 33% operations and confirmations, 50% for general ledger and accounting postings, 33% for dealing, 33% for

market data capture and valuations, 50% for reporting and limit management, 33% for exposure capture and 33% for analytics.

Question: If non-electronic, reasons for not using electronic platforms?

#	Answer Options	Yes	No	N/A-using electronic platforms	Total
1	Cost of electronic trading is too high	11%	26%	63%	100%
2	Lack of personal relationships with banks because of trading electronic	27%	10%	63%	100%
3	Electronic has no/little impact on operational efficiency	24%	13%	63%	100%
4	Electronic trading does not encompass confirmation and matching	10%	27%	63%	100%
5	Electronic trading has a negative impact on FX market in South Africa	4%	33%	63%	100%
6	Cost (Time, energy, resources) of electronic trading outweighs the benefit of electronic	30%	7%	63%	100%
7	Not all desired FX hedging products available electronically	28%	9%	63%	100%

Question: Reasons for using multi bank trading platforms (e.g FXall, Burrenex, FX connect, 360T or Hotspot FXi)?

#	Answer Options	Yes	No	N/A - Not using electronic platforms	Total
1	Word of mouth (corporate to corporate)	15%	47%	37%	100%
2	Word of mouth (bank to corporate)	54%	8%	37%	100%
3	Alignment with offshore headquarters/subsidiary	45%	17%	37%	100%
4	Increasing Straight Through Processing (STP) possibilities	51%	11%	37%	100%

37% of the respondents do not use electronic platforms. Of those, 11% believe the cost of electronic trading is too high, 27% cite the lack of personal relationship with the banks, 24% believe that electronic has little or no impact on efficiency, 10% have not adapted electronic due to it not encompassing confirmation and matching, 4% due to the belief that it has a negative impact on FX market in SA, 30% believe the cost of electronic trading outweighs the benefits and 28% do not have access to desired products on electronic platforms. Not all platforms offer options and this may likely be what the 28% that want additional products on the platforms are looking for.

The main reasons for the respondents using multibank trading platforms is due to word of mouth from bank to corporate (54%), 51% wanted to increase STP possibilities and 45% was to align with offshore headquarters/subsidiary. It is interesting to see that banks are actually actively promoting the use of electronic platforms as this is touted as the main reason for using electronic platforms.

It is good to note that the 37% of respondents that do not use the platforms is also inclusive of 17% of the respondents who do not undertake any FX hedging activities.

Question: Do you think Multi–bank Trading Platforms (MBTPs) have the following impact in South Africa?

#	Answer Options	Strongly Agree	Agree	Strongly Disagree	Disagree	N/A - Not using electronic platforms	Total
1	Increase volatility of currency	2%	2%	33%	26%	37%	100%
2	Negatively affects liquidity	0%	2%	45%	16%	37%	100%
3	Bad for the FX market structure (traditional process of dealing fx) in South Africa	2%	4%	41%	16%	37%	100%

Of the respondents that use electronic platforms (63%), a total of 59% strongly disagree and disagree that MBTPs increase volatility, a total of 61% strongly disagree and disagree that

MBTPs negatively affects liquidity whilst a total of 57% strongly disagree and disagree that MBTPs are bad for the FX market structure in South Africa.

Question: Is Straight Through Processing (STP) achieved with any of the electronic platforms (single bank, multi bank, Reuters or Bloomberg) being used?

#	Answer Options	%
1	Yes	36%
2	No	28%
3	N/A - Not using electronic platforms	37%
	Total	100%

Question: Are electronic platforms (single bank, multi bank, Reuters or Bloomberg) effective and efficient (beneficial) irrespective of Straight Through Processing (STP)?

#	Answer Options	%
1	Yes	59%
2	No	4%
3	N/A - Not using electronic platforms	37%
	Total	100%

Question: Advantages realised by using electronic platforms (single bank, multi bank, Reuters or Bloomberg)?

#	Answer Options	Yes	No	N/A - Not using electronic platforms	Total
1	Greater Price Transparency	56%	6%	37%	100%
2	Better audit trail in terms of checking if deal executed at best possible rate	38%	24%	37%	100%
3	More efficiency (less time used to conclude FX deal).	59%	3%	37%	100%

4	Reductions in process risk (STP reducing operational risk)	46%	16%	37%	100%
5	Adaptability	38%	24%	37%	100%
6	Cost reductions	45%	17%	37%	100%
7	Other	33%	29%	37%	100%

36% out of 63% of users of electronic platforms have advised that STP is achieved with the electronic platforms being used. 28% of out 63% have advised that no STP is achieved by using electronic platforms. The low STP rate, in this researcher's opinion, is likely due to the complexity and cost involved in implementing STP.

59% out of 63% of respondents using electronic platforms have advised that electronic platforms are beneficial irrespective of whether STP has been implemented. The contradicts some of the literature covered in the literature review section of the paper advising that electronic trading is only beneficial when STP is also implemented. This would seem to make sense as users of MBTPs will still benefit from better pricing, more efficiency (less personnel required to conclude deals), better audit trail of concluded deals and cost reductions.

56% out of 63% of respondents advised that electronic platforms offer greater price transparency. 38% have advised that electronic platforms offer better audit trail of FX deals concluded. The first response is rather surprising as greater price transparency is likely to only be achieved by using MBTP as a number of liquidity providers can simultaneous submit prices and the customer is then able to choose the best rate. With SBTPs, only one price is quoted and as such one would not be able to say that they have greater price transparency. It is possible for a customer on a SBTP to be quoted a rate higher than the prevailing market rate as there are no competing quotes and the customer would in a lot of cases trade on the only rate being quoted on the SBTP.

With regards to efficiency, 59% have advised that electronic platforms are more efficient which is to be expected. With MBTPs, a single person can have access to many liquidity providers at the same time. If one compares that to telephone trading, where more than one person is required to telephone the banks simultaneously to obtain the best rate at that point in time, MBTPs are more effective. SBTPs can also be deemed as more efficient that telephone trading

as the customer would not have to be wait for the telephone to be picked up by the bank in order to conclude a deal.

Reductions in process risk was identified as a benefit of electronic platforms by 46% out of 63% of the respondents while benefits for adaptability and cost reductions was 38% and 45% respectively. Other than the above-mentioned benefits, 33% of the respondents advised that they enjoy other benefits from using the platforms.

Question: Are your banking partners (FX dealers) willing to trade FX with your organisation via Multi bank trading platforms (e.g FXall, FX connect, 360T, Hotspot FXi, etc.)?

#	Answer Options	%
1	Yes - All banking partners	11%
2	Yes - Most banking partners	17%
3	Yes - Some partners	14%
4	No - No partners at all	23%
5	Not aware of bank view	34%
	Total	100%

34% of respondents are not aware of their respective bank's view with regards to the banks' willingness to quote the customer FX via MBTPs, a surprisingly high percentage of respondents. 11% of the respondents have advised all their banking partners are active on MBTPs while 17% of respondents have advised that most of their banking partners are willing to provide pricing on MBTPs. Of all the respondents, 23% have advised that none of their banking partners are willing to price them on MBTPs while 14% have advised that some of their banking partners are willing to price them on MBTPs.

4.2 Bank Survey Results

Question: Does the bank have a bilateral (Single Bank Trading Platform – SBTP) customer FX dealing platform for corporate customers?

#	Answer	%
1	Yes	90%
2	No	10%
	Total	100%

Question: What is the percentage of Corporate Customers using the Bank's bilateral customer FX trading platform?

#	Question	0% No SBTP	1% - 34%	35%-67%	68% - 100%	Total
1	SA Corporates	10%	30%	40%	20%	100%
2	Multinationals	10%	50%	20%	20%	100%
3	State Owned Entities (SOEs)	10%	70%	10%	10%	100%
4	SMEs	10%	0%	60%	30%	100%

90% of the banks who responded to the survey have a SBTP which the banks' customers can use to buy and sell FX with the respective bank. 10% of the banks do not have their own SBTP. There is a mixed use of the SBTP by different types of companies (SA Corporates, Multinationals, SOEs and SMEs). It is interesting to note the high percentage of SBTP usage by SMEs. SA Corporates and Multinationals had a high usage percentage but less than the SME usage percentage.

Question: Which FX products (derivatives) are available on the platform (SBTP)?

#	Question	N/A – No SBTP	Yes	No	Total
1	FX Forwards	10%	90%	0%	100%
2	Non-deliverable forwards	10%	10%	80%	100%
3	FX swaps	10%	80%	10%	100%
4	FX options (vanilla, collars, straddles, etc.)	10%	20%	70%	100%

5	Other	10%	60%	20%	100%

Question: Which are the popular FX derivatives traded on platform (SBTP)?

#	Question	N/A – No SBTP	Yes	No	Total
1	FX Forwards	10%	90%	0%	100%
2	Non-deliverable forwards	10%	0%	90%	100%
3	FX swaps	10%	80%	10%	100%
4	FX options (vanilla, collars, straddles, etc.)	10%	10%	80%	100%
5	Other	10%	60%	30%	100%

Question: Do customers want to trade more derivate products on the SBTP?

#	Answer	%
1	Yes	60%
2	No	40%
	Total	100%

Numerous FX derivatives are available on SBTPs with FX Forwards at 90% and FX Swaps at 80% being the most common derivatives on the platforms. Non-deliverable forwards and FX options are not available on SBTPs at a negative response rate of 80% and 70% respectively. 60% have advised that additional derivatives other than FX forwards, Non-deliverable forwards, FX swaps and FX options are traded on the SBTPs. The banks have advised that FX forwards are the most popular derivative instruments traded on SBTPs (90%) followed by FX swaps at 80%. The least popular derivative to be traded on SBTPs is options with only a 10% popularity rate. Interesting to note that besides FX Forwards, Non- Deliverable Forwards, FX Swaps and FX options, 60% of the respondents have advised that there are other more popular derivatives that are traded on SBTPs. A large portion of other derivative products is likely to be spot transactions. A significant portion of the of ‘other’ additional derivatives available on SBTPs and ‘other’ popular derivative instruments on SBTPs, both at a positive response rate of 60%, is likely to be spot FX transactions.

60% of the banks have responded that customers want to trade more derivative instruments on SBTPs that are not available as yet. This would seem to suggest that electronic trading is popular as Banks' corporate customers want to electronically trade other FX derivative products on the SBTPs that are not available as yet.

Question: Are electronic trading solutions being pushed to customers or being pulled by customers?

#	Answer	%
1	Pushed to customers	80%
2	Pulled from customers	20%
	Total	100%

Question: Is infrastructure challenges a problem with regards to Electronic Trading Platforms?

#	Answer	%
1	Yes	20%
2	No	80%
	Total	100%

Question: Does the bank offer SBTP (Single Bank Trading Platform) customer users' integration to organizations' ERP system or Treasury Management system?

#	Answer Options	%
1	Yes	50%
2	No	40%
3	N/A - Bank does not have a SBTP	10%
	Total	100%

80% of the respondents have advised that electronic trading solutions are being pushed to customers while 20% have advised that electronic trading solutions are being pulled from customers. This indicates that in 80% of the cases, it is the banks that are coming up with

solutions for customers while in only 20% of the cases the 0% customers are demanding/requesting the solutions from the banks.

The majority of the bank respondents (80%) have advised that they do not have any infrastructure challenges with regards to electronic trading platforms. 20% of respondents do have challenges, the challenges advised are due to problems with the internet service provider, bandwidth, client infrastructure problems, pricing challenges, investments in new technological vendors and integration into existing bank systems.

50% of the banks offer an interface from their respective SBTPs to the various customers' ERP systems. 40% of the respondents do not offer this service while 10% of the respondents do not have SBTPs. Some customers, from the 40% of the banks that do not offer an integration service, are unlikely to implement STP due to cost considerations as well as not having the support of the bank offering the SBTP. It is important for the bank that owns SBTP to be involved in the ERP integration process as the customer is unlikely to integrate the process if there is not bank support.

Question: What is the popularity of the below FX trading methods?

#	Question	1% - 34%	35% - 67%	68% -100%
1	Telephone	50%	40%	10%
2	Electronic	30%	70%	0%
3	Other	100%	0%	0%

From the banks' response, telephone trading is still a very popular means of trading FX. 50% of the respondents have advised that 1% - 34% of their customers use telephone trading, 40% of respondents advise that 35% - 67% of their customers trade telephonically, while 10% of the respondents have advised that 68% - 100% of their customers are still trading telephonically. 30% of the respondents have advised that 1% - 34% of their customers use electronic trading while 70% of the respondents have advised that 35% - 67% of their customers use electronic trading methods. 100% of the respondents have advised that 1% - 34% of customers use other FX trading methods. An example of other trading methods is the automatic conversion of the FX by the bank on behalf of the customer, i.e. if a local company

is receiving say USD into their ZAR account, the USD amount would in this instance be automatically converted to ZAR with the customer being notified after the fact.

Question: How important is automation of the FX dealing process (Trade, confirmation, posting deal, settlement, etc.) to customers?

#	Answer	%
1	Important	80%
2	Not important	10%
3	Indifferent	10%
	Total	100%

Question: From a banks perspective; are electronic platforms (single bank, multi bank, Reuters or Bloomberg) effective and efficient for customers irrespective of Straight Through Processing (STP) for customers?

#	Answer	%
1	Yes	100%
2	No	0%
	Total	100%

80% of the bank respondents have advised that automation of the FX dealing process (Trading, confirmation, recording of the FX deal as well as settlement) are important for customers, 10% have advised that the abovementioned automation process is not important and 10% have advised that their customers are indifferent about the automation of the process.

Question: What is the customer flow trend on own Single Bank Trading Platform (SBTP) over the past 5 years?

#	Answer Options	N/A - Bank does not have a SBTP	Yes	No	Total
1	Increase in customer flow via platform	10%	80%	10%	100%
2	Decrease in customer flow via platform	10%	10%	80%	100%

3	Steady flow	10%	10%	80%	100%

80% of respondents had advised an increase in the customer FX trading flow on their respective SBTPs while only 10% have advised a decrease in the customer FX flow on SBTPs.

Question: What are the reasons for uptake of single bank trading platform (SBTP) by banks' customers?

#	Answer Options	N/A - Bank does not have a SBTP	Yes	No	Total
1	Word of mouth (corporate to corporate)	10%	30%	60%	100%
2	Word of mouth (bank to corporate customers)	10%	60%	30%	100%
3	Pressure from offshore headquarters	10%	30%	60%	100%
4	Increasing Straight Through Processing (STP) possibilities	10%	80%	10%	100%
5	Reduction of manual intervention	10%	90%	0%	100%

The biggest reason for the uptake of trading via SBTPs is the reduction of manual intervention at 90%, followed by the increasing of STP possibilities at 80% with word of mouth from the bank to customers at 60%. 30% of the reasons for the uptake of trading on SBTPs is due to word of mouth from corporate to corporate (as opposed from bank to corporate at 60%) and pressure from offshore headquarters for multinational companies.

Question: Does the bank quote prices on Multi Bank Trading Platforms (MBTPs- e.g. 360T)?

#	Answer Options	%
1	Yes	70%
2	No	30%
	Total	100%

Question: Does the bank offer corporate customers access to Multi bank dealer platforms (e.g. 360T, FXall, etc)?

#	Answer Options	Yes	No	Total
1	As a standard customer banking solution	30%	70%	100%
2	On customer request	60%	40%	100%
3	Do not offer this option for customers	30%	70%	100%

A majority of banks (70%) provide quotes on MBTPs while 30% do not provide pricing on the platforms. 70% of the bank respondents do not offer access to MBTPs as a standard customer banking solution while 60% offer access to MBTPs only on the request from customers. This would make sense as when customers move onto MBTPs, the banks are unlikely to make the same margin on the said customers FX trades due to the increased competition from other price makers on MBTPs. 30% of the banks have advised they do not offer customers any option with regards to access to trading FX via MBTPs.

Question: What are the reasons provided by customers for requesting to trade on Multi Bank Trading Platforms (MBTPs) over the last 5 years?

#	Answer Options	Yes	No	Total
1	Greater price transparency	70%	30%	100%
2	Increased audit trail of FX deals concluded	70%	30%	100%
3	Increase in efficiency (less time and resources employed to conclude a FX deal)	80%	20%	100%
4	Automation to achieve STP	60%	40%	100%

The biggest reason forwarded by companies requesting their liquidity providers to quote FX rates on MBTPs is an increase in the efficiency of concluding FX deals at 80% followed by greater price transparency and an increased audit trail of FX deals concluded both at 70%. Interestingly, the automation objective received the lowest positive response rate at only 60%.

Question: What is the customer flow trend on Multi Bank Trading Platforms (MBTPs) over the past 5 years?

#	Answer Options	N/A – MBTP not supported	Yes	No	Total
1	Increase in customer flow via platform	30%	70%	0%	100%
2	Decrease in customer flow via platform	30%	0%	70%	100%
3	Steady flow	30%	30%	40%	100%

30% of respondents do not quote FX rates on MBTPs. 70% have advised an increase in the customer flow of FX deals concluded on MBTPs. This agrees with a negative response rate of 70% for a decrease of customer flow on MBTPs.

Question: What are the reasons for customer requests to trade on multi bank trading platforms (MBTPs)?

#	Answer Options	Yes	No	No View	Total
1	Word of mouth (corporate to corporate)	70%	20%	10%	100%
2	Word of mouth (bank to corporate customers)	70%	20%	10%	100%
3	Pressure from offshore headquarters	70%	30%	0%	100%
4	Increasing Straight Through Processing (STP) possibilities	100%	0%	0%	100%
5	Reduction of manual intervention	90%	10%	0%	100%
6	Greater price transparency	70%	30%	0%	100%
7	Increased audit trail of FX deals concluded	90%	0%	10%	100%
8	Increase in efficiency (less time and resources employed to conclude a FX deal)	90%	10%	0.00%	100%

The biggest reason for customers to request for their liquidity providers to quote FX on MBTPs is to increase STP possibilities at 100%. It is closely followed by an increased audit trail of FX deals concluded, an increase in efficiency of concluding FX deals and the reduction of manual

intervention; all three having a positive response rate of 90%. The next set of reasons, with a positive response rate of 70%, is due to word of mouth from corporate to corporate, word of mouth from bank to corporate, pressure from offshore headquarters as well as greater price transparency.

Question: What is the banks view of Multi Bank Trading Platforms (MBTPs - e.g. 360T, FXall, etc.?

#	Answer Options	%
1	Good	30%
2	Bad	20%
3	Indifferent	40%
4	No View	10%
	Total	100%

40% of bank respondents are indifferent as to whether MBTPs are good or bad. 30% believe they are good, 20% believe they are bad with 10% having no view.

Question: Does the bank believe any on the following to be true with regards to Single Bank Trading Platforms (SBTPs)?

#	Answer Options	Yes	No	Makes no difference	Total
1	SBTPs negatively affect the structure of the FX market in South Africa	0%	90%	10%	100%
2	SBTPs increases volatility of local FX market	0%	90%	10%	100%
3	SBTPs negatively impacts the liquidity of the market	0%	90%	10%	100%

90% of the banks believe that SBTPs do not negatively affect the structure of the FX market, SBTPs do not increase volatility of the local FX market and SBTPs does not negatively impact the liquidity of the market. 10% of the respondents believes that it makes no difference with regards to the above-mentioned statements.

Question: Does the bank believe any on the following to be true with regards to Multi Bank FX Trading platforms (MBTPs)?

#	Answer Options	No View	Yes	No	Makes no difference	Total
1	MBTPs negatively affect the structure of the FX market in South Africa	10%	20%	60%	10%	100%
2	MBTPs platforms increases volatility of local FX market	0%	10%	80%	10%	100%
3	MBTPs negatively impacts the liquidity of the market	0%	20%	70%	10%	100%

80% of the bank respondents do not believe that MBTPs increase the volatility of the local FX market, with 10% believing MBTPs increase the volatility and 10% believing MBTPs do not make a difference to the volatility of the local FX market. 70% believe that MBTPs do not negatively impact the liquidity of the market, 20% believe that MBTPs negatively affect the liquidity of the market and 10% of the respondents believing it makes no difference. MBTPs are believed to negatively affect the structure of the FX market by 20% of the respondents, 60% do not believe that MBTPs negatively affects the structure of the market while 10% of the respondents do not have a view and believes that it makes no difference.

Question: From the banks view; what are the customer advantages realised by using electronic platforms (single bank, multi bank, Reuters or Bloomberg)?

#	Answer Options	No View	Yes	No	Makes no difference	Total
1	Greater Price Transparency	0%	80%	0%	20%	100%
2	Better audit trail in terms of checking if deal executed at best possible rate	0%	90%	10%	0%	100%
3	More efficiency (less time used to conclude FX deal).	0%	90%	10%	0%	100%
4	Reductions in process risk (STP reducing operational risk)	0%	90%	10%	0%	100%
5	Adaptability	0%	80%	20%	0%	100%

6	Cost reductions	0%	90%	10%	0%	100%
7	Other	40%	30%	20%	10%	100%

The biggest advantages realized by customers using MBTPs from the banks view all at 90% are better audit trails of deal concluded, better efficiency of FX deals concluded, reductions in process risk and cost reductions. 80% of the respondents believe that the reasons are due to greater price transparency and adaptability. To a small extent, 30% positive response rate, was other reasons.

Chapter 5: Conclusion

Electronic trading of FX via SBTPs and MBTPs has been a possibility for several years in developed economies and markets. This paper investigated the uptake of electronic trading by companies operating in South Africa. This paper is important as not only is it the first paper to be done on this topic in the South African environment but it also researched some of the perceptions with regards to MBTPs. This chapter will provide a summary of the findings, conclusions of the paper as well as suggesting possibilities for additional research.

5.1 Summary of findings

A significant number of respondents have more than 1 banking partner that they conclude FX deals with, making it highly possible that companies want to have the ability to shop around for a better FX rate. If company has only 1 banking partner to conclude deals with, they are likely to be quoted and transact at non-market rates.

By far the dominant primary hedging strategy being excised is one of a rolling hedge followed by an ad hoc or situational hedging strategy. The nature of the business as well as the profile of the FX exposures is likely to be a big contributing factor with regards to the different approaches to a hedging strategy.

The top five primary hedging objectives as advised by company respondents in order of popularity are the reduction of income statement volatility, minimisation of FX gains and losses, maintenance of a marketplace competitive advantage, protection of cash flows in group reporting currency and the protection of shareholder value.

A significant majority use derivative instruments in their risk management approach with FX forwards and FX swaps being the most popular derivative instruments being used. This is not surprising due to the ease of use of the instruments, the lack of accounting problems they provide, their cost effectiveness in comparison to say options and the fact that they actually do an effective job in protecting against adverse currency movements. Options, due to their complexity and cost, are used by a minority of respondents.

Telephone trading, followed by SBTPs and MBTPs, is still the most popular means of trading FX in SA. This maybe an indication that companies prefer the personal relationships with the banks that will reduce when trading moves onto electronic platforms. The banks have responded that customers want to trade more FX derivatives electronically on SBTPs confirming the increasing use of electronic trading on SBTPs. The fact that good majority of banks have advised an increase in the FX flow on both SBTPs and MBTPs would seem to also support the increasing trend of trading FX electronically.

Deal capture has the highest automation rate of the FX risk management process within the TMS followed closely by operations and confirmation process. The least automated process is analytics. The full process of deal capture, operations and confirmations, general ledger and accounting postings, dealing, market data capture and valuations, reporting and limit management, exposure capture and analytics is on average automated below the 50% mark.

As covered in the literature review section of the paper, some literature is of the view that MBTPs and SBTPs are said to only be beneficial where STP can be achieved. It thus becomes important to understand if companies consider the importance of automation with the objective of achieving STP as a deciding factor on whether to use electronic FX trading platforms. Per the companies and bank responses, electronic Platforms (SBTPs and MBTPs) are effective and efficient for corporate customers irrespective of Straight Through Processing (STP) possibilities.

A significant number of banks have responded that they are pushing electronic trading solutions to customers with only a minority stating that customers are pulling electronic trading solutions from them. Hutchinson (2016), Standard Bank's head of e-FX, previously stated that customers are pulling solutions from the bank whereas previously the bank were pushing solutions to customers.

This talks to some on the literature on this topic covered in the literature review section that the BIS year Triennial Survey results were indicating that the structure of the FX markets is slowly moving from anonymous trading towards a more relationship-based form. The traditional structure of the FX market (over-the-counter) has been generally strong, although in a sophisticated electronic form as opposed to the previous simpler form of telephone trading. Within the electronic FX trading market, there seems to be a sizable move from indirect

electronic execution via multilateral trading platforms to bilateral trading between the dealer and a counterparty.

From the companies' perspective; reasons for not using electronic trading platforms by non-users are in descending order: cost outweighing the benefits, not all desired products available, lack of personal relationships as well as electronic trading having little impact on operational efficiency. One would hope that after the respondents completed the survey, they will look a bit deeper into their reasons for not using electronic platforms as most of the reasons provided are not true based on the literature covered on in an earlier section of this paper.

The reasons for those using MBTPs are mainly due to banks advising their clients to use MBTPs, alignment with offshore headquarters or subsidiary as well as increasing STP possibilities. Some banks do not have SBTPs and appreciate that their clients want to move onto electronic trading and thus direct them to the use of MBTPs where the said banks without SBTPs are price makers. This is beneficial to both banks and end customers as it eliminates the need for the banks to invest vast sums of money in developing their own SBTPs while at the same time giving the customer an option to trade electronically so that the customer can enjoy some of the benefits of electronic trading like price transparency, better audit trail, STP and cost reductions.

Feedback received from the banks as the reasons (in descending order) for the uptake of trading via SBTPs is the reduction of manual intervention, followed by the increasing of STP possibilities, word of mouth from the bank to customers, word of mouth from corporate to corporate and pressure from offshore headquarters for multinational companies. While from a MBTPs, the reasons (also in descending order) for the uptake of trading are to increase STP possibilities, an increase audit trail of FX deals concluded, an increase in efficiency of concluding FX deals, the reduction of manual intervention, word of mouth from corporate to corporate, word of mouth from bank to corporate, pressure from offshore headquarters and greater price transparency.

A significant number of company respondents who use electronic trading platforms have disagreed with some of the touted disadvantages of MBTPs. Only a minute number of respondents agreed that MBTPs increase volatility of the currency, negatively affects liquidity and that they are bad for the FX market structure in South Africa. More than half of the

respondents using ETPs have achieved STP by using the electronic platforms. A significant majority of respondents who use ETPs feel that ETPs are beneficial irrespective of whether STP is achieved or not, in contrast with some of the literature that states that electronic trading is only beneficial when STP is also implemented.

The advantages, in descending order, enjoyed by corporate respondents using electronic platforms are more efficiency, greater price transparency, reductions in process risk, cost reductions, better audit trail of rates traded at, adaptability with other benefits other than the above-mentioned benefits also being identified by respondents.

A good majority of bank respondents do not believe that MBTPs increase the volatility of the local FX market, nor that MBTPs negatively impact the liquidity of the market and no negative effect on the structure of the FX market.

Banks have advised that the advantages realized by customers using MBTPs are (in descending order) a better audit trails of deal concluded, better efficiency of FX deals concluded, reductions in process risk and cost reductions, greater price transparency and adaptability.

5.2 Conclusion

As per section 1.4 of this paper, the research was being conducted was to impart resolutions on four questions.

a) Would MBTPs be a good addition to corporate treasury departments of South African based companies?

   Based on the research done, MBTPs would indeed be a welcome addition to treasury departments of SA based companies. Small banks in South Africa are likely to be price makers on MBTPs as the cost to develop their own SBTPs can be excessive and may prove difficult to recoup the investment in SBTPs.

b) Should companies only use MTBPs when STP has been achieved or can MBTPs add value for corporate treasuries even if STP is not achieved?

Though using MBTPs with STP possibilities is the desired state, but MBTPs can still be used without STP. Electronic trading platform providers also now offer standard interfaces to front and back offices which allow real end-to-end STP to be achieved as opposed to earlier years when the platforms only offered access to trading.

Even without implementation of STP, companies can still benefit from using MBTPs due to increased price transparency, better audit trail in terms of checking that FX deals are being concluded at the best possible rate, cost reductions and more efficiency being gained.

All bank respondents have advised that electronic platforms are effective and efficient irrespective of whether STP has been implemented by customers. This statement contradicts the findings of some of the literature reviewed which states that online market places only become truly valuable if there are possibilities of integration into the corporates hedging process thereby enabling Straight Through Processing (STP).

c) Are there advantages of concluding FX deals via MBTPs for South African based companies?

MBTPs provide users with several benefits. Increased price transparency, better audit trail in terms of checking that FX deals are being concluded at the best possible rate, cost reductions, more efficiency and reductions of process risk are some of the more visible advantages of concluding FX trades using MBTPs as advised by corporates.

Banks have advised that there are advantages to be realized by customers using MBTPs. These advantages are a better audit trail of deal concluded, better efficiency of FX deals concluded, reductions in process risk and cost, greater price transparency and adaptability.

d) Are the touted disadvantages of MBTP on the South African FX market valid?

The disadvantages of MBTPs were touted to be that they increase volatility, that they negatively affect liquidity and that they are bad for the FX market structure seem to be invalid with a majority of corporates and banks disagreeing with the mentioned disadvantages.

5.3 Further research suggestions

Electronic trading via the use of MBTPs has a high usage trend in the developed markets and economies and a low usage in emerging markets and economies. As this was the first paper in the SA environment with regards to the use of electronic platforms for trading FX, more research can be done by using a bigger population sample as well as using information from electronic trading providers to determine how much FX flow is being channeled through electronic platforms.

It is likely that many other areas for further research may still present themselves with regards to this topic as time goes on and as other works are done.

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ANNEXURES

Annexure 1 – Corporate survey questions

Question 1: Organisation Type

(Answer Options: Multinational, South African operations only, State Owned Enterprise)

Question 2: What is your organisations' current operating model for managing FX?

(*Answer Options: Yes, No)*

- Centralised or decentralised?

Question 3: How many banking partners does your organisation conduct FX deals with?

(*Answer Options: 1,2,3, more than 3)*

Question 4: What is your organisations' primary hedging strategies?

(Answer Options: rarely, sometimes, mostly, always)

- Static/annual hedging (most hedges placed annually; typically coinciding with the budget FX rate-setting process)
- Rolling Hedge – hedging on a frequency basis (per week, month, quarter, etc.)
- Rolling but layering hedge – hedging an increasing amount of exposure over time to achieve an 'average' rate for item or buckets hedged
- Ad hoc/situational hedging

Question 5: What is your organisations' primary Hedging objectives

(Answer Options: N/A –No FX hedging done, strongly agree, agree, strongly disagree, disagree)

- Reduce income statement volatility
- Protect cash flows in group reporting currency
- Protect consolidated reported earnings in your Group reporting currency
- Minimize FX gains and losses due to re-measurement of FX denominated assets and liabilities in each period
- Protect subsidiaries local currency cash flows
- Protecting shareholder value
- Protect/achieve annual budget FX rates

- Maintain marketplace competitive advantage
- Manage year on year financial performance
- Mitigating sub's net equity/capital balance sheet translation impacts on parent's AFS

Question 6: What is the organisations' Risk Management approaches

(Answer Options: N/A, rarely, sometimes (on average), mostly, always)

- Hedging using derivative instruments
- Natural management through matching costs and revenue in the same currency in same entity
- Natural management via pass-through to suppliers or customers
- No FX risk management undertaken

Question 7: Which FX instruments are used in hedging programs.

(*Answer Options: Yes, No, N/A –No FX hedging done)*

- FX forwards
- FX options (vanilla, collars, straddles, etc.)
- FX swaps

Question 8: FX instruments traded on electronic platforms.

(*Answer Options: N/A - not using electronic platforms, Yes, No)*

- FX Forwards
- Non-deliverable forwards
- FX swaps

FX options (vanilla, collars, straddles, etc.)

Question 9: Are there more products that you would like to trade electronically?

(*Answer Options: N/A - not using electronic platforms, Yes, No)*

Question 10: How many banks are your liquidity providers on Multi bank trading platforms (e.g FXall, FX connect, 360T, Hotspot FXi, etc.)?

(*Answer Options: 1 – 2 providers, 3 – 5 providers, more than 5 providers)*

Question 11: How many banks are your liquidity providers on Multi bank trading platforms platforms (e.g FXall, Burrenex, FX connect, 360T, Hotspot FXi, etc.)?
(*Answer Options: 1,2,3 more than 3)*

Question 12: How long is the hedging Period?
(*Answer Options: Yes, No, N/A – no hedging is done)*

- Less than I month
- 1 – 6 months
- 6 – 12 months
- More than 12 months

Question 13: What is the organisations' FX dealing method
(*Answer Options: Yes, No)*

- Telephonic
- Electronic - single bank (e.g. Citi Pulse (Citibank), Pace/ Barx (ABSA), Straight2Bank (Standard Chartered), etc)
- Electronic – Multi Bank (e.g FXall, Burrenex, FX connect, 360T or Hotspot FXi)
- No FX dealing – automatic conversion by bank
- Reuters and/or Bloomberg

Question 14: To what extent is the FX risk management process automated within the Treasury Management System and or financial risk system
(*Answer Options: Yes, No)*

- Deal capture
- Operations and confirmations
- GL and accounting postings
- Dealing
- Market data capture and valuations
- Reporting and limit management
- Exposure capture
- Analytics

Question 15: If non-electronic, reasons for **not** using electronic platforms
(*Answer Options: n/a – using electronic platforms, Yes, No)*

- Cost of electronic trading is too high
- Lack of personal relationships with banks because of trading electronic
- Electronic has no/little impact on operational efficiency
- Electronic trading does not encompass confirmation and matching
- Electronic trading has a negative impact on FX market in South Africa
- Cost (Time, energy, resources) of electronic trading outweighs the benefit of electronic
- Not all desired FX hedging products available electronically

Question 16: Reasons for using multi bank trading platforms (e.g FXall, Burrenex, FX connect, 360T or Hotspot FXi)
(*Answer Options: n/a – not using electronic platforms, Yes, No)*

- Word of mouth (corporate to corporate)
- Word of mouth (bank to corporate)
- Alignment from offshore headquarters
- Increasing Straight Through Processing (STP) possibilities
- Reduction of manual intervention
- Greater price transparency
- Increased audit trail of FX deals concluded

Question 17: Do you think Multi–bank Trading Platforms (MBTP) have the following impact in South Africa:
(*Answer Options: Yes, No, Sometimes)*

- Increase the volatility of the currency
- Negatively affects liquidity
- Is bad for the FX market structure (traditional process of dealing fx) in South Africa

Question 18: Is Straight Through Processing (STP) achieved with any of the electronic platforms (single bank, multi bank, Reuters or Bloomberg) being used?
(*Answer Options: N/A – do not use electronic platforms, Yes, No)*

Question 19: Are electronic platforms (single bank, multi bank, Reuters or Bloomberg) effective and efficient irrespective of Straight Through Processing (STP)
(*Answer Options: N/A – do not use electronic platforms, Yes, No)*

Question 20: Advantages realised by using electronic platforms (single bank, multi bank, Reuters or Bloomberg)

(*Answer Options: N/A – not using electronic platforms, Yes, No)*

- Greater Price Transparency
- Better audit trail in terms of checking if deal executed at best possible rate
- More efficiency (less time used to conclude FX deal).
- Reductions in process risk (STP reducing operational risk)
- Adaptability
- Cost reductions
- Other

Question 21: Are your banking partners (FX dealers) willing to trade FX with your organisation via MTP?

(*Answer Options: (yes – all partners, yes – most partners, yes - some partners, no partners at all, Not aware of bank view)*

Question 1: Does the bank have a bilateral (Single Bank Trading Platform – SBTP) customer FX dealing platform for corporate customers?
(Answer Options: Yes, No)

Question 2: What is the percentage of Corporate Customers using the Bank's bilateral customer FX trading platform? (Answer *Options: 0% - No SBTP, 1% - 34%, 35% - 67%, 68% - 100%)*

- SA Corporates
- Multinationals
- State Owned Entities (SOEs)
- SMEs

Question 3: Which FX products (derivatives) are available on the platform (SBTP)?
(Answer Options: N/A – No SBTP, Yes, No)

- FX Forwards
- Non-deliverable forwards
- FX Swaps
- FX Options (vanilla, collars, straddles, etc.)
- Other

Question 4: Which are the popular FX derivatives traded on platform (SBTP)?
(Answer Options: N/A – No SBTP, Yes, No)

- FX Forwards
- Non-deliverable forwards
- FX Swaps
- FX Options (vanilla, collars, straddles, etc.)
- Other

Question 5: Do customers want to trade more derivate products on the SBTP?
(Answer Options: Yes, No)

Question 6: Are electronic trading solutions being pushed to customers or being pulled by customers?

(Answer Options: Yes, No)

- Pushed to customers
- Pulled from customers

Question 7: Is infrastructure challenges a problem with regards to Electronic Trading Platforms?
(Answer Options: Yes, No)

Question 8: What is the popularity of the below FX trading methods?
(Answer Options: 1% - 34%, 35% - 66%, 67% - 100%)

- Telephone
- Electronic
- Other

Question 9: How important is automation of the FX dealing process (Trade, confirmation, posting deal, settlement, etc.) to customers?
(Answer Options: Important, Not Important, Indifferent)

Question 10: From a banks perspective; are electronic platforms (single bank, multi bank, Reuters or Bloomberg) effective and efficient for customers irrespective of Straight Through Processing (STP) for customers?
(Answer Options: Yes, No)

Question 11: Does the bank offer SBTP (Single Bank Trading Platform) customer users' integration to organisations ERP system or Treasury Management system?
(Answer Options: N/A – Bank does not have a SBTP, Yes, No)

Question 12: What is the customer flow trend on own Single Bank Trading Platform (SBTP) over the past 5 years?
(Answer Options: N/A – Bank does not have a SBTP, Yes, No)

- Increase in customer flow via platform
- Decrease in customer flow via platform
- Steady flow

Question 13: What are the reasons for uptake of single bank trading platform (SBTP) by banks' customers?

(Answer Options: N/A – Bank does not have a SBTP, Yes, No)

- Word of mouth (corporate to corporate)
- Word of mouth (bank to corporate customers)
- Pressure from offshore headquarters
- Increasing Straight Through Processing (STP) possibilities
- Reduction of manual intervention

Question 14: Does the bank quote prices on Multi Bank Trading Platforms (MBTPs- e.g. 360T)?

(Answer Options: Yes, No)

Question 15: What are the reasons provided by customers for requesting to trade on Multi Bank Trading Platforms (MBTPs) over the last 5 years?

(Answer Options: Yes, No)

- Greater price transparency
- Increased audit trail of FX deals concluded
- Increase in efficiency (less time and resources employed to conclude a FX deal)

Question 16: What is the customer flow trend on Multi Bank Trading Platforms (MBTPs) over the past 5 years?

(Answer Options: N/A – MBTPs not supported, Yes, No)

- Increase in customer flow via platform
- Decrease in customer flow via platform
- Steady flow

Question 17: What are the reasons for customer requests to trade on multi bank trading platforms (MBTPs)?

(Answer Options: Yes, No, No View)

- Word of mouth (corporate to corporate)
- Word of mouth (bank to corporate customers)
- Pressure from offshore headquarters

- Increasing Straight Through Processing (STP) possibilities
- Reduction of manual intervention
- Greater price transparency
- Increased audit trail of FX deals concluded
- Increase in efficiency (less time and resources employed to conclude a FX deal)

Question 18: Does the bank offer corporate customers access to Multi bank dealer platforms (e.g. 360T, FXall, etc)?
(Answer Options: Yes, No)

- As a standard customer banking solution
- On customer request
- Do not offer this option for customers

Question 19: What is the banks view of Multi Bank Trading Platforms (MBTPs - e.g. 360T, FXall, etc.?
(Answer Options: Good, Bad, Indifferent, No View)

Question 20: Does the bank believe any on the following to be true with regards to Single Bank Trading Platforms (SBTPs)?
(Answer Options: Yes, No, Makes no difference)

- SBTPs negatively affect the structure of the FX market in South Africa
- SBTPs increases volatility of local FX market
- SBTPs negatively impacts the liquidity of the market

Question 21: Does the bank believe any on the following to be true with regards to Multi Bank FX Trading platforms (MBTPs)?
(Answer Options: No View, Yes, No, Makes no difference)

- MBTPs negatively affect the structure of the FX market in South Africa
- MBTPs platforms increases volatility of local FX market
- MBTPs negatively impacts the liquidity of the market

Question 22: From the banks view; what are the customer advantages realised by using electronic platforms (single bank, multi bank, Reuters or Bloomberg)?

(Answer Options: No View, Yes, No, Makes no difference)

- Greater Price Transparency
- Better audit trail in terms of checking if deal executed at best possible rate
- More efficiency (less time used to conclude FX deal)
- Reductions in process risk (STP reducing operational risk)
- Adaptability
- Cost reductions
- Greater Price Transparency
- Better audit trail in terms of checking if deal executed at best possible rate
- More efficiency (less time used to conclude FX deal)
- Reductions in process risk (STP reducing operational risk)
- Adaptability
- Cost reductions
- Other

Annexure 3 – Definitions

OTC market:

A decentalised market with no central physical location. In this market, market participants use various communication methods like email and telephone to trade with each other. In this market, dealers act as market makers and quote prices at which they will buy and/or sell a currency. A trade can be concluded in this market without other market players being aware of the transaction. The OTC market is generally regarded as being less transparent than exchanges and is subject to less rigorous regulations.

Exchange:

An exchange on the other hand is a market place in which securities, derivatives, commodities and other financial instruments are traded. The exchange's core function is to ensure the efficient distribution of price information as well as a fair and orderly trading. Exchanges provide market participants a platform to sell securities to the investing public.

Base currency:

The base currency is the currency against which exchange rates are generally quoted in a given country. E.g. in the currency pair USD/ZAR, USD is the base currency and the ZAR is the quoted currency.

Settlement Risk:

Settlement risk arises because traditionally the transfer of the currency across borders tends to happen during the normal working hours of the home central bank. If one leg of the transaction settles before the other, the party still waiting for settlement faces the risk of counterparty default (Lindley, 2008). Settlement risk is commonly referred to as Herstatt Risk as the first reported case of settlement risk was in 1974 when Germany's Herstatt Bank failed after markets closed in Europe but before their US Dollar funds had been transferred to other banks thereby putting other banks out of pocket.

FX Prime brokerage:

Prime brokerage (PB) is an arrangement entered into between the bank dealer and customer that allows the end customer (e.g. hedge funds) to transact directly in the interbank market through electronic trading or directly.

An example would be if hedge fund BBB pays Citi to be its prime broker, thereby having access to EBS and a trading platform like Reuters. Should BBB buy USD from say Deutche

Bank, Citi will then become the seller of the USD to fund BBB and the purchaser of USD from Deutche Bank.

White Labelling:

This is a practice whereby small banks with no SBTPs offer their customers with FX liquidity by providing SBT platforms of the major banks under the small banks' name.

Internalization of customer trades:

The capability to internalise FX customer trades instead of trading them out in the market. If for example customer A sells USD, the bank will hold onto the USD until customers B, C and D buys the USD; rather than buying the USD in the interbank market. If any of the positions can't be matched; they are then passed onto the interbank dealer desk where the position would then be managed.

Directional Flow FX Trades:

These end customer FX deals are trades which are normally related with consequent movements in the exchange rates and are hence regarded as informed.

Non-Directional Flow FX Trades:

These end customer FX deals are not related with any consequent movements in the exchange rate.

Predatory High-frequency FX trades:

High Frequency Trading (HFT) can be described as a program trading platform that uses powerful computer programs to transact a large number of orders at very fast speeds. Normally the trades with the quickest execution speeds tend to be more profitable than the trades with slower execution speeds.

Retail Aggregators:

Retail aggregation is a process whereby the small FX trades can automatically be combined into the big FX deals and traded out in the liquid interbank market. With Retail aggregation, people with modest wealth could also trade FX, creating an entirely new class of agents. Retail trading has been classified as one of the quickest growing segments of the FX market.

Liquidity aggregators:

Defined as electronic tools which are used to collect streaming prices from diverse sources including but not limited to electronic brokers, FX dealers and MBTPs. The ability to aggregate the quotes into one executable stream means end-customers and dealers have the ability to access the best pricing from many platforms simultaneously.

Foreign Exchange Risk:

A financial risk that exists when a financial transaction is denominated in a currency other than that of the base currency of the company.

The three types of foreign exchange risk are:

- Transaction risk

  This risk is considered as the simplest form of FX exposure and arises due to a company concluding transactions in a currency other than the companies reporting currency.

- Translation risk

  This FX risk arises as a result of a company having assets and/or liabilities denominated in a currency that is different to the company's reporting currency. When consolidation of the Annual Financial Statements (AFS) occurs, the company then has to translate the foreign assets and/or liabilities into its reporting currency.

- Economic risk

  Commonly referred to as operating exposure. This risk arises as a result of the company's present value of future operating cash flows being affected by changes in exchange rates. Applies to companies whose expected future operating cash flows from sales are denominated in a foreign currency and with the source of funds likely being from foreign operations.