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Content

Priyono, Briyan Cadalora Putra, Cisa Cadalora Putri Redenomination: Between Opportunities and Challenges Study of the Implementation of Redenomination in Indonesia	5-27
Wasiu Akintunde Yusuf, Abdurahman Isik, Nafisa Ibrahim Salisu Relative Effects of Exchange Rate and Interest Rate on Nigeria's Economic Growth	28-37
Tolina Fufa, Casey Abington, Tekle Wanorie Remittance Inflows and Economic Growth: The Case of Developing Countries	38-53
David R. Rink Impact of Family Constellation upon the Financial Advisor-Client Dyad: A Conceptualization	54-81



REDENOMINATION: BETWEEN OPPORTUNITIES AND CHALLENGES

Study of the Implementation of Redenomination in Indonesia

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Abstract

The purpose of this article is to describe the opportunities and challenges in redenomination in Indonesia. The application of Redenomination has the potential to strengthen exchange rates and show real economic conditions but also causes hyperinflation if the implementation of the time is not right. From these studies, it is shown that a strong understanding of redenomination policies seems to be the main success factor in the implementation of redenomination in Indonesia. Furthermore, businesses consider the Indonesian economy to be better in terms of prices and exchange rates. At the microeconomic level, businesses consider that redenomination facilitates the recording of simpler financial transactions and encourages more dynamic businesses and increases productivity.

Keywords: Redenomination; Opportunities; Challenges.

INTRODUCTION

Bank Indonesia's plan to conduct IDR redenomination which began in 2010, has attracted a lot of criticism from various parties, both from economists, stock exchange observers, business people, and others. This topic will definitely be controversial, as Woodrow Wilson said: "If you want to make enemies, try to change something ..." it becomes very natural that there is public rejection/concern (Priyono, 2013).

Redenomination means that the nominal value of circulating paper money (and coins) changes - in practice, it decreases. With redenomination, all prices in the economy are reduced by the same value. No market subject is directly affected (disadvantaged or benefited) by the process. The process is usually accompanied by the issuance of new banknotes or stamping of outstanding old banknotes. Redenomination is usually applied after hyperinflation or when the economy is seriously affected by the dollar and the central bank wants to regain seriousness. High price levels cause a lot of discomfort in the economy - there are, for example, problems with expressing the

nominal value of goods and services, with accounting, statistical evidence, dealing with software, bank payment systems and the like. Redenomination can be seen as a step to complete the efforts of the central authority to stabilize price growth in the economy.

We agree with Ioana (2009), that in the theory of redenomination it should not have a direct impact on inflation because it does not change fundamental indicators that directly affect inflation. Only (and small) exceptions can be rounding prices. New prices can be slightly rounded up. In fact, prices are usually described in both (old and new) and redenomination versions so they should not lead to price rounding. But there may be an indirect effect of redenomination of currencies in the form of decreasing inflation expectations (Mosley, 2005). The market subject must be convinced (by redenomination) that the authorities mean that their struggle against inflation is serious and that the decline in the nominal value of the currency is a step in the process of disinflation. The subject must be convinced that inflation is a negative aspect of the old currency that will not reappear with the new currency. In this case, inflation could fall due to differences in the behavior of market participants who expect lower inflation. From this point of view, redenomination can be seen as another tool in a disinflation strategy that indirectly helps in reducing expectations and thus stabilizes the price level. We must mention that there are general costs associated with implementing redenomination as well. The minimum cost is printing banknotes and printing new coins, on advertising campaigns and software changes. Redenomination logistics is complicated because the responsible authorities must provide overall coordination of the processes that affect everyone in the entire economy.

Amoako-Agyeman (2014) defines the redenomination of currencies as the process by which a country's currency is recalibrated due to significant inflation and currency devaluation. He further stated that currency redenomination consists of removing a certain number of zeros from currency and carrying everything in its monetary scale. Nwaoba, (2010) considers redenomination of currencies as an exercise in which the state and their governments try to reaffirm their monetary sovereignty because of money increases or reduces the legitimacy of the government. According to (Mas, 1995), redenomination can also continue to add zeros to currencies as recorded in the immediate post-independence period by South Africa (1961), Sierra Leone (1964), Australia (1966), Bahamas (1966), among others.

Another reason is that "feeling the good effect" of reconstruction in the currency basically assumes that perceptions of the local currency will increase because people always start unconsciously linking current redenomination with revaluation (Lead Capital Limited, 2007). He also mentioned the countries that have redenominated their currencies, like: Brazil (1967, 1970, 1986, 1989, 1990, 1993, 1994), Afghanistan (2002), Germany (1923), Angola (1995, 1999), China (1955), South Korea (1962), Mexico (1993, 1996), Ghana (2007), Israel (1948, 1960, 1980, 1985), and Turkey (2005).



Mosley (2005) lists the names of other countries whose currencies have been redenominated. They include Uruguay (1993), Ukraine (1996), Sudan (1992), Russia (1998), Peru (1985, 1991), Poland (1995), Romania (2005), Argentina (1983, 1985, 1992), Azerbaijan 1992), Belarus (1992, 2000), Bolivia (1987), Chile (1975), Bulgaria (1999), Democratic Republic of the Congo (1993, 1998), (Croatia (1994), Georgia (1995), Latvia (1993) Lithuania (1993), Macedonia (1993), and Nicaragua (1998).

The redenomination discourse has actually been rolled out by Bank Indonesia since six years ago. This issue was motivated because the IDR currency was too large. The same thing was questioned by Ross H McLeod, an economist from Australia, why the IDR was not redenominated, because the nominal value was too large. As is known that currently the IDR currency is classified as the second largest currency fraction in the world after Vietnam. The IDR 100,000 denomination is the second largest after 500,000 Dong issued by the Vietnamese government. Previously Indonesia was third and Vietnam the second, after Zimbabwe, which had issued a Z \$ 10 million fraction, had redenominated its currency. Through redenomination, at least two benefits will be obtained, namely:

- First, to simplify the payment system that exists in the community without further impact on the economy. Through redenomination, Bank Indonesia can save money on printing costs. As is known, so far Bank Indonesia has printed fractions of IDR. 50 to IDR. 500, even the latest IDR. 1,000 denomination is only to fulfill needs, especially traders for refunds, because the prices of goods are generally not made round prices, for example IDR.
- Second, redenomination is expected to make the IDR more practical. Money with a large nominal is considered less efficient and troublesome payment. According to the study, the Indonesian currency is ideally redenominated by eliminating three zeros. So if IDR. 1,000 is deducted, it will be IDR. 1, while IDR. 10,000 becomes IDR. 10. If this happens, the fraction of the penny will run again.
- Finally, what is equally important is that Bank Indonesia must also maintain the money supply. If the money supply is not controlled to exceed 10%, this will trigger an inflator effect. As is known that until the end of 2009 according to Bank Indonesia estimates the growth of the money supply reached 10.7%. But in the previous year (2008) the growth of the money supply reached 26.3%. The growth in the money supply will trigger inflation, for example, in 2008 the high growth in the amount of money in circulation has triggered an inflation rate of up to 6%. Meanwhile, Bank Indonesia ability to reduce the money supply in 2009 was able to suppress the inflation rate to 2.9% (Makmun, 2010).

In addition, with the redenomination there will be an increase in the size of the company's operational costs and banking because it replaces information systems and

technologies that require time to adjust to apply accounting technology to adjust to nominal simplification. Bank Indonesia will also spend a large amount of money to print new redenominated money and public socialization. In addition, another social impact was community distrust of the IDR (Kesumajaya, 2011).

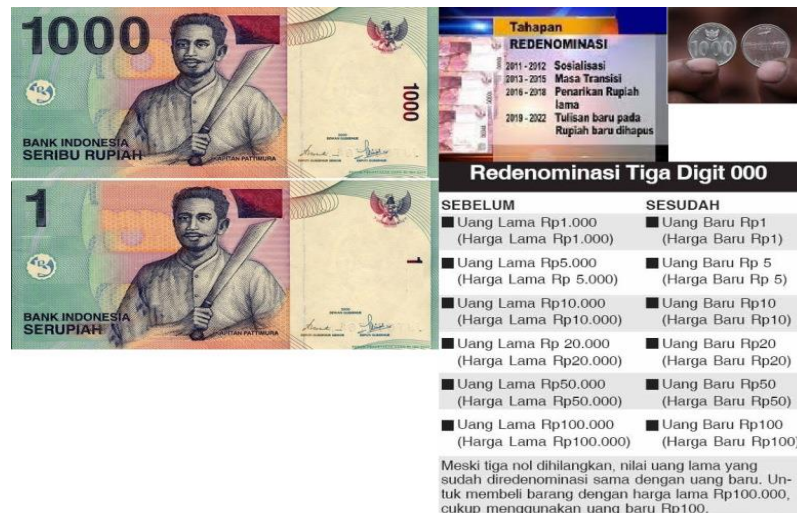


FIGURE 1. MONEY TO BE REDENOMINATED



FIGURE 2. MONEY THAT WILL BE REDENOMINATED

Indonesia is the third largest currency denomination country in the world, with a currency denomination of IDR. 100,000. Bank Mandiri Chief Economist Destry Damayanti said, redenomination or simplification of the nominal value of the IDR has several benefits, including pride as a nation. According to him, with the IDR exchange rate against the US dollar still large, there was an assessment that Indonesia's economy was still underdeveloped. He considered the redenomination policy would provide economic benefits to the community. The main benefit is pride. If you can do redenomination, the IDR exchange rate against the US dollar which is currently IDR 9,680 per US dollar becomes only IDR 9.6 per US dollar. This condition will be proportional to the value of the Malaysian ringgit to the US dollar of 3.05 ringgit, the Philippine peso of 41.92 pesos, the Thai baht of 30.52 baht, and the Singapore dollar of 1.23 Singapore dollars. "Do not let such Zimbabweans still have sheets worth 1 million. They also have high inflation," he said (Purwanto, 2013).



Several economists in Indonesia assert that the redenomination policy is not urgent. For example, A Tony Prasetyantono (Head of the Center for Economic and Public Policy Studies, (Universitas Gajah Mada) said that Indonesia's economy was "OK" with the current currency despite a trade deficit of US \$ 1.5 billion and a current account deficit of US \$ 20 billion (Prasetyantono , 2013). Similarly, Rizal Ramli (Lukihardianti, 2017) stated that redenomination would not provide significant benefits to the Indonesian economy and could potentially lead to forced inflation.

In Indonesia, the influence of religion and culture is strong in daily activities of both individuals and organizations (Frantz & Mayer, 2014), as well as limited access to information and formal education, will encourage the illusion of money not only in society but also businesses, especially small businesses and medium. The price of rounding up the main and supporting materials and the selling price of the product has the potential to occur considering that the Indonesian government has not accommodated nominal denominations below IDR100.00; they are IDR 50.00 and IDR 25.00. Whereas in business, the accumulated difference in prices of IDR 50.00 and IDR 25.00 per unit is still a relevant consideration in purchasing decisions. Likewise, philanthropy as part of social responsibility activities can increase, because nominal value of donations psychologically seems small by using new currencies. This opinion is supported by research (Prabawani & Prihatini, 2014) in Central Java, Indonesia, which shows that high business attention, especially SMEs, towards social elements is influenced by religious and cultural backgrounds. Therefore, a study to explore the positive and negative effects of redenomination in Indonesia from a business perspective of all business and industrial measures is needed.

Research on redenomination has been carried out using various positivistic and phenomenological approaches and involving various countries, such as Romania and Turkey (Muetter & Ioana, 2006), Ghana (Dzokoto, Mensah, Twum-Asante, & Opare-Henaku, 2010), Italy, France , Spain, and Germany (Santis, 2015). In Indonesia, redenomination research has been conducted by (Lianto & Suryaputra, 2012), (Purwana, Warokka, & Buchdadi, 2012), (Pambudi, Juanda, & D.s, 2014), and (Prabawani & Prihatini, 2014). However, research on redenomination in Indonesia usually focuses on individual perspectives; for example (Lianto & Suryaputra, 2012) and (Purwana et al., 2012), (Purwana et al., 2012). The sample size is also relatively small. For example, Lianto and Suryaputra (2012) only involved 100 people who understood the redenomination program. (Purwana et al., 2012) analyzed 90 middle-low income people in Jakarta. Other works mainly approach from the perspective of macroeconomics, for example (Ozdemir, 2008), (Priyono, 2013), (Ioana, 2009), and (Pambudi et al., 2014).

METHOD

The methods used in implementing redenomination in Indonesia are:

- The first stage is socialization in 2011-2012;
- The second stage is the transition period, in 2013-2015;
- The third stage is the search for old IDR, in 2016-2018; and
- The fourth stage is the new writing on the newly deleted IDR, in 2019-2022.



FIGURE 3. PLAN FOR THE STAGES OF REDENOMINATION

RESULTS AND DISCUSSION

Redenomination is carefully arranged and measured until the community is ready, so as not to cause unrest in the community. In the process of this stage of the Indonesian Government guarantees no Sanering.

Redenomination opportunities

Redenomination Alternative. So is it possible that redenomination can be implemented? The first discourse to appoint Bank Indonesia was to eliminate three zeros, IDR 1,000 (old) would be USD 1 (new). This will make the dollar value close to the value of the Chinese yuan and the Hong Kong dollar. If the denomination is applied, taking into account the old denomination, there will be three bills below the value of \$1 or fractions which cost IDR 100 to IDR.500, from IDR. 0.2 and 0.1 for USD 200 and USD 100. a long time. The use of this denomination is not so complicated because there are only 3 fractions below \$1. Compare that with Euros or US Dollars which have fractions of cents to 10 fractions from 0.01 to 1 Euro or 1 US dollar. The second option is to delete two zeros, which is USD 100 (old) to IDR 1. If this is implemented, referring to the old denomination of \$1 will be the smallest denomination of paper money no longer under \$1. In terms of complexity, this choice is more likely glance over the first choice.

This option will also place the amount equivalent to the Japanese Yen. The third and fourth option is to eliminate 1 and 4 zeros. For the first zero, what happens is that there will be no fractions below \$1. But this policy tends to be 'bear' because by observing the old denomination of IDR. 1 it will still not exist because it has been so extinct from circulation. So, if you eliminate 4 zeros, the dollar value will be very high and automatically 'prestige' high. Imagine if dollars were equivalent to U.S. Dollars. and



the Euro, will be very proud of all dollar holders. But there will be a lot below IDR. 1, IDR. 0.5 to IDR. 5,000, IDR. 0.1 to IDR. 1,000 and IDR. 0.05, IDR. 0.02, and \$ 0.01 for USD 500, USD 200 and IDR. 100. So there will be 5 fractions. under \$1.

Background of Bank Indonesia to do redenomination:

The biggest Indonesian denomination at present is IDR 100,000, which is the second largest fraction in the world after the Vietnamese currency has ever printed 500,000 Dong. The emergence of unrest over the status of the rupiah that is too low than in other currencies, such as the dollar, euro and other global money. Not a matter of substance but a matter of identity because the strength of the IDR is relatively stable, safe foreign reserves, maintained inflation, and good economic performance.

Fraction of Indonesian money that is too large will cause inefficiency and inconvenience in conducting transactions, because a lot of time is needed to record, calculate and bring money to make transactions so that inefficiencies occur in economic transactions. To prepare for Indonesia's economic equality with the ASEAN region in entering the era of the ASEAN Economic Community in 2015. To eliminate the impression that the nominal value of money that is too large seems to reflect that in the past, a country had experienced high inflation or had experienced unfavorable economic fundamentals.

The Role of Bank Indonesia in implementing opportunities for the redenomination plan

In implementing redenomination, several steps are needed. Bank Indonesia acknowledges that the application of redenomination is not easy so it must go through a process. Bank Indonesia has prepared the stages of simplifying the value of the rupiah or redenomination starting from 2011-2020.

Year 2010. This year the first time a redenomination discourse emerged. The Governor of Bank Indonesia, Darmin Nasution, said that he would eliminate three zeros behind the IDR. This step is to simplify the mention of the unit price or IDR value.

Year 2011-2012. Bank Indonesia began discussions with the government regarding the redenomination plan. This period is also a period of socialization. The Bank also prepares various kinds of things such as accounting, recording, information systems. In the stages of drafting the bill, the plan to print money and its distribution has also begun.

Year 2013-2015. This period was a transition period. The Ministry of Finance together with Bank Indonesia on January 23, 2013, officially held a series of socialization plans for denomination. The aim is to provide an understanding to the public that redemption is not a cut in the value of the currency (Sanering) but a simplification by eliminating some zeros. At this time there will be two types of currencies, namely old

denominations and new post-denomination fractions. It aims to familiarize the community in the use of new currencies, both in payments and transaction returns. For example, the price of a product worth IDR 10,000 will be written in two prices, namely IDR 10,000 (old IDR) and IDR 10 (new IDR). Bank Indonesia will also slowly replace old IDR damaged money with new IDR money.

Year 2016-2018. In this period, the government is targeting the current money (old IDR) will really not circulate anymore. Bank Indonesia will slowly withdraw old money in the transition period.

Year 2019-2020. The implementation of redenomination began to occur. This stage is called phasing out, which is when the IDR is returned with the word 'new' to IDR. Bank Indonesia will spread the use of new currencies as a substitute for old money.

Bank Indonesia prior to redenomination Indonesian banks first assured that all related infrastructure had been adjusted and arranged in such a way that it was compatible with new currencies with fewer zeros. The plan for IDR redenomination will be costly. Bank Indonesia also has to spend a lot of money to replace and print new money. Printing money always drains Bank Indonesia's budget.

There are three reasons Indonesia has implemented redenominalization, namely:

- Indonesia is under control, which is under 10%;
- Government debt from the percentage of Gross Domestic Product (GDP) continues to fall; and
- Stable economic conditions.

Redenomination will not have a negative effect on the economy. A strong economy and stable politics will facilitate the redenomination process. If business people believe that the economy is performing well, redenomination can run as expected. However, redenomination causes inflation to increase if business people perceive the economy to slow down or worsen when the policy is implemented. The success of redenomination can only be done when inflation and inflation expectations are stable and low.

The Indonesian population according to Central Bureau of Statistics has a poor population with income below US \$2 per day (USD 20,000 per day) which will be very busy with this redenominasi. They will be busy with their money which will convert many dollars into cents. If poor people are assumed to also have low education levels, then mathematics will also be their weak division, and certainly more difficult to make people in this group receive new redenomination IDR. Of the four choices, cents must be chosen with the least fraction or no fractions of cents below \$1. It seems the first choice (eliminating three zeros) and the second (eliminating two zeros) is a more likely alternative to choose. The second option does not even have a penny fraction below \$1. If this is chosen, Indonesia will have an equivalent Japanese Yen IDR value which must also be a beautiful 'commander'. This policy, once again in terms of economic



theory should not have any impact because there is no change in value in real terms. However, the sociographic conditions that are vulnerable to issues that make rational people have to reduce their attention.

Every policy that allows for rent seeking, both with economic and political motives, which will take advantage of the Indonesian Nation is a great nation, one of the great things we must show that we are proud to hold the IDR. In addition, redenomination not only aims to simplify economic transactions, but also to increase the authority of the IDR in foreign currencies. However, we should not be trapped in a "nominal trap", because the authority of the IDR is not really due to a large value, but because of its stable value. For the long term, redenomination of IDR is a necessity. Positive plans for redenomination must be applied carefully. So that Bank Indonesia as the most powerful party in determining the money supply in Indonesia, launches a discourse to cut the number digits in IDR value, this is done so that the dignity of the IDR value in the eyes of the international world is expected to have more selling value. Bank Mandiri Chief Economist Destry Damayanti said, redenomination or simplification of the nominal value of the IDR has several benefits, including pride as a nation. According to him, with the IDR exchange rate against the US dollar still large, there is an assessment that the Indonesian economy is still underdeveloped (Purwanto, 2013).

The impact of psychology on the community and investors will depend on how Bank Indonesia socializes. What must also be understood is that redenomination is different from sanering. Currency redenomination in theory will not cause a price increase because the price is also cut off. It's different with sanering. Currencies that experience sanering will decrease in value but the prices of goods are not guaranteed to go down. Thus, it will often reduce the purchasing power of money while redenomination does not. Community readiness is needed because without community readiness the economic turmoil can occur which is panic in the community. Forget the history of painful, because redenomination is not flashy. One sign of the End Times was the destruction of the Fiat Money System and the return to the Islamic Gold Dinar and Silver Dirham Financial System. Today we think that money is something that is not feasible, aka there is no physical (paper only picture), only mere bullshit numbers, then the money will return to nature is something of value and keep the gold dinar and silver dirham. The application of redenomination requires a minimum of five years and during that time traders must include two types of currencies namely old money that has not been deducted and new money so that public control is created. In addition, to carry out redenomination of exchange rates, a gradual withdrawal of money circulating in the community is needed (WK, 2017).

There are three requirements that must be met if you want to simplify the exchange rate unit. The three requirements are (Hardiyanto, Arif, 2013):

- a. Stable economic conditions;

- b. Low and maintained inflation; and
- c. Guaranteed price stability.

The background of Bank Indonesia to do redenomination is:

- 1) The biggest fraction of Indonesia's current money is IDR. 100,000, - which is the second largest fraction in the world after the Vietnamese currency once printed 500,000 Dong.
- 2) The emergence of unrest over the status of the IDR which is too low compared to other countries' currencies, such as the dollar, euro and other global money. Not a matter of substance but a matter of identity because the strength of the IDR is relatively stable, safe foreign reserves, maintained inflation, and good economic performance.
- 3) Fraction of Indonesian money that is too large will cause inefficiency and inconvenience in conducting transactions, because a lot of time is needed to record, calculate and bring money to make transactions so that inefficiencies occur in economic transactions.
- 4) To prepare for Indonesia's economic equality with the ASEAN region in entering the era of the ASEAN Economic Community in 2015; 5) To eliminate the impression that the nominal value of money that is too large seems to reflect that in the past, a country had experienced high inflation or had experienced unfavorable economic fundamentals.

Redenominasi encourages consumption behavior to be greater. Seeing changes in the behavior of these people, goods producers will increase prices to the limits that are still tolerated by consumers. According to (Juanda, 2010) the experimental data will be more easily interpreted in concluding the causal relationship compared to survey data or secondary data. The success of redenomination can be seen from changes in inflation rates and economic growth after the redenomination policy was implemented. A strong economy and stable politics will facilitate the redenomination process. If the Indonesian people believe and the government also believes that the economy is performing well, redenomination can run as expected. However, if the Indonesian people and government perceive the economy to slow down or deteriorate, then redenomination will cause inflation to increase.

The success of redenomination can only be done when inflation and inflation expectations are stable and low. "Indonesia is still a large exchange rate, so there is a perception that a country that has a large exchange rate has a backward economy. Moreover, the large exchange rate is still perceived as a developing country," said Bank Mandiri Chief Economist Destry Damayanti Jakarta (Purwanto, 2013). The application of redenomination must be shared with the development of public perceptions of the policy. Do not worry that what happens is the perception of cutting currency values, which makes people withdraw their funds from banks and invest



abroad, Redenomination is done when Indonesia implements the ASEAN Economic Community. At that time, Indonesia could equalize the value of the IDR with the currencies of ASEAN countries. At present it is not right because the economic crisis in Europe has not really passed and the real sector in Indonesia has not moved.

IDR redenomination is not expected to disturb the Indonesian capital market at all. Rationally, this (redenomination) can only be done when inflation is at a low level, and the economy is stable. This means positive, and the Indonesian economy is on track. If this opportunity is implemented properly, ie there is no swelling of inflation, then the likely positive impact that will occur is that financial transactions become simpler, facilitate financial accounting, improve the dignity of the Indonesian people in the eyes of the International.

- First, financial transactions are simpler, not too many digits, and speed up the calculation of transactions because there are fewer digits.
- Second, simplifying financial accounting. Because of the limitations of data storage in the machine, simplifying the IDR is very helpful to save time, reduce errors in reading financial statements that are often presented in millions of IDR, simplifying the calculation of statistical data for accounting report analysis.
- Third, increasing the dignity of the Indonesian people in the eyes of the International. For people who work collaborating with foreign companies, or partnering with foreign investors, this has a positive impact because in a nutshell the IDR will lift the image of Indonesia. For residents of Indonesia who do not partner with foreign companies, of course there is no impact from this redenomination (Dewi, 2013).

In economic theory, redenomination does not have any impact. In contrast to sanering and devaluation which have a direct impact on the exchange rate of money held by the community, it also has other economic impacts due to the continuation of this policy which includes export-import, inflation, and economic growth (Ministry of National Development Planning, 2017).

Inflation as measured by the consumer price index reflects the annual percentage change in the cost of the average consumer obtaining a basket of goods and services that can be fixed at certain intervals, such as annuals. Laspeyres formula is a method commonly used to calculate price indices. The Laspeyres index is a price index weighted by the base year quantity or quantity index weighted by the base year price (Siagian, 2006).

The need to carry out redenomination in Indonesia is based on several aspects, namely:

Economic inefficiency

1. The IDR denomination is quite large at this time, is considered to have caused inefficiencies in the economy associated with the first, causing considerable time and transaction costs. This too large fraction of money will cause inconvenience in making transactions. Transactions that use large nominal automatically will take a long time compared to small numbers. In addition, transaction costs will also be greater because the transaction time is longer. Second, the need for infrastructure development for non-cash payment systems in the future at a significant cost. For information that at this time the ability of computers can only accommodate 15 digit numbers, while the value of the State Expenditure Program Budget has reached 16 digits. It is possible that in the next few years business people, especially financial service providers, need to make adjustments to the accounting software and hardware system to accommodate the use of more than 16 digits in financial transactions if they are not redenominated. Third, increase the cost of procuring new money with a larger fraction to accommodate the increasing need for cash payments. With the increasing need for large denominations, the use of banknotes will be much higher with the use of coins, while the cost of printing banknotes is much higher than the cost of printing coins that have a longer circulation period.
2. Technical constraints on business operations In everyday life, technical constraints on operations by business actors are easy for us to meet. For example, at a gas station that only has 6 digit numbers so the officers will find it difficult if the transaction exceeds IDR1,000,000. Although at some gas stations outsmarting adding zeros with paper on the meter, this remains a problem that will continue to be faced with the use of large denominations. The same thing also happens in taxi meter which only has 6 digits. Another technical obstacle is that with large denominations it will require large storage media, besides that in processing data for statistical purposes it will also take a longer process because the data used is very large. Another obstacle encountered was that business actors would find it difficult to present the overall data in their financial statements. Large denominations will also cause potential human error in the entry/collection, processing, and presentation of data will be greater.
3. Supporting the national economy in entering the era of the ASEAN Economic Community in 2015 Indonesia will face a trade liberalization in the ASEAN region which is often referred to as the ASEAN Economic Community (MEA). This liberalization of trade is expected to create greater market opportunities than when world trade was fragmented because of the protection applied in many countries towards imported products (Tambunan, 2013). In addition, the formation of economic integration is expected to provide benefits such as encouraging the development of local industries, increasing trade benefits through improving terms



of trade, and promoting economic efficiency in an economic region (Meier, 1995). With MEA in 2015, ASEAN will have 4 main characteristics, namely as a single market and production base unit, competitive economic zones, equitable economic growth and increasing the ability to integrate with the global economy (Bank Indonesia, 2009). The current condition of Indonesia's economic fundamentals can be categorized as a strong enough economy for the successful implementation of the MEA in the year.

Bank Indonesia strongly believes that IDR redenomination will not experience the tragic fate of the Zimbabwean dollar. Why? Because the failure of Zimbabwe to redenominate some time ago was triggered by the uncontrolled inflation rate in the country.

1. Redenomination is needed to improve or overcome inefficiencies that can occur due to the higher time and transaction costs needed because the value of transactions in the community is getting bigger and bigger. Especially if the transactions carried out rely on cash payments.
2. Redenominasi helps overcome infrastructure development inefficiencies for non-cash payment systems that typically use large fees. The nominal value (digits) of the transaction is getting bigger and bigger, and the more troublesome. As a result, problems were also found in recording money. The bigger the transaction, the longer the recording, and the more expensive.
3. Redenomination is a form (anticipation) of the Indonesian government and monetary authorities for ASEAN single currency discourse, so that the currency (IDR) of the IDR is quite equivalent to the currencies of other ASEAN countries. At present, Indonesia and Vietnam are two countries that have large currency digits among countries in the ASEAN region.
4. The Redenomination process usually consists of the following stages:
 - (a) Socialization;
 - (b) Transition phase; and
 - (c) Old currency withdrawals.

Because each country has different characteristics, the impact of the redenomination process in each country must also be different. Therefore, in the currency redenomination policy, the important thing that must be done by the monetary authority of a country is to ensure that we will benefit from this central bank policy (Turambi, 2015).

Countries that Successfully Implement Redenomination

Turkey. The Turkish Central Bank made a redenomination policy in 2005 for two reasons. First, technical reasons given the large number of zeros in the currency

complicate the calculation of financial transactions. Second, redenomination is done to increase the credibility of the economy. The existence of a currency (bank note) of 20,000,000 is a very unnatural thing in the international economy, and has been considered to have a negative effect on the credibility of the Turkish economy. The simplification of currencies is a necessity for the Turkish community in the real sector and the financial sector such as banking, capital markets and payment systems (Serdengecti, 2004).

Romania. Romania conducted redenomination on July 1, 2005 by removing 4 digits of its currency. Romania's main reason for redenomination is the desire to join the Euro. Romania made very planned preparations to fulfill its desire to join the Euro single currency. The steps taken by Romania in implementing the redenomination policy are, first, on July 14, 2004 the enactment of the law concerning redenomination. Second, March 1, 2005 until June 30, 2006 dual pricing of new and old currencies. Third, on July 1, 2005 new money (paper and metal) was circulated. Fourth, on 1 July 2005 until 31 December 2006 the circulation of two currencies and the gradual withdrawal of old money. Fifth, since January 1, 2007 old money does not apply. Sixth, from January 1, 2007 to an undetermined time, old money can be exchanged for new money (Isărescu, 2006).

Redenomination Challenges

Challenge background

The main problem of the economy of Indonesia and even the World is, assuming that money has a time value. So that money is better kept in a safe place than must be circulated, but it is not profitable, what else if the money is circulated, but it has the potential loss for the owner. So the government made an effort to overcome the Indonesian economy in a financial system, especially the value of the Indonesian currency that would make changes in the value of its currency to be better. Therefore, the government agreed to the plan to continue the process of the Currency Redenomination Bill. This was revealed by the Governor of Bank Indonesia, Agus Martowardojo after meeting President Jokowi at the Merdeka Palace, Jakarta, Tuesday (07/25/2017). "I report to the President about the Currency Redenomination Bill with the Minister of Finance. The President then welcomed the bill and later it will be presented at the cabinet meeting," Agus said. "Then, the President will give a final direction and we will then discuss it with the Legislative Assembly. The process continues," he said. If the process is smooth, Agus hopes that the people's representatives in the Indonesian House of Representatives will include the Currency Redenomination Bill that was submitted to the Indonesian Parliament in 2013 to the priority National Legislation Program for 2017 (Kuwado, 2017).

What about the effect of redenominasi on the stock market? Besides we will be able to buy shares at lower prices, market participants will be negative because in general they want economic stability. Although redenomination does not theoretically disrupt



economic activity, the psychological impact that this has on society will be quite worrying for market participants.

When can redenomination be implemented? Redenominasi according to Bank Indonesia can take as long as 10 years. The initial stage of socialization in 2011-2012 and later in 2013, made Redenomination become a transition period until 2015. Now in this transition period, two assessments will be used, called the old rupiah and new rupiah. So you can buy books at a price of IDR. 100,000. You can only use a IDR. 100,000 denomination, or use a new IDR for IDR. 100 (IDR redenomination). This seems to confuse the public later when making transactions, especially producers themselves will also give 2 prices, old dollar prices with new dollar prices. Especially people who have felt aggrieved because of the Sanering policy in the old order. All fears that were carefully thought out by Bank Indonesia, they have conducted comparative studies in Turkey which succeeded in redenomination in 2004. Already many countries have succeeded in Redenomination, such as Turkey, Vietnam has the largest denomination in the world after Indonesia, from 500,000 Dong. and does not take into account Zimbabwean denominations of 100 billion US dollars on one Zimbabwean currency sheet.

Strategy to overcome challenges

To overcome the technical challenges and obstacles in increasing economic efficiency, and to foster national pride, a policy of IDR redenomination is needed as follows, (Turambi, 2015). The need to carry out redenomination in Indonesia is based on several aspects, namely:

- a) Economic efficiency; occurs in many aspects, such as payment systems more efficient, the prices listed are simpler, the process of recording, storing, managing, and reporting data in financial statements/statistics is shorter, faster, and can be presented in full, and in the aspect of information technology, redenomination will reduce software adjustments and the hardware needed related to limitations in software and hardware to accommodate larger numbers.
- b) Reducing obstacles/constraints in the form of technical risks of possible human error in the posting process. or other statistical activities.
- c) Higher public perception / trust in the IDR.
- d) Price changes in a narrow range.
- e) Driving efforts to direct inflation expectations lower to level.
- f) Reducing the risk of currency substitution. This supports a more stable dollar value.

g) Supporting economic equality with the ASEAN Economic Community in 2015.

Ibnu Khaldun (1962), said that a country would not be able to carry out sustainable development without justice in its system. Price stability means the guarantee of fairness of money in its function so that the economy will be relatively in a condition that allows the allocation of resources equally, income distribution, optimum growth, full employment and economic stability (Karim & Arif-Uz-Zaman, 2013: 179).

Redenomination terms can work well

According to the Economist Institute for Development of Economics and Finance (INDEF) Bhima Yudistira spoke about the planned redenomination of the IDR which will be rolled into the National Legislative Program. He considered, the policy must be reviewed and matured first because it can have an impact on inflation. "There are at least three redenomination requirements. The exchange rate is stable, inflation can be controlled and economic fundamentals must be in good condition. Because redenomination also requires long preparation and socialization, "he explained (Suheriadi, 2017).

Redenomination can be done when economic conditions are good and inflation is under control. Thus, it is hoped that there will be no public unrest which therefore the community must have price controls on goods/services. This can be done by giving two prices, namely the price before redenomination and the price after redenomination. The Indonesian inflation data according to Bank Indonesia data (Bank Indonesia, 2009) are as follows.

Indonesian Monthly Consumer Price Index and Inflation,
2005, 2006, 2007, Jan-May 2008 (2002 = 100), June 2008 - December 2013
(2007 = 100), January 2014 - December 2016 (2012 = 100), January - September 2017 (2012 = 100)

Month	2005		2006		2007		2008		2009	
	IHK	Inflation	IHK	Inflation	IHK	Inflation	IHK	Inflation	IHK	Inflation
January	118,53	1,43	138,72	1,36	147,41	1,04	158,26	1,77	113,78	-0,07
February	118,33	-0,17	139,53	0,58	148,32	0,62	159,29	0,65	114,02	0,21
March	120,59	1,91	139,57	0,03	148,67	0,24	160,81	0,95	114,27	0,22
April	121	0,34	139,64	0,05	148,43	-0,16	161,73	0,57	113,92	-0,31
May	121,25	0,21	140,16	0,37	148,58	0,1	164,01	1,41	113,97	0,04
June	121,86	0,5	140,79	0,45	148,92	0,23	110,08*)	2,46*)	114,1	0,11
July	122,81	0,78	141,42	0,45	149,99	0,72	111,59	1,37	114,61	0,45
August	123,48	0,55	141,88	0,33	151,11	0,75	112,16	0,51	115,25	0,56
September	124,33	0,69	142,42	0,38	152,32	0,8	113,25	0,97	116,46	1,05
October	135,15	8,7	143,65	0,86	153,53	0,79	113,76	0,45	116,68	0,19
November	136,92	1,31	144,14	0,34	153,81	0,18	113,9	0,12	116,65	-0,03
December	136,86	-0,04	145,89	1,21	155,5	1,1	113,86	-0,04	117,03	0,33
Inflation rate		17,11		6,6		6,59		11,06		2,78

Source: Link: <http://www.bps.go.id/linkTabelStatis/view/id/907>



Month	2010		2011		2012		2013		2014	
	IHK	Inflation	IHK	Inflation	IHK	Inflation	IHK	Inflation	IHK	Inflation
January	118,01	0,84	126,29	0,89	130,9	0,76	136,88	1,03	110,99 2)	1,07
February	118,36	0,3	126,46	0,13	130,96	0,05	137,91	0,75	111,28	0,26
March	118,19	-0,14	126,05	-0,32	131,05	0,07	138,78	0,63	111,37	0,08
April	118,37	0,15	125,66	-0,31	131,32	0,21	138,64	-0,1	111,35	-0,02
May	118,71	0,29	125,81	0,12	131,41	0,07	138,6	-0,03	111,53	0,16
June	119,86	0,97	126,5	0,55	132,23	0,62	140,03	1,03	112,01	0,43
July	121,74	1,57	127,35	0,67	133,16	0,7	144,63	3,29	113,05	0,93
August	122,67	0,76	128,54	0,93	134,43	0,95	146,25	1,12	113,58	0,47
September	123,21	0,44	128,89	0,27	134,45	0,01	145,74	-0,35	113,89	0,27
October	123,29	0,06	128,74	-0,12	134,67	0,16	145,87	0,09	114,42	0,47
November	124,03	0,6	129,18	0,34	134,76	0,07	146,04	0,12	116,14	1,5
December	125,17	0,92	129,91	0,57	135,49	0,54	146,84	0,55	119	2,46
Inflation		6,96		3,79		4,3		8,38		8,36

Month	2015		2016		2017	
	IHK	Inflation	IHK	Inflation	IHK	Inflation
January	18,71	-0,24	123,62	0,51	127,94	0,97
February	118,28	-0,36	123,51	-0,09	128,24	0,23
March	118,48	0,17	123,75	0,19	128,22	-0,02
April	118,91	0,36	123,19	-0,45	128,33	0,09
May	119,50	0,50	123,48	0,24	128,83	0,39
June	120,14	0,54	124,29	0,66	129,72	0,69
July	121,26	0,93	125,15	0,69	130,00	0,22
August	121,73	0,39	125,13	-0,02	129,91	-0,07
September	121,67	-0,05	125,41	0,22	130,08	0,13
October	121,57	-0,08	125,59	0,14		
November	121,82	0,21	126,18	0,47		
December	122,99	0,96	126,71	-0,07		
Inflation rate		3,35		3,02		2,66

Note:

*) Since June 2008, CPI has been based on consumption patterns in the cost of living survey in 66 cities in 2007 (2007 = 100)

2) Since January 2014, CPI is based on consumption patterns in the cost of living survey in 82 cities in 2012 (2012 = 100)

Source: <http://www.bps.go.id/linkTabelStatistik/view/id/907>

Negative results that occur when redenomination is implemented poorly

Although redenomination is expected to provide positive implications for the Indonesian economy, but unfortunately the application of redenomination also has the possibility of risks that must be anticipated. The several possible risks are:

1. ***Increased inflation due to excessive price rounding.*** This redenomination program will potentially lead to price rounding up with a reason to facilitate transactions by business actors. Even though the draft proposed by the government to the Indonesian Parliament regulates the procedures for rounding up, rounding off by business operators has the potential to be excessive due to the impact of money illusion from this redenomination program. With rounding, the price increases. If this happens to all products and services, it will encourage high inflation. But with the inclusion of the same 2 price inclusion obligations during the transition period, this is expected to be avoided.
2. ***Large expenditure by the government.*** The success of the redenomination program will depend on the success of socialization to the community so that there will be no confusion in the transaction. Then, huge costs will be needed starting from preparation, academic studies, comparative studies, bills, laws, socialization, to implementation, supervision and sanctions. And the bigger the cost of spending is for the cost of printing new money to replace the old money circulating in the community.
3. ***Rejection of part of the community and increase the burden of business actors.*** Although this is good for national interests, it still has the potential for rejection from some parts of the community. Today the community is very accustomed to the use of large denominations because they feel counting money hundreds is much easier than counting with lots of cents. Especially for entrepreneurs, the implementation of this redenomination program will provide additional burdens, because it creates an obligation to include 2 prices that apply during the redenomination transition period.
4. ***Psychological effects.*** Implementation of IDR redenomination has the potential to cause psychological effects such as fear and doubt for entrepreneurs. Producers for a certain period of time will hold back selling their products because they have a psychological feeling that the money they receive is small and will happen to increase the selling price which can eventually trigger inflation. Besides that, the past sanering experience felt by business actors still traumatized, considering that there are still many business people who have experienced these sanering events.
5. ***Potential disputes between business actors and consumers.*** This redenomination policy has the potential to cause disputes, especially for transactions that have been bound by the agreement. With this change in denomination, it is feared that the binding of transactions in an agreement will harm one party which leads to a dispute. But of course with the existence of laws and regulations that regulate the technical aspects of redenomination, this can certainly be avoided.



Countries that Failed to Implement Redenomination

Brazil. Brazil is one of the countries in Latin America that has done redenomination several times. Brazil has recorded 6 redenomination, namely 1967 (lost 3 zeros), 1970 (lost 3 zeros), 1986 (lost 3 zeros), 1989 (lost 3 zeros), 1993 (lost 3 zeros), and 1994 (lost 3 zeros) (Serdengecti, 2004). In the implementation of the redenomination program in the period of the early 1990s, it was considered to have failed. Failure is due to the fact that Brazil's economic fundamentals are actually in an unfavorable condition and the government is considered unable to manage its macroeconomic indicators. The high rate of inflation has caused the economy to only grow in the range of 0-1% in the 1990-1992 period. In addition, the Government of Brazil adopted a fiscal deficit policy to finance development with these sources of expenditure funding not originating from tax revenues but by printing money (money creation) so that there was a condition of discrepancies in the growth of the money supply with the capacity of the economy. After redenomination, the inflation rate remains high even though the government has stabilized the economy (Bank Indonesia, 2014b).

Russia. Russia has failed in implementing the redenomination program in 1998. The redenomination program plans to eliminate three zeros from its currency. redenomination aims to convince the public that the economic crisis. Russia has passed marked by a huge decline in inflation from year to year, starting from 875% in 1993 to 200% in 1995, and finally reaching 15% in 1997 (Dogarawa, 2007). However, determining the wrong timing makes the implementation of redenomination in Russia fail, where the stability of the international economy is in a situation that is not supportive. After redenomination, there was pressure on the ruble as a result of the spillover of the fall of Asian currencies, which caused the government to be unable to pay its foreign debt. This worsened the situation because the ruble exchange rate continued to depreciate, causing an increase in the inflation rate after being redenominated. The country again experienced very high inflation in 1999, amounting to 86% (Latif, 2010).

The findings of Hardiyanto, Arif (2013) who stated that the perception of business people who experienced fear or shock from the impact of redenomination did not appear in this study, this was because the lowest education of the research respondents was High School/Vocational High School with the majority having bachelor's degrees. Indicators of employee conditions were found to be unable to reflect business performance in this study because the impact of redenomination was considered to have no effect on the condition of employees. In this case the government is expected to have prepared preventive programs to avoid the shock that experienced by business actors, especially small and micro businesses. The incentives and socialization with a personal approach are expected to be the solution to the policy

succession of IDR redenomination.

Research by Mosley (2005) which sees the influence of redenomination on credibility and public trust in currencies in developing countries states that the risks arising from the impact of redenomination of currencies are strongly related to public opinion. This indicates that the public perception is very important to analyze related to the IDR redenomination program. In addition to this, a factor of public trust in the government should be considered. Business actors who are the main drivers of the economic sector in Indonesia have become very important in the succession of the IDR redenomination program.

CONCLUSION

From several studies conducted by several other countries, Indonesia still has the opportunity to establish IDR currency redenomination even though there are several challenges that must be faced.

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RELATIVE EFFECTS OF EXCHANGE RATE AND INTEREST RATE ON NIGERIA'S ECONOMIC GROWTH

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Abstract

This study examined the relative effect of exchange rate and interest rate on economic growth in Nigeria, with the objective of determining their various implications on Nigeria's economic growth. The study employed quarterly time-series data from 2000:Q1 to 2017:Q2. The Cointegration and Error Correction Methodology (ECM) were adopted. The result indicated that Exchange rate and Consumer Price Index had a significant effect on economic growth, while interest rate had an insignificant effect on economic growth in Nigeria. Therefore, the study recommended that government (regulatory authority) should endeavour to design exchange rate policies that can increase the growth prospects of the Nigerian economy. It also suggests that the government should maintain a low rate of inflation for that would increase investor's confidence and participation as well as attract more capital flows into the economy. Finally, the study recommended that the issue of high lending rate with hidden transaction costs should be seriously monitored and addressed by the regulatory authority (CBN).

Keywords: Cointegration; Consumer Price Index; Error Correction; Exchange Rate; Unit Root.

INTRODUCTION

Background to the Study

The issue of exchange rate and interest rate have been accorded attention in Nigeria. Their dynamic movement raises concern especially with their attendant consequences. The relative effects of these variables place the economy in a vulnerable position while studies across most developing and developed economies had exposed the effects of these variables on their economies. In Nigeria, exchange rate and interest rate policies have changed within the time frame from regulated (1970-1986) to deregulated regimes (1986 to date). Exchange rate is the rate at which one currency is exchanged for another. It is pivotal to the achievement of macroeconomic stability and economic performance of any economy in the global world. The interest rates on its own plays a critical role in the effective distribution of resources targeted at stimulating economic growth. For this reason, interest rate is accorded prominence as



a facilitator of growth. It is expected that exchange rate and interest rate if properly managed could make a difference to the Nigeria's economic growth effort.

The Nigerian economy goes through the difficulties of exchange rate and interest rate dynamics. These are two important variables in any economy owing to the fact that they determine consumption and investment decision of economic agents. However, when not properly managed their dynamic movement can have severe consequences in the economy. Their fluctuations are therefore not desirable in the economy since they increase risk and doubt in both domestic and international transaction and thus discourage investment and trade. Nigerian economy especially is vulnerable to exchange rate and interest rate fluctuations due to its mono-product structure or dependence on oil as well as high dependence on capital flows. This poses challenges for policy makers tasked with macroeconomic stabilisation goals.

Despite the difficult conditions in the economy associated with high exchange rate and interest rate, the Nigerian economy still shows strong resilience but much is not revealed about what effect exchange rate and interest rate have on the economy. It is therefore, important to establish the quantitative direction to understanding the implications of exchange rate and interest rate on Nigeria's economic growth path. This is one of the major motivations of the study. To this end, studies have been conducted by various scholars notable among them are Chughtai *et al* (2015) for Pakistan and Obansa *et al* (2013) for Nigeria; to establish the relative effects of exchange rate and interest rates on economic growth in Nigeria. Obansa *et al* (2013) validates the relevance of exchange rate and interest rate on economic growth in Nigeria using the Vector Autoregressive (VAR) technique. Similarly, this study is conducted to contribute to debate on the relative effects of exchange rate and interest rate on economic growth in Nigeria and differs markedly from other studies in Nigeria as none of the authors employed the Error Correction Methodology (ECM). The ECM shows the extent to which success in portraying the effect of exchange rate and interest rate would be achieved. Consequently, the choice of ECM is justified over VAR approach because it is a forecasting model and more so, it is only applicable when variables are co-integrated. Few empirical studies have been conducted on the effects of exchange rate and interest rate on economic growth in Nigeria and several methodologies have been applied such as Vector Auto-regressive Model (Obansa *et al.*, 2013) and Ordinary Least Square (Imoisi *et al.*, 2010) among others. None of these studies have employed the Error Correction Model. This justifies the use of Error Correction Model to present the relative effect of exchange rate and interest rate on economic growth in Nigeria. This is because ECM has the capacity to adequately capture both the dynamic and the static equilibrium relationships among non-stationary time-series. It also captures the speed of adjustment which restores equilibrium in the dynamic model. With the exception of (Obansa *et al.*, 2013) that

considered the two effects of exchange rate and interest rate on economic growth in Nigeria together, other studies in Nigeria only considered either exchange rate on economic growth (Adeniran et al., 2014) or interest rate on economic growth (Joseph et al., 2018). To this effect, there is paucity of information on studies that both consider the relative implications of exchange rate and interest rate on economic growth in Nigeria. Therefore, to what extent does interest rate contribute to economic growth in Nigeria? Does exchange rate has an effect on economic growth in Nigeria?

Theoretical Review

The price of one country's currency expressed in terms of some other country's currency is referred to as exchange rate. Exchange rate determines the relative prices of domestic and foreign products. It also determines the level of external sector involvement in international trade. Conversely, interest rate is pictured as a compensation for accumulating financial assets and sacrificing current consumption. Monetary policy regimes utilises interest rate and exchange rate as strategic policy instruments to accomplish low inflation rate and stabilize the macro economy. Since early 1970s, the relationship between interest rate liberalization and economic growth has been a centre of attention both empirically and theoretically. In line with the Neoclassical and the Keynesian theories, low interest rate would increase investment spending and economic growth in both developed and developing economies. There is an argument that interest rate liberalization leads to financial development and long run economic growth. Given the re-invention of the financial liberalization concepts in the 1970's, many countries have liberalize their economies by deregulating exchange rate and interest rates, thereby, eliminating credit controls, allowing free entry into the banking sector, permitting private ownership of banks, international trade liberalization and capital flows. The most pertinent of this liberalization are exchange rate and interest rate. Sadly, the Nigerian case in this context has been varied.

Nigeria practised fixed exchange rate regime from Independence up to 1986 when it was abolished and replaced with flexible exchange rate regime. The flexible exchange rate regime as it were is the follow up to the structural Adjustment Programme (SAP), designed to devalue the naira in order to promote exports in Nigeria. But Nigeria is known as an import dependent economy, particularly for her capital goods. And the manufacturing sector to which exchange rate devaluation was aimed at encouraging export is dominated by multinational corporations and incapacitated by low capacity utilization. The result is that this sector is rather troubled by high interest rate, high cost of raw materials for production, naira depreciation, rising inflation, foreign exchange shortages and consumer strong resistances to local products. The choice of exchange rate regime is indeed significant for economic growth efforts. Although a more flexible exchange rate regime can permit an economy to make necessary adjustment more rapidly; but on the margin, more flexible regime is weakly associated



with slightly higher growth rates. In developing and emerging economies such as those in Asia and Africa with less depth in the financial markets, and more incomplete markets, they are less able to deal with real and financial shocks, and hence the choice of exchange rate regime is more important (Oyejide & Udun 2010).

Empirical Review

Joseph et al., (2018) looked at the effect of interest rate on economic growth in Nigeria during the period 1980 to 2016. Using OLS multiple regression technique, the study discovered that inflation and exchange rate have an insignificant negative effect on economic growth while, deposit interest rate had a significant positive relationship with economic growth. Applying the Error Correction Model (ECM), Lorytyer (2017) examined the effect of interest rate on economic growth in Nigeria using annual time-series data from 1980 to 2015. The result showed that interest rate has a significant effect on economic growth. Etale and Ayunki (2016) empirically examined the relationship between interest rate and economic growth in Nigeria. Using annual data from 1985 to 2014, the authors adopted the Error Correction Models (ECM). The findings revealed that interest rate has a negative significant effect on economic growth in Nigeria. The study recommended that monetary authorities should adopt appropriate policies that would promote and stimulate economic growth in Nigeria. In Sri Lanka, the study by Aslam (2016) employed the use of an Ordinary Least Square methodology to investigate the impact of exchange rate on economic growth. The study used time series data from 1970 to 2015. The findings revealed that exchange rate has a positive impact on economic growth in Sri Lanka. Using a simple linear regression model, Chughtai et al., (2015) examined the impact of major economic variables (interest rate and exchange rate) on the economic growth of Pakistan using annual time series data from 1981 to 2013. The study result revealed that both inflation and interest rate impact negatively on growth, while exchange rate has a positive impact on the economy. The study suggests that policymakers should maintain high exchange rate in order to boost the economy and take serious considerations about changing interest rates while controlling inflation rate. The Generalised Method of Moment (GMM) and Simultaneous equations model were employed by Akpan et al., (2015) to explore the effect of exchange rate movement on Nigeria's economic growth. The study used quarterly data from 1986 to 2014. The analysis indicated that there is no direct relationship between exchange rate and output growth. Rather, Nigeria's economic growth has been directly affected by monetary variables. The research suggested that a broad program of exchange rate reform to complement the exchange rate policy adopted. Analysing the impact of exchange rate on economic growth in Nigeria using the Ordinary Least Square technique, Adeniran et al., (2014) used data time-series for the period 1986 to 2013. The study revealed that exchange rate had a positive but insignificant relationship with economic growth. The result also indicated

that interest rate and inflation had a negative impact on economic growth. The study recommended that government should encourage the export promotion strategies in order to maintain a surplus balance of trade and also conducive environment, adequate security, effective fiscal and monetary policy, as well as infrastructural facilities should be provided so that foreign investors would be attracted to invest in Nigeria. Obansa et al., (2013) empirically examined the relationship between exchange rate and interest rate on economic growth in Nigeria from 1970 to 2010, through the use of a Vector Auto-regression Model (VAR) with emphasis on impulse response factor and forecast error variance decomposition. The study revealed that interest rate had a little impact on economic growth in the period of regulation than in the deregulation era. Furthermore, the result showed that exchange rate liberalisation was good for the Nigerian economy as it promotes growth. However, interest rate liberalization does not make any significant impact on the economy as it undermines investment drive. The paper recommended that Interest rate liberalization and deregulation should be replaced with the policy of Interest rate regulation as obtained in the 1970s and early 1980s. Adopting the cointegration and Error Correction Model, Khondker et al., (2012) used annual data from 1980 to 2011 to analyze the relationship between exchange rate and economic growth in Bangladesh. The study revealed that in the long-run a 10% depreciation of real exchange rate would be associated with a 3.2% rise in aggregate output. While, in the short-run, real exchange rate depreciation would result in about half a percent decline in gross domestic product.

METHODOLOGY

Quarterly data with a sample period from 2000:Q1 to 2017:Q2 is adopted. This is to ensure enough data point for the econometric analysis and also to cater for the loss of degree of freedom. The data were sourced from the CBN statistical bulletin 2017 and CBN database.

The model is specified as thus:

$$RGDP = f(CPI, REXR \& RINT) \dots \dots \dots (1)$$

Equation 1 can be presented in its econometric form as thus;

$$RGDP = \beta_0 + \beta_1 CPI + \beta_2 REXR + \beta_3 RINT + \mu \dots \dots \dots (2)$$

Where:

RGDP = Real Gross Domestic Product (proxy for economic growth)

CPI = Consumer Price Index (proxy for inflation)

RINT = Real Interest Rate

REXR = Real Exchange Rate

μ is the error term, β_0 is the constant term; $\beta_1 - \beta_3$ are coefficient of the variables.

Apriori expectation of the model: β_1, β_2 and $\beta_3 < 0$

In view of the importance of a well-managed exchange rate and interest rate for economic growth, this study employs econometric methodologies such as co-integration and Error Correction framework to examine the relative effects of exchange rate and interest rate on Nigeria's economic growth. The study uses the Error Correction Model (ECM) framework after co-integration has been established among the variables. The ECM is employed to estimate the relative effects of exchange rate and interest rate on economic growth. The use of this approach predicts the cumulative effect taken into account the dynamic effect among exchange rate, interest rate and other examined variable. Once the variables are co-integrated, it becomes easy to distinguish between the long-run and short-run relationship. Therefore, to capture both the long-run and short-run dynamics of exchange rate and interest rate on economic growth in Nigeria, an ECM employing the Johansen co-integration techniques was employed which allows for the estimation of short-run dynamics as well as long-run equilibrium adjustment processes.

RESULTS AND DISCUSSION

The empirical investigation of this study starts with a unit root test which is conducted to examine the order of integration of each of the variables in the model. Thereafter, co-integration analysis is then undertaken and followed by the examination of the long-run and short-run dynamics of exchange rate and interest rate on economic growth and other variable.

Unit Root Tests. To examine the existence of stochastic non-stationarity in the series, the study tests for the order of integration of the individual variables through the unit root test employing the Augmented-Dickey Fuller (ADF) and Philips-Perron (PP) tests. The variables tested are: RGDP, REXR, CPI AND RINT. The result presented in the table below indicated that RGDP, REXR, CPI AND RINT were all stationary at first difference, which implies that they are I(1) series. Given the unit root properties of the variables, the study proceeded to establish whether or not there is a long-run co-integrating relationship among the variables in equation (1) by using the Johansen's co-integration test.

TABLE 1. UNIT ROOT TEST

VARIABLES		ADF @ LEVEL	ADF @ FIRST DIFF.	PP @ LEVEL	PP @ FIRST DIFF.	ORDER OF INTEG.
RGDP		-1.363444	-3.942186***	-1.348411	-3.902341	I(1)
REXR		-1.581711	-6.763671***	-1.668188	-6.750127	I(1)
CPI		-2.071894	-7.473064***	-2.262836	-7.501253	I(1)
RINT		-2.025722	-4.072121***	-2.134112	-4.086304	I(1)
CRITICAL VALUE	1%	-3.538362	-3.527045	-3.525618	-3.527045	
	5%	-2.908420	-2.903566	-2.902953	-2.903566	
	10%	-2.591799	-2.589227	-2.588902	-2.589227	

Source: Author's computation using E-views version 10

Note: ***denote significance at 1% level. **denote significance at 5% level.

Co-integration Test. The co-integration test was performed based on the Johansen-Juselius (1990) framework. The objective is to establish whether long-run relationship exists among the variables, using Trace and Maximum Eigen tests. The result revealed long run relationship among variables examined in the study. Specifically, there exists long run relationship among real gross domestic product, consumer price index, real exchange rate and real interest rate reporting one co-integrating equation. Hence, given the objective of this study which look at single or direct relationship between the dependent and explanatory variables from the model as well as the result of cointegration test, the study employed Error Correction Model (ECM).

TABLE 2. JOHANSEN COINTEGRATION TEST

Series: LRGDP INF REXR RINT				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.291061	50.29540	47.85613	0.0290
At most 1	0.274738	26.56041	29.79707	0.1128
At most 2	0.061418	4.396096	15.49471	0.8691
At most 3	0.000327	0.022556	3.841466	0.8805
Trace test indicates 1 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None	0.291061	23.73499	27.58434	0.1442
At most 1 *	0.274738	22.16432	21.13162	0.0357
At most 2	0.061418	4.373540	14.26460	0.8180
At most 3	0.000327	0.022556	3.841466	0.8805
Max-eigenvalue test indicates no cointegration at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Source: Author's computation using E-views 10

Estimation of the Error Correction Model. Based on the Granger Representation theorem, co-integrated variables will also depict an error correction model (ECM) which shows the short-run dynamics or adjustments of any deviation from equilibrium. ECM is a one-period lagged co-integrating equation as well as first lagged (differences) of the endogenous variables. The result of the estimated model is presented and interpreted in Table 3.

The result in Table 3 depicts negative and significant relationship between the real gross domestic product (rgdp), consumer price index (cpi) and real exchange rate (rexr). The relationship is in line with the apriori expectation and a percentage increase in REXR will lead to 0.001414% decrease in real gross domestic product. Also, a percentage increase in CPI will lead to 0.00613 decreases in real gross domestic

product. However, real interest rate ($rint$) shows positive and insignificant relationship with real gross domestic product which contradicts the apriori expectation as proposed by economic theory. At 1.912646, the Durbin Watson statistics shows the absence of auto-correlation given its value that is between 1.8 and 2.2. We can therefore reject the null hypothesis of the presence of autocorrelation among the disturbance terms in the model and accept the alternative hypothesis that there is no autocorrelation between the error terms. The fitness of the model is confirmed by the F-statistic (407.7749) which is significant at 1 percent given the value of 0.000000 which led to rejection of null hypothesis that all the explanatory variables introduced in the model are not jointly significant in explaining the variations in real gross domestic product. The error correction term, ECM_{t-1} , was significant at 1% with a high feedback of 86%. It is also negatively signed, showing that the adjustment is in the right direction to restore the long run relationship. This confirms also that any disequilibrium in the short run can be fixed back with a speed of 86% in the long run. The coefficient of determination (R^2) explains 96% of the variations in the dependent variable which is above 50% and even after taking into consideration the degree of freedom, the adjusted coefficient of determination (adjusted R^2) still explains 95% variation in the dependent variable.

TABLE 3. RESULTS OF ERROR CORRECTION MODEL

Dependent Variable: LRGDP				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.47214	0.053593	288.6952	0.0000
CPI	-0.006013**	0.000168	-35.76516	0.0000
REXR	-0.001414**	0.000348	-4.068334	0.0001
RINT	0.000117	0.001945	0.060206	0.9522
ECM(-1)	-0.859077	0.064079	-13.40662	0.0000
R-squared	0.961110	Mean dependent var		16.25767
Adjusted R-squared	0.958753	S.D. dependent var		0.346391
S.E. of regression	0.070350	Akaike info criterion		-2.402859
Sum squared resid	0.326638	Schwarz criterion		-2.243516
Log likelihood	90.30150	Hannan-Quinn criter.		-2.339493
F-statistic	407.7749	Durbin-Watson stat		1.912646
Prob(F-statistic)	0.000000			

Source: Authors' computation using E-views 10

Note: **denote significance at 5% level.

Diagnostic Test. After the analysis and presentation of the ECM result, several diagnostic tests of the model adequacy were considered to check how “good” the fitted model is. Specifically, the Jarque-Bera (JB) Test of Normality, the Breusch-Godfrey (BG) test for serial correlation, White heteroskedasticity and Ramsey Reset Test were employed. The result is presented in Table 4.

TABLE 4. SUMMARY OF DIAGNOSTIC TESTS FOR THE ECM MODEL

TEST	GDP
Jarque-Bera Normality	6.240075 (0.06415)
Breusch-Godfrey (B-G)	3.277818 (0.3242)
Heteroskedasticity	2.398477 (0.0589)
Ramsey Reset	5.51069 (0.5453)

Note: The probability is given in parenthesis while the F-statistics are above the probability value.

Source: Author's Computation using E-views Output

The outcome of the diagnostic tests as shown Table 4 is satisfactory. Under the null hypothesis that the residuals are normally distributed, the JB test for residual normality assumption is not disrupted. Table 4 also shows that the error process could be pronounced as normal for the relationship between the dependent variable and explanatory variables. The B-G test which is noted to have stronger statistical power showed the absence of serial correlation. Also, the absence of white heteroskedasticity and specification error was authenticated. The results of the tests suggest that the model is well specified, and hence the results are credible.

CONCLUSION AND POLICY IMPLICATIONS

The paper examined the effect of exchange rate and interest rate on economic growth in Nigeria from 2000:Q1 to 2017:Q2 using Co-integration and Error Correction Model (ECM). The specific objective is to estimate the effect of exchange rate and interest rate on economic growth in Nigeria. In the process of doing this, the hypotheses that both exchange rate and interest rate promote economic growth in Nigeria were validated. The two variables (exchange rate and interest rate) that were used to measure their effect on economic growth contributed to economic growth. Exchange rate was significant, while interest rate was insignificant. The ECM term in indicates a feedback of 86% of the previous quarters with the speed of adjustment to equilibrium very high.

With the negative relationship between the exchange rate and economic growth, it follows that exchange rate is significant and supports economic growth in Nigeria. This result is in tandem with the findings of Obansa et al., (2010), Aslam (2016) and Adeniran et al., (2014). It therefore implies that a well-managed exchange rate can increase the growth prospects of the Nigerian economy.

The negative relationship between CPI and economic growth shows that a decrease in CPI leads to higher economic growth all things being equal. CPI being proxy for economic stability if maintained at a lower rate would increase investor's confidence and participation as well as capital flows into the economy.

From the findings, real interest rate has a positive relationship with real gross domestic product (RGDP) but has an insignificant effect on economic growth. This is



an indication that the lending activities of deposit money banks have little impact on the country's economic growth. The constraint that makes it difficult for banks to lend should be addressed. Likewise, the issue of high lending rate with hidden transaction costs must be seriously monitored and addressed by the regulatory authorities.

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REMITTANCE INFLOWS AND ECONOMIC GROWTH: THE CASE OF DEVELOPING COUNTRIES

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Abstract

This paper investigates the long-run growth effect of remittance flows to developing countries using the dynamic panel generalized-method-of-moments (GMM) estimators with Windmeijer (2005) correction. Our results indicate that the link between remittance inflows and economic growth is conditional on the extent of financial depth and quality of governance of the recipient countries.

Keywords: *Remittances; Economic growth; GMM*

INTRODUCTION

According to the World Bank, the officially recorded remittances to developing countries have increased from \$49 billion in 1990 to \$429 billion 2016. This amount represents about 75% of global remittance flows (World Bank, 2017) [1]. Furthermore, remittance flows to developing countries are more than three times the size of Official Development Assistance (ODA), which amounted to \$142.6 billion in 2016, and are relatively more stable than cyclical private debt and equity flows (see Figure 1 in the Appendix). The sheer size of remittances has been continuously growing and now represents the second largest source of external funding for developing countries, behind foreign direct investment (FDI), which totaled \$646 billion in 2016 (UNCTAD, 2017) [2]. It is also believed that billions more are transferred through unofficial channels.

Does this ever-growing remittance flow to developing countries enhance economic growth? Both theoretical and empirical research into the long-term economic impact of remittances has produced mixed results. On one hand, theory presents somewhat ambiguous explanations regarding the effects of remittance inflows on the economic growth of the recipient economy. The literature shows that remittances could be driven

by an altruistic motive (i.e., to help smooth consumption of the receiving family members), and/or a self-interest motive (i.e., as investment during good times) (Lucas & Stark, 1985; Rapoport & Docquier, 2006; Lueth & Ruiz-Arranz, 2008; Adams, 2009) [3]. Given that remittances are private financial flows that could be used to finance consumption and investment, they could potentially contribute to capital accumulation, both physical and human. This would then result in an increase in economic growth of the receiving economy by augmenting domestic sources of income, improving the creditworthiness of domestic investors (enhancing their collateral), and consequently, lowering the cost of capital in the domestic economy, and by improving domestic macroeconomic stability (or reducing output volatility). These effects, however, depend on the extent to which remittances are directed towards investment. If a significant portion of remittances goes to consumption, they could contribute towards poverty reduction and consumption smoothing and thus, short-run economic growth, but not necessarily to long-term economic growth (Barajas et al., 2009; Chami et al., 2005; IMF, 2005; World Bank, 2006) [4]. Remittance inflows could also exert a negative impact on labor force participation by encouraging consumption of leisure as the recipients can substitute unearned income for labor income, and could therefore dampen long-term economic growth (Chami et al., 2005). Theory also shows that remittance inflows may affect total factor productivity (TFP) growth through effects on the efficiency of domestic investments and the size of domestic production externalities generated by an economy (Barajas et al., 2009).

On the other hand, the empirical studies are also inconclusive. A number of empirical studies show that remittance inflows enhance investment, facilitate human capital formation, and total factor productivity and hence contribute positively to economic growth (IMF, 2005; World Bank, 2006; Ahortor & Adenutsi, 2009; Salahuddin & Gow, 2015; Borja, 2017). At the same time, a host of other empirical studies show that remittance inflows exert either no discernible or even negative effect on long-run economic growth (Barajas et al., 2009; Chami et al., 2005; Gupta, 2006; Lim & Simmons, 2015). Some of the studies show that remittances may hamper economic growth through a Dutch Disease effect (Acosta et al., 2009; Barajas et al., 2011) or by reducing labor supply and increasing investment risk (Chami et al., 2005), or by negatively affecting quality of domestic institutions (Abdih et al., 2012). Still other studies show that the growth effects of remittance inflows depend on the recipient countries' domestic factors (Catrinsecu et al., 2009; Giuliano & Ruiz-Arranz, 2009).

Against this backdrop, this study attempts to re-examine the growth effects of remittance inflows to developing countries using the most recent available data set and system GMM for panel data estimation with Windmeijer (2005) correction. In addition to applying the Windmeijer correction to the dynamic panel GMM regression to try to



minimize the potential instrument proliferation issue, which could bias the regression results downwards, this study contributes to the existing body of research in that it focuses only on developing countries (given that the growth impacts of remittances could differ between developed and developing countries), controls for six governance indicators besides the common control variables, examines if the growth effect of remittance is conditional on domestic factors including financial depth and quality of governance. The study also uses data averaged over five year period to minimize the effects of business cycle fluctuations from masking the long-run growth impact of remittance inflows.

Our results show that the effect of remittance inflow on economic growth depends on the extent of financial depth and the quality of governance of the recipient countries. Thus, any effort at boosting the growth effect of remittance should focus on strengthening the financial system and improving the quality of governance of the recipient countries.

The remainder of the paper is organized as follows. Section 2 describes the data. Section 3 discusses the econometric methodology employed and Section 4 provides the empirical results of the study. Finally, Section 5 concludes the paper.

DATA AND PRELIMINARY ANALYSIS

This study employs a panel of 48 countries for which we have complete data on remittance inflows and control variables for the period 1996-2016. Our growth regressions are estimated using five-year averages of all variables. The dependent variable is economic growth as measured by a country's annual percentage change in real GDP per capita. The control set is comprised of remittance inflows to GDP ratio along with other variables commonly found to be robustly significant in previous studies. Our World Bank remittance measure reflects annual inflows from personal transfers, employee compensation, and migrants' transfers. Additionally, the full set of explanatory variables includes initial real GDP per capita, government consumption expenditures to GDP ratio, domestic credit to GDP ratio, inflation rate, population growth rate, trade openness, average years of schooling, real effective exchange rates, and measures of governance. Six separate measures reflecting different dimensions of governance are explored. These include voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption. In addition to these separate measures, we formed a single governance variable which gives the combined average of the six aforementioned dimensions.

The number of countries and years in our study are limited by data availability, specifically the education and governance measures. However, we feel it is important to

include these variables in our model. The measure of years of schooling serves as a proxy for a country's level of human capital, which economic theory tells us is important for growth. Analyzing the governance variables contributes to the existing literature as they are relatively new measures and have not been included in many studies. See Table 1 in the Appendix for a full list of variables along with descriptions and sources for each. Summary statistics for each variable are shown in Table 2 below.

TABLE 2. SUMMARY STATISTICS

<i>Variable</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Minimum</i>	<i>Maximum</i>
Real GDP per capita	3357.779	2901.554	239.729	12762.31
Economic growth	4.233	2.286	-5.142	11.810
Remittance inflows	0.042	0.054	0.00022	0.318
Schooling	5.714	2.363	0.822	9.816
Govt. size	14.588	5.438	4.954	37.078
Inflation	7.208	8.244	-1.800	74.101
Openness	69.447	31.687	18.454	191.126
Private credit	48.832	40.208	-63.123	215.026
Real effective exch. rate	104.356	18.348	62.644	210.826
Population growth	1.854	0.883	0.260	6.059
Governance	39.208	14.354	4.74	74.109
voice and accountability	41.225	18.308	2.494	85.220
Political stability	32.789	19.341	1.344	90.000
Govt. effectiveness	41.646	17.327	4.434	78.766
Regulatory quality	42.244	16.077	4.810	74.008
Rule of law	37.963	16.317	2.500	70.996
Corruption control	39.385	17.972	1.440	80.736

Note: Except real GDP per capita, schooling, real effective exchange rate, and governance indicators, all variables are expressed as percentage values.

ECONOMETRIC METHODOLOGY

We examine the causal link between economic growth and remittance inflow using the dynamic panel generalized-method-of-moments (GMM) estimators [5]. The cross-country growth regression we estimate can be written as follows:

$$y_{i,t} - y_{i,t-1} = (\alpha - 1)y_{i,t-1} + \beta'X_{i,t} + \tau_t + \mu_i + \varepsilon_{i,t} , \quad (1)$$

where $y_{i,t}$ is the logarithm of real per capita GDP in country i at time t , $X_{i,t}$ is a set of explanatory variables, including remittance inflow, average years of schooling, government consumption expenditure, inflation rate, trade openness, size of private credit provided by domestic financial institutions, population growth rate, quality of governance, and real effective exchange rate; τ_t captures time-specific effects (time dummies are used), μ_i represents time invariant country-specific effects, and $\varepsilon_{i,t}$ is the idiosyncratic shocks.



Note that we can rewrite (1) as:

$$y_{i,t} = \alpha y_{i,t-1} + \beta' X_{i,t} + \tau_i + \mu_i + \varepsilon_{i,t} \quad (2)$$

So that the model can equally be thought of as being for the increase or level of y .

Model (2) contains the lagged dependent variable as an explanatory variable in the same regression. Applying OLS estimator to this model results in biased and inconsistent estimates, since the lagged real per capita GDP is correlated with the country fixed effects in the error term. To remove this dynamic panel bias, Holtz-Eakin et al., (1988) and Arellano and Bond (1991) propose the first-difference transform of (2) as follows:

$$y_{i,t} - y_{i,t-1} = \alpha(y_{i,t-1} - y_{i,t-2}) + \beta'(X_{i,t} - X_{i,t-1}) + (\varepsilon_{i,t} - \varepsilon_{i,t-1}) \quad (3)$$

Although the fixed effects are expunged, the lagged per capita GDP as well as any of the control variables in X are still potentially endogenous. To overcome this problem, Arellano and Bond (1991) uses the lagged levels of the explanatory variables as instruments under the assumptions that the error term, ε , is not serially correlated and that the explanatory variables are weakly exogenous (i.e., they are uncorrelated with future realizations of error terms). Specifically, this dynamic panel estimator commonly referred to as Difference GMM, uses the following moment conditions:

$$E[y_{i,t-l}(\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \text{ for } l \geq 2; t = 3, \dots, T, \quad (4)$$

$$E[X_{i,t-l}(\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \text{ for } l \geq 2; t = 3, \dots, T, \quad (5)$$

However, Blundell and Bond (1998) demonstrate that when explanatory variables are persistent over time, the untransformed lagged levels of these variables are weak instruments for transformed variables and this adversely affects the small- sample and asymptotic properties of Difference GMM.

To increase efficiency, Blundell and Bond develop a dynamic panel System GMM, originated in Arellano and Bover (1995), which augments the difference estimator by estimating simultaneously in differences and levels, with the two equations being distinctly instrumented. The addition of regression in levels also allows us to examine the cross-country relationship between our variables of interest. While the instruments for equation in differences are the same as above, the instruments for equation in levels are the lagged differences of the explanatory variables [6]. These are valid instruments under the following additional assumption: although there may be correlation between the levels of the explanatory variables and the country fixed effects in (2), there is no correlation between the differences of these variables and the country-specific effect [7]. This assumption results in the following stationarity properties:

$$E[y_{i,t+p}\mu_i] = E[y_{i,t+q}\mu_i] \text{ and } E[X_{i,t+p}\mu_i] = E[X_{i,t+q}\mu_i], \text{ for all } p \text{ and } q \quad (6)$$

The additional moment conditions for the regression in levels are:

$$E[(y_{i,t-l} - y_{i,t-l-1})(\mu_i + \varepsilon_{i,t})] = 0 \text{ for } l = 1, \quad (7)$$

$$E[(X_{i,t-l} - X_{i,t-l-1})(\mu_i + \varepsilon_{i,t})] = 0 \text{ for } l = 1. \quad (8)$$

The dynamic panel GMM-sometimes referred to as System GMM-, thus, uses the moment conditions in Eqs. (4), (5), (7), and (8) to generate consistent and efficient estimates.

The consistency of dynamic panel GMM rests on the validity of the instruments and the assumption that the error terms do not exhibit serial correlation. In particular, the estimator can suffer from a potential instrument proliferation; where by the instrument count may become equal to or larger than the number of cross-sectional units and thereby over-fitting the instrumented variables they may fail to remove the endogenous components of the variables and result in a biased parameter estimates towards those from non-instrumenting estimators. We can reduce this instrument count problem by either restricting the instruments to certain lags instead of all available lags or by collapsing the instrument matrix. The latter can be formally expressed as:

$$E[y_{i,t-l}(\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \text{ for each } l \geq 2, \quad (9)$$

$$E[X_{i,t-l}(\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \text{ for each } l \geq 2. \quad (10)$$

In dynamic panel GMM, we replace the moment conditions of the standard difference GMM (4 and 5) with (9) and (10). The new moment conditions state the same orthogonality assumption between the lagged levels and the differenced error term as (4) and (5) but we only want the estimator to minimize the magnitude of the empirical moments $\sum_t y_{i,t-l}(e_{i,t} - e_{i,t-1})$ for each l , rather than separate moments $\sum_{t,l} y_{i,t-l}(e_{i,t} - e_{i,t-1})$ for each l and t (Roodman, 2009). This method, known as the Windmeijer correction, significantly minimizes the potential biases that arise due to over identification problem and boosts the efficiency of our estimates without losing information, as no lags are actually dropped.

We also use two specification tests. The first relates to instruments and includes Hansen-J test of the joint validity of the instruments and Difference-in-Hansen tests of exogeneity of instrument subsets (null hypothesis that the lagged differences of the explanatory variables are uncorrelated with the residuals). The second test examines the hypothesis that the error term is not second-order serially correlated (by construction, the differenced error term is likely first-order serially correlated even if the original is not).



EMPIRICAL RESULTS

To estimate the causal link between remittance inflow and economic growth, we use both dynamic panel difference and system GMM estimators with five-year averaged dataset. As can be seen in Table 3, the coefficient estimate of remittance inflow is statistically not significant, implying that remittance inflow has no significant effect on economic growth of the countries studied during the 1996-2016 period. This result holds true after we control for initial income per capita, average years of schooling, government size, inflation rate, trade openness, private credit, population growth, governance, real effective exchange rate, and time dummies (results not indicated in the table)[8]. Given that our sample countries are at different income strata

(9 are low-income while 39 are middle-income countries, according to the World Bank's official income classification)[9], we also investigate if remittance inflow exerts varying effects on economic growth depending on the income group of the sample countries. As can be seen in regression (2) of Table 3, the estimated coefficient of the interaction term between remittance inflow and an indicator variable LIC (LIC=1 if the country is a low-income, and 0 if middle income) is statistically not significant, implying that the growth effect of remittance inflow does not vary depending on the income group of the countries studied.

Does the growth effect of remittance inflow depend on the state of financial deepening and the quality of governance of the recipient countries, among other institutions? To examine this case, we include interaction terms for remittance inflow and financial depth, and remittance inflow and the quality of governance indicator, in two separate growth equations with the same specification as before. As regression (3), both difference and system GMM, shows the coefficient estimate of the remittance inflow is negative and statistically not significant. However, the coefficient estimate of the interaction term between remittance inflow and private credit is statistically significant at 5% (system GMM) and 10% (difference GMM), indicating that remittance inflow exerts a significant and positive effect on economic growth in countries with better financial deepening. The coefficient estimate of private credit is also statistically significant showing that financial deepening promotes economic growth. This finding may indicate that well-functioning financial institutions channel remittance flows into uses that do enhance economic growth. This finding is in agreement with earlier work by Giuliano and Ruiz-Arranz (2009) in that the growth effect of remittance depends on the level of financial depth of the recipient countries [10].

Similarly, the coefficient estimate of remittance inflow is negative and statistically not significant (regression 4) whereas the estimated coefficient of the interaction term between remittance inflow and governance is statistically significant at 10% (system GMM), indicating that remittance inflow enhances economic growth in those countries that possess a higher quality governance.

TABLE 3. REMITTANCE INFLOW AND ECONOMIC GROWTH: GMM REGRESSION RESULTS

<i>Dependent variable: per capita real GDP growth rate</i>								
<i>Variable</i>	<i>Difference GMM</i>				<i>System GMM</i>			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Remittance inflow	1.790 (1.342)	0.380 (3.396)	-0.331 (1.897)	-0.032 (5.403)	-0.063 (0.891)	-0.352 (0.968)	-1.585 (1.152)	-2.873 (1.866)
Per capita income, t-1	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.002 (0.001)	-0.002*** (0.001)	-0.002*** (0.001)	-0.002*** (0.001)	-0.002* (0.001)
Schooling	-1.702 (2.253)	-1.906 (2.738)	-2.723 (4.628)	-1.281 (2.878)	3.202 (2.932)	2.266 (4.922)	0.499 (2.671)	-0.061 (1.455)
Government size	-0.100 (0.314)	0.870 (0.924)	0.062 (0.125)	0.360 (0.363)	0.115 (0.152)	0.086 (0.207)	0.060 (0.206)	-0.956 (2.763)
Inflation	0.020 (0.054)	-0.124 (0.139)	0.022 (0.106)	0.010 (0.101)	-0.035 (0.064)	-0.047 (0.049)	-0.026 (0.066)	0.011 (0.086)
Trade openness	-0.057 (0.050)	0.029 (0.088)	0.012 (0.076)	0.006 (0.067)	0.007 (0.032)	0.009 (0.050)	0.023 (0.033)	0.019 (0.033)
Private credit	0.129** (0.053)	0.106* (0.063)	0.200** (0.096)	0.134* (0.075)	0.055** (0.021)	0.058** (0.027)	0.155** (0.062)	0.037** (0.016)
Governance	0.002 (0.172)	-0.015 (0.143)	0.062 (0.125)	0.071 (0.583)	0.163* (0.088)	0.151* (0.081)	0.173* (0.098)	0.432* (0.227)
Real effective exchange rate	-0.011 (0.061)	0.019 (0.080)	0.014 (0.041)	-0.002 (0.044)	-0.012 (0.037)	-0.011 (0.051)	0.001 (0.030)	-0.002 (0.032)
Population growth	-0.775 (2.368)	2.834 (3.765)	-0.934 (1.877)	-0.153 (2.207)	0.312 (1.070)	-0.067 (0.993)	-1.474 (1.431)	-1.431 (1.186)
Remit*LIC		0.117 (3.440)				-0.023 (1.417)		
Remit*private credit			0.043* (0.024)				0.030** (0.015)	
Remit*Governance				0.009 (0.114)				0.074* (0.039)
Constant					-5.855 (10.358)	-3.685 (11.455)	-6.048 (8.945)	-6.338 (20.154)
Observations	144	144	144	144	144	144	144	144
AR(2) test ^a	0.310	0.733	0.391	0.602	0.318	0.300	0.876	0.714
Hansen J test ^b	0.582	0.969	0.543	0.878	0.325	0.139	0.254	0.517
Diff. in Hansen test ^b					0.771	0.792	0.755	0.992

Notes: All variables are five-year averaged log values; (1) is baseline regression and controls for income per capita (t-1), remittance inflow, schooling, government size, inflation, trade openness, private credit, governance, real effective exchange rate, and population growth; in addition to those in (1), the



regressions include interaction terms between remittance inflow and a dummy variable for low-income countries (LIC=1 if low income country and 0 otherwise) in (2), private credit in (3), governance in (4); all regressions incorporate Windmeijer correction (2005), with robust standard errors in parentheses; *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively; P-values of post-estimation tests are reported; (a) The null hypothesis is that the errors in the first-difference regression exhibit no second-order serial correlation; (b) The null hypothesis is that the instruments used are not correlated with the residuals.

The coefficient estimate of the quality of governance indicator is also statistically significant (system GMM), indicating the importance of institutions in facilitating economic growth. All control variables, with the exception of private credit, governance, and lagged per capita income, enter all of the regressions with statistically insignificant coefficients.

The governance index is composed of six indicators (voice and accountability, political stability, government effectiveness, regulation quality, rule of law, and control of corruption) and we are interested in identifying if some of the indicators are more important than others in boosting the effect of remittance inflow on economic growth of the recipient countries. Table 4 displays the regression results.

As we can see, the coefficient estimates of voice and accountability, political stability, government effectiveness, rule of law, and the interaction terms between remittance inflow and voice and accountability, remittance inflow and political stability, remittance inflow and rule of law are all statistically significant while the coefficients of regulation quality, control of corruption, and the interaction terms between remittance inflow and regulation quality, and remittance inflow and control of corruption are not significant. This indicates that, having a government structure that promotes voice and accountability, ensures political stability, and upholds rule of law is an important prerequisite to the realization of the potential growth effects of remittance inflows. This finding is in line with the works of Kaufmann and Kraay (2002), and Liu et al., (2018) that conclude that good governance can promote economic growth by nurturing systems and government policies that foster enabling environment for efficient resource utilization; or as Liu et al., (2018) describes it by encouraging the “helping hands” of power while inhibiting the “grabbing hands” of power.

Just like in Table 3, the coefficient estimate of remittance inflow is not significant while that of private credit is statistically significant. The results indicate that the effect of remittance inflows on economic growth is conditional on a number of domestic factors including the extent of financial deepening and the quality of governance. These findings are in line with earlier studies by Catrinescu et al., (2009), Giuliano & Ruiz-Arranz (2009),

World Bank (2006), to mention a few, that also found that the growth effect of remittances depends on a variety of domestic factors, including political and economic policies and institutions. The post-estimation tests also confirm that our results are robust and valid.

TABLE 4. REMITTANCE INFLOW, GOVERNANCE, AND ECONOMIC GROWTH: SYSTEM GMM
REGRESSION RESULTS

<i>Dependent variable: per capita real GDP growth rate</i>						
<i>Variable</i>	<i>System GMM</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
Remittance inflow	-1.522 (0.969)	-1.489 (0.992)	-2.949 (2.048)	-2.792 (1.759)	-3.977 (2.475)	0.075 (1.747)
Per capita income, t-1	-0.001 (0.001)	-0.002** (0.001)	-0.002* (0.001)	-0.001* (0.001)	-0.002*** (0.001)	-0.001 (0.001)
Schooling	-0.608 (0.558)	0.711 (0.669)	1.328 (3.369)	0.007 (0.731)	0.005 (0.674)	-0.509 (0.440)
Government size	-0.796 (2.781)	0.759 (2.782)	1.097 (3.510)	0.396 (3.399)	0.919 (3.607)	-0.064 (0.129)
Inflation	-0.021 (0.064)	-0.031 (0.075)	-0.135** (0.062)	-0.111 (0.076)	-0.457 (1.002)	-0.058 (0.069)
Trade openness	-0.398 (1.232)	-0.001 (0.029)	-0.012 (0.057)	-0.833 (1.920)	-0.039 (0.036)	-0.004 (0.019)
Private credit	0.022* (0.012)	0.056** (0.028)	0.043* (0.022)	0.025* (0.015)	0.060* (0.031)	0.024* (0.013)
Voice and accountability	0.223** (0.093)					
Remit*Voacc	0.054** (0.025)					
Political stability		0.218** (0.104)				
Remit*Polst		0.040* (0.020)				
Govt effectiveness			0.210* (0.123)			
Remit*Goveff			0.051 (0.042)			
Regulation quality				0.294 (0.194)		
Remit*Regqual				0.069 (0.048)		
Rule of law					0.485* (0.242)	
Remit*rulaw					0.107* (0.059)	
Corruption control						0.045 (0.185)
Remit*corrcon						0.002



						(0.044)
Real effective	-1.715	-0.024	-0.043	-0.030	-0.055	0.001
exchange rate	(3.164)	(0.025)	(0.061)	(0.034)	(0.041)	(0.023)
Population	-0.640	-0.222	-1.208	-2.026*	-2.846**	-2.803
growth	(1.115)	(1.205)	(2.013)	(1.185)	(1.271)	(1.945)
Constant	14.071	-3.732	-1.769	4.228	0.886	9.764*
	(21.983)	(12.585)	(21.510)	(22.179)	(21.040)	(5.428)
Observations	144	144	144	144	144	144
AR(2) test ^a	0.803	0.435	0.227	0.777	0.957	0.483
Hansen J test ^b	0.757	0.875	0.240	0.327	0.762	0.597
Diff. in	0.269	0.488	0.819	0.119	0.528	0.529
Hansen test ^b						

Notes: All variables are five-year averaged log values; all regressions control for income per capita (t-1), remittance inflow, schooling, government size, inflation, trade openness, private credit, real effective exchange rate, and population growth; in addition (1) controls for voice & accountability and its interaction term with remittance inflow, (2) controls for political stability and its interaction term with remittance inflow, (3) controls for government effectiveness and its interaction term with remittance inflow, (4) controls for regulation quality and its interaction term with remittance inflow, and (5) controls for rule of law and its interaction term with remittance inflow; all regressions incorporate Windmeijer correction (2005), with robust standard errors in parentheses; *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively; P-values of post-estimation tests are reported; (a) The null hypothesis is that the errors in the first-difference regression exhibit no second-order serial correlation; (b) The null hypothesis is that the instruments used are not correlated with the residuals.

CONCLUSION AND POLICY IMPLICATIONS

This article examines the long-run growth effect of remittance flows to 48 developing countries using the dynamic panel generalized-method-of-moments (GMM) estimators with Windmeijer (2005) correction and five-year averaged data spanning from 1996-2016. The empirical results show that the growth effects of remittance inflow depend on the extent of financial deepening and the quality of governance of the recipient countries. Hence, any effort at boosting the growth effects of the huge remittance that flows into the developing countries should first focus on strengthening the financial system and other infrastructure that channel remittances into growth-enhancing activities, and promoting the quality of governance and domestic institutions that facilitate economic growth.

NOTES

- [1] The World Bank 2018 report also shows that the remittance flow to developing countries equals \$466 billion in 2017 and is projected to grow throughout 2018 due to the stronger economic performance in the host countries (World Bank, 2018).

- [2] Excluding China, the remittance flows to low-and middle-income countries (LMICs) are also significantly larger than FDI in LMICs (World Bank, 2018).
- [3] The literature also includes a third motive for remittance as informal arrangements between the migrant and family members regarding migration and remittance whereby the former appears to remit a fraction of their earned income on a regular basis (Lucas & Stark, 1985).
- [4] In addition, if remittances are perceived to be permanent, they may tend to stimulate additional consumption rather than investment (Barajas et al., 2009).
- [5] For a detailed description of the various GMM estimators, refer to Arellano & Bond (1991); Arellano & Bover (1995); Blundell & Bond (1998); Hansen (1982); and Roodman (2009).
- [6] The new instruments seem more valid for variables that are very persistent over time, random walk-like variables, as past changes may be more predictive of contemporaneous levels than past levels are of current changes.
- [7] Remember that we have assumed error term is not serially correlated.
- [8] The results hold true when we also control for labor force participation rate (instead of population growth), and gross fixed capital formation-to-GDP ratio, which proxies for investment rate.
- [9] See the appendix for the list of the countries included in the study.
- [10] Giuliano & Ruiz-Arranz (2009), however, found a significant negative interaction term between remittance and financial deepening and argue that remittances boost growth in countries with less developed financial systems by providing an alternative way to finance investment and relaxing credit constraints.

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APPENDIX

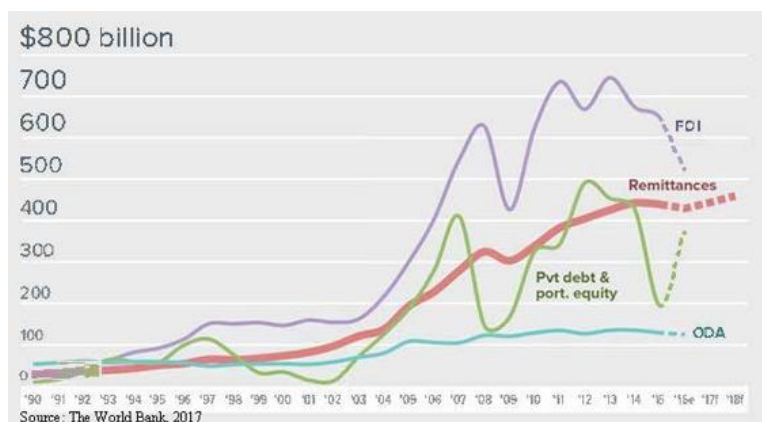


FIGURE 1. REMITTANCE AND OTHER FINANCIAL FLOWS TO DEVELOPING COUNTRIES



TABLE 1. VARIABLE DESCRIPTIONS AND SOURCES

<i>Variable</i>	<i>Description</i>	<i>Source</i>	<i>Notes</i>
Real GDP per capita	GDP per capita in constant 2010 US\$	World Bank. World Development Indicators Dataset	
Economic growth	GDP growth; annual %	World Bank. World Development Indicators Dataset	
Remittance inflows	Annual remittance inflows as a % of GDP; sum of 1) personal transfers, 2) employee compensation, 3) migrants' transfers	World Bank Migration and Remittances Data	
Schooling	Average years of total schooling for total population aged 25 and older	Barro-Lee Educational Attainment Dataset	5-year averages
Govt. size	General government final consumption expenditures as a % of GDP	World Bank. World Development Indicators Dataset	
Inflation	Annual % change in consumer price index (CPI)	World Bank. World Development Indicators Dataset	
Openness	Trade as a percent of GDP; sum of exports and imports as a % of GDP	World Bank. World Development Indicators Dataset	
Private credit	Domestic credit provided by the financial sector as a % of GDP	World Bank. World Development Indicators Dataset	
Real effective exchange rate	CPI-based real effective exchange rate	Bruegel Datasets. Real Effective Exchange Rates for 178 Countries: A New Database	Narrow index: 67 trading partners
Population growth	Annual population growth rate (annual %); all residents regardless of legal status or citizenship	World Bank. World Development Indicators Dataset	
Governance	Aggregate indicator reflecting overall quality of governance	World Bank. The Worldwide Governance Indicators Dataset	Author-calculated average of all World Governance Indicators (remaining variables listed below)

<i>Variable</i>	<i>Description</i>	<i>Source</i>	<i>Notes</i>
Voice and accountability	Extent to which citizens are able to participate in selecting government, freedom of expression, freedom of association, free media	World Bank. The Worldwide Governance Indicators	All World Governance Indicators are based on 30+ data sources that combine views from a large number of enterprise, citizen, and expert survey respondents
Political stability	Likelihood of political instability and/or politically motivated violence, terrorism	World Bank. The Worldwide Governance Indicators	
Government effectiveness	Quality of public and civil services, independence from political pressures, quality of policy formulation/implementation/commitment	World Bank. The Worldwide Governance Indicators	
Regulatory quality	Ability of government to formulate/implement policies that permit and promote private sector development	World Bank. The Worldwide Governance Indicators	
Rule of law	Quality of contract enforcement, property rights, police, and courts; likelihood of crime and violence	World Bank. The Worldwide Governance Indicators	
Corruption control	Extent to which public power is used for private gain	World Bank. The Worldwide Governance Indicators	

Countries included in the study: Algeria, Argentina, Bangladesh**, Benin*, Bolivia**, Botswana, Brazil, Burkina Faso*, Cameroon**, China, Colombia, Costa Rica, Cote d'Ivoire**, Dominican Republic, Egypt**, El Salvador**, Fiji, Ghana**, Guatemala**, Honduras**, India**, Indonesia**, Jamaica, Jordan**, Kenya**, Lesotho**, Madagascar*, Mali*, Mexico, Morocco**, Mozambique*, Niger*, Nigeria**, Pakistan**, Panama, Paraguay, Philippines**, Rwanda*, Senegal*, South Africa, Sri Lanka**, Sudan**, Suriname, Swaziland**, Thailand, Togo*, Tunisia**, and Turkey.

*represents low-income countries (LIC) (9);

**represents lower-Middle income countries (L-MIC) (22) and the remaining are upper-middle income countries (U-MIC) (17).



IMPACT OF FAMILY CONSTELLATION UPON THE FINANCIAL ADVISOR-CLIENT DYAD: A CONCEPTUALIZATION

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Abstract

Client retention is crucial to a company's survival in the financial services industry. A major determinant of retention is a customer's satisfaction with financial services provided by the firm. A critical component of an investor's service experience is the financial advisor. Therefore, determining which advisor to assign to a new client will have a significant impact upon whether the financial advisor-customer relationship is mutually beneficial. Social and behavioral scientists have extensively researched the effect of participants' personalities-similar and dissimilar-upon inter-relationships. While many marketing studies have been performed in this area, most have focused on the similarity of members' demographics and personalities. This paper presents a composite variable that identifies the major factors of successful dyads. It also allows more detailed evaluation of the financial advisor-client interaction. The variable is called "family constellation", which includes birth order, gender, spacing of children, and family size. A model incorporating both similarity and dissimilarity of dyadic participants' personalities is discussed, and conceptually extended. Potentially successful and unsuccessful financial advisor-client relationships are highlighted. Limitations and implications are presented.

Keywords: *Financial Services; Financial Advisor-Client Dyad; Family Constellation; Birth Order; Similarity/Dissimilarity of Dyadic Members.*

DEVELOPMENT OF THE PROBLEM

Many variables affect the long-term survival of financial services companies.¹ One of these is customer retention.² A major determinant of retention is an investor's cumulative satisfaction with the purchase and consumption experience of financial services provided by the firm over time (Anderson et al., 1994; Ennew & Binks, 1996; Selnes, 1998; Reddy &

¹Crosby et al. (1990) characterize the financial services industry environment as being dynamic and uncertain in ways that impact future needs and offerings (Zeithaml, 1981), consisting of "many buyers who are relatively unsophisticated about the service" (Frankwich et al., 2001), and encompassing a complex customized product (Levitt, 1983).

²Other variables include convincing current customers to purchase additional financial products and attracting new customers (Berry, 1983; Frankwich et al., 2001).



Czepiel, 1999; Mittal & Kamakura, 2001; Ranaweera & Prabhu, 2003; Gustafsson et al., 2005; Athanassopoulou, 2006; Liu & Wu, 2007; Baran et al., 2008; Shekhar & Gupta, 2008; Rajaobelina & Bergeron, 2009; Tseng & Wu, 2014). A critical component of the customer's overall service experience is the company's financial advisor (Dion et al., 1995; Boles et al., 2000a; Lee & Dubinsky, 2003; Eisingerich & Bell, 2007; Martenson, 2008; Newell et al., 2011; Gaur et al., 2012; Soderberg, 2013; Yu & Tseng, 2016; Cruciani, 2017). Therefore, determining which advisor to assign to a new investor will have a significant impact upon whether the initial financial advisor-client interaction is favorable, and develops into a successful long-term relationship.

As a preliminary step, financial services firms typically use a questionnaire to collect demographic data, assess investment goals, and determine risk tolerance of a new customer.³ Companies sometimes supplement this survey with a personal interview. Armed with this information, financial services managers determine which advisor to assign to a prospective client. This decision is usually made without regard to the similarity/dissimilarity of the personalities of the financial advisor and new customer.

An extensive body of literature exists in the social and behavioral sciences in areas related to interactions and dyadic relationships (e.g., interpersonal relations, theory of complementary needs, and similarity/dissimilarity of participants' attitudes and personalities). Many marketing studies have focused on interpersonal associations and salesperson-customer dyads. However, most of these have dealt primarily with the similarity of members' demographics and personalities.

PURPOSE

The purpose of this paper is to present a composite variable that will be beneficial in identifying the major factors of successful dyads. It will also allow more detailed evaluation of the roles of financial advisor and customer within such a relationship. The variable is called "family constellation", which includes birth order, gender, spacing of children, and family size. A model incorporating both similarity and dissimilarity of dyadic members' personality characteristics will be presented and discussed. This model will then be conceptually extended by developing all possible combinations of financial advisor and client according to sibling gender and age rank within the family. Likely successful and unsuccessful interactions will be highlighted. Finally, limitations and

³Researchers have found little or no relationship between individuals' financial decision-making and their self-reported risk preferences (Lopes, 1994; Warneryd, 1996; Zaleskiewicz, 2001).

implications of applying family constellation to the financial advisor-client dyad will be discussed.

SELECTED LITERATURE REVIEW: INTERPERSONAL RELATIONS

Social and behavioral scientists have extensively investigated interpersonal relations. A question commonly addressed by these researchers concerns what determines a successful association between individuals. One school of inquiry, which is supported by a relatively large body of evidence, maintains a successful association is partially a function of how "similar" the participants are in terms of opinions, values, etc. A second school of thought that is supported by some research purports "dissimilarity" between individuals tends to result in a favorable interaction.⁴

Salesperson-Customer Similarity. The "similarity" hypothesis states the "formation of interpersonal relationships ... [will] be facilitated when two individuals hold [similar] opinions ... " (Thibaut & Kelley, 1959: 43), values, and philosophies.⁵ In addition to numerous investigations by social and behavioral scientists, several marketing researchers have found empirical support for this notion.⁶ Dion et al. (1995) found personality similarity between salespeople and industrial purchasing managers was positively significant with sales performance.⁷ Lombard (1955) determined similar values between retail salespeople and customers lead to persistent and continued behavior patterns. Investigating life insurance salespeople and customers, Evans (1963) discovered similarity of physical, demographic, and affiliate attributes within these dyads increased the likelihood of a sale. Tosi (1966) concluded similarity of expectations between wholesale drug salespeople and retail pharmacists usually resulted in successful interactions. Gadel (1964) found age similarity between life insurance agents and policy

⁴For excellent reviews of early theory and research in both areas, refer to Thibaut & Kelley (1959), Heider (1961), Homans (1961), Berscheid & Walster (1969).

⁵Similarity-attraction theory (e.g., Byrne, 1971) argues "people are attracted to, prefer, and support relationships with similar others in order to reinforce their self-esteem and maintain balance or congruity in self-identity. Interaction is easier and less cognitively challenging with others who have similar attitudes, values, or experiences" (Smith, 1998: 7), which "supports traditional sales beliefs that exchange relations are easier to develop with like others" (Wilson & Ghingold, 1981: 91). In addition, "customers who perceive salespeople as similar to themselves could expect them to hold common beliefs as to what behaviors, goals, and policies are appropriate. Trust and satisfaction are fostered since customers attribute benevolent intentions to salespeople whom they believe share their values" (Doney & Cannon, 1997: 41).

⁶For purposes of this literature review, the author excluded research studies involving students, a fictitious salesperson or buyer, etc.

⁷The following is a verbatim excerpt from Lichtenthal and Tellefsen (2001: 6): "The literature on power suggests that, in general, attraction can provide the basis for influence. If a decision-maker is attracted to another person, then s/he will be motivated to try to gain that person's acceptance and to try to please the other person by agreeing with the person or following the person's advice (French & Raven, 1959). Thus, if a business buyer is attracted to a salesperson, then the buyer will be motivated to accept the salesperson's assertions and follow the salesperson's purchase suggestions. A number of researchers have found support for this pattern of similarity-based purchase behavior. Researchers found that when buyers had higher levels of internal similarity with their salespeople, the buyers were more likely to cooperate with the salesperson (Mathews et al., 1972); change their attitudes toward the product to reflect the salesperson's suggestions (Bush & Wilson, 1976); follow the salesperson's guidance on product selection (Brock, 1965); and make a purchase recommended by the salesperson (Taylor & Woodside, 1982; Woodside & Davenport, 1974)."



holders was positively correlated with sales. Investigating the relative importance of salesperson expertise and salesperson-customer similarity in a retail store, Brock (1965) concluded similarity was more important than expertise. Riordan et al. (1977) found greater attitudinal similarity between life insurance agents and customers than between agents and unsold prospects. In a study of financial advisors and clients, Palmer and Bejou (1995) ascertained some aspects of relationship development may be significantly dependent on the gender of both buyer and seller. Kang and Hillery (1998) discovered older customers had more favorable attitudes toward older retail clothing salespeople than their younger counterparts. Smith (1998) determined similarity among salespeople and purchasing agents in terms of gender, personality, and life stage were positively related to the relationship quality of the seller-buyer dyad. Surveying life insurance customers, Yu and Tseng (2016) found salesperson characteristics-expertise, likeability, and similarity—significantly and positively influenced relationship quality, which in turn increased repurchase intention and willingness to recommend. In a study of UK financial provider-customer relationships, Mukherjee and Nath (2007) found “shared-values ... enhance the feeling of association, develop a bonding, and nurture an associative, long-term relationship” (p. 1192). Dalziel and Harris (2011) confirmed this finding in a subsequent investigation. Taylor and Woodside (1982) discovered demographic similarity between insurance salespeople and prospects was positively significant with sales performance. Crosby et al. (1990) found similarity between insurance salespersons and customers in terms of appearance, status, and lifestyle were positively related to relationship quality and sales effectiveness, which increased a customer’s likelihood of having future interactions with the salesperson. Woodside and Davenport (1974) found a high degree of similarity between salesperson and consumer produced a much greater incidence of purchase. In testing the impact of salesperson and consumer similarity on consumer purchasing behavior, Churchill et al. (1975) found similarity accounted for statistically significant differences in consumers’ purchase intentions. In data collected from purchasing agents, Doney and Cannon (1997) discovered similarity of supplier’s salesperson to members of the buying firm had a significant influence upon a buyer’s anticipated future interactions with the supplier. In a study of salespeople, Fine and Gardial (1990) discovered perceived customer similarity had a significant positive effect upon the salesperson’s “confidence in making a sale, ease of making the sale, and the potentiality for the sale” (p. 15). Gaur et al. (2012) discovered appearance similarity and status similarity among retail bankers and customers in New Zealand had a significant positive impact upon a buyer’s satisfaction with a salesperson; however, lifestyle similarity did not. Other researchers have established similarity

between salespersons and customers is positively associated with improved sales performance (Busch & Wilson, 1976; Boles et al., 2000b; Lichtenthal & Tellefsen, 2001; Lee & Dubinsky, 2003).

Salesperson-Customer Dissimilarity. With the "dissimilarity" theory, dyad formation will be facilitated when two individuals possess different opinions, values, and philosophies as well as "when the differences are such that each person can provide something the other one needs" (Thibaut and Kelley, 1959: 45). In this sense, "two apparently dissimilar entities may ... be considered ... complementary ... when they lead toward a common purpose" (Heider, 1961: 186). Beyond social and behavioral science research, only a few marketing studies have substantiated the "dissimilarity" (or complementary) hypothesis.⁸ Investigating the retail clothing environment, Kang and Hillery (1998) determined younger customers had more favorable attitudes toward older salespeople than younger ones, because older salespeople showed more interest in helping them and were more likely to provide information. Surveying salespeople at a large life insurance company, Dwyer et al. (1998) tested age and gender similarity of salespeople and customers. No difference in performance between either age-matched pairs of salespeople and customers or mismatched ones was discovered. However, they found gender-mismatched salesperson-customer dyads outperformed matched ones. Using a web-video sales encounter, McColl and Truong (2013) determined dyad gender mismatching resulted in higher customer satisfaction scores for an attractive salesperson. In other studies, researchers uncovered either limited or no support for the positive influence of seller-buyer similarity on sales performance (Riordan et al., 1977) or in buyer assessments of salespeople (Jones et al., 1998).

BIRTH ORDER

The order an individual is born in the family has been extensively researched by social and behavioral scientists. As "a surrogate for differences in age, size, power, and privilege among siblings" (Sulloway, 1995: 76), birth order creates a different environment and experience for each sibling. This, in turn, has a significant impact upon the development of the child's personality and behavior patterns, which tend to persist throughout his/her life. The typical dichotomy in these studies has been first-born and later-born individuals.⁹

In general, first-born tend to be risk-averse, conservative, and more patient than later-born individuals (Sulloway, 1996; Chabris et al., 2008; Lampi & Nordblom, 2009; Morgan, 2009; Gilliam & Chatterjee, 2011). First-born are more likely to be achievement- and

⁸For purposes of this literature review, the author excluded research studies involving students, a fictitious salesperson or buyer, etc.

⁹Compared to first- and later-born, little research has been conducted on middle-born (Lampi & Nordblom, 2010). One researcher described middle-born as "the neglected birth order" (Kidwell, 1982).



success-oriented as well as status-conscious than their later-born counterparts (Majoribanks, 1989; Terry, 1989; Cherian, 1990; Wilson et al., 1990; Retherford & Sewell, 1991; Sulloway, 1995; Davis, 1997; Paulhus et al., 1999; Simonton, 2008). Also, first-born are usually more responsible, serious, structured, and organized than later-born siblings (Moore & Cox, 1990; Sulloway, 1995, 1996; Jefferson et al., 1998; Paulhus et al., 1999; Rohde et al., 2003; Stewart, 2004; Healey & Ellis, 2007). Finally, first-born tend to be suggestible and prefer assistance in decision making (Zuckerman & Grosz, 1958; Stafford & Greer, 1965).

However, later-born are likely to be risk takers, who are willing to gamble for a higher payoff (Sulloway, 1996; Chabris et al., 2008; Lampi & Nordblom, 2009; Morgan, 2009; Gilliam & Chatterjee, 2011). Later-born also tend to be independent, radical, and rebellious (Moore & Cox, 1990; Sulloway, 1996; Davis, 1997; Rohde et al., 2003; Stewart, 2004; Healey & Ellis, 2007; Dixon et al., 2008). While later-born usually lack discipline in making financial decisions (Moore & Cox, 1990), they prefer a minimum of suggestion and assistance (Zuckerman & Grosz, 1958; Stafford & Greer, 1965). Finally, later-born possess a higher self-esteem, are more self-reliant, secure, friendly, and sociable as well as less anxious, worrisome, and fearful than their first-born counterparts (Sampson, 1965; Ernst & Angst, 1983; Burden & Perkins, 1987; Rowe et al., 1992; Sulloway, 1996; Mock & Parker, 1997; Sulloway, 2001).

Although some contradictory results have emerged from these studies, there is a general body of knowledge. Of primary interest are those findings that seem to support a conceptual link between birth order and consumer behavior, which several researchers have recognized (Kirchner, 1969; Rink, 1972; Claxton, 1995). Unfortunately, little such literature exists in marketing (Zemanek et al., 2000; Saad et al., 2005; Rink, 2010); and even less exists in financial services. Rink et al. (2013) discuss the possible impact of prospective clients' birth order upon the financial services industry. In a subsequent paper, Rink et al. (2014) provide specific strategies for financial services firms to adopt in order to develop a more customized experience for their first- and later-born customers.

FAMILY CONSTELLATION¹⁰

Individuals tend to perceive new situations in terms of historically similar instances. Their experiences and attitudes are generalized (or transferred) from the past to present situations.

¹⁰"The theory of family constellation that has emerged ... has favorable relations ... to Freud's theory of motivational development (Freud, 1916/1917) ... [and] ... Adler (1929) ... [who] was the first to try to characterize sibling positions, but ... was not systematic about it" (Toman, 1976: 283-284).

Since family contexts are among an individual's oldest, ... most regularly effective, longest-lasting contexts stemming from the individual's earliest years, ... generalizations and transferences from them to new social situations are likely to have occurred more often and ... influenced the perception and ... shaping of contemporary life contexts more strongly than those ... experienced only later in ... life (Berscheid & Walster, 1969: 77).

That is, the people one has lived with the longest will have a significant impact upon the types of individuals selected as future friends, companions, spouses, etc. New associations tend to duplicate old ones. In general, "the more complete the duplication, the greater the chance that the relationship will last and be happy" (Toman, 1970: 45).

One way for determining whether a new relationship is similar to an earlier one is to examine the position each person had in his/her original family. This position can be characterized by the individual's gender distribution and age rank among his/her siblings. Toman (1970) maintained it was possible to describe a person's major personality characteristics and those of his/her friends, the likelihood of stability in marriage, what he/she was like at work, and his/her philosophy on the basis of two facts: gender and age rankings of siblings within the individual's family.

Systematic research of more than 3,000 families confirmed Toman's hypothesis. It also led to the development of eight portraits of sibling and gender positions. The major long-term social behavior, attitudes, interests, and social preferences of each portrait are summarized below (Toman, 1976: 143-188):

- ④④④④ ***Oldest Brother of Brothers (OBB)***. Independent. Perfectionist. Aggressive. Thinks he knows what is best. Loves to lead and assume responsibility. Reliable. Likes clean facts. Believes in strong leadership. Foresees what should be done. Cannot accept criticism. Believes women should be obedient and respectful.
- ④④④④ ***Youngest Brother of Brothers (YBB)***. Leans on others. Daring, annoying, volatile, impulsive, and obstinate. Does not want to lead. Accepts authority. Seeks appreciation and respect. Lacks stability and insight. Easily discouraged by failure. Lives beyond means. Prefers present joys. Pursues talents with commitment. Does not like routine or order. Yielding with women.
- ④④④④ ***Oldest Brother of Sisters (OBS)***. Realist. Does not seek leadership, but will lead if asked. Willing to take risks. Material items are not critical. Acknowledges authority. Bristles at unfounded demands. Less likely to be affected by prestige. Appreciates women.
- ④④④④ ***Youngest Brother of Sisters (YBS)***. Does not like orders. Only personal interests are important. Does whatever he likes. His ambition is harder to arouse than that of



other men. Can assume leadership role, but others must help him. Leaves details to others. Can accomplish much if motherly type is available. Women love him, and want to take care of him.

④④④ ***Oldest Sister of Sisters (OSS)***. Likes to give orders and to take care of things; otherwise, unhappy and angry. Responsible. Competent. Self-confident. Tough. Independent. Works to maintain her power. Expects submission. Tends to over-exert herself. Feels she's an expert on all topics. Pretends to be surer of herself than she really is. Stays tied to her father more strongly than other women.

④④④ ***Youngest Sister of Sisters (YSS)***. Adventuresome, vivacious, impulsive, erratic, gullible, emotional, and moody. Can be very stubborn. Recognition, praise, and prestige are important. Judges by what she experiences and feels. Needs guidance from another; but it cannot be obvious. Courageous. Willing to take risks. More suggestible than other women. Attracts men better than other women.

④④④ ***Oldest Sister of Brothers (OSB)***. Independent and strong in an unobtrusive way. Reasonable, responsible, and friendly. Likes to appear superior. More optimistic than others. Practical. Has healthy ego. Disappointments rarely discourage her. Cannot bear solitude. Loves to take care of men, who often take her for granted.

④④④ ***Youngest Sister of Brothers (YSB)***. Friendly, kind, sympathetic, sensitive, and tactful. Not discouraged by disappointments. Submissive, but not subservient. Average professional motivation. Guided more by feelings and instincts than other women. Sometimes extravagant, spoiled, and selfish. Feminine. Attracts men more pervasively than other women. Gets what she wants from men.

By cross-tabulating these sibling positions according to gender and age ranks, Toman (1976) arrived at 16 types of parental couples. Each parental couple is described in terms of expected degree of favorability of the relationship, which is a function of possible age rank and/or gender conflicts between the participants. In a rank conflict, "the partners ... have had similar or identical age ranks in their respective original families." Since neither individual is used to the age rank of the other, they will demand that age rank for themselves in their association. With a gender conflict, "a partner has had no siblings of the opposite gender in his original family." Such an individual will have difficulty getting used to a partner of the opposite gender in any interaction. "Rank conflicts as well as [gender] conflicts are examples of non-complementary relationships" (Toman, 1976: 85).

- ④④④④ *Oldest Brother of Sisters (OBS)-Youngest Sister of Brothers (YSB)*. No rank or gender conflict. Usually a good relationship. Quarreling rare. Good understanding. Husband is friendly, but sets tone of relationship; wife submits.
- ④④④④ *Youngest Brother of Sisters (YBS)-Oldest Sister of Brothers (OSB)*. No rank or gender conflict. Ordinarily a good relationship. Great mutual understanding. Whatever wife says/does, husband generally consents/agrees.
- ④④④④ *Oldest Brother of Sisters (OBS)-Youngest Sister of Sisters (YSS)*. Partial gender conflict. Relatively good relationship. Couple understands each other. Wife will sometimes oppose husband; but this does not last long. Husband sets tone, but must do so inconspicuously, or wife may resist.
- ④④④④ *Youngest Brother of Sisters (YBS)-Oldest Sister of Sisters (OSS)*. Partial gender conflict. Relatively good relationship. Husband and wife get along. But, wife is more authoritative than husband likes; however, he does not contest her.
- ④④④④ *Oldest Brother of Brothers (OBB)-Youngest Sister of Brothers (YSB)*. Partial gender conflict. Relatively favorable relationship. Husband may be tough and self-righteous in dealings with wife; but, she can usually tone him down. Under wife's influence, husband becomes more tolerant and open to her wishes.
- ④④④④ *Youngest Brother of Brothers (YBB)-Oldest Sister of Brothers (OSB)*. Partial gender conflict. Relatively good relationship. In original family, husband depended upon others; hence, he accepts wife's leadership. She treats him like one of her children. Since wife's nurturing is friendly, all goes well.
- ④④④④ *Oldest Brother of Sisters (OBS)-Oldest Sister of Brothers (OBS)*. Rank conflict. Relationship moderately favorable. Both challenge other's claim for leadership. Each wants the other to give in; but find it difficult to do so.
- ④④④④ *Youngest Brother of Sisters (YBS)-Youngest Sister of Brothers (YSB)*. Rank conflict. Relationship moderately good. Each was dependent upon a person of the opposite gender in his/her original family. Each expects the other to provide leadership; yet, neither can.
- ④④④④ *Oldest Brother of Brothers (OBB)-Youngest Sister of Sisters (YSS)*. Gender conflict. Relationship moderately favorable. Each complements other by age rank. Neither had opposite gender sibling in original family. Husband gives orders; wife accepts. She needs his support. Relationship is tense for a long time.
- ④④④④ *Youngest Brother of Brothers (YBB)-Oldest Sister of Sisters (OSS)*. Gender conflict. Relationship moderately good. Neither experienced sibling of opposite gender in



original family. Wife is responsible leader. Husband submits; he secretly opposes this. Relationship is not relaxed or contented.

- ④④④④ ***Oldest Brother of Sisters (OBS)-Oldest Sister of Sisters (OSS)***. Rank and partial gender conflicts. Relationship unfavorable. Each was oldest sibling in original family. Fight for dominance likely. Wife not used to peer of opposite gender. Husband had some experience and offers advice. Wife's pride, independence, and obedience to her dad get in the way. Wife is more strict and rigid; husband is more sympathetic and tolerant.
- ④④④④ ***Youngest Brother of Sisters (YBS)-Youngest Sister of Sisters (YSS)***. Rank and partial gender conflicts. Relationship rather unfavorable. Only husband learned to deal with peer of opposite gender. He expects nurturance and leadership. Wife not sure whether to compete or submit. She knows he cannot provide leadership.
- ④④④④ ***Oldest Brother of Brothers (OBB)-Oldest Sister of Brothers (OSB)***. Rank and partial gender conflicts. Relationship relatively unfavorable. Both used to giving orders; husband is more insistent. Neither can give in. Only wife has experience with sibling of opposite gender. She offers advice to husband; but he resists.
- ④④④④ ***Youngest Brother of Brothers (YBB)-Youngest Sister of Brothers (YSB)***. Rank and partial gender conflicts. Relationship ordinarily unfavorable. Only wife had experience with sibling of opposite gender. Both unconsciously search for someone who can offer parental attention. Neither can provide it for the other. Husband impresses wife as erratic, competitive, and too dependent.
- ④④④④ ***Oldest Brother of Brothers (OBB)-Oldest Sister of Sisters (OSS)***. Rank and gender conflicts. Relationship unfavorable. Neither prepared to deal with peer of opposite gender. Each had age rank conflict in original family. Hence, each claims leadership and expects the other to submit; but neither can.
- ④④④④ ***Youngest Brother of Brothers (YBB)-Youngest Sister of Sisters (YSS)***. Rank and gender conflicts. Relationship unfavorable. Neither had experience with sibling of opposite gender. Both have same age rank. They are accustomed to being taken care and guided by their families. They feel someone else is responsible for them. They are somewhat at a loss with each other.

POSSIBLE FINANCIAL ADVISOR-CUSTOMER DYADS BASED UPON THEIR SIBLING GENDER AND AGE RANK

Most financial services transactions involve a brief, one-time firm representative-customer encounter (e.g., making a bank deposit with the assistance of a teller). Over time, these interactions would probably occur with different company personnel. Toman's model would probably not apply to such exchanges. On the other hand, the relationship a major investor maintains with a financial advisor would be relatively frequent and long-term in nature. The major aspects of Toman's theory would more likely generalize to the latter than the former case.

Several adjustments are necessary in Toman's model before it can be applied to the financial services industry. First, financial advisors can be either male or female. Therefore, sibling positions corresponding to the "female" and "male" categories in the 16 parental couples previously described would be aggregated to form one financial advisor dimension. Similarly, clients can be either male or female. Hence, sibling positions corresponding to advisors are duplicated for customers. The end result is an eight-by-eight matrix that cross-classifies financial advisor sibling positions with customer sibling positions. Figure 1 summarizes the degree of favorability (and complementarity) of various advisor-client dyads.

Before continuing, it is important to note that it is not the author's intent to trivialize the complex nature of the interaction between financial advisor and potential prospect. Nor is the author suggesting this dyadic relationship can be reduced to a simple deterministic model as Figure 1 might imply. The author's extension of Toman's model is merely a guideline, and nothing more. Finally, the author is not recommending family constellation be used exclusively in the assignment of financial advisors to possible clients. Instead, the author is suggesting family constellation be considered in concert with potential customer's demographic data, investment goals, and risk tolerance, which financial services firms already collect, as well as experience and intuition of the manager of financial advisors (and perhaps advisors themselves) in an effort to increase the likelihood of a successful initial interaction between financial advisor and prospect that evolves into a mutually satisfying long-term relationship.



		Client							
		OBB	OBS	YBB	YBS	OSB	OSS	YSB	YSS
Financial Advisor	OBB	RC & GC Similar Unfavorable	RC & PGC Similar Unfavorable	GC Complement Mod Favor	PGC Complement Rel Favor	RC & PGC Similar Unfavorable	RC & GC Similar Unfavorable	PGC Complement Rel Favor	GC Complement Mod Favor
	OBS	RC & PGC Similar Unfavorable	RC & GC Similar Unfavorable	PGC Complement Rel Favor	GC Complement Mod Favor	RC Similar Mod Favor	RC & PGC Similar Unfavorable	No RC & GC Complement Favorable	PGC Complement Rel Favor
	YBB	GC Complement Mod Favor	PGC Complement Rel Favor	RC & GC Similar Unfavorable	RC & PGC Similar Unfavorable	PGC Complement Rel Fav	GC Complement Mod Favor	RC & PGC Similar Unfavorable	RC & GC Similar Unfavorable
	YBS	PGC Complement Rel Favor	GC Complement Mod Favor	RC & PGC Similar Unfavorable	RC & GC Similar Unfavorable	No RC & GC Complement Favorable	PGC Complement Rel Favor	RC Similar Mod Favor	RC & PGC Similar Unfavorable
	OSB	RC & PGC Similar Unfavorable	RC Similar Mod Favor	PGC Complement Rel Favor	No RC & GC Complement Favorable	RC & GC Similar Unfavorable	RC & PGC Similar Unfavorable	GC Complement Mod Favor	PGC Complement Rel Favor
	OSS	RC & GC Similar Unfavorable	RC & PGC Similar Unfavorable	GC Complement Mod Favor	PGC Complement Rel Favor	RC & PGC Similar Unfavorable	RC & GC Similar Unfavorable	PGC Complement Rel Favor	GC Complement Mod Favor
	YSB	PGC Complement Rel Favor	No RC & GC Complement Favorable	RC & PGC Similar Unfavorable	RC Similar Mod Favor	GC Complement Mod Favor	PGC Complement Rel Favor	RC & GC Similar Unfavorable	RC & PGC Similar Unfavorable
	YSS	GC Complement Mod Favor	PGC Complement Rel Favor	RC & GC Similar Unfavorable	RC & PGC Similar Unfavorable	PGC Complement Rel Favor	GC Complement Mod Favor	RC & PGC Similar Unfavorable	RC & GC Similar Unfavorable

FIG. 1. FAVORABILITY OF FINANCIAL ADVISOR-CLIENT DYADS BY SIBLING POSITION, GENDER, AND PERSONALITY^a

^aEach financial advisor-client dyad is coded according to degree of rank and gender conflict; similarity or dissimilarity (complementarity) of personality characteristics; and favorability of the relationship. Specifically, RC=rank conflict; GC=gender conflict; and PGC=partial gender conflict. In terms of personality characteristics, Similar=similar personality; and Complement=complementary personality. Regarding degree of favorability of the relationship, Rel Favor=relatively favorable; and Mod Favor=moderately favorable.



SUCCESSFUL AND UNSUCCESSFUL INTERACTIONS

In this section, potentially successful financial advisor-customer interactions will be distinguished from those that would probably be unsuccessful. Three different degrees of favorability will be delineated: favorable, moderately favorable, and unfavorable.

- “Favorable” associations are characterized by either no rank and no gender conflicts, or partial gender conflict.
- “Moderately favorable” relationships consist of either rank or gender conflict, but not both. In terms of their psychological significance, favorable and moderately favorable dyads may be perceived as complementary relationships.
- “Unfavorable” interactions, on the other hand, are symbolized by either rank and partial gender conflicts, or rank and gender conflicts.

Hence, these associations may be viewed as non-complementary (or similar) (Toman, 1976). Each of the 64 possible advisor-client dyads can be segregated under one of three categories. Overall, almost 57% of these 64 financial advisor-customer interactions are classified as either “favorable” or “moderately favorable” while slightly more than 43% are judged to be “unfavorable” (Figure 1).

Favorable Interactions. Generalizing Toman's work (Figure 1), the following six financial advisor-customer dyads should result in relatively good (or complementary) relationships, because the individuals complement one another: OBS-YSB, OBS-YSS, OBB-YSB, YBS-OSB, YBS-OSS, and YBB-OSB. In all six cases, mutual understanding generally exists between the parties. However, in the first three cases, the advisor sets the tone of the relationship, because he was the “older” sibling in his original family. As a result, the financial advisor can be friendly and tolerant while the customer is submissive (OBS-YSB). Or, he may be tough and self-righteous, but the customer is used to such an individual, and therefore knows how to deal with the advisor (OBB-YSB). In another instance, the financial advisor will have to inconspicuously establish the tone of the interaction. If he does not, the customer will become stubborn, insistent, and oppose him. Fortunately, such a potential dilemma will not last long (OBS-YSS).

With the last three dyads, the customer assumes the leadership position in the interaction, because she was the “oldest” sibling in her original family. The advisor, acting out his role of the “younger” sibling, generally submits to the customer's will (YBS-OSB). In another case, the financial advisor may not like the customer's highly authoritarian behavior, but he does not contest the customer's leadership (YBS-OSS). Also, the customer may treat



the advisor in a motherly way, but he accepts this guardianship and nurturance since it is tolerant and friendly rather than possessive (YBB-OSB).

By switching the order of the members of each dyad from financial advisor-customer to customer-advisor, the corresponding symmetrical interactions are obtained (Figure 1). While this exchange does not affect the favorability of these interactions, the results of each dyad are reversed. For example, with the three customer-financial advisor dyads of YBS-OSB, YBS-OSS, and YBB-OSB, the female advisor sets the leadership and authoritative tone of the relationship, and the customer generally consents. In fact, he seeks the advice, understanding and encouragement of the female advisor in a motherly fashion. This complementary association occurs because the female financial advisor and customer were educated as "older" and "younger" siblings, respectively, in their family experiences. However, in the cases of OBS-YBS, OBS-YSS, and OBB-YBS, the female advisor is subservient to the customer's domineering and authoritative personality.

Moderately Favorable Interactions. The following two financial advisor-customer interactions result in moderately favorable or complementary relationships: OBB-YSS and YBB-OSS (Figure 1). Although mutual understanding exists between the two individuals, it is not as positive as in the previous section. Indeed, some tension may prevail; however, it does not sabotage the relationship.

In the first case (OBB-YSS), as a result of his "older" sibling orientation, the advisor establishes the leadership tone of the interaction. Because of her "younger" sibling position, the customer may act impulsively and accept the financial advisor's leadership. In order to assert herself, the customer sometimes reacts negatively to the advisor's role. This relationship is apt to remain tense for a long time. With the last dyad (YBB-OSS), neither person has experienced a sibling of the opposite gender in their original family. As a consequence of her "older" sibling orientation, the customer assumes command of the interaction. The financial advisor, reacting according to his "younger" sibling upbringing, submits to her authority. However, he secretly opposes the customer's leadership, and the relationship is not a relaxed or contented one.

Role reversal of financial advisor and customer does not alter the favorableness of the OBB-YSS and YBB-OSS relationships (Figure 1). While the results for these two interactions do change, both situations will remain tense and unhappy for a relatively long period of time. With the YBB-OSS dyad, the female advisor is the responsible leader in all matters affecting the relationship. The customer submits, but he secretly opposes her. However, in the case of the OBB-YSS relationship, the customer assumes command

of the interaction while the female financial advisor willingly accepts his direction. Occasionally, she will react negatively toward the customer.

Eight additional financial advisor-customer interactions and their corresponding inverses will probably result in moderately favorable relationships (Figure 1). These dyads can be categorized into the following sub-groups:

- 1) Demanding leader-willing follower (OBB-YBB and OSS-YSS). The financial advisor, as a result of his/her "older" sibling indoctrination and inexperience with an opposite gender sibling, is a responsible individual and earnestly seeks the leadership and authority role. He/she likes to take control of the relationship, give orders, and provide direction. Because of his/her "younger" sibling education, the customer desires an "older" advisor who can fulfill the paternal/maternal capacity of protection, dominance, and leadership. He/she likes the relationship structured this way.
- 2) Unwilling leader-willing follower (OBS-YBB and OSB-YSS). The financial advisor is not only an "older" sibling, but he/she has had experience with an opposite gender sibling. Consequently, he/she is not as obsessed with authoritative power as the "demanding" leader. The latent desire to lead is present, and will become manifest when the "younger" sibling customer demands direction. But, the advisor will not assume an authoritarian mentality; instead, he/she lends guidance in a reasonable, friendly, and open manner.
- 3) Unwilling leader-unwilling follower (OSB-YSB and OBS-YBS). While the customer desires direction and is submissive, he/she is not subservient. The interaction will be moderately favorable, because the financial advisor, as a result of his/her "older" and opposite gender sibling experience, assumes the leadership position of the encounter in an unobtrusive manner.
- 4) Demanding leader-unwilling follower (OSS-YSB and OBB-YBS). Because of his/her orientation as an "older" sibling and inexperience with a sibling of the opposite gender, the financial advisor will demand the leadership role of the dyad. The customer with his/her "younger" and opposite gender sibling training seeks direction, but he/she does not like to take orders or be pushed. Hence, for the relationship to be somewhat successful, the advisor must provide guidance in a subtle manner.

Unfavorable Interactions. The remaining six financial advisor-customer interactions generally lead to unfavorable relationships, because the individuals are similar in terms of personalities: OBS-OSS, OBB-OSB, OBB-OSS, YBS-YSS, YBB-YSB, and YBB-YSS (Figure 1). In the first three cases, both advisor and customer are used to leading others,



being the authority, and bearing responsibility. The financial advisor can be the more insistent, rigid, and stricter member of the dyad. Although the customer may offer advice, the advisor will become annoyed at this display of tolerance (OBB-OSB). The opposite result will occur in the OBS-OSS interaction. Being a more sympathetic and tolerant authority, the financial advisor will offer advice. However, the customer's pride and independence will get in the way. She feels nobody can tell her anything. The ultimate conflicting relationship is the OBB-OSS dyad. Both members lay claim to leadership and expect the other individual to submit; however, neither can.

The last three financial advisor-customer dyads (YBS-YSS, YBB-YSB, and YBB-YSS), share this common attribute: each party expects leadership, guidance, nurturance, care, and responsibility from the other. But, given their personality characteristics, neither can assume this role. As a result, both individuals seek the assistance of an outside, third party in fulfilling these needs.

Role reversal does not alter the favorability of these six interactions (Figure 1). Four of the six financial advisor-salesperson dyads retain the same conclusions (YBS-YSS, YBB-YSB, YBB-YSS, and OBB-OSS). Although dominance, independence, authoritarianism, and responsibility characterize both members of the remaining customer-advisor dyads (OBS-OSS and OBB-OSB), the results differ. With an OBS-OSS interaction, the financial advisor is more demanding and rigid than the customer. She will tend to ignore any advice offered by the customer. But, in the case of an OBB-OSB customer-advisor relationship, the customer will be annoyed when the female financial advisor offers advice. The customer tends to be more insistent; he views the female advisor as too maternal and tolerant.

Fourteen additional financial advisor-customer dyads and their respective inverses will likely result in unfavorable interactions (Figure 1). These relationships can be categorized according to reasons why they will probably be unsuccessful.

- (1) Both parties' needs to dominant, lead, and be responsible will clash (OBB-OBS, OBB-OBB, OBS-OBS, OBS-OSB, OSB-OSB, OSB-OSS, and OSS-OSS).
- (2) Each individual expects the other person to provide leadership. Yet, as a consequence of their similar personalities, neither is capable of assuming this role. Each requires understanding, but feels inadequately understood himself/herself. As a result, both members' dependence and nurturance needs will be thwarted (YBB-YBB, YBB-YBS, YBS-YBS, YBS-YSB, YSB-YSB, YSB-YSS, and YSS-YSS).

LIMITATIONS

It may be questionable whether the relationship between financial advisor and client approximates a marriage. However, “ ... [n]oting exchange activity typically intensifies subsequent to the initial sales in financial services ... ” (Dwyer et al., 1987: 14), Levitt (1983) stated “ ... the sale merely consummates the courtship. Then the marriage begins. How good the marriage is depends on how well the relationship is managed ... ” (p. 111).

Levitt’s marriage analogy is fitting. In fact, research analyzing the interpersonal attraction and the interdependence relationships between husbands and wives provides an apt framework for describing the evolution of buyer-seller relationships (Dwyer et al., 1987: 14).

McCall (1966) describes marriage as a:

“ ... restrictive trade agreement. The two individuals agree to exchange only with one another, at least until such time as the balance of trade becomes unfavorable in terms of broader market considerations (pp. 197-198).

Seller-buyer relationships involve some of the same benefits and costs as husband-wife relations, such as reduced uncertainty, managed dependence (Spekman et al., 1985),

... exchange efficiency, and social satisfactions from the association. Foremost is the possibility of significant gains in joint—and consequently individual—payoffs as a result of effective communication and collaboration to attain goals. The buyer’s perception of the effectiveness of the exchange relation then is a significant mobility barrier and a potential competitive advantage for the seller that insulates the latter from price competition. It is possible, however, that real or anticipated costs outweigh the benefits of relational exchange. Maintenance of the association requires resources. Parties with highly divergent goals may spend considerable economic and psychic resources in conflict and haggling processes. More important may be the opportunity costs of foregone exchange with alternative partners (Dwyer et al., 1987: 14).

After researching over 3,000 German families, Toman developed eight portraits of individuals and 16 types of parental couples. The United States and Germany are similar in some respects (e.g., highly developed countries). However, they differ on many other characteristics (e.g., history, language, cultural values, education, and ethnicity). For example, the divorce rate is significantly lower in Germany (2.0 per 1,000 inhabitants) than in the United States (3.2 per 1,000 inhabitants). Also, the proportion of German women who work outside the home (47%) is lower than that of American women (57%). In addition, a dramatically higher percentage of Germans are Caucasian than Americans (93% versus 68%, respectively) (U.S. Census Bureau, 2017; Bureau of Labor Statistics, U.S.



Department of Labor, 2017; World Bank, 2017). These statistics could call into question the legitimacy of the author's generalization of Toman's theory to the United States.

In order to effectively utilize the author's extension of Toman's model, the financial services firm would have to be relatively large in size (e.g., number of financial advisors, clients, assets, etc.). Otherwise, the financial services manager would not have the ability or flexibility to assign the "appropriate" financial advisor to each new prospective customer.

The 16 parental couples and eight portraits developed by Toman were derived from urban populations of a highly developed country (i.e., Germany). Further, he presumed the family was the primary early educational medium, one parent financially supported the family while the other stayed home and took care of the children, and no unusual circumstances occurred (e.g., early death of one parent, divorce, debilitating disease, etc.) (Toman, 1976). A change in any of these variables is likely to have a major effect upon Toman's model as well as the author's extension.

Toman's eight portraits deal with only two siblings. They do not differentiate between a person who is an only child or one with several siblings of the same gender. However, in his book, Toman (1976) does discuss only children and some multiple sibling positions. As a result, the author's extension of Toman's model is also deficient in these areas.

Gender distribution and age rank of the family were the only two variables comprising Toman's model. While he briefly discussed some other variables (e.g., family size and age spacing of children), Toman overlooked several major confounding variables (e.g., education level attained, socioeconomic status, sibling positions of the parents, and nationality).

Finally, Toman (1976) admitted the 3,000 German families who participated in his study were "not representative in a statistical sense" (p. 139). In fact, Toman selected families from only two cities in Germany—Nuremberg and Zurich. Furthermore, almost 75% of his sample families either lived in or near Nuremberg. While Toman's sampling method could call into question the legitimacy of his model and the author's extension, the size of Toman's sample—over 3,000 German families—mitigates this limitation to some extent.

IMPLICATIONS

The author's extension of Toman's model could assist financial advisors to better understand prospects, customers, and themselves as well as why certain relationships

possess a higher probability of success than others.¹¹ As a result, advisors could increase their success rate for acquiring new customers. This would decrease new client acquisition costs, and allow financial advisors the opportunity to interact with more prospective customers. Advisors could also improve their relationships with existing clients, which would increase customer satisfaction and retention. Favorable word-of-mouth by satisfied clients could lead to an influx of new customers. The aggregate impact of these occurrences would improve the morale of financial advisors and decrease client acquisition costs as well as increase the company's sales, market share, and profit.

In addition, Figure 1 could help the manager of financial services better understand the different personalities and behavior patterns of his/her advisors and their clients as well as the interactions within these dyads. With advance knowledge as to the likely success of each relationship, the manager could more effectively perform his/her supervisor duties and responsibilities. The types of financial advisor-client interactions discussed in this paper are usually prearranged by the manager of financial services. Because of this lead-time, the manager could use the author's extension of Toman's model to determine the "best" type of advisor to assign to a potential customer, which would increase the likelihood of a successful relationship. If, for some reason, this particular financial advisor was unavailable, the manager of financial services would consult Figure 1 again in order to ascertain the "next best" type of advisor to select. Hence, the author's extension of Toman's model incorporates some degree of flexibility for the manager in selecting the "appropriate" financial advisor for the new prospect.

If favorability is to be maintained within any advisor-client relationship, continual feedback concerning customer changes is paramount. For example, if an OBB client replaced a YBB customer, then according to Figure 1 the proper adjustment for the manager of financial services employing the "complementarity" theory would be to substitute the "older" sibling financial advisor (e.g., OBB, OBS, OSB, or OSS) with a "younger" sibling advisor (e.g., YBB, YBS, YSB, or YSS). In this way, gender and/or age rank conflicts that tend to characterize interactions involving two "older" or "younger" children would be avoided. Once again, the author's extension of Toman's model is sufficiently flexible for the manager to address such situations.

By better understanding the personality characteristics, attitudes, and behavior patterns of each financial advisor as a result of Figure 1, the financial services manager could more effectively assist and motivate each advisor to attain his/her full potential. For example, financial advisors possessing "younger" sibling positions would require more

¹¹"Understanding that personality traits may play a role in decision-making is another step in enriching the set of behavioral factors that advisors need to take into account when dealing with clients. Personality traits make some financial assets more attractive to specific types of investors, or make them more prone to specific cognitive or behavioral biases" (Cruciani, 2017: 59).



direction and assistance than their "older" counterparts if their interactions with customers were to be successful. Periodic "role-playing" sessions with an "experienced" advisor followed by "constructive" feedback would be an effective learning method for these particular advisors. For those recent graduates from the firm's training program needing positive reinforcement, the financial services manager could initially assign them prospective customers who are similar to themselves, which would significantly bolster their confidence (Fine & Gardial, 1990; Doney & Cannon, 1997).

Finally, Figure 1 could be incorporated in the initial intensive training program for each group of new recruits as a means to introduce them to the variety of prospective clients they are apt to meet. This would help them to better understand the different personalities of potential customers, why they act the way they do, etc. As a result, the new recruits would be better able to determine the best approach to adopt for each prospect, which would increase the likelihood of successfully acquiring a new customer. The author's extension of Toman's model could also be included in periodic refresher training programs. In both instances, "role-playing" sessions followed by "constructive" feedback would maximize the learning experience of participants.

CONCLUSION

By collecting family constellation information of prospective clients (i.e., gender and age rank within the family) along with their demographic data, risk tolerance, and investment goals, managers of financial services firms would be able to assign the "most appropriate" advisor to each potential customer based upon the author's extension of Toman's model. This would likely maximize each investor's satisfaction of his/her total service experience with the company. Over time, this satisfaction would translate into higher levels of client retention and loyalty, thereby optimizing the customer's lifetime value to the firm as well as increasing sales, market share, and profits. Simultaneously, these satisfied clients would become ambassadors for the firm, which would result in new customers at nominal expense.

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