Influence Of Interest Rate Capping On Financial Performance Of Depository Institutions Listed In Nairobi Security Exchange, Kenya.

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Abstract: Market forces determine these rates, that is, demand and supply, but also several factors come into play. Placing a cap on interest rates will affect the industry's efficiency as it doesn't account for several factors that might affect the bank's decisions to opt for certain spreads. This study, therefore, investigated the influence of interest rate caps on the financial performance of depository institutions listed in Nairobi Securities exchange, Kenya. The study-specific objectives were to determine the effect of Interest rate income; non-interest rate income and Interest rate expense on the performance of depository institutions listed in NSE. The study also identified the moderating impact of bank size on the relationship between interest rate capping and performance of depository institutions listed in NSE. The research adopted a theory loanable funds theory of interest rate. The study used a mixed research design which involved detailed and longitudinal research designs because of the use of panel data from the year 2013 to 2017. The target population composed of the managers, finance managers and heads of sections in the banks totaling to 106 from all the listed depository institutions. All the employees were considered to participate in the study. Data were collected through document analysis. Primary data was collected through questionnaires Data was analyzed by use of descriptive and inferential statistics. Descriptive methods generated frequencies, percentages, means and trend analysis whereas inferential statistical methods involved the use of paired sample t-test which was used to test the effect of the variable relationship and for rejection of hypotheses. The purpose of tables and graphs presented the data. The t-statistic results showed that the interest rate capping law in September 2016 significantly influences depository institutions listed in NSE net profit. This was also supported by the fact that the time series trend depicted a drop in net profit especially in 2015-2017. The descriptive statistical analysis also concurs with inferential findings because the interest capping law increased banks expenses thus shrinking the interest rate income and non-interest rate income. The recommendation from the study is that the government should not continue with the measure because it will result in adverse effects on the economy, in the long run, reducing the amount of money in circulation. The fact that all the depository institutions were affected by the introduction of the interest capping law should be a concern too, and more examination is necessary. Keywords: Market forces; interest cap; demand, Supply

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I. Introduction

In any economy, depository institutions act as an intermediary through which people deposit funds and get loans. Depository institutions essentially make money from the difference between the rate which they pay depositors and the standard which they charge the borrowers. Market forces determine these rates, that is, demand and supply, but also several factors come into play. Placing a cap on interest rates will affect the industry's efficiency as it doesn't account for several factors that might affect the bank's decisions to opt for certain spreads (Greenbaum, Thakor & Boot, 2015). Interest rate capping is a useful tool to support the banking industry for its sustainability as noted by Millar (2013). Others assert that in countries where financial institutions with extreme market power limiting the price of credit can be justified to protect consumers (Dewatripont & Tirole, 1994). Empirical evidence shows that interest rate capping on loan was a success in the Republic of Korea for the period 1956-94 and that financial liberalization did not significantly help increase financial depth (Demitrades & Luintel 2001). According to the Office of fair trading (2010), interest rates capping that are set too low, and interest rate capping that is set too high are both problematic. In countries where caps do not cover fees and commissions and when the definition of interest rate is not clear, for example,

financial institutions may give the impression of compliance with the ceiling but charges fees and commissions that are not considered part of the cost of the loan.

In South Africa, some financial organizations evaded caps by charging credit life insurance and other services, which reduced the transparency of the total cost of credit. In Sub-Saharan Africa, interest rates on loans are currently capped in 24 countries. Zambia also uses interest rate caps. South Africa has established several changes in its interest rate restrictions. First, the institution authorizes signed an exemption in the usury law to evade small loans from based on the interest rate ceilings in 1993 (Maimbo & Gallegos, 2014). Then after more than a decade with no capping on small loans, a national credit act went into effect in 2007 and re-imposed a capping on small loans and introduced a capping of 5% per month on short-term borrowings as part of an integrated credit framework. Also, the act acknowledges seven credit subsectors with distinct maximum interest rates linked to a threshold rate set by the central bank. Fees charged are capped as well (Porteous, Collins & Abrams, 2010). For their part, WAEMU countries established interest rates controls in 1997 dropped their ceilings by 3% in 2013. Banks can now charge a standard interest rate of 15%, with a maximum speed of 24% for microfinance institutions (MFIs) (Mbengue, 2013). National bank of Ethiopia eliminated interest rate ceilings in the financial sector in 1998, Ethiopia is still considered to have de facto interest rate ceilings since most microfinance institutions have decided to maintain a lower interest rate, strategically, for political reasons. Concerning the trend of introducing interest rate controls in African countries, In Africa, most countries with interest rates capping have a ratio of credit to the gross domestic product (GDP) lower than the regional average, considering both the 2008 and the 2012 indicator (71% and78%, respectively). Besides, according to the account penetration indicator, financial inclusion in 83% indicate minimal than the regional average. The other basic financial inclusion elements such as loan access in the past year signify a similar trend. In most nations, the private bureau coverage, depth of credit information, and strength of legal rights indicators fallow below the regional average (Khan, 2011).

II. Literature Review

Financial performance is an essential element of how profitable a company is relative to its total assets. It is measured by the return on the asset. ROA gives an idea as to how efficient management is at using its assets to generate earnings. The yield on asset is the company's net income divided by its average total assets; ROA is displayed as a percentage. Sometimes this is referred to as "return on investment". Return on asset formula looks at the ability of a company to utilize its assets to gain a net profit as observed by Kiarie (2011). Net income in the numerator of the ROA formula can be found on an income statement. Average total asset on the denominator of the ROA formula is located on a company's balance sheet. The average of total assets should be used based on the period being evaluated. Interest rate affects financial performance direct and indirect, when the interest rate is high borrowers are discouraged from borrowing. Were and Wambua (2013) noted interest rate earned by banks drops, this has a direct impact on bank profitability. Low-interest rate period has the opposite effect many people will borrow and if spread remains the same banks will benefit from increased interest earning. Interest has an indirect effect on financial performance through impacting the economy, the high-interest rate to borrowers discourages borrowing this result to shrunk investment through multiplier effects savings are reduced and this will have a negative impact on banks performance argued by Ngugi (2004). The opposite is valid during the period of minimal interest rate. In conclusion the interest rate affects financial performance positively and negatively depending on interest rate movement.

Craigwell and Maxwell (2016) revealed that the incidence of non-interest income in Barbados declined over the period, contrary to the findings in Jamaica and Trinidad and Tobago as well as the wider developed world. A review of the literature and a panel data regression model confirm that the result for Barbados may be attributed to the absence of some of the factors that were pinnacle to the generation of non-interest income in developed countries, such as deregulation and technological change, especially for the development of loan securitization and credit scoring. The empirical evidence supports bank characteristics and the ATM technology as the most influential factors shaping the trend of non-interest income in the banking industry in Barbados and suggests that non-interest income is positively related to both bank profitability and earnings volatility.

Ng'endo (2012) examined the relationship between non-interest income and financial performance of commercial Banks in Kenya. The results showed that that there is no significant increase in profit as the bank invest and diversify to non- interest income. The F statistic was also significant suggesting that the model was fit to explain the relationship. The study concludes that noninterest income has partial significant positive impact on financial performance. Oniang'o (2015) sought to determine the effect of non-interest income on profitability of commercial banks in Kenya. To achieve this objective the study used a descriptive survey. The population of the study constituted all the 43 commercial banks in Kenya. The study found that non-interest income was positively related to profitability of commercial banks. The correlation results were found there was a moderate correlation between Non-interest income and profitability of commercial banks.

Zairy and Salina (2010) in their research paper on analysis of Islamic banks exposures to rate of return and risk the panel data for 2007-2008 the study found that Islamic banks show a strong positive correlation between interest rate expense and performance. Kolopo and Dapo (2015) their findings disagree with this findings in their research for the period 2002 to 2011 in Nigeria a sample of tier one capital banks, using fixed effects regression analysis method where interest rate risk had insignificant effect on banks performance. Zagonov, Kiswani and Mash (2009) in their study to determine how banks regulate the interest rate expense, the findings were performance was negatively correlated to interest rate expense this can be explained by the fact that management failed to hedge the risk which was consistent to (Matthias, 2012) in his research on impact of loan growth and business model on bank risk in 15 EU countries found higher level of interest rates reduce bank's exposure to leverage risk.

III. Materials and Methods

The study adopted quantitive research methodology. In this study, data was gathered using structured research instruments and document analysis. Researcher used clearly defined research hypotheses which objectives sought to test. Data was in form of numbers and statistics, then presented in tables, charts, figures. Therefore, this research methodology was ideal for this study. The research adopted a mixed research design which included a descriptive and longitudinal survey to focus on monitoring of behavioral and non-behavioral activities and conditions of the panel data. Behavioral include the following non-verbal analysis, linguistic and extra linguistic analysis and spatial analysis. On behavioral include record analysis, physical process analysis and physical condition analysis. The targeted population for this study was 106 top level managers of 11 depository institutions including finance managers and heads of departments of depository institutions listed on NSE. These depository institutions included I&M holdings Ltd, HF groups Ltd, National Bank of Kenya Ltd, NIC Bank Ltd, Standard Charted Bank Ltd, Equity Group Holdings, Cooperative Bank of Kenya Ltd, KCB Group Ltd, Diamond Trust Bank Kenya Ltd, CFC Stanbic Holdings Ltd and Barclays Bank Ltd. The managers, finance managers and heads of the following sections including Personal Banker, Business Banker, Micro Business Banker, SME Relationship manager Mortgage relationship Manager Corporate Relationship Manager, Branch Manager, Credit Analyst were considered for the study. The study adopted census method because of the small size of the population. All the depository institutions listed in NSE were considered. A census is where data is collected from all members of the population (McDaniel & Gates 2001). The sample size of this study was 106 managers of 11 depository institutions listed on NSE.

IV. Results

The researcher administered 106 questionnaires out of which 78 questionnaires were completely filled and collected back. This results represented a 73.6% response rate which is very good as asserted by Bebbie (2004) that a response rate of 70% and above is very good.

In Table 1, the results shows the demographic aspects of the respondents. From the table, the study results indicate that majority of the sampled respondents were male 51(65.4%) which can be interpreted that male are the majority in depository institution listed in Nairobi Security Exchange Market. The table also shows that most of the employees in the depository institutions in NSE are newly employed with less than 2 years' experience 45(57.7%). The findings in Table 1 also depict that most of the employees in the depository institution in NSE have bachelor degree, 65(83.3%) while few have master degree 13(16.7%), this shows that deposit institutions in NSE employees have highly qualified staffs that have expertise in their area of interest, mostly accounting and finance specialty.

Table 1: Demographic characteristics			
Variable	Variable	Frequency	Percent
Gender	Female	27	34.6
	Male	51	65.4
Work Experience	Less than 2 years	45	57.7
	3-5 years	13	16.7
Education	5-10 years	20	25.6
	Bachelor Degree	65	83.3
	Master Degree	13	16.7

The results in Table 2 shows the descriptive statistics of variables used in the study. From Table 2, the results shows that that the respondents were in agreement that bank size had moderate effect on interest rate capping on performance of depository institution with a mean of 3.8. The other factors which influenced interest

rate capping included: interest rate expense (mean=3.7); non-interest rate income (mean=3.7) and interest rate income (mean=3.4). The results also shows that the interest rate capping had great impact on the interest rate income due to the level of agreement by the respondents that: there has been a growth of bank in loan book (mean=4.7); increase in loan loss provision (mean=4.2), decrease in interest rate income (mean=3.5). The respondents were undecided on whether interest rate capping has increased non-performing loans (3.3) and strongly disagreed that interest rate capping has increased recovery of non-performing loans (mean=1.3). The study findings can be interpreted that interest rate capping has negatively affected interest rate income of the deposit institutions listed in NSE. The study findings were are in agreement with studies conducted by Kiarie (2011) and Ngugi (2004) that asserted that interest rate capping have affected negatively banks interest income. As far as non-interest rate income is concern, the study found out that: there was an increase in loan restriction since interest rate came into effect (mean=5); reduction in profit, return on asset and investment due to interest rate capping (mean=4.7); and an increase in credit facilities due to interest rate capping (mean=4.2). Interestingly, the results shows that respondent were undecided on whether interest capping has increased time spent in managing non-performing loans (mean=3.3) but strongly disagreed that interest rate capping has enabled recovery of non-performing loans. The study finding in Table 2 can be interpreted that, interest rate capping has reduced non-interest rate income which has negatively affected performance of depository institutions listed in NSE which concurs with past studies conducted by Mbotu (2010) and Kiarie (2011).

On the other hand, the study findings in Table 2 reveal that interest rate capping has resulted to an increase in interest rate expenses affecting negatively the performance of depository institutions in NSE. This was shown by the level of the respondents' agreement that: interest rate capping has negatively affected depository institution profitability, return on investment and asset (mean=4.7); increase in layoff in depository institution (mean=4.7); increase in servicing cheaper loans (mean=4.2); banks have become unable to meet their obligations (mean=3.7). The respondents however strongly agreed that interest rate has enabled recovery of nonperforming loans. The study findings can therefore be interpreted that, interest rate capping has negatively affected depository institution profitability due to increase in depository institutions expenses. Were and Wambua (2013) supports the study findings because they observed that interest rate capping have made banks to incur heavy operational expenses. Table 2 also depict that depository institution size have a greater impact on their performance due to the level of agreement to the researcher questions that: increase in depository institution branches has increased their stock prices (mean=4); larger depository institutions have quality asset (mean=3.9); larger depository institution s have lower risk profile (mean=3.9); increase in depository institution size improves profit margin, return on investment and asset (3.7); and finally depository institution with larger size increase its stock returns (mean=3.6). This study findings can be interpreted as; depository institutions size have a positive effect on its performance. Gandhi and Lusting (2015) and Tran (2013) found out that banks that are large in size have adequate financial muscle to operate in turbulent environment necessitated by interest rate capping which supports the researcher study findings that bank size have a moderating role on the relationship between interest rate capping and performance of depository institutions listed in NSE.

Table 2: Descriptive statistics			
Variables	Ν	Mean	
Bank size	78	3.8282	
Interest rate expense	78	3.7487	
Non-interest rate income	78	3.7128	
Interest rate income	78	3.3795	
Growth in loan book due to interest rate capping	78	4.7436	
Interest rate capping has lead to increase in loan loss provision	78	4.2308	
Interest rate capping has decreased the interest rate income	78	3.4590	
Interest rate capping increased non-performing loans	78	3.3077	
Interest rate capping has increased recoveries of non-performing loans	78	1.2564	
Increased in loan borrowing restriction since interest rate capping	78	5.0000	
Reduced profit, return on assets and investment due to interest rate capping	78	4.7436	
Increase in credit facilities due to interest rate capping	78	4.2308	
Interest rate capping has increased time spent in managing non-performing loans	78	3.3333	
Interest rate capping has enabled recovery of non-performing loans	78	1.2564	
Interest rate capping has negatively affected depository institution profitability, return on investment and asset	78	4.7436	
Lay off due to increase in depository institution expenses	78	4.7436	
Servicing cheaper loans has increased depository institution expenses	78	4.2308	

Influence	Of Interest	Rate Capping	On Financial	Performance	Of Depository	Institutions
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Banks unable to meet their obligation due to interest rate capping	78	3.7692
Enabled recovery of non-performing loans due to interest rate capping	78	1.2564
Valid N (listwise)	78	
Increase in depository institution branches increases their stock prices	78	4.0256
Larger depository institutions have quality asset	78	3.9359
Larger depository institutions have low risk profile	78	3.9359
Increase in depository institution size improves profit margin, return on investment and asset	78	3.6538
Depository institution larger size increase stock returns	78	3.5897

Figure 1 shows the trend of net profit for the depository institutions listed in NSE for the periods before and after interest rate capping in 2016 (2013-2017). From the figure, the graphs indicate that 11 depository institutions contracted their net profit for the five consecutive years after the capping law came into effect as compared to before the capping of interest rate. On average, the findings of the study can be interpreted that, there has been a negative effect of depository institutions net profit as a result of interest rate capping in the year 2016 as supported by Were and Wambua (2013); Kirie (2011), Ngugi (2004); Mbotu (2010) studies. Figure 1 shows that there was an increase in net profit between 2013 and 2014, followed by a constant profit from 2014 to 2015. The findings depict that there was a high decrease in net profit from 2015 to 2016 and a further decrease from 2016-2017. The decrease in net profit was attributed to implementation of interest rate capping in September, 2016 which affected the bank profit.

Figure 2 shows that there was an increase in net profit in 2013 and 2014, followed by a continuous decrease from 2014-2017. The findings depict that there was a high decrease in net profit from 2014 to 2016. The decrease in net profit can be attributed to implementation of interest rate capping in September, 2016 which affected the bank profit.



Figure 1: Net profit trend of Barclay bank in 2013-2017



Figure 2: Net profit trend of CFC bank in 2013-2017

The results in Table 13 of paired sample test show that the mean tends to be more negative implying that the depository institutions listed in NSE reported a reduction in their net profit after the interest capping law came into effect. On the other hand, the positive standard deviations depict that, net profit of the depository institutions before the capping of interest rate deviated more from the mean than after the capping. The significant value of the standard error mean in Table 13 indicates that there was an increase in the movement in the mean before and after the capping of interest rate. The results on the significant show that the depository institutions significantly change the way they conduct their business operation after the introduction of the capping law to remain profitable. This was because the significance value was less than 0.05. The researcher also used the significant values as a basis of rejecting the study hypothesis thus concluding that there is a significant effect of interest rate income, non-interest rate income, and interest rate expenses on the performance of depository institutions listed in NSE. It was also concluded that bank size has a moderating effect on the relationship between interest rate capping on the performance of depository institutions listed in NSE. The tstatistic results in Table 13 show that the interest rate capping law in September 2016 significantly influence depository institutions listed in NSE net profit as supported by Were and Wambua (2013); Kirie (2011), Ngugi (2004); Mbotu (2010) studies. This was also supported by the fact that the time series trend depicted a drop in net profit especially in 2015-2017. The descriptive statistical analysis also concurs with inferential findings because the interest capping law increased banks expenses and shrunk its interest rate income and non-interest rate income. The depository institutions in the meantime resorted into a series of measures to be on a recovery path. The mixed findings on how the depository institutions reacted to the interest rate control by the government is a clear indication that the whole banking industry in Kenya did not adopt a similar approach to remain profitable.

Table 3: Paired Samples Test								
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the			
					Difference			
					Lower	Upper	P Value	
Pair 1	Barclays - CFC	2854372.00	401124.84	179388.48	2356309.72	3352434.27	.000	
Pair 2	DTB – Equity	-11511351.60	2523716.01	1128640.10	-14644958.90	-8377744.29	.001	
Pair 3	HF – I&M	-5733199.00	1319252.11	589987.48	-7371266.85	-4095131.14	.001	
Pair 4	KCB – NBK	12540522.800	3927685.13	1756514.18	7663657.57	17417388.02	.002	
Pair 5	NIC – Standard Charted	-4653016.80	1783705.40	797697.30	-6867779.58	-2438254.01	.004	
Pair 6	Standard Charted – COOP	-2235051.60	3355549.98	1500647.57	-6401517.20	1931414.01	.211	

V. Discussion

The objective of the study was to examine the influence of interest rate income on performance of depository institutions listed at Nairobi Security Exchange, Kenya. This objective sought to test the first null research hypothesis posited H_{01} : There is no significant influence of the interest rate income on performance of depository institutions listed at Nairobi Security Exchange, Kenya. From the results, interest rate income had

significant negative effect on performance of the depository institutions listed at Nairobi Security Exchange as p=0.000 (P<0.05). The results as per the tables 13 reveal that interest rate income had a statistically significant difference between the two periods. The noted difference of interest income is the largest as it has the lowest value of p=.000 with post capping posting reduced interest income. Therefore, the first null hypothesis is rejected as interest rate income has significant influence on performance of the depository institutions listed at Nairobi Security Exchange. The introduction of interest rate capping has significant effect on interest rate income as most financial institutions have witnessed reduction in credit uptake. It is often argued that interest rate ceilings can be justified on the basis that financial institutions are making excessive profits by charging exorbitant interest rates to clients. This is the usury argument, and is essentially one of market failure: government intervention is required to protect vulnerable clients from predatory lending practices. The argument, which is predicated on an assumption that demand for credit at higher rates is price inelastic, postulates that financial institutions are able to exploit information asymmetry (and in some cases short run monopoly market power) to the detriment of client welfare. Aggressive collection practices for non-payment of loans have exacerbated the image of certain lenders.

Interest rate capping has resulted to reduction in interest rate income as lending institutions have reduced the number of credit advanced to borrowers. With a mean of 3.46, introduction of interest rate capping has results to reduction in interest rate income. The results also revealed that interest rate capping has led to increase in loan loss provision with a mean of 4.32. However, interest rate capping has not increased recoveries of non-performing loans. Most lending institutions have stopped advancing unsecured loans and this has negatively affected interest rate income. Unsecured compared to secured loan had high interest rate income resulting to lending institutions realizing huge profits. Ng'etich (2011) indicated that the interest rate control did not significantly affect how the commercial banks issued their loans. Although the study did find that some banks contracted their loans books after the law came into effect, such were not enough to shift the ground for the whole industry. Matundura (2018) found out that interest rate capping was negatively and statistically related to the bank's interest rate income at 5% level of significance. The findings are also in tandem Shuremo (2016), Mang'eli (2012) and Kipngetich (2011) on interest rates and their spread on the profitability of commercial banks in Kenya. It also agrees with Mbua (2017) which confirmed that capping had negative effect on profits and hence their shares became less attractive.

From the results, non-interest rate income had significant negative effect on Performance of the listed depository institutions listed at Nairobi Security Exchange in Kenya. For Non-interest income at pre and post capping era, p value is equal to .037 and this implies that there was a statistically significant difference in this variable between the two eras with non-interest income post the capping era being the larger figure and thus growth. Therefore, the second null hypothesis is rejected as non-interest rate income has significant effect on Performance of the listed depository institutions listed at Nairobi Security Exchange in Kenya. The results indicated that income not associated with credit has also declined due to decrease in number of transaction and some accounts are dormant. There have also been reduction late fees and over-the limit fees as most of the borrowers are honoring their repayment schedule. This has reduced non-interest income to most sampled institutions in this study. The study also revealed that there has been increase in credit facilities due to interest rate capping as shown by a mean of 4.23 and reduced profit, return on assets and investment due to interest rate capping as indicated by a mean of 4.7. All of the sampled respondents strongly agreed that increased in loan borrowing restriction since interest rate capping. These findings agree with a number of previous studies.

Overall on noninterest income, the findings were therefore found to agree with studies Tarawneh et.al (2017), Singh et.al (2016) on the significance of non-interest income to profitability of banks. It also agrees with Stiroh, (2002) on the growing importance of non-interest income but disagrees with Young and Rice, (2003) that intermediation based products remain central business activities of banks. According to Stiroh (2006), US banks are becoming increasingly reliant on fees, fiduciary income, service charges, trading revenue, and other types of non-interest income. They reported that the industry as a whole, earned 42% of its net operating revenue from non-interest sources in 2004, a marked increase from 32% in 1990 and 20% in 1980. Negative relationship between non-interest rate income has negative relationship with performance is supported by Sun et al. (2017). Their study indicated that noninterest rate is negatively correlated with the performance of commercial bank; the higher the noninterest rate is, the lower the performance of commercial bank. The research also shows the coefficient between non-interest income rate and performance inclines to zero as the noninterest income rises. The study also confirms the results of Gichure (2015) which revealed that shows that there was a negative relationship between increase in non-interest income and financial performance occasioned by the variability in the ratio of non-interest income and net interest income.

VI. Conclusions

The descriptive and the inferential study findings have shown that the interest rate capping has significantly influenced the net profit of depository institutions listed in NSE. The 11 depository institutions net profit reduced significantly as shown by the time trend analysis after the law came into effect in September 2016. The idea of interest rate capping being new phenomena in Kenyan depository institutions made some of them adopt a wait and see approach. The banks are on a learning curve on how they can best navigate the policy change and remain the market afloat while still making reasonable profits. Basing on the first objective, the study concluded that interest rate income has significant negative influence on performance of depository institutions listed at Nairobi Security Exchange, Kenya. This implies that, after introduction of interest rate capping by CBK affected lending institution interest rate as compared to secured loan. The negative impact of the law on the interest rate income was on account of narrow interest rate spread which is largely attributable to lending rates which had an average of 16.58% the whole of year 2016 as per CBK bank supervision report 2016 of which the last three and a half months had an average of 14% after capping law was signed.

Author Contributions

All the authors contributed to the successful of the document. **Conflict of Interest** Declaration of conflict of interest.

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