Performance and Efficiency Analysis of Selected Private Sector banks in India

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

This paper discusses the performance and efficiency analysis of selected private sector banks in the light of tough competition and technology up gradation. Right from the establishment of Royal Chartered bank, Indian banking sector has seen a magnanimous growth especially after independence. The nationalization of banks in 1969 and 1980 had added fuel to the growth. The New Economic policy, 1991 has totally changed the facets of the banking sector. The doors are open to the private and foreign banks to India and the services are scattered and spread to various areas like wealth management, insurance, mutual funds, forex trading, financial services etc apart from the primary objective of accepting deposits and lending loans. This research paper focuses on evaluation of the performance and efficiency analysis of selected private sector banks with respect to some of the key indicators such as Total deposits, Total advances, Total Assets, Net Profit & Non-Performing Assets of last 10 years. The absolute figures and the average annual growth rates (AAGR) were calculated for each indicator over a period of 10 years and accordingly the rankings

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were assigned based on performance and efficiency analysis. Key area findings of the research were found and so incorporated in the study. The research found that has been performing well among the given three banks when compared with other two banks.

1. INTRODUCTION

The lifeline of any economy for its prosperous growth lies in its financial system. Banking is one of the key elements in financial system. It is the oldest form of financial intermediary which accepts deposits from public and turns into loans for the corporate and needy sectors. In India, which is especially emerging economy, banks are very special for three reasons. One is, they lead to develop the other financial and market intermediaries [1,2]. Secondly, huge dependence of corporate sector on banks due to well-structured and highly liquid equity and bond markets. Thirdly, it is a golden option for many house hold people in India to save money for assured return and safety [3-5]. The structure and forms of banking industry has been ever changing along with development of technology and growth of globalization all over the world. Management of liquidity and solvency ratios are vital for the commercial banks as it associated with their performances and reputations, especially with profitability ratios [6,7]. If the banks have poor liquidity conditions, the regulators will penalize them and therefore it becomes imperative for the banks to keep a sound liquidity arrangement. Healthy financial performance has become a great challenge in the modern times as banks are characterised by the technological advancements, high competition for consumer deposits and altering monetary policy that augments the liquidity, solvency and the profitability of the banks (Srinivasan, P, & Britto, J, 2017).

Thus, banks are now, not only competing with themselves but also with many other competitors in the market who arise due to deregulation and liberalization. This paper discusses the performance and efficiency analysis of selected private sector banks in the light of tough competition and technology up gradation. The key parameters of a bank such as Deposits, Advances, Net Profits and Net NPA, that will analyse the efficiency and performance of the banks were taken for 10 years and then compared.

The research article is constructed with Introduction to the topic followed by Literature review, Research methodology- highlighting the objectives, data collection, sample size, metrics used for analysis, limitations of study. The next part is about the analysis of various financial metrics of the selected private banks. The paper finally presents its findings from the analysis and followed by conclusion and the scope for further study in this area. All the references were cited at the end of the article.

2. INDIAN BANKING STRUCTURE- AN OVER VIEW

The whole Indian banking system is governed by Banking Regulation Act, 1949. The Apex body for all the banking transactions and activities in India is Reserve bank of India (RBI). Along with RBI, the other authorities that govern the banking operations are SEBI, Ministry of Finance.

Public Sector banks are the banks in which, the Government of India holds a majority stake. It is as good as the government running the bank. Since the public decide on who runs the government, these banks that are fully/partially owned by the government are called public sector banks. At present there are 12 banks in India which are under Public Sector Segment.

Private-Sector Banks are banks where greater parts of stake or equity are held by the private shareholders and not by government. They have grown faster and bigger over the two decades since liberalization using the latest technology, providing contemporary innovations and monetary tools and techniques. The new private sector banks are those that have gained their banking license since the liberalization in the 1990s. At Present, there are 22 Private Sector Banks in India.

3. REVIEW OF LITERATURE

Hetal K Solanki [8] in their study on impact of specific variables on profitability of selected private sector banks in which six private banks

were taken for the years 2009 to 2020. All the variables such as Return on Assets, Return on Equity, Net Interest Margin etc are analysed and regression analysis is used. It is found that liquidity risk is more and has a negative impact on specific variables and profitability of private banks. On the other hand, Solvency of the banks is having a positive impact on various models. The financial metrics that were taken indicate the performance and efficiency of the all six banks for 11 years. The regression analysis suggests the impact of variables on the risk of each financial metric.

Dr A Vini Infanta & R. Ashwini [9] in their study on performance analysis of selected private sector banks. The researchers had taken 3 private banks namely, ICICI, AXIS and South Indian bank. The period of study was from 2016 to 2020. The various indicators like Net Profit Margin, Return on Assets, Return on equity, Earnings per Share, Net Interest Margin are used to analyse the performance. It was found that the performance of ICICI and Axis banks are good in most of the aspects where as the performance of South Indian Bank was very poor and needs to be improved a lot. Similar kind of financial variables are used to assess the performance in this study. The averages of these variables were taken for each bank for the last 5 years and the overall average of each parameter decides the performance of best and poor banks.

Dr Divyang Joshi [10] made their research analysis on selected public and private sector banks from 2016 to 2020. The key indicator variables taken for the purpose are Total Assets, Net Profits, Total Equity, CASA ratio, Capital Adequacy ratio etc. The study revealed that private sector banks are out-perming than public sector banks. HDFC is performing better than ICICI and SBI is better performing than BOB in their respective segments. Apart from the key variables, some of the relative measures like CASA ratio, Capital adequacy ratio were taken to highlight the overall performance of public and private sector banks.

N. Sathiya & S. Sangeetha [11] analysed the performance of selected five public and private sector banks from 2015 to 2019. Five key indicators are selected for the purpose of analysis such as Return on Assets, Total Income, Net Profit, Net Interest Income, Operating Profits. As per the study, Public sector banks are performing better than Private sector banks with respect to Total Income, Net Interest Income, Operating Profits. On the other hand,

Net Profits and Return on Assets of Private banks are better than Public banks. On a whole, private sector banks are performing a step ahead of public sector banks as revealed by the study. The financial metrics of profits, incomes, return on assets were considered for analysis of the five public and private banks and the over all means of these indicators for 5 years showed the performance of public and private sector banks.

Dr R Mayakakkannan, C. Jaya Shankar [12] The research was made to study the financial performance of all Public and Private sector banks during 2015-2020. The CAMEL model was used. Mean differences and t-test is used to analyse the performance. The study revealed that though in some aspects, Public Sector Banks are good but in most of the aspects Private sector banks are outperforming. This paper used CAMEL model for an overall analysis of banks from different aspects. The present paper uses some key financial metrics for analysis of performance and efficiency of selected banks.

S. Panboli and Kiran Birda, [13] The study was mainly aimed to compare the performance of selected public private sector banks using CAMEL model. The period of study was 2012-2017. The banks selected are SBI, PNB, BOB, UBI, CB, HDFC, ICICI, KMB, AXIS and Yes bank. The study revealed that HDFC bank stood in 1st place, ICICI in 2nd and the least rank is given to Canara bank.

M. Keshari, [14] In his research paper "Analysing Financial Strength of Selected Banks", has taken two banks namely, J & K Bank, South Indian Bank for the period of 2005-2014. CAMEL model is used along with Average, SD and One Way ANOVA. The study revealed that South Indian Bank is performing less than that of J & K Bank

Dr Sneha S Shukla, [15] In her paper, analysis of financial strength of Public and private sector banks, the researcher has taken 3 Public (BOB, IDBI & PNB) and 3 Private (AXIS, ICICI & HDFC) banks for the period of 2010-2013. The research tool used was CAMEL model along with mean and Variance. It has concluded that, HDFC & BOB are top in Capital adequacy, HDFC in Asset quality, HDFC and ICICI in Management efficiency, HDFC in Earnings, ICICI in Liquidity. Over all, the study ranked HDFC in 1st place, ICICI in 2nd and BOB in 3rd place. The analysis of these banks were done with CAMEL model in which various variables were considered with

regard to capital adequacy, assets, management efficiency, earnings and liquidity. Though, the present study does not consider CAMEL for analysis, the literature is used to understand the averages, percentages, coefficient of variation of selected variables of selected banks

Khatik and Nag, [16] Performances and Soundness of five national banks namely Dena Bank, UBI, SBI, BOB, UCO bank. CAMEL model was used along with other parameters like Percentages, Averages, Coefficient of Variations, One Way ANOVA tools were used. The findings showed that BOB ranked in top, UBI in 2nd, Dena bank in 3rd, SBI in 4th and UCO bank in 5th place. The analysis of these banks were done with CAMEL model in which various variables were considered with regard to capital adequacy, assets, management efficiency, earnings and liquidity. Though, the present study does not consider CAMEL for analysis, the literature is used to understand the averages, percentages, coefficient of variation of selected variables of selected banks.

4. RESEARCH METHODOLOGY

Based on the above literature, the performance of the banks (Public and Private sector) was mostly analysed by considering some key financial metrics such as Assets, Deposits, Return on Assets, Operating Profit, Interest Income etc. The present study analyses the performance of selected banks using four key financial metrics which are very important for a bank's performance analysis and accordingly the following objectives were framed.

4.1 Objectives of Study

> To analyse the Average Annual Growth Rate, Mean, Standard Deviations of selected private sector banks with respect to Deposits, Advances.
> To evaluate the Average Annual Growth Rate, Mean, Standard Deviations of selected private sector banks with respect to Net Profits, Net NPA
> To Compare the performances of all selected banks based on the key indicator analysis and to rank the banks accordingly.

4.2 Sample Size, Period and Variables under Study

The present study takes the top 3 Private Sector banks namely HDFC Bank, ICICI Bank and

Kotak Mahindra Bank. The banks were chosen based on the highest market capitalization in BSE Bankex. The study covers the period of 10 years from 2011 to 2020. Total four key performance Indicators were taken.

4.3 Financial Metrics Used

1. Total Deposits
2. Total Advances
3. Total Net Profit
4. Net NPA

4.4 Relevance for Financial Metrics Used

The financial metrics are taken based on their placing in the financial statements and importance for analysis. For any bank, the two very important aspects are deposits and loans which are the primary composites of liabilities and assets of any bank's balance sheet. The net profits will indicate the over all financial performance of the banks that can be inferred from the Profit and Loss statement. Net NPA will show the efficiency of the banks in maintaining and recovering the loans and advances on timely basis without any default.

4.5 Statistical Tools Used

The annual growth rates were calculated over a period of 10 years. Then the Average Annual Growth Rate (AAGR) is calculated for all the values of the indicator for 10 years, followed by Mean and Standard deviation values for ranking.

Average Annual Growth Rate (AAGR) = (Value of Year N – Value of Year N-1) ÷ Value of Year N

4.6 Performance and Efficiency Analysis of HDFC, ICICI & KMB

4.6.1 Deposits

The deposits of a bank are the major part of the entire funding operations. Without deposits, banks can not lend loans and advances. The whole transaction cycle of banks is mainly depending upon the flow of money from public deposits.

The above Table 1 pertaining to total deposits of the selected private sector banks during the period 2011-2020. Deposits include- time, demand and current accounts. HDFC has captured highest growth rate of 24.25% in 2020

and with lowest of 17.01% in 2019.With regard to absolute terms, it has pooled 11,46,207.13 crores in 2020 which was the highest among all banks during 2011-2020. Though, ICICI has also outperformed with its highest growth rate of 17.53% in 2020, there was a declining growth rate of 7.36% in 2015. KMB has also performed exemplary in 2016 with 86.63% highest and with 14.41% In 2017. The AAGR is high in KMB, followed by HDFC and the third place goes to ICICI.

4.6.2 Total loans and advances

The above table is pertaining to total advances of the private sector banks during the period 2011-

2020. Advances include all types of loans- Secured and Unsecured accounts. There has been a mixed growth among all banks with regard to advances. In absolute terms, HDFC showcased the highest number of advances of Rs 10,43,670.88 crores in 2020. Its highest growth rate is 27.57% in 2014 and 19.57% in 2018. ICICI showed the highest growth rate of 17.39% in 2014 with a low growth rate of 4.37% in 2017. Similarly, KMB recorded its highest growth rate of 63.36% in 2016 with a lowest of 2.64% in 2020. The Annual Average Growth rate (AAGR) is high in KMB followed by HDFC in second position and ICICI in third position. The Standard Deviation of advances are low in KMB, followed by ICICI and finally it is high in HDFC.

Table 1. Comparative analysis of total deposits of HDFC, ICICI & KMB during 2011-2020

Year	HDFC (Rs in Crores)	Annual growth rate (%)	ICICI (Rs in Crores)	Annual growth rate (%)	KMB (Rs in Crores)	Annual growth rate (%)
2011	2,08,287.21	-	2,59,106.00	-	27,312.98	-
2012	2,46,539.58	18.37	2,81,950.47	8.82	36,460.73	33.49
2013	2,96,091.77	20.10	3,14,770.54	11.64	49,389.14	35.46
2014	3,67,080.33	23.98	3,59,512.68	14.21	56,929.75	15.27
2015	4,50,283.65	22.67	3,85,955.25	7.36	72,843.46	27.95
2016	5,45,873.29	21.23	4,51,077.39	16.87	1,35,948.76	86.63
2017	6,43,134.25	17.82	5,12,587.26	13.64	1,55,540.00	14.41
2018	7,88,375.14	22.58	5,85,796.11	14.28	1,91,235.80	22.95
2019	9,22,502.68	17.01	6,81,316.94	16.31	2,24,824.26	17.56
2020	11,46,207.13	24.25	8,00,784.46	17.53	2,60,400.21	15.82
AAGR		20.89		13.41		29.95
MEAN	5,61,437.50		4,63,285.71		1,21,088.51	
SD	2,95,830.18		1,70,999.69		80,023.54	

Source: Annual Reports of HDFC, ICICI, KMB & Compiled Data

Table 2. Comparative analysis of total advances of HDFC, ICICI & KMB during 2011-2020

Year	HDFC (Rs in Crores)	Annual growth rate (%)	ICICI (Rs in Crores)	Annual growth rate (%)	KMB (Rs in Crores)	Annual growth rate (%)
2011	1,60,831.42	-	2,56,019.31	-	41,241.95	-
2012	1,98,837.53	23.63	2,92,125.42	14.10	53,143.61	28.86
2013	2,47,245.12	24.35	3,29,974.13	12.96	66,257.65	24.68
2014	3,15,418.86	27.57	3,87,341.78	17.39	71,692.52	8.20
2015	3,83,407.97	21.56	4,38,490.10	13.20	88,632.21	23.63
2016	4,87,290.42	27.09	4,93,729.11	12.60	1,44,792.82	63.36
2017	5,85,480.99	20.15	5,15,317.31	4.37	1,67,124.91	15.42
2018	7,00,033.84	19.57	5,66,854.22	10.00	2,05,997.32	23.26
2019	8,69,222.66	24.17	6,46,961.68	14.13	2,43,461.99	18.19
2020	10,43,670.88	20.07	7,06,246.11	9.16	2,49,878.96	2.64
AAGR		23.13		11.99		23.14
MEAN	4,99,143.97		4,63,305.92		1,33,222.39	
SD	2,82,251.88		1,42,666.26		75,810.60	

Source: Annual Reports of HDFC, ICICI, KMB & Compiled Data

4.6.3 Total net profits

Net Profit is the key indicator of the annual performance of any organization. It is depending on two variables namely, total expenses and total incomes. From the above table, it can be seen that HDFC showcased a highest rate of NP of 31.25% in 2012 and in absolute terms in 2013 with Rs 27,296.27 Crores in 2020. Similarly, ICICI showed 27.62% highest rate in 2013 with a negative declining growth rate of (37.48%) in 2019. KMB showed its highest of 44.27% in 2017 and with decline of 11.94% in 2016. The AAGR was high in HDFC, followed by KMB and ICICI is in the third place. The Standard deviation (risk) of

net profit is low in case of KMB, followed by ICICI and thirdly to HDFC bank.

4.6.4 Net NPA

Non-performing assets are those which could not be recovered for a specific period of time from the borrowers. Banks will be safe and grow better if these NPAs are at less and negative growth rates YOY. From the table, it can be seen that, HDFC showed a highest NPA rate of 74.87% in 2014 with a diminished NPA rate of 9.30 in 2015. ICICI showed the highest negative growth rate of (51.20%) in 2019 with a highest positive growth rate of 108.22% in 2016.

Table 3. Comparative analysis of net profits of HDFC, ICICI & KMB during 2011-2020

Year	HDFC (Rs in Crores)	Annual growth rate (%)	ICICI (Rs in Crores)	Annual growth rate (%)	KMB (Rs in Crores)	Annual growth rate (%)
2011	4,017.69	-	6,318.19	-	1,569.24	.-
2012	5,273.40	31.25	7,937.63	25.63	1,850.53	17.93
2013	6,900.28	30.85	10,129.88	27.62	2,204.21	19.11
2014	8,764.51	27.02	11,677.12	15.27	2,511.54	13.94
2015	10,700.05	22.08	12,942.30	10.83	3,065.08	22.04
2016	12,817.33	19.79	10,926.89	(15.57)	3,431.12	11.94
2017	15,287.40	19.27	11,340.33	3.78	4,949.98	44.27
2018	18,560.84	21.41	9,099.54	(19.76)	6,147.14	24.19
2019	22,445.61	20.93	5,689.16	(37.48)	7,119.70	15.82
2020	27,296.27	18.75	11,225.47	1.03	8,607.08	20.89
AAGR		**23.48**		**1.26**		**21.13**
MEAN	**13,206.34**		**9,728.65**		**4,145.56**	
SD	**7,281.37**		**2,282.79**		**2,311.39**	

Source: Annual Reports of HDFC, ICICI, KMB & Compiled Data

Table 4. Comparative analysis of total net NPA Of HDFC, ICICI & KMB during 2011-2020

Year	HDFC (Rs in Crores)	Annual growth rate (%)	ICICI (Rs in Crores)	Annual growth rate (%)	KMB (Rs in Crores)	Annual growth rate (%)
2011	296.41		2,407.36	-	1,186.74	.-
2012	352.33	18.87	1,860.84	(22.70)	1,806.30	52.21
2013	468.95	33.10	2,230.56	19.87	2,393.42	32.50
2014	820.03	74.87	3,297.96	47.85	3,146.41	31.46
2015	896.28	9.30	6,225.53	88.77	4,110.19	30.63
2016	1,320.37	47.32	12,963.08	108.22	2,522.14	(38.64)
2017	1,843.99	39.66	25,216.81	94.53	8,626.60	242.03
2018	2,601.02	41.05	27,823.56	10.34	16,592.00	92.34
2019	3,214.52	23.59	13,577.43	(51.20)	11,275.60	(32.04)
2020	3,542.36	10.20	10,113.86	(25.51)	1,744.81	(84.53)
AAGR		**33.10**	**10571.70**	**30.02**	**5340.42**	**36.22**
MEAN	**1,535.63**		**10,571.70**		**5,340.42**	
SD	**1,145.28**		**9,005.42**		**4,881.08**	

Source: Annual Reports of HDFC, ICICI & KMB, Compiled Data

Table 5. Over all comparison and ranking of AAGRs of Selected Banks

Performance	AAGR			Mean			SD		
	HDFC	ICICI	KMB	HDFC	ICICI	KMB	HDFC	ICICI	KMB
Deposits	2	3	1	1	2	3	3	2	1
Advances	1.5	3	1.5	1	2	3	3	2	1
Net Profits	1	3	2	1	2	3	3	2	1
NPA	2	1	3	1	3	2	3	1	2
Average of Ranks	1.625	2.5	1.875	1	2.25	2.75	3	1.75	1.25
Group Ranks	**1**	**3**	**2**	**1**	**2**	**3**	**3**	**2**	**1**
HDFC COMPOSITE RANK	**1.67**								
ICICI COMPOSITE RANK	**2.33**								
KMB COMPOSITE RANK	**2**								
Overall Composite Rank									
HDFC	**1**								
KMB	**2**								
ICICI	**3**								

KMB showed the highest declined negative growth rate of (84.53%) in 2020 with the highest positive growth rate of 242.03 % in 2017. The AAGR is low in case of ICICI, followed by HDFC and finally it is high in KMB. The Standard Deviation (Risk spread of NPA) is low in ICICI, followed by KMB and finally it is high in HDFC.

5. RESULTS AND DISCUSSION

Having a growth in deposits is always a better performance indicator for any bank. This can be seen from the above study that Kotak bank is having the highest average annual growth rate in deposits when compared with other banks. The growth trend in deposits of HDFC and ICICI were not good as Kotak. HDFC occupied the second position and ICICI bank is in third position. After the deposits, any bank wants to convert them into advances. Perhaps, advances are the main source of income for the banks. When we analyse the performance of growth in advances, both HDFC and Kotak have equal average annual growth rates with regard to advances. ICICI bank occupied the least position in this regard. They need to improve it to be in the competition and to generate more income that increases the net profit.

The operational performance of a bank will be decided by its Net Profit. Net profit is the result of the accumulated deposits and advances stated above. It is the difference between the income on advances and interest on deposits along with operating expenses and other incomes. In this regard, HDFC is in the first rank with highest annual growth rate of net profits for 10 years, followed by KMB and ICICI bank. The low advance growth rate of ICICI quoted above, has

also made least performance in the net profits.

When it comes to NPA, it is not only important that the how much quantum of advances that banks have given , but also how much of it is recovered in the form of interest and principal every year without any default. If there is a default, it leads to Non Performing Assets which reduces not only the profit but also an impact on good will of the bank. In this aspect, ICICI is having the least annual growth rate of Net NPAs of the last 10 years, and the next positions occupied by HDFC and KMB.

With regard to the Mean value of deposits, advances and Net Profits, HDFC occupied the first rank, followed by ICICI and the least rank is occupied by KMB. With regard to Mean value of Net NPAs, HDFC is in first position with less mean amount of NPAs, followed by KMB and finally by ICICI bank [17-19].

With regard to the Standard Deviation of deposits, advances and net profits, it can be seen that Kotak bank is in first position, followed by ICICI bank and finally by HDFC bank. This clearly indicates that the mean value of deposits, advances and net profits are not properly distributed to give the valid conclusion. Hence, the Standard Deviation is used for validity. With regard to SD of NPA, ICICI is having the less SD, compared with Kotak and HDFC banks [20-23].

Overall, after grouping the ranks under each statistical tool, it is observed that, the performance of HDFC stood in 1st rank, followed by Kotak Mahindra bank in 2nd position and the third position by ICICI bank. The literature review

conducted for this study also highlighted that private banks are out-perming the public sector banks. HDFC is in top position in all the studies where as ICICI bank stood top or second in most of the studies considered. But, in this study the bank is in 3rd position. It is understood that the bank is not up to the expectations with regard to the four financial metrics compared with HDFC and Kotak Banks. But, its performance in other indicators/ratios may be well as revealed from the literature survey.

6. CONCLUSION

For any bank, deposits and advances play a very important role to capture more business. ICICI bank should concentrate on the Year on Year (YoY) growth of its deposits, advances, net profits and NPA. There is an inter dependence among these four financial metrics that the banks should understand. The deposits will increase the customer base and the scope for more lending. The advances will increase the interest income and enhance the profitability. The net profit will determine the return on assets of the bank. Finally, the NPA will indicate the risk associated with the advances of a bank.

Kotak Mahindra bank, on other hand, though performs well with regard to all parameters, it needs to get more amount of deposits, advances and net profit to maintain the standards all the years. HDFC bank, the top performer, though performing well with regard to all parameters, but it can be seen that the dispersion of the growth rates measured in terms of standard deviation is high and should be taken care of. If all the three banks could rectify the deficiencies stated above, surely, they will outperform in the banking sector and will surpass the public sector banks.

7. LIMITATIONS OF STUDY

1. The study is carried for only three banks namely HDFC, ICICI and Kotak Mahindra Bank.
2. Also, the period of study is taken from 2011-2020 only.
3. Very important four indicators are used to analyze the performance and efficiency analysis of selected private sector banks.

8. FURTHER RESEARCH

The above research is carried out with 3 selected private sector banks namely HDFC, ICICI and Kotak Mahindra based on their market capitalization in BSE Bankex index at the time of study. However, for a better performance analysis and comparison, some more banks may be added for the research. Also, some more specific variables such as Return on Assets, Return on Equity, Operating Profit, Total Income etc. may be taken for the study to get over all picture and better comparative analysis. Also, usage of charts/graphs and statistical methods like t-test to test may be used for more accurate and reliable results of study.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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