# The Role of Financial Inclusion in Enhancing the Effectiveness of the Money Supply

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#### **Abstract**

Financial inclusion in the international community at the present time is of great importance and is one of the most important developments that took place in the past years, and although financial inclusion in Iraq is still below the level of ambition, it has become clear that there is a positive significance effect on the money supply as it is one of the most important monetary policy variables. Whenever financial inclusion is high, there will be an increase in the amounts deposited in the banking system through an increase in deposits, i.e. decreasing cash in the informal sector and increasing it in the formal sector. The aggregate regression model (OLS, the fixed effects model (LSDV) and the random effects model (EGLS) were used. (Where the results were significant and there is an effect of financial inclusion in the money supply. This paper will study financial inclusion in depth and money supply, which is one of the monetary policy variables, and the impact that financial inclusion has on money supply.

### Introduction

The idea of financial inclusion can be traced back to the nineteenth century, when the cooperative movement arose in India in 1904 against non-institutional lending agencies in the form of lenders when they were charging exorbitant interest to poor peasants, and was excluding the poor from access to formal banking services, which required the emergence of an integrated financial system Comprehensive for the purpose of integrating the poor and their entry into the institutional economy, meaning bridging the gap between the urban and rural areas, and the concept of financial inclusion gained importance in trying to focus on delivering financial services to rural areas, after which the bank licensing rules were liberalized in 1965 and 14 major commercial banks were nationalized in In 1969, which contributed to the opening of branches in all regions to reduce disparities in the provision of basic services. (2015: pp.12-13, Singh & Roy)

The term financial inclusion became a trend after the global financial crisis in 2008, because the crisis had a significant impact on the low-income community and also the unbanked people in general. prevents access to financial services, and the current financial exclusion continues to impede the access of unbanked persons to financial institutions and financial inclusion is implemented to facilitate the access of unbanked persons specifically for the purpose of using formal financial institutions at a reasonable cost and there are no barriers to access to her. Sidik, 2018, p.138))

The concept of financial inclusion

Universal finance was first proposed by the United Nations in 2005 to promote community-related microcredit, a financial system that provides effective financial services, especially for low-income and poor people, can bring shared prosperity to society, the World Bank Advisory Group on Poverty Alleviation believes That comprehensive finance is a better use of various

financial services to meet the needs of the poor class of financial services, as the concept of comprehensive finance is an extension of microfinance and microcredit, which can be seen that comprehensive finance is the result of microfinance and microcredit, but it is higher than the two, because comprehensive finance from Service objective and scope of service is much more than microfinance and microcredit and means that everyone enjoys the full range of financial services. Liu, 2018: p.140))

Financial inclusion refers to all initiatives that make formal financial services available, accessible, and affordable to all segments of the population, or the absence of price and non-price barriers in the use of financial services. Improving access means improving the degree to which financial services are available at every fair price, and thus Harness the untapped potential of these individuals and companies that are currently excluded from the formal financial sector or underserved and enable them to develop their capabilities, and enhance their human capital. (Desalegn, 2021; p.1)

Providing banking services at reasonable cost to broad sections of the disadvantaged and low-income groups, meaning unfettered access to public goods and services is a sine qua non for an open and efficient society, since banking is in the nature of the public good, it is essential that the provision of banking and payment services be for the entire population without discrimination (Evans, Osi, 2017:p.45)

A process that refers to the improvement in the quantity, quality and efficiency of financial intermediation services, which helps to improve lives, enhance opportunities and strengthen economies, and local savings are enhanced through financial inclusion, which leads to increased productive investments in local businesses (Ha Le, 2019:p.311)

The importance of financial inclusion is highlighted in the following points:

It provides low-income individuals with the possibility of saving for the future, which promotes stability in personal finance and a high level of use of bank deposits, which contributes to securing a more stable deposit base for banks during times of crisis.

Higher levels of financial inclusion can facilitate greater participation of the various sectors of the economy in the formal financial system because with the increase in the share of the formal financial sector, it enhances the case for using the interest rate as a major tool for macroeconomic stability which has positive effects on economic growth. (Han & Melecky, 2013:p.4).

Financial inclusion helps deal with shocks in unexpected emergencies such as illness or job

Financial inclusion has positive effects on financial stability by reducing the risks of cyclical fluctuations by providing the procedures required to reduce these risks, and financial inclusion deals with the formal financial system and includes all members of society within the formal economy, which leads to the diversification of the portfolio (Deposits and credit) as well as the stability of the financial system helps to increase financial inclusion by educating the community and increasing their confidence in the financial system. (Tita, 2017: 9)

Financial inclusion serves society on a larger scale by allowing payments to be transferred from cash to accounts with more efficient and transparent payments from governments or companies and vice versa, as the individual saves for future expenses such as large purchases and investments in education or business into the days of destitution and old age, and by Other

Most people borrow money from time to time for their desire to do business, buy land or a house, or to cover the cost of unexpected emergency expenses. (Kunt et al, 2017, pp.2-3) The most important goals of financial inclusion

Ending extreme poverty By giving individuals the opportunity to finance investments that will lead to income-generating businesses, more education and skills training, or access to better housing, financial inclusion may enable access to finance for farmers to be able to invest in equipment and knowledge, to increase the yield of related crops. With the aim in mind, they should have equal rights to access financial services including microfinance in the form of formal credit in the forms of mortgages, student loans, credit cards, consumer credit, and microfinance for entrepreneurs, farmers, and families. (El- Zoghbi, et al, 2019: p.4-5)

In order to ensure and enhance food security and availability of food to reduce hunger, agricultural finance is very important for developing countries as many small and marginalized farmers are excluded from the formal banking system in many countries in the Asia-Pacific region. Hunger for inclusive growth. p.4): 2015 Islam,)

Increasing the effectiveness of monetary policy, as countries that enjoy high levels of financial inclusion in the household and business sectors are able to adjust their credit and savings operations when interest rates change, which improves the transmission of monetary policy effects and enables the monetary authority to work in a better way to ensure price stability and support banking stability. The rapid response in the output gap to a potential shock to nominal interest rates is often higher in countries with advanced degrees of SME financial inclusion Blancher et al., 2019:p. 8)

Enhancing the quality of education The availability of funding will provide individuals with a way to invest in educational opportunities such as university degrees or further higher education Education and skills training in many countries requires financial investment for individuals Loans can increase educational opportunities by making use of families to pay tuition fees required. (Tita, 2017: p.9)

By distributing the cost over time through access to credit women can have a greater say in the household budget which will help reduce gender inequality such as access to credit which enables women to assert their economic power Women are in dire need for the purpose of such access Services Compared to Men Because they are more likely than men to be self-employed, providing women with direct financial services will enable them to have more control over their affairs and invest in the health and education of their children. This will lead to overall improvements in the well-being of the Kara family. et al, 2021: p.2).)

## Dimensions of financial inclusion

Dimensions and indicators of financial inclusion

pointer after arrival	
Number of bank branches per (100) population	Number of bank branches per 1000 km2
over the age of 15	
The number of (ATM) automated teller machines	Number(ATM) per 1000 km2
for each (100) thousand adults	
Retail outlets without branches of commercial	Non-branch retail outlets of commercial banks per
banks per 1000 km2	adults 100,000

Mobile money agent outlets per 1000 km2	Mobile money agent outlets per 100,000 adults			
Usage indication				
Percentage of individuals who saved in the past 12	Percentage of individuals who borrowed from a			
months using an informal institution	financial institution in the past 12 months			
Percentage of adults who used an account Official	Percentage of adults who used a mobile phone to			
to receive wages or government payments in 12	pay bills or send or receive money in the past 12			
.months past	.months			
Number of depositors per 1000 adults	Number of borrowers per 1000 adults			
Quality Index				
The ability to bear the fees for opening a bank	Convenience and ease in using banking services			
account				

p.41: 2019 Bermeo,) Agoba, at el, 2017: p.23 (2017: 76-75 pp., World Bank) Amidzic.et.al, 2014, P:10) (Bin Rajab, 2017: p. 10) (Al-Araji, 2020: p. 328) (Al-Sayegh, 2021: pg. 460)

# Financial inclusion in Iraq

seeks to enhance financial inclusion in Iraq, through programs launched, the most prominent of which are interest-free loans to finance small projects, and granting housing loans by specialized banks. The Central Bank is also trying to apply financial inclusion significantly by contracting with international institutions to reach the poorest Classes in society, educating the group that is not proficient in financial knowledge, and financial literacy, which increases individuals covered financially by institutions that are subject to the law, which helps to withdraw cash circulating in society to the monetary authorities represented by banks, where the Central Bank estimates that the percentage of cash The person outside the official sector in society, which ranges from (80%) to (91 %) of the currency issued by the Central Bank, and this is due to the fact that members of society prefer dealing with cash in their transactions rather than an account in an official institution, perhaps due to low confidence in the banking system or lack of Understanding the procedures of the banks due to the lack of awareness and financial culture, and it is possible because of the cost that these banks require for the purpose of opening a bank account, and the reason may be due to the routine procedures that individuals do not prefer.

There is a weakness in the banking spread in Iraq, as it reached (2.20) per 100,000 people according to, as for the percentage of the automated teller machine (5.61) per 100,000 people, and the local credit provided to the private sector of the total domestic production was (13.01)%, while the percentage of deposits To the gross domestic product amounted to (18.07)%, these percentages are considered below the level of ambition despite achieving a remarkable development in Iraq regarding financial inclusion, especially after the year 2017 and the actual application of financial inclusion in Iraq.

## The Central Bank of Iraq initiative

The Central Bank of Iraq is currently seeking to implement a strategy for financial inclusion and to give banks a time limit for the purpose of implementation to reach the poor and those in remote areas and educate them to enter the official sector of the state and thus there is a wide

space for banks to grant loans at a low interest rate for the purpose of serving the class The reason for this is due to obtaining deposits that enable them to invest them in a distinctive way without thinking about the bank's deposit hall and the possibility of being withdrawn by depositors. Tax from entering the largest part of the currency in the official sector.

In the year 2020, the Central Bank took many measures that regulate the work of banks and enhance their role in financing economic activity, and one of the most important measures of the Central Bank (Central Bank of Iraq, 2020: p. 33)

Granting banking facilities by providing rescheduling of bank loans to the private banking sector, especially those owed to small and medium-sized companies, as well as increasing the repayment term for existing future loans to the sectors most vulnerable to the repercussions of the virus and reducing the cost of borrowing.

Changing the name of the money transfer companies to be Islamic banks, provided that their capital is (100) billion dinars, provided that their capital is increased to (250) billion dinars, with priority given to the merged companies.

Addressing microfinance institutions for the purpose of stimulating micro-enterprises whose financing amount does not exceed (5) million dinars, as it is possible to finance an initiative of (1) trillion dinars, as it is one of the projects that occupy a large part that cannot be overlooked by the informal sector.

Financial Inclusion Data Working Group in Iraq from 2016 - 2020

pointer	the year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
banking diffusion	2.68	2.91	2.92	2.69	2.33	2.37	2.24	2.25	2.25	2.20
banking density	37.26	34.34	34.24	37.12	42.89	42.16	44.59	44.49	44.41	45.42
ATM spread	2.34	2.27	3.05	1.54	2,77	3.07	2.97	3.81	4.35	5.61
Number of branches	2.04	2.26	2.30	2.16	1.89	1.97	1.91	1.97	2.02	2.03
per 1000 km										
Number of ATMs per	1.07	1.07	1.49	0.77	1.33	1.52	1.51	1.99	2.33	3.08
km 1000										
The amount of credit	5.23	5.76	6.19	6.85	9.43	9.25	8.62	8.05	8.00	13.01
to GDP										
Deposits to GDP	8.37	8.31	8.94	9.54	12.33	12.06	11.56	10.90	11.68	18.07

Prepared by the researcher

The Central Bank of Iraq realizes the importance of financial inclusion, so we note a remarkable development in most indicators of financial inclusion, even if it is below the level of ambition. However, there are measures to implement a strategy to develop financial inclusion in the coming years because of its vital role in developing economic activity.

# M2 cash offer

Monetary policy is one of the most important economic policies for any country and therefore seeks to achieve the same goals that other economic policies seek. Monetary policy derives its effectiveness from the strength of the relationship between the money supply and the level of economic activity when the change in the money supply results in important changes at the level of the economy Which indicates the effectiveness of monetary policy and vice versa.

Monetary economists believe that there is a strong causal relationship that descends from the money supply to economic activity through the economic cycle. (Ibrahim, 2019: pg. 132) Monetary policy involves managing the money supply and the interest rate with a view to achieving macroeconomic goals such as controlling inflation, consumption, economic growth, and liquidity. This can be achieved through the process of interest rate adjustment, buying and selling government bonds, regulating the foreign exchange market, and changing the amount of money to be Banks have to keep it as a reserve. Alphonsus,2020: p.349) problem statement

Despite the importance of financial inclusion for the economy in general, most members of society suffer greatly from various obstacles that cause them not to use banking services. They may be difficult to access services, if they live in rural or remote places, or they are ignorant of financial instructions, and it is possible because of the procedures they require. Banks in order to open a bank account and its high costs and others, and there is also a class disparity in access to services, where women suffer, especially in developing countries compared to men, and on the other hand, most banks grant credit to large companies, which makes obtaining credit at a reasonable cost for small companies very difficult, This in turn increases the financially deprived or excluded compulsorily and not voluntarily and could lead us to an important question: Is there a role for financial inclusion to influence the money supply. the importance of studying

Through the escalating global interest in financial inclusion, as most international experiences have proven that financial inclusion enhances financial stability, contributes to achieving economic growth and works to improve the lives of individuals as well as its impact on the economy in general, and enhances the role of monetary policy as it is one of the economic policies in general. Especially since financial inclusion is the main factor in reducing poverty, and brings financially excluded groups so that financial services are granted to all.

Objectives of the study

The study aims to ascertain from a statistical point of view the existence of an impact of financial inclusion in enhancing the effectiveness of monetary policy in Iraq

A statement of the concept of financial inclusion, its objectives, its economic and social importance, and its role in attracting more dealers with official financial institutions.

Demonstrate the effects of financial inclusion on the effectiveness of the money supply. main premise

(no effect Statistically significant for financial inclusion in the money supply) Study restrictions

The study is limited in terms of available data, information on financial inclusion indicators is still limited, and financial inclusion is still poorly applied in developing countries, and therefore indicators for measuring financial inclusion are weak and do not meet ambition, and the reason for this is due to the failure to give more space to apply financial inclusion So far, it has also not been possible to obtain quarterly data, as it has been implemented starting from the year 2020 by the Central Bank of Iraq, which relies on data from governmental or private banks operating in Iraq, according to accurate information according to a special form and method, which required the researcher to travel to Baghdad governorate. (The Central Bank of Iraq) for the purpose of conducting some interviews, most notably with the Deputy Governor of the

Bank, the Financial Inclusion Officer, the Monetary Policy Officer, and the Financial Stability Officer, for the purpose of clarifying some matters related to financial inclusion and monetary policy.

Literature Review

Lapukeni study, 2015)) titled

The impact of financial inclusion on monetary policy effectiveness: the case of Malawi

The research findings indicate that financial inclusion may have a positive impact on the effectiveness of monetary policy in Malawi. Although the government and central bank are taking initiatives to educate the public about the need for financial services and improve financial culture, it is critical that policy makers begin to try to integrate activities outside the banking system into the formulation and implementation of monetary policy and perhaps have a proxy for the process of money formation outside the system. Gathering this information is often difficult and expensive. However, in order to improve policy access and inclusive economic growth, this information may be crucial. Since the financial markets in a country like Malawi are not yet developed and the economic players are not yet fully active, there may be a need to rethink traditional monetary policy.

Mbutor & Uba (2013) study

(The impact of financial inclusion on monetary policy in Nigeria)

Financial inclusion is a real strategy to improve the effectiveness of monetary policy Specifically, there is a strong but inverse relationship between the rate of inflation and the volume of commercial bank loans and advances as a proportion of GDP. This suggests that simply making credit available in the system would boost investment and reduce inflation. The overall exposure of rural branches by clients also carries A good promise for monetary policy as its coefficient is also negatively correlated with inflation, the number of bank branches as a measure of financial inclusion did not come with the right mark, however, this is read as a symptom of an unnecessary set of branches in certain locations where they serve too few customers.

Analysis of the money supply in Iraq

M2. Money Supply

the year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
cash offer	72178	75466	87679	90728	82595	88082	89441	95391	103441	119906
change %	19.53	4.56	16.18	3.48	(8.96)	6.64	1.54	6.65	8.44	15.92

Prepared by the researcher

It is noticeable that the offer increased significantly during the research years, especially in 2020, due to Covid-19 and the state-imposed roaming ban, and the distribution of grants to the unemployed, which increased state spending.

The relationship between financial inclusion and the money supply

The demand for money is one of the factors that affect the implementation of monetary policy, the importance of innovation of transaction technology for the demand for money, Obtain accurate estimates of the parameters of demand for money using microdata and find that interest rate flexibility is reasonably lower for individuals who have access to ATMs than for those who do not. Further, the share of demand deposits increases at the currency holding

account, assuming that the cost of holding demand deposits is reduced by the introduction of an ATM. Costs come down (Columba, 2009: p.5-6.(

stable money demand function is generally necessary for the formulation and implementation of effective monetary policy because it enables a policy-driven change in monetary aggregates to have a predictable effect on production, interest rates, and price. Transactions for cash because investors need to hold more money to make the same amount of real expenses. With no monetary illusion, an increase in the general level of prices will lead to a proportionate increase in the nominal demand for money, leaving the level of real money balances unchanged. Recent years have witnessed the transformation of the financial sector through financial innovations and developments that affected monetary aggregates and the stability of money demand, Including dealing through automated teller machines. Kamau, 2012:P.72 -73) & Sichei)

practical side

A- The first sub-hypothesis:

Table (3) shows the impact of financial inclusion in cash offer For the Iraqi banking system and for the period (2011 - 2020) as the number of views reached (40) views after converting them to quarterly data according to (EViews V.9) program and using the PR (Panel Regression) model, the panel data was used by applying three models: the aggregate regression model, and effects model Fixed, model effects Random.

Table (3) Financial inclusion in the money supply

Random Effects Model Fixed Effects Model Pooled Regression Model								
Random Effects Model Fixed Effects Model Pooled Regression Model	Sample: 2011Q1 2020Q4 Total panel (balanced) observations: 40							
Prob  t-Statistic  Coefficien  t  Coefficien  t  Coefficien  t  Coefficien  t  t-Statistic  t  Coefficien  t  t  Coefficien  t  Coefficien  t								
0.005     2.983     3.9073     11.657     0.005     2.983     3.9073     11.657     0.003     3.134     3.7197     11.65786     Constant       4     558     70     86     7     083     05								
0.120     -     93.871     -     0.202     -     93.871     -     0.180     -     89.363     -122.4487     X11       14     1.304     61     122.44     3     1.304     61     122.44     1     1.370     11       427     87     427     87     238     1								
0.005     -     4.9425     -     0.005     -     4.9425     -     0.003     -     4.7051     -14.67463     X12       6     2.969     69     14.674     8     3.118     86       029     63     029     63     821								
0.290     -     46.444     -     0.291     -     46.444     -     0.267     -     44.213     -49.90082     X13       7     1.074     13     49.900     5     1.074     13     49.900     4     1.128     50       427     82     82     633     633								
0.215       -       102.32       -       0.216       -       102.32       -       0.193       -       97.406       -129.3016       X14         5       1.263       09       129.30       8       1.327       58         688       16       688       16       442       442								
0.213     1.270     96.227     122.23     0.214     1.270     96.227     122.23     0.191     1.334     91.606     122.2357     X15       1     274     78     57     5     361     12								
0.845     0.196     7.2671     1.4291     0.845     0.196     7.2671     1.4291     0.837     0.206     6.9180     1.429160     X16       3     661     07     60     6     583     80								
0.593     -     6.9300     -     0.593     -     6.9300     -     0.574     -     6.5972     -3.740861     X17       1     0.539     56     3.7408     5     0.539     56     3.7408     6     0.567     16       802     61     61     036     036     036								
0.765025 <b>0.765025 R-square</b>								
•	R-squared adj.							
14,88351 9.441729 14,88351 F-statistic	-							
	Prob (F-statistic)							

Source: Prepared by the researcher based on the results of the electronic calculator

After the model has been estimated by the three methods of tablet data, we work on differentiating between these models in order to rely on the best method, and to reach the goal that will be used F - test in order to compare models to prove the research hypotheses, and to choose the appropriate model, it is necessary to test the restricted F and Hausman To be used in showing the impact of financial inclusion on the money supply for the research sample, table (27) in the above shows the following:

# 1-1 Aggregate Regression Model (OLS)

It appears from the table above that the estimated model was significant according to the probabilistic value of the F. test (Prob F-statistic), amounting to (0.000), which is less than the significant level (5 %), and there is one indicator of the independent variable whose value was significant according to the value of (Prob), which is X12 At a significant level (5 %). In addition, the value of the coefficient of determination (R 2) is (0.765), That is, the model explains 76.5% From its effect on the approved variable represented by one of the monetary policy indicators (money supply) according to the aggregate regression model (OLS), and the rest of the ratio is explained by other factors not included in the regression model.

# 1-2 Fixed Effects Model (LSDV)

It appears from the table above that the estimated model was significant according to the probabilistic value of the F. test (Prob F-statistic), amounting to (0.000), which is less than the significant level (5 %), and there is also one indicator for the independent variable whose value was significant according to the value of (Prob), which is X12 At a significant level (5 %). In addition, the value of the coefficient of determination (R2) is (0.765), meaning that the model explains 76.5% From its impact on the dependent variable represented by the presentation of cash according to the Fixed Effects Model (LSDV) The rest of the ratio is explained by other factors not included in the regression model.

## 1-3 Random Effects Model (EGLS)

It appears from the table above that the estimated model was significant according to the probabilistic value of the F. test (Prob F-statistic), amounting to (0.000), which is less than the significant level (5 %), and there is also one indicator for the independent variable whose value was significant according to the value of (Prob), which is X12 At a significant level (5 %). In addition, the value of the coefficient of determination (R2) is (0.765), meaning that the model explains 76.5% From its effect on the dependent variable represented by the presentation of criticism according to the random effects model (EGLS) The rest of the ratio is explained by other factors not included in the regression model.

We conclude from this that the first sub-hypothesis (the null hypothesis) was rejected according to the three models of its significance at the 5 % level.

Despite the significance of the fixed and random models, it is necessary to extract or benefit from the results extracted according to the Hausman test, as it becomes clear that the statistical value Chi-Sq. Statistic It was (0.000), which is less than the tabular amount of (14,067) at the moral level (5%) and with a degree of freedom (7), which depends on the number of indicators for the independent variable, meaning that the effects model The constant (Agustina & Septiarini, 2018: 226) is the appropriate model when compared with random effects, which means rejecting the fifth sub-hypothesis, and the table () shows this.

#### Hausman test results

Test type	Test value	Prob.	df
Hausman's test	0.0000	1.00	7

Source: Prepared by the researcher based on the results of the electronic calculator

Accordingly, the most suitable model according to this hypothesis and the results above is the effects model Fixed (Al-Jammal, 2012: 270-272) for his superiority according to the test Hausman on random effects.

#### Results

Financial inclusion is at the present time the most important steps taken by Iraqi banks, under the direction of the Central Bank of Iraq, to contribute to the growth of the economy.

Financial inclusion contributes to the strengthening of funds for the economy through deposits in the banking sector and thus loans at a low interest rate.

- The indicators of financial inclusion affect the money supply as one of the monetary policy variables for the period from 2011 - 2020 and through the application of models (aggregate regression model, fixed effects model, random effects model) and by using the method of analyzing longitudinal or tablet data as a result that the three models The value of the coefficient of determination (R 2) is (0.765), which means that the model explains 76.5% From its impact on the approved variable represented by the offer of cash The rest of the ratio is explained by other factors not included in the regression model.

#### Recommendations

The central bank should instruct governmental or private Iraqi banks to open new branches of banks, especially in rural and remote areas, as well as to hold strategies and directions for the purpose of increasing customer service in banks in order to attract them to the official sector and thus increase the amounts deposited by opening the bank account, which Ultimately, this leads to the granting of credit with low and competitive interest and cost, in addition to providing distinguished electronic services around the clock for the purpose of accessing the services provided in the neighboring and Arab homes, at least.

Banks have to make a very big propaganda for the purpose of marketing services, because most citizens, whether they do not have a financial culture, not only those who cannot read and write, but a large part does not understand many banking procedures and their benefits, and therefore it is reflected positively, whether on the bank itself by increasing the return and educating the citizen for the purpose of saving and obtaining Benefit instead of staying at home.

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