Dear Fellow Shareholders,

Jamie Dimon,
Chairman and
Chief Executive
Officer

We are facing challenges at every turn: a pandemic, unprecedented government actions, a strong recovery after a sharp and deep global recession, a highly polarized U.S. election, mounting inflation, a war in Ukraine and dramatic economic sanctions against Russia. While all this turmoil has serious ramifications on our company, its effect on the world — with the extreme suffering of the Ukrainian people and the potential restructuring of the global order — is far more important.

Adding to the disruption, these events are unfolding while America remains divided within its borders, with many arguing that it has lost its essential leadership role outside of its borders and around the world. But during this difficult time, we have a moment to put aside our differences, offer solutions and work with others in the Western world to come together in defense of democracy and essential freedoms, including free enterprise. We have seen America, in partnership with other countries around the globe, come together previously during instances of conflict and crisis. This juncture is also a moment when our country needs to work across the private and public sectors to lead once again by, among other remediations, improving American competitiveness and better fulfilling equal access to opportunity for all. JPMorgan Chase, a company that has historically worked across borders and boundaries, will do its part to ensure the global economy is safe and secure. I discuss these themes later in this letter.

Although I begin this annual letter to shareholders in a challenging landscape, I remain proud of what our company and our hundreds of thousands of employees around the world have achieved, collectively and individually. As you know, we have long championed the essential role of banking in a community — its potential for bringing people together, for enabling companies and individuals to reach for their dreams, and for being a source of strength in difficult times. Throughout these past two challenging years, we never stopped doing all the things we should be doing to serve our clients and our communities.

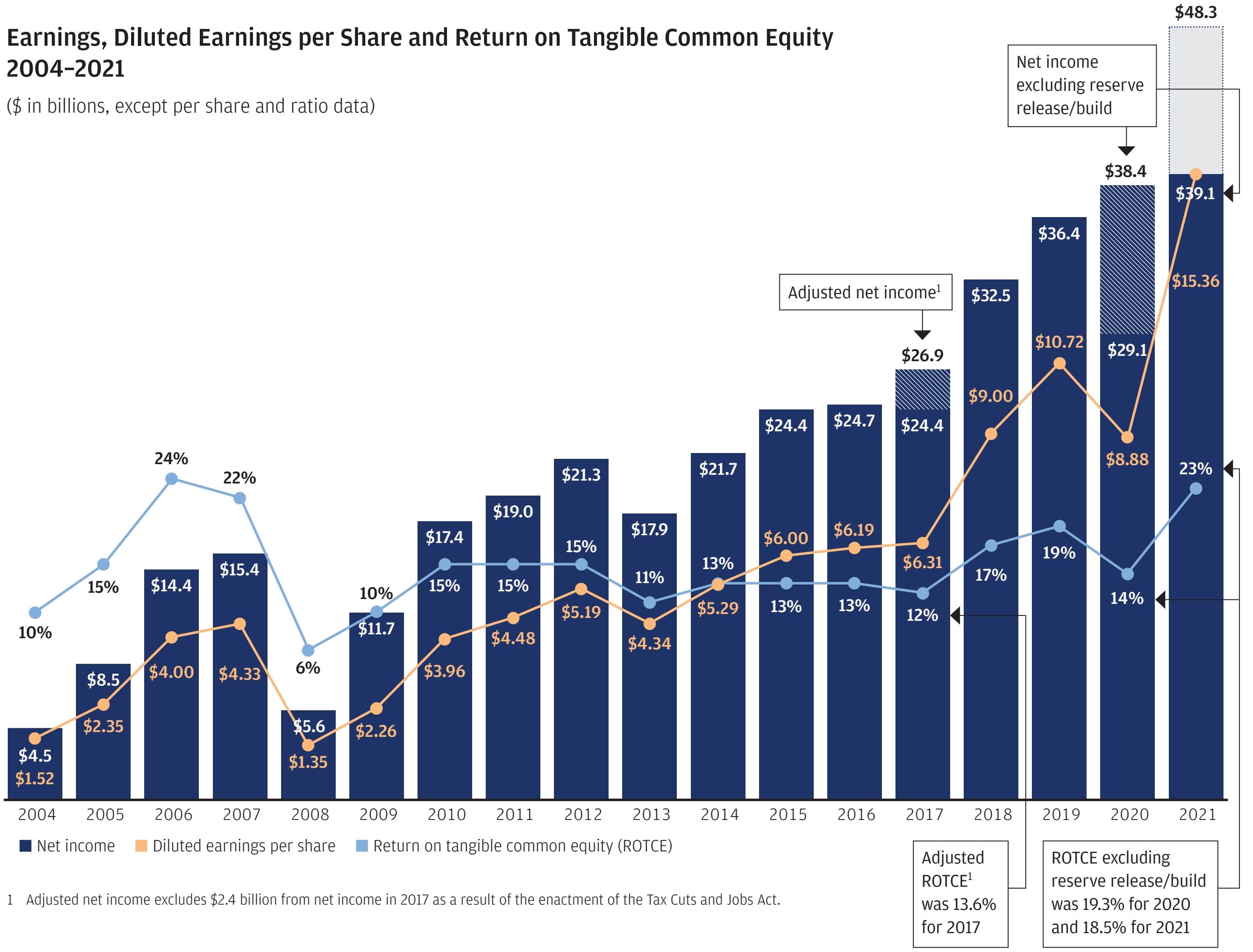
Looking back on the last year and the past two decades — starting from my time as CEO of Bank One in 2000 — it is clear that our financial discipline, constant investment in innovation and ongoing development of our people are what enabled us to persevere in our steadfast dedication to help clients, communities and countries throughout the world. 2021 was another strong year for JPMorgan Chase, with the firm generating record revenue, as well as setting numerous other records in each of our lines of business. We earned $48.3 billion in net income on revenue of $125.3 billion versus $29.1 billion on revenue of $122.9 billion in 2020, reflecting strong underlying performance across our businesses. Included in the $48.3 billion is $9.2 billion after tax in reserve releases due to the volatility introduced by the new current expected credit loss accounting standard. We have pointed out repeatedly that we do not consider these reserve releases core or recurring profits because they are driven by hypothetical, probability-weighted scenarios. Excluding these reserve releases, we still earned 18% on tangible equity — an extremely healthy number. We generally grew market share across our businesses and continued to make significant investments in products, people and technology, all while maintaining credit discipline and a fortress balance sheet. In total, we extended credit and raised capital of ***$3.2 trillion*** for large and small businesses, governments and U.S. consumers.

I'd like to note some steadfast principles that are worth repeating. The first is that while JPMorgan Chase stock is owned by large institutions, pension plans, mutual funds and directly by individual investors, in almost all cases, the ultimate beneficiaries are individuals in our communities. More than 100 million people in the United States own stock, and a large percentage of these individuals, in one way or another, own JPMorgan Chase stock. Many of these people are veterans, teachers, police officers, firefighters, healthcare workers, retirees or those saving for a home, education or retirement. Your management team goes to work every day recognizing the enormous responsibility that we have to our shareholders.

Second, while we don't run the company worrying about the stock price in the short run, in the **long run** our stock price is a measure of the progress we have made over the years. This progress is a function of *continual* investments in our people, systems and products, in good and bad times, to build our capabilities. Whether looking back 10 years or since the JPMorgan Chase/Bank One merger in 2004, these investments have resulted in our stock's significant outperformance of the Standard & Poor's 500 Index and the Standard & Poor's Financials Index. These important investments will also drive our company's future prospects and position it to grow and prosper for decades.

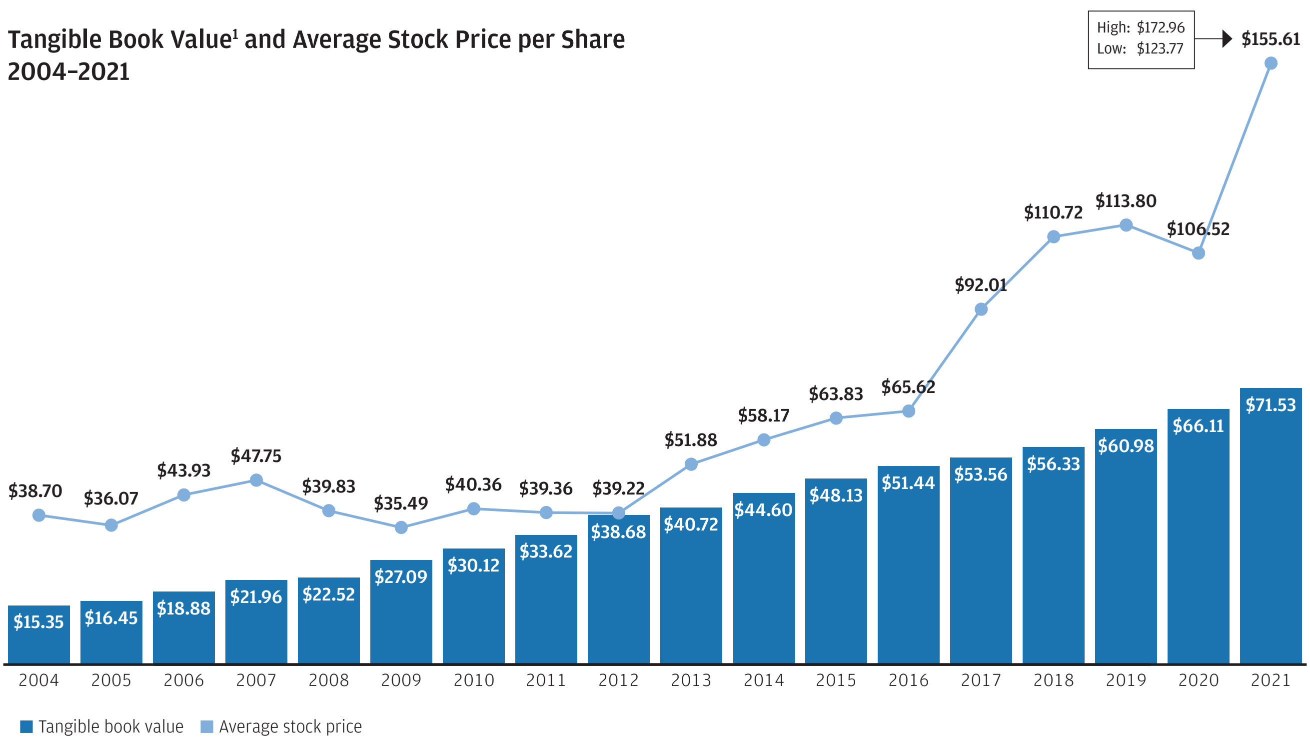
Earnings, Diluted Earnings per Share and Return on Tangible Common Equity 2004–2021

($ in billions, except per share and ratio data)



1 Adjusted net income excludes $2.4 billion from net income in 2017 as a result of the enactment of the Tax Cuts and Jobs Act.

Tangible Book Value[1] and Average Stock Price per Share 2004–2021



1 9% compound annual growth rate since 2004.

Stock total return analysis

	Bank One	S&P 500 Index	S&P Financials Index
Performance since becoming CEO of Bank One (3/27/2000–12/31/2021)[1]			
Compounded annual gain	12.6%	7.4%	5.3%
Overall gain	1,213.2%	373.5%	208.6%

	JPMorgan Chase & Co.	S&P 500 Index	S&P Financials Index
Performance since the Bank One and JPMorgan Chase & Co. merger (7/1/2004–12/31/2021)			
Compounded annual gain	11.3%	10.7%	5.3%
Overall gain	553.9%	494.4%	145.9%
Performance for the period ended December 31, 2021			
Compounded annual gain			
One year	27.7%	28.7%	34.9%
Five years	16.0%	18.5%	13.2%
Ten years	20.2%	16.5%	16.3%

These charts show actual returns of the stock, with dividends reinvested, for heritage shareholders of Bank One and JPMorgan Chase & Co. vs. the Standard & Poor's 500 Index (S&P 500 Index) and the Standard & Poor's Financials Index (S&P Financials Index).

1 On March 27, 2000, Jamie Dimon was hired as CEO of Bank One.

We have consistently described to you, our shareholders, the basic principles and strategies we use to build this company — from maintaining a fortress balance sheet, constantly investing and nurturing talent to fully satisfying regulators, continually improving risk, governance and controls, and serving customers and clients while lifting up communities worldwide.

If you look deeper, you will find that our success and accomplishments are founded on our commitment to our shareholders. Shareholder value can be built ***only*** if you maintain a healthy and vibrant company, which means doing a good job taking care of your customers, employees and communities. Conversely, how can you have a healthy company if you neglect any of these stakeholders? As we have learned in 2021, there are myriad ways an institution can demonstrate its compassion for its employees and its communities while still upholding shareholder value.

Adhering to our basic principles and strategies allows us to drive good organic growth and properly manage our capital (including dividends and stock buybacks), as we have consistently demonstrated over the past decades. All of this is shown in the charts on pages 8-12, which illustrate how we have grown our franchises, how we compare with our competitors and how we look at our fortress balance sheet. I invite you to peruse them at your leisure. In addition, I urge you to read the CEO letters in this Annual Report, which will give you more specific details about our businesses and our plans for the future.

There are two other critical points I would like to make. We strive to build enduring businesses, and we are not a conglomerate — all our businesses rely on and benefit from each other. Both of these factors help generate our superior returns. But, despite our best efforts, the moats that protect this company are not particularly deep — and we face extraordinary competition. I have written about this reality extensively in the past and cover it in more detail in this letter. However, it is the hand we have been dealt, and we will play it as best we can.

My friend, Warren Buffett, spoke in his letter this year about his silent partner — the U.S. government — noting that all his company's success is predicated upon the extraordinary conditions our country creates. He is right to say to his shareholders that when they see the flag, they should all say thank you. We should, too. I do just want to note that in our case, the silent partner is not so silent. JPMorgan Chase is a healthy and thriving company, and we always want to give back and pay our fair share. We do — and we want it to be spent well and have the greatest impact. To give you an idea of where our taxes and fees go: In the last 10 years, we paid $42 billion in federal, state and local taxes in the United States and $17 billion in taxes outside of the United States. We also paid the Federal Deposit Insurance Corporation $11 billion so that it has the resources to cover the failure of any major American bank.

Finally, the basis of our success is our people. They are the ones who serve our customers and communities, build the technology, make the strategic decisions, manage the risks, determine our investments and drive innovation. Whatever your view is of the world's complexity and the risks and opportunities ahead, having a great team of people — with guts, brains, integrity and enormous capabilities to navigate personally challenging circumstances while maintaining high standards of professional excellence — is what ensures our prosperity, now and in the future.

Client Franchises Built Over the Long Term

Consumer & Community Banking

	2006	2011	2020	2021
Households (M)	~45	~55	63	66
Active mobile customers (M)	–	8.2	40.9	45.5
# of branches	3,079	5,508	4,908	4,790
# of advisors[1]	NM	3,201	4,417	4,725
Average deposits ($B)[1]	$204	$383	$851	$1,055
Deposits market share[2]	4.4%	6.6%	9.6%	10.3%
# of top 50 markets where we are #1 (top 3)	*7 (14)*	*6 (18)*	*8 (25)*	*8 (25)*
Business Banking primary market share[3]	5.1%	6.8%	9.5%	9.2%
Client investment assets ($B)[1]	~$80	$138	$590	$718
Total payments volume ($B)[4]	NA	~$1,500	$4,022	$4,997
% of digital non-card payments[5]	<25%	~40%	72%	75%
Credit card sales ($B)	*$257*	*$344*	*$703*	*$894*
Debit card sales ($B)	*NA*	*$189*	*$379*	*$467*
Debit & credit card sales volume ($B)	NA	$533	$1,081	$1,361
Credit card sales market share[6]	16%	20%	22%	22%
Credit card loans ($B, EOP)	$153	$132	$144	$154
Credit card loans market share[7]	19%	18%	17%	17%

- Serve >66 million U.S. households and >5 million small business relationships
- 59 million active digital customers[8], including 45 million active mobile customers[9]
- Primary bank relationships for >75% of Consumer Banking checking households
- First bank to have branch presence in all contiguous 48 U.S. states
- #1 U.S. credit card issuer based on sales and outstandings[10]
- #3 mortgage servicer[11]
- #2 bank auto lender[12]
- Provided deferred payments and forbearance options for >2 million mortgages, auto loans and credit cards, representing ~$90 billion in balances[13]
- #1 PPP lender on a dollar basis

Corporate & Investment Bank

	2006	2011	2020	2021
Global investment banking fees[14]	#2	#1	#1	#1
Market share[14]	8.7%	8.2%	9.2%	9.5%
Total Markets revenue[15]	#8	#1	#1	#1
Market share[15]	6.3%	9.3%	12.7%	12.2%
FICC[15]	#7	#1	#1	#1
Market share[15]	7.0%	10.1%	13.0%	12.5%
Equities[15]	#8	#3	co-#1	co-#1
Market share[15]	5.0%	7.6%	12.2%	11.5%
Assets under custody ($T)	$13.9	$16.9	$31.0	$33.2
Average client deposits ($B)[16]	$190	$319	$611	$715
Firmwide Payments revenue ($B)	$5.0	$6.1	$9.6	$10.3
Firmwide Payments revenue rank (share)[17]	NA	NA	#1 (6.7%)	#1 (7.2%)
Daily payment processing (T)[18]	NA	NA	>$8	>$9
Average daily security purchases and sales ($T)	NA	NA	$2.7	$2.9

- >90% of Fortune 500 companies do business with us
- Presence in over 100 markets globally
- #1 in global investment banking fees for the 13th consecutive year[14]
- Consistently ranked #1 in Markets revenue since 2011[15]
- J.P. Morgan Research ranked as the #1 Global Research Firm, #1 Global Equity Research Team and #1 Global Fixed Income Research Team[19]
- #1 in USD payments volume[20]
- #1 in U.S. Merchant transaction processing[21]
- #2 custodian globally[22]

Commercial Banking

	2006	2011	2020	2021
# of top 75 MSAs with dedicated teams	36	49	66	66
# of bankers	1,203	1,108	2,020	2,254
New relationships (gross)	NA	NA	1,856	2,579
Average loans ($B)	$53.6	$104.2	$218.9	$205.0
Average deposits ($B)[23]	$73.6	$174.7	$237.8	$301.5
Gross investment banking revenue ($B)[24]	$0.7	$1.4	$3.3	$5.1
Payments revenue ($B)[25]	$0.9	$1.1	$1.5	$1.8
Multifamily lending[26]	#28	#1	#1	#1

- 140 locations across the U.S. and 32 international locations, with 27 new markets since 2018
- $1B revenue from Middle Market expansion markets, up 34% YoY
- Credit, banking, and treasury services to ~23K Commercial & Industrial clients and ~32K real estate owners and investors
- 18 specialized industry coverage teams
- #1 overall Middle Market Bookrunner in the U.S.[27]
- Over 100,000 affordable housing units financed in 2021[28]

Asset & Wealth Management

	2006	2011	2020	2021
Mutual Funds with a 4/5-star rating[29]	119	146	183	206
Client assets ($T)[30]	$1.3	$1.9	$3.7	$4.3
Traditional assets ($T)[30, 31]	$1.2	$1.6	$3.2	$3.7
Alternatives assets ($B)[30, 32]	$100	$157	$282	$353
Deposits ($B)[30]	$52	$124	$199	$282
Loans ($B)[30]	$30	$57	$187	$218
# of Global Private Bank client advisors[30]	1,506	2,389	2,462	2,738
Global Private Bank (*Euromoney*)[33]	#7	#4	#2	#1
U.S. Private Bank (*Euromoney*)[33]	#1	#1	#1	#1

- 86% of 10-year JPMAM long-term mutual fund AUM performed above peer median[34]
- Business with 60% of the world's largest pension funds, sovereign wealth funds and central banks
- #2 in 5-year cumulative net client asset flows behind BlackRock[35]
- Positive client asset flows across all regions, segments and products
- $58B in Alternatives fundraising
- #2 in Institutional Money Market Funds AUM[36]
- 60% of Asset Management AUM managed by female and/or diverse portfolio managers[37]

NM = Not meaningful
NA = Not available
EOP = End of period
FICC = Fixed income, currencies and commodities
MSAs = Metropolitan statistical areas

AUM = Assets under management
PPP = Paycheck Protection Program
USD = U.S. dollar
YOY = Year-over-year

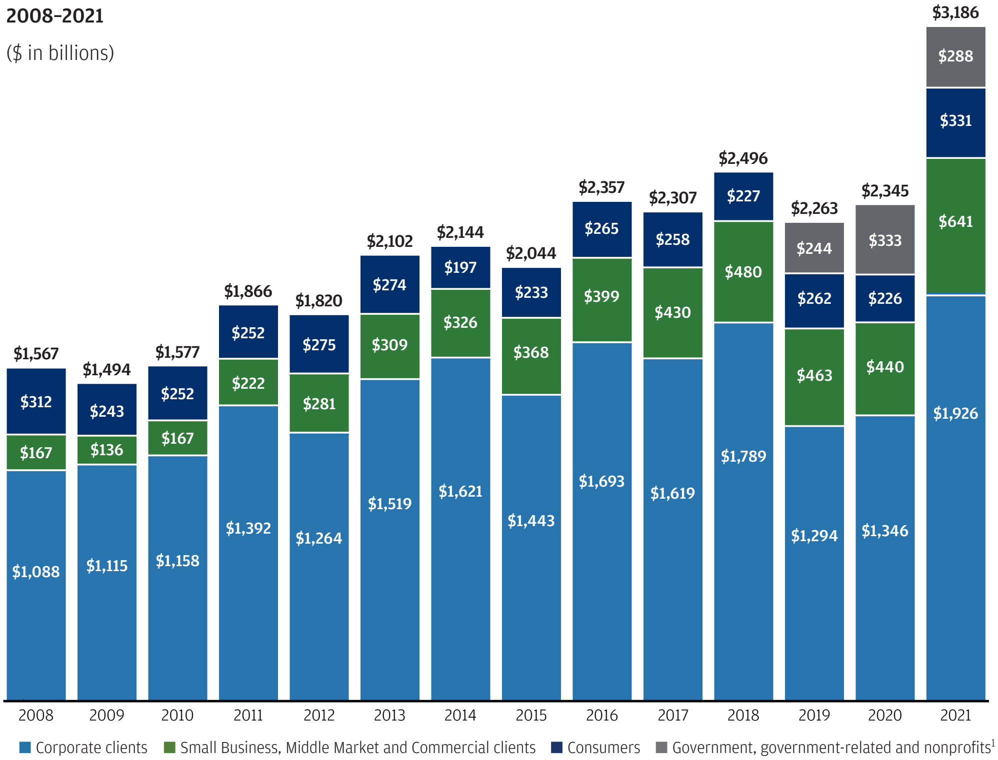
M = Millions
B = Billions
T = Trillions
K = Thousands

For footnoted information, refer to page 47 in this Annual Report.

New and Renewed Credit and Capital for Our Clients

2008–2021

($ in billions)



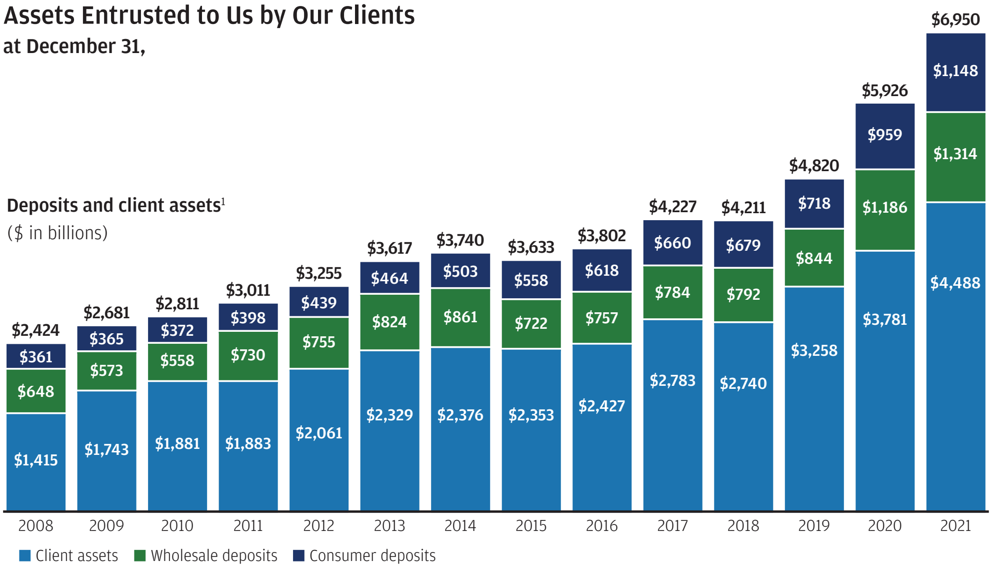
1 Government, government-related and nonprofits available for 2019–2021 only; included in Corporate clients and Small Business, Middle Market and Commercial clients for prior years.

Assets Entrusted to Us by Our Clients

at December 31,

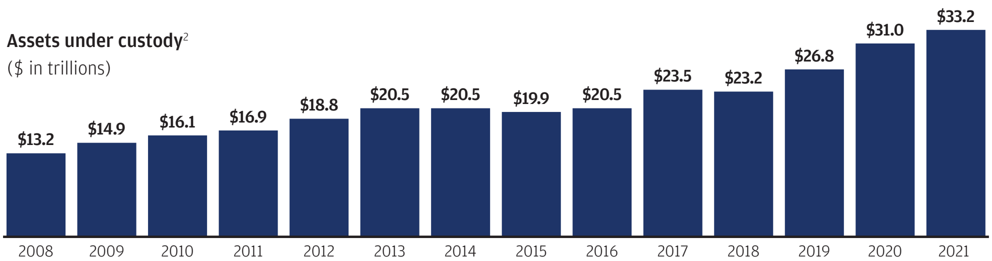
Deposits and client assets[1]

($ in billions)



Assets under custody[2]

($ in trillions)



1 Represents assets under management, as well as custody, brokerage, administration and deposit accounts.

2 Represents activities associated with the safekeeping and servicing of assets.

Fortress balance sheet

Selected data, for the year ended December 31,
(average, $ in trillions)

	2021	Change since 2008
Assets		
Liquid assets[1]	$ 1.7	443%
Loans[2]	1.0	76%
Trading assets[3]	0.5	4%
Total assets	3.7	108%
Liabilities and equity		
Deposits	2.3	199%
Trading liabilities[4]	0.2	10%
Preferred stock and long-term debt	0.3	16%
Common equity	0.3	94%
Total liabilities and equity	$ 3.7	108%

Income statement

Selected data, for the year ended December 31,
($ in billions)

	2021	Change since 2008
Revenue		
Noninterest income	$ 73	174%
Net interest income	53	14%
Total net revenue	125	72%
Expenses, credit costs and pre-tax profit		
Noninterest expense	71	64%
Net charge-offs	3	(71)%
Reserve build/(release)	(12)	(182)%
Pre-tax profit	$ 63	1,251%

1 Includes ~$700 billion cash, ~$450 billion United States Treasury securities and ~$150 billion agency mortgage-backed securities; reported high quality liquid assets (HQLA) is $738 billion and represents quarterly average HQLA included in the liquidity coverage ratio. Total reported eligible HQLA excludes average excess eligible HQLA at JPMorgan Chase Bank, N.A. that are not transferable to nonbank affiliates. Refer to liquidity coverage ratio on page 103 of the 2021 10-K for additional information.

2 Loans net of allowance for loan losses.

3 Includes trading assets for debt instruments, equity and other instruments and derivative receivables.

4 Includes trading liabilities for debt and equity instruments and derivative payables.

These assets are cash (essentially deposits at the Fed) and other highly marketable securities. This is an extraordinary amount of liquidity — approximately $700 billion is required by the liquidity coverage ratio and will always consist of the most conservative assets.

These are still our riskiest assets, but you can see how small they are relative to the size of our balance sheet.

The best way to ascertain actual risk is by looking at Advanced risk-weighted assets (RWA), which total only $1.1 trillion (excluding operational risk RWA) because so many assets have so little risk.

This is an extraordinary amount of consumer and wholesale deposits.

There is more than $500 billion in preferred stock, long-term debt and common equity, an extraordinary capital base. Equally important, the amount of unsecured short-term financing, the riskiest type, is negligible.

A large portion of our $125 billion of revenue is fairly recurring and predictable; for example, revenue from loans, Asset Management, Consumer Banking, Wealth Management, Securities Services and Payments. We've already told our shareholders that net interest income (excluding CIB Markets) will be more than $8 billion higher in 2022, primarily due to higher rates.

Our fortress balance sheet is accompanied by a fortress income statement. Even under extreme stress, our company could make a profit. For example, if credit losses were $10 billion higher or more, if we had a $10 billion operational error or if certain asset-based revenue dropped by as much as $10 billion, we would still be in very good shape.

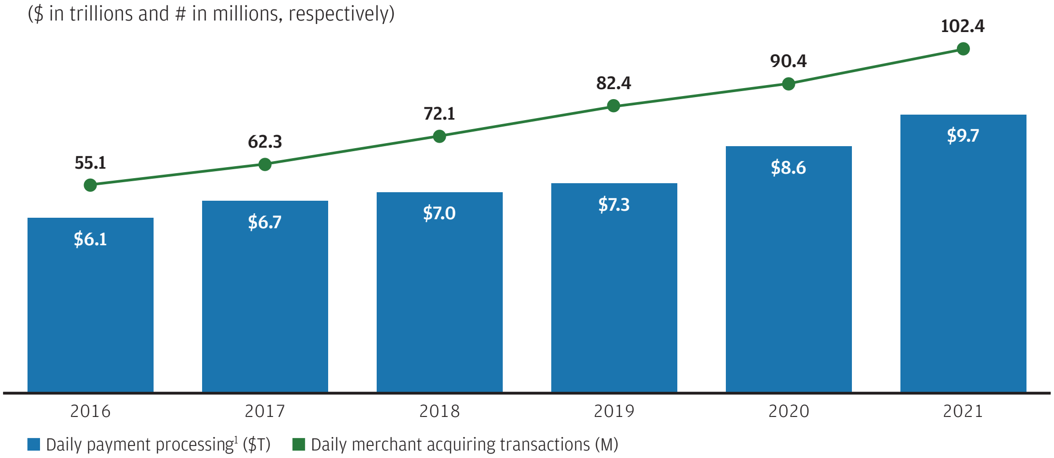
We tend to look at this number on a more normalized basis. For example, charge-offs are artificially low in this part of the cycle (a more normal amount would be $7 billion versus $3 billion), and we don't consider the reserve release of $12 billion as core or recurring profits. If you adjust for this and add back the $8 billion of normalized higher net interest income[1], our normalized pre-tax profit would be closer to $50+ billion.

And in terms of capital preservation, we could, if we had to, cut the dividend to zero, saving $12 billion in a year. Or we could reduce expenses substantially — which we could easily achieve.

1 Excluding CIB Markets net interest income.

Daily Payment Processing and Merchant Acquiring Transactions

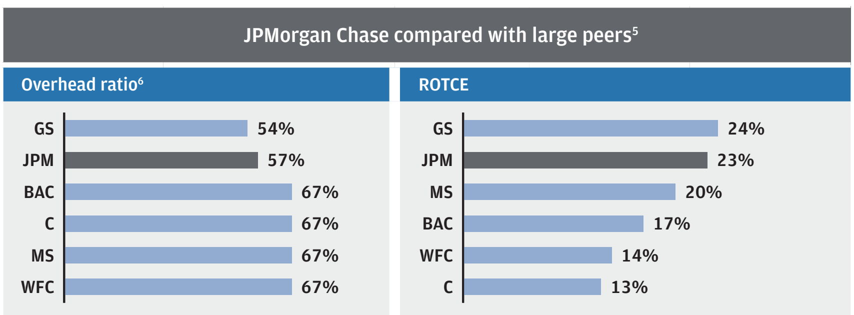
($ in trillions and # in millions, respectively)



1 Based on Firmwide data using regulatory reporting guidelines as prescribed by the Federal Reserve Board.

JPMorgan Chase Is in Line with Best-in-Class Peers in Both Efficiency and Returns

	Efficiency		Returns		
	JPM 2021 overhead ratio	Best-in-class peer overhead ratio[1]	JPM 2021 ROTCE	Best-in-class all banks ROTCE[2,4]	Best-in-class G-SIB ROTCE[3,4]
Consumer & Community Banking	58%	51% COF-DC & CB	41%	31% BAC-CB	31% BAC-CB
Corporate & Investment Bank	49%	53% GS-IB & GM	25%	26% GS-IB & GM	26% GS-IB & GM
Commercial Banking	40%	42% PNC	21%	20% Key	15% WFC-CB
Asset & Wealth Management	64%	59% CS-PB & TROW	33%	48% UBS-GWM & MS-IM	47% MS-WM & IM



ROTCE = Return on tangible common equity
G-SIB = Global Systemically Important Banks
For footnoted information, refer to page 47 in this Annual Report.

Within this letter, I discuss the following:

Significant Geopolitical and Economic Challenges

America and the rest of the world are facing the confluence of three important and conflicting forces: 1) a strong U.S. economy, which, we hope, has COVID-19 in its rearview mirror; 2) high inflation, which means rising interest rates and, importantly, the reversal of quantitative easing (QE); and 3) the war in Ukraine and the accompanying humanitarian crisis, with its impact on the global economy in the short term, as well as its significant impact on the geopolitics of the future. These factors will likely have a meaningful effect on the economy over the next few years and on geopolitics for the next several decades.

I should remind the reader that we normally don't worry about – or even try to predict – normal fluctuations of the economy. In all times, we are prepared for difficult markets and severe recessions, as well as for unpredictable events, not only so we will survive them but also so we can be there for our clients when they need us the most. However, sometimes there are powerful underlying structural trends that we must try to understand since their impact can be so large, with widespread impact on many parts of human existence.

THE U.S. ECONOMY IS STRONG.

In 2020 and 2021, enormous QE – approximately $4.4 trillion, or 18%, of 2021 gross domestic product (GDP) – and enormous fiscal stimulus (which has been and always will be inflationary) – approximately $5 trillion, or 21%, of 2021 GDP – stabilized markets and allowed companies to raise enormous amounts of capital. In addition, this infusion of capital saved many small businesses and put more than $2.5 trillion in the hands of consumers and almost $1 trillion into state and local coffers. These actions led to a rapid decline in unemployment, dropping from 15% to under 4% in 20 months – the magnitude and speed of which were both unprecedented. Additionally, the economy grew 7% in 2021 ***despite*** the arrival of the Delta and Omicron variants and the global supply chain shortages, which were largely fueled by the dramatic upswing in consumer spending and the shift in that spend from services to goods. Fortunately, during these two years, vaccines for COVID-19 were also rapidly developed and distributed.

In today's economy, the consumer is in excellent financial shape (on average), with leverage among the lowest on record, excellent mortgage underwriting (even though we've had home price appreciation), plentiful jobs with wage increases and more than $2 trillion in excess savings, mostly due to government stimulus. Most consumers and companies (and states) are still flush with the money generated in 2020 and 2021, with consumer spending over the last several months 12% above pre-COVID-19 levels. (But we must recognize that the account balances in lower-income households, smaller to begin with, are going down faster and that income for those households is not keeping pace with rising inflation.)

Today's economic landscape is completely different from the 2008 financial crisis when the consumer was extraordinarily overleveraged, as was the financial system as a whole – from banks and investment banks to shadow banks, hedge funds, private equity, Fannie Mae and many other entities. In addition, home price appreciation, fed by bad underwriting and leverage in the mortgage system, led to excessive speculation, which was missed by virtually everyone – eventually leading to nearly $1 trillion in actual losses.

During 2020 and 2021, many aberrant things also happened: 2 million people retired early; the supply of immigrant workers dropped by 1 million due to immigration policies; available jobs skyrocketed to 11 million (again unprecedented); and job seekers dropped to 5 million. Wage growth accelerated dramatically, particularly in low-income jobs. We should not be unhappy that wages are going up – and that workers have more choices and are making different decisions — in spite of the fact that this causes some difficulties for business. House prices surged during the pandemic (housing became and still is in extremely short supply), and asset prices remained high, some, in my view, in bubble territory. Inflation soared to 7%; while clearly some of this rise is transitory due to supply chain shortages, some is not, because higher wages, higher housing costs, and higher energy and commodity prices will persist (more to come on this later). All these factors will continue in 2022, driving further growth as well as continued inflation. One additional point: Consumer confidence and consumer spending have diverged dramatically, with consumer confidence dropping. Spending, however, is more important, and the drop in consumer confidence may be in reaction to ongoing fatigue from the pandemic shutdown and concerns over high inflation.

PERSISTENT INFLATION WILL REQUIRE RISING INTEREST RATES AND A MASSIVE BUT NECESSARY SHIFT FROM QUANTITATIVE EASING TO QUANTITATIVE TIGHTENING.

It is easy to second-guess complex decisions after the fact. The Federal Reserve (the Fed) and the government did the right thing by taking bold dramatic actions following the misfortune unleashed by the pandemic. In hindsight, it worked. But also in hindsight, the medicine (fiscal spending and QE) was probably too much and lasted too long.

I do not envy the Fed for what it must do next: The stronger the recovery, the higher the rates that follow (I believe that this could be significantly higher than the markets expect) and the stronger the quantitative tightening (QT). If the Fed gets it just right, we can have years of growth, and inflation will eventually start to recede. In any event, this process will cause lots of consternation and very volatile markets. The Fed should not worry about volatile markets unless they affect the ***actual*** economy. A strong economy trumps market volatility.

This is in no way traditional Fed tightening — and there are no models that can even remotely give us the answers. I have always been critical of people's excessive reliance on models — since they don't capture major catalysts, such as culture, character and technological advances. And in our current situation, the Fed needs to deal with things it has never dealt with before (and are impossible to model), including supply chain issues, sanctions, war and a reversal of QE in the face of unparalleled inflation. Obviously, the Fed always needs to be data-dependent, and this is true today more than ever before. However, the data will likely continue to be inconsistent and volatile — and hard to read. The Fed should strive for consistency but not when it's impossible to achieve.

One thing the Fed should do, and seems to have done, is to exempt themselves — give themselves ultimate flexibility — from the pattern of raising rates by only 25 basis points and doing so on a regular schedule. And while they may announce how they intend to reduce the Fed balance sheet, they should be free to change this plan on a moment's notice in order to deal with actual events in the economy and the markets. A Fed that reacts strongly to data and events in real time will ultimately create more confidence. In any case, rates will need to go up substantially. The Fed has a hard job to do so let's all wish them the best.

The shift from QE to QT will cause a massive change in the flow of funds in and out of Treasury bonds and, therefore, all securities. Our situation today is completely unlike the monetary policy adjustments following the great financial crisis of 2008. When central banks were buying bonds from 2008 to 2014, there was a tremendous amount of deleveraging in the rest of the financial world. Clearly, this deleveraging slowed growth, which in turn reduced the need for business investment. In addition, banks were required to buy Treasuries to meet their new liquidity requirements. This action reduced both lending and the money supply in the years after the great financial crisis. Low growth also led to less capital needed, and QE added to the savings glut. I am still convinced that these are some of the primary reasons our economy experienced low growth and so-called "secular stagnation."

In today's economic environment, countries' central banks do not need to increase their foreign exchange reserves as they did after the great financial crisis, and banks don't need to buy Treasuries to improve their liquidity ratios. This time around, business investment will likely be higher, both because of higher growth and because the capital required to combat climate change is estimated to be more than $4 trillion annually. Finally, governments will also need to borrow more money — not less.

This massive change in the flow of funds triggered by Fed tightening is certain to have market and economic effects that will be studied for decades to come. Our bank is prepared for drastically higher rates and more volatile markets.

THE WAR IN UKRAINE AND THE SANCTIONS ON RUSSIA, AT A MINIMUM, WILL SLOW THE GLOBAL ECONOMY — AND IT COULD EASILY GET WORSE.

The effects of geopolitics on the economy are harder to predict. For as much attention as it gets, geopolitics over the past 50 years have rarely disrupted the global economy in the short run (think Afghanistan; Iraq; Korea; Vietnam; conflicts between Pakistan and India, India and China, China and Vietnam, Russia and China; and at least 10 other upheavals and wars in the Middle East). The 1973 Organization of the Petroleum Exporting Countries, or OPEC, oil embargo was an exception, when the sharp jump in oil prices pushed the world into a global recession. However, it's important to point out that while past geopolitical events often did not have short-term economic effects, they frequently had large, longer-term consequences — such as America's experience with the Vietnam War, which drove the great inflation of the 1970s and 1980s and tore the body politic apart.

As I write this letter, the war in Ukraine has been raging for well over a month and is creating a significant refugee crisis. We do not know what its outcome ultimately will be, but the hostilities in Ukraine and the sanctions on Russia are already having a substantial economic impact. They have roiled global oil, commodity and agricultural markets. We expect the fallout from the war and resulting sanctions to reduce Russia's GDP by 12.5% by midyear (a decline worse than the 10% drop after the 1998 default). Our economists currently think that the euro area, highly dependent on Russia for oil and gas, will see GDP growth of roughly 2% in 2022, instead of the elevated 4.5% pace we had expected just six weeks ago. By contrast, they expect the U.S. economy to advance roughly 2.5% versus a previously estimated 3%. But I caution that these estimates are based upon a fairly static view of the war in Ukraine and the sanctions now in place.

Many more sanctions could be added — which could dramatically, and unpredictably, increase their effect. Along with the unpredictability of war itself and the uncertainty surrounding global commodity supply chains, this makes for a potentially explosive situation. I speak later about the precarious nature of the global energy supply, but for now, simply, that supply is easy to disrupt. (We should also keep in mind that, as a percentage of global GDP, oil is only about 40% of what it was in 1973 — but it is still essential and critical.)

THE CONFLUENCE OF THESE FACTORS MAY BE UNPRECEDENTED.

Each of these three factors mentioned above is unique in its own right: The dramatic stimulus-fueled recovery from the COVID-19 pandemic, the likely need for rapidly raising rates and the required reversal of QE, and the war in Ukraine and the sanctions on Russia. They present completely different circumstances than what we've experienced in the past — and their confluence may dramatically increase the risks ahead.

While it is possible, and hopeful, that all of these events will have peaceful resolutions, we should prepare for the potential negative outcomes. In the next section, I discuss immediate actions we should take to protect us from potential serious problems.

THE WAR COULD AFFECT GEOPOLITICS FOR DECADES.

Russian aggression is having another dramatic and important result: It is coalescing the democratic, Western world — across Europe and the North Atlantic Treaty Organization (NATO) countries to Australia, Japan and Korea. The United States and the West realize there is no replacement for strong allies and strong militaries.

The war and prior trade disputes with China also highlight the critical importance of economic relationships and trade, particularly trade that involves anything affecting national security. The outcome of these two issues will transcend Russia and likely will affect geopolitics for decades, potentially leading to both a realignment of alliances and a restructuring of global trade. How the West comports itself, and whether the West can maintain its unity, will likely determine the future global order and shape America's (and its allies') important relationship with China, which I talk more about later in this letter.

HOW ARE WE MANAGING OUR GLOBAL BANK IN THESE DIFFICULT MARKETS AND COMPLEX TIMES?

Our hearts go out to all of those affected by the war — JPMorgan Chase and its employees have already donated over $5 million to the Ukrainian humanitarian crisis, with more to come.

JPMorgan Chase has also played its part in the implementation of the Western world's policies and sanctions regarding Russia. Of course, we are following both the letter of the law and the spirit of all the American and allied sanctions, working hand in hand with governments to implement complex policies and directives, and then some. Managing this has been an enormous undertaking. It is completely different from navigating a financial crisis or a severe recession. This entails sanctioning individuals, including their ownership of assets and companies; reducing exposures across multiple products and services; analyzing and stopping billions of dollars of payments as directed by governments; and many other actions.

We are not worried about our direct exposure to Russia, though we could still lose about $1 billion over time. But we are actively monitoring the impact of ongoing sanctions and Russia's response, concerned as well about their secondary and collateral effects on so many companies and countries. We have been steadfast in our operating principles to be prepared for the unpredictable. Rest assured that our management teams, hundreds of us, globally, have been working around the clock to do the right thing.

The Extraordinary Need for Strong American Leadership

Even before the war in Ukraine jeopardized the world order, we were facing exceptional and enormous global challenges — nuclear proliferation (this is still the biggest risk to mankind, bar none, and made all the more stark by the war in Ukraine), threats to cybersecurity, terrorism, climate change, pressures on free and fair trade, and vast inequities in society. Critical to solving these problems is strong American leadership. American global leadership is the best course for the world ***and for America*** — and our leadership needs to articulate to its citizens why this is the case. The war in Ukraine reminds us that in a troubled world, national security always becomes the paramount concern. We should never again forget that this is true even in peaceful times — and we should never again be lulled into a false sense of security. Power abhors a vacuum, and it should be increasingly clear to all that without strong American leadership, chaos likely will prevail.

The world does not want an arrogant America telling everyone what to do but, instead, wants America working with allies, collaborating and compromising. Most of the world would applaud mature, respectful and civil leadership by America. We can organize military and economic frameworks that make the world safe and prosperous for democracy and freedom ***only*** if we work with our allies.

If Western allies across Europe and Asia realize there is power in strong partnership, it puts the Western world in a better position to address future challenges, including those posed by China's growth. This is applicable to areas where we have common interests (e.g., anti-terrorism, nuclear proliferation, climate change), as well as to areas where we may not (e.g., economic and political competition).

It also is clear that trade and supply chains, where they affect matters of national security, need to be restructured. You simply cannot rely on countries with different strategic interests for critical goods and services. Such reorganization does not need to be a disaster or decoupling. With thoughtful analysis and execution, it should be rational and orderly. This is in everyone's best interest.

WHILE AMERICA HAS FLAWS, ITS ESSENTIAL STRENGTHS ENDURE.

Many feel despondent about the "decline" of America. Our economy has had anemic growth for decades. COVID-19 and George Floyd's murder cast a spotlight on what we already knew — that our lower-income citizens, often minorities, suffer more in our society, particularly during recessions and times of turmoil. Continuing income inequality may very well be causing growing partisanship, as some people believe the American dream is fraying and that our system is unfair, leaving many of our citizens behind.

In prior letters, I have detailed our poor management of basic policy in America and what the consequences have been from that dysfunction: ineffective education systems, soaring healthcare costs, excessive regulation and bureaucracy, the inability to plan and build infrastructure efficiently, inequitable taxes, a capricious and wasteful litigation system, frustrating immigration policies and reform, inefficient mortgage markets and housing policy, a partially untrained and unprepared labor force, excessive student debt, and the lack of proper federal government budgeting and spending, which lead to huge inefficiencies. Since I have covered these issues at length in the past, I will not elaborate on them here. I do, however, want to point out (and I find it disheartening) how readily we accept the failure, often with a chuckle, of our bureaucracy and policies.

Our country is not perfect, but our basic principles — i.e., the rule of law, individual liberties, freedom of speech and religion, and the concept of equal opportunity — are still exceptional ideals that most of the world wants yet often is not able to achieve. These principles still make America the partner of choice for many countries and the destination of choice for many individuals. Our American system gave us one of the world's most prosperous and innovative economies. I do not like it when anyone disparages this wonderful country because of our flaws. Though our sins may be real, they are the sins of all countries. We can celebrate this country for having given so much to so many while acknowledging prior mistakes and fixing them. It is shocking to me how many people denigrate not just America but free enterprise and the essential role of business. If America could open its borders to all, I have little doubt that billions of people, if they could, would want to come here, and few would leave.

America has faced tough times before — the Civil War, World War I, the U.S. stock market crash of 1929 and the Great Depression that followed, World War II and 9/11, among others. As recently as the late 1960s and 1970s, we struggled with the loss of the Vietnam War, political and racial injustice, recessions and inflation. (Do you remember America's obsession and fear about the emergence of Japan as an economic power in the 1980s?) In each case, however, America's resiliency persevered and ultimately strengthened our position in the world. We hope this time is no different, but we should not be complacent as we do not have a divine right to success.

TO MAINTAIN OUR COMPETITIVENESS, OUR COUNTRY MUST REGAIN ITS COMPETENCE — AND OUR PRINCIPLES, INCLUDING FREE ENTERPRISE, NEED TO BE NURTURED.

America's moral, economic and military might all derive from our principles and are also predicated on the strength and ***competence*** of the American system. We must acknowledge that nurturing and maintaining our enormously prosperous economy provides the foundation of that system. Ultimately, that economy is what pays for the best military the world has ever seen.

Over the past 20 years, our economy has grown, on average, at only 2%. American ingenuity, work ethic, technology and business capability were able to overcome some — but not all — of our mismanagement. We should not accept mediocrity; we no longer imagine what should be: Over the past decade, we should have grown at 3.5%.

Freedom and its brother, free enterprise, ***properly regulated*** are the answer — not unconstrained capitalism nor crony capitalism, where business uses government and regulations to maintain its position or strengthen its hand. All interest groups, business groups included, should applaud good public policy and not resist it for self-serving reasons.

Free enterprise celebrates, and is inseparable from, human freedom and creativity, which ultimately are the sources of all human progress. The secret sauce of free enterprise is not only the free movement of capital but also, more importantly, the value of knowledge and free people exercising their rights.

Nonetheless, many countries — inadvertently through decades of following bad policy or deliberately by restricting freedoms — damage the full benefit of free enterprise and often discourage savings, innovation, and the free movement of people and labor. We all believe in great social safety nets that reduce poverty, provide opportunity for good jobs and serve as an engine for economic growth. But freedom slowly disappears when a country's government controls too much of its economy, and people in nearly every country, free or not, do not like constantly being told what to do. It is disingenuous when political leaders say that government "built the roads" and then use that statement as an argument to suppress free enterprise. The roads were built by the people and for the people so that all could travel and prosper.

What we really need are free enterprise, more civic-minded companies and citizens, and ***extraordinarily competent government and policies***.

GOVERNMENT, WITH ITS UNIQUE POWERS, HAS AN ESSENTIAL ROLE IN MANAGING THE ECONOMY — BUT IT NEEDS TO BE REALISTIC ABOUT *ITS* LIMITATIONS ON WHAT IT CAN AND CANNOT DO.

We have fallen into the rut of false narratives, which distracts us from facing reality. We don't define our problems properly. If you have the wrong diagnosis of a problem, you will certainly have the wrong solution. Even if you have the right diagnosis, you still may arrive at the wrong solution — but your odds are certainly much better. Our policies are often incomprehensible and uncoordinated, and our policy decisions frequently have no forethought and no identification of ***desired outcomes***.

We sometimes blame inflation on corporate profits — for example, the cost of meat in the United States is high not because of the profits earned by the meat packing industry but because of high cattle and feed costs and disruptions in logistics. Similarly, energy costs are high not because of price gouging but because of the dramatic decline in investments in energy, which results in reduced supply when demand goes up. Regulation has dramatically impeded our ability to build good infrastructure in a timely manner — the cost of building a highway has more than tripled in 20 years purely because of expenses due to regulations.

Our politics are dysfunctional, which has prevented some of our best, brightest and most competent to want to work in government. While we have plenty of economists, academics and lifetime politicians in government, who I know are committed to doing their best, we need additional brainpower, capabilities and experience from leaders across all sectors of our society, including business. It is going to take extraordinary, broad-based leadership to solve our problems.

There are some things only the federal government can do — among them, protect national security, operate federal courts, act as a central bank, perform certain research and development (R&D), and execute some national infrastructure. While government cannot create jobs outside of government itself, it can ***optimize the conditions*** under which jobs can be created. If it simply exhibits consistency and competence in the performance of its tasks, government will maximize investments and jobs. Conversely, government can destroy jobs and capital investment through bureaucracy, red tape and constant policy changes. Government cannot and will not be able to hold back technology, but it can foster an environment that promotes quick retraining of those who are replaced by technological advancements.

Our problems are neither Democratic nor Republican — nor are the solutions. Unfortunately, however, partisan politics are preventing collaborative policy from being designed and implemented, particularly at the federal level. We would do better if we listened to one another.

Democrats should acknowledge Republicans' legitimate concerns that money sent to Washington often ends up in large wasteful programs, ultimately offering little value to local communities. Democrats could acknowledge that while we need good government, it is not the answer to everything. Democrats could also acknowledge that a healthy fear of a large central government is not irrational (like a leviathan).

Republicans need to acknowledge that America can and should afford to provide a proper safety net for our elderly, our sick and our poor, as well as help create an environment that generates more opportunities and more income for more Americans. Republicans could acknowledge that if the government can ***demonstrate*** that it is spending money wisely, we should spend more — think infrastructure and education funding. And that may very well mean higher taxes for the wealthy. Should that happen, the wealthy should keep in mind that if tax monies improve our society and our economy, then those same individuals will be, in effect, among the main beneficiaries.

Democrats and Republicans often seem to be ships passing in the night — with both parties talking at cross purposes even when they may share the same goals. Compromise is not incompatible with democracy — in fact, compromise is a core principle of democracy. Enacting major policies on a purely partisan basis (think healthcare and tax reform) virtually guarantees decades of fighting. It's not unreasonable to assert that major policies should be bipartisan or not at all.

We must remember that the concepts of free enterprise, rugged individualism and entrepreneurship are not incompatible with meaningful safety nets and the desire to lift up our disadvantaged citizens. We can acknowledge the exceptional history of America ***and*** also acknowledge our flaws, which need redress.

WE MUST CONFRONT THE RUSSIA CHALLENGE WITH BOLD SOLUTIONS.

America must be ready for the possibility of an extended war in Ukraine with unpredictable outcomes. We should prepare for the worst and hope for the best. We must look at this as a wake-up call. We need to pursue short-term and long-term strategies with the goal of not only solving the current crisis but also maintaining the ***long-term unity*** of the newly strengthened democratic alliances. We need to make this a ***permanent, long-lasting*** stand for democratic ideals and against all forms of evil.

Our nation's solutions need to be bold, brave and dynamic — and they ***have to be bipartisan*** — because we know only bipartisan solutions stand on firm ground. Bipartisanship could start with the appointment of Republicans to the cabinet. We need to think broadly because whatever we do will not only help determine the fate of the war in Ukraine but likely will determine the ability of the Western democratic world to address critical future challenges. We also need to ensure that the Western coalition remains economically competitive on the world stage. The better America performs as a country in dealing with Russia now, the easier it will be for us to engage with the rest of the world, including China, going forward.

In addition to being big, clear-eyed and realistic, our solutions should acknowledge that we are essentially, and unfortunately, reverting to some Cold War strategies. Here are some actions we should take immediately:

- Demonstrate leadership and commitment to a ***long-term*** military strategy by meaningfully increasing our military budget and troop deployment on NATO's borders, as appropriate. To both sides, these steps make our resolve clear and reflect our recognition of the grave new geopolitical realities.
- Direct billions of dollars in aid to Ukraine, announced now, to support the country currently and to help rebuild in the future. We should also help the Europeans with the enormous migration issues they are facing. The United States could take the lead in humanitarian efforts and ask all nations, including China, to join us in this response.
- Turn up sanctions — there are many more that could be imposed — in whatever way national security experts recommend to maximize the right outcomes.
- We need a "Marshall Plan" to ensure energy security for us and our European allies. Our European allies, who are highly dependent on Russian energy, ***require*** our help. For such a plan to succeed, we need to secure proper energy supplies immediately for the next few years, which can be done while reducing CO_2 emissions.

  As we are seeing — and know from past experience — oil and gas supply can be easily disrupted, either physically or by additional sanctions, significantly impacting energy prices. National security demands energy security for ourselves and for our allies overseas. Fortunately, we do not need to change our ***long-term objectives*** on climate change and greenhouse gases, and we should remind ourselves that using gas to diminish coal consumption is an actionable way to reduce CO_2 emissions expeditiously. While the United States is fairly energy independent, we need to increase our energy production and get more gas (in the form of liquefied natural gas) to Europe immediately. Our work with all of our allies should include urging them to both increase their production and deliver some of it to Europe. To do this, we also need immediate approval for additional oil leases and gas pipelines, as well as permits for green energy projects; i.e., solar and wind. We cannot accomplish our goals with misguided and counterproductive policies.

Strong, bold and comprehensive short-term and long-term policies, persistently and properly executed, will maximize the strength and the durable unity of the democratic world. Not only will this be very good for the Western world in general, but it will help frame our approach with China.

A STRONG AMERICA NEED NOT FEAR A RISING CHINA.

The most important relationship over the next 100 years will be the one between America (and its allies) and China. The stronger the allied nations, the better it is for America. But for America to get this essential relationship right, we need to have a clear-eyed view of our strategic economic and national security interests.

America is not operating from a position of weakness; indeed, our strengths are extraordinary. Conversely, over the next 40 years, China will have to grapple with some serious issues: For all of its strengths, China still needs more food, water and energy to support its population; pollution is rampant; corruption continues to be a problem; state-owned enterprises are often inefficient; corporate and government debt levels are growing rapidly; financial markets lack depth, transparency and adequate rule of law; income inequality remains highly prevalent; and its working age population has been declining since 2015. China will continue to face pressure from the United States and other Western governments over human rights, democracy and freedom in Hong Kong, and activity in the South China Sea and Taiwan.

Asia is a very tangled continent, geopolitically speaking. Many of China's neighbors (Afghanistan, India, Indonesia, Japan, Korea, Pakistan, the Philippines, Russia and Vietnam) are large, complicated and not always friendly to China — in fact, China has had border skirmishes and wars with India, the Soviet Union and Vietnam since World War II. These neighbors do not all look at the rise of China as being completely beneficial. By comparison, America is at peace with its North American neighbors and is protected by the Atlantic and Pacific oceans.

America and China have large differences: ideological, democracy versus single-party rule, and market capitalism versus state-controlled capitalism. We also have common interests: halting nuclear proliferation, reducing terrorism, stopping climate change and promoting peaceful relationships. All countries, including China, want to lift up their people. Done right, we can establish and maintain a relationship with China that will allow both countries and the world to thrive.

Because we are dealing with a combination of circumstances that we have never confronted before — the rise of a country equal in size to us, unfair trade and bilateral investment rights, and state-sponsored subsidies and competition — we will need to respond in equally unprecedented ways.

We should stop complaining about unfair practices and just take appropriate action. Both countries can take unilateral actions as they see fit in the economic domain — and they already do — and that is okay.

To counter unfair competition on China's part (i.e., subsidies and state-sponsored monopolies), we will need to develop thoughtful policies and strategies that work. We also need to develop "industrial policies" that help industries important to national security (for example, semiconductors, 5G, rare earths and others) succeed. I believe this could be done intelligently and not as "handouts" or subsidies that create excessive profits. This will also require increased government R&D focused on activities that business simply cannot do alone — advanced science, military technologies, among others.

Although there will be global trade restructuring, lots of global trade (and trade with China) will remain even after trade partnerships have been altered. Keep in mind, China's trade with the West and the United States in 2021 totaled $3.6 trillion (exports and imports). By contrast, China's total trade with Russia in 2021 totaled almost $150 billion. Clearly, these economic relationships are critical to China and the West – China also has a huge interest in making this work.

All of these policies must be done in conjunction with our allies or they will not be effective – because without a united front, unfair economic and trade practices will still be allowed to flourish. If it were up to me, I would rejoin the Trans-Pacific Partnership (TPP). We need to look at trade as only one part of strategic economic partnerships – and that's exactly what TPP did. There is a lot at stake, but there is no reason why serious, comprehensive, honest negotiations can't lead to good outcomes.

THERE ARE COMPELLING REASONS FOR GLOBAL TRADE RESTRUCTURING.

There is no question that supply chains need to be restructured for three different reasons:

- For any products or materials that are essential for national security (think rare earths, 5G and semiconductors), the U.S. supply chain must either be domestic or open only to completely friendly allies. We cannot and should not ever be reliant on processes that can and will be used against us, especially when we are most vulnerable.
- For similar national security reasons, activities (including investment activities) that help create a national security risk – i.e., sharing critical technology with potential adversaries – should be restricted.
- Companies will diversify their supply chains simply to be more resilient.

This restructuring will likely take place over time and does not need to be extraordinarily disruptive. There will be winners and losers – some of the main beneficiaries will be Brazil, Canada, Mexico and friendly Southeast Asian nations.

Along with reconfiguring our supply chains, we must create new trading systems with our allies. As mentioned above, my preference would be to rejoin the TPP – it is the best geostrategic and trade arrangement possible with allied nations.

WE CAN HAVE A PATH FORWARD FOR U.S. POLICY: AGREE ON WHAT WE WANT, THEN EXECUTE.

We need more real leaders – people who know how to get things done, who are capable and who can educate and explain to all citizens what we need and why. We need a renaissance of the American dream and American "can-do" exceptionalism.

Our leaders need to agree on what we want and then execute to get it done. At a minimum, we should all agree that we want:

- ***The world's most prosperous economy,*** which would also mean having the world's reserve currency. The strength and the importance of the U.S. dollar are predicated on the strength and openness of the U.S. economy, the rule of law and the free movement of capital.
- ***Regulations and policies that foster growth*** and accomplish stated goals but don't cripple business innovation and investment. Policies need to be consistent, reliable and constantly reviewed to reduce red tape and increase efficiency.
- ***A new strategic economic and competitive framework,*** devised in partnership with our allies (particularly as it relates to China), which includes trade and industrial policy, as previously discussed. This does need rebranding. Trade is only part of an economic relationship (there are investment rights, property rights, education, immigration rights and so on). We should always negotiate strategic economic agreements remembering that whether you emerge with a formal agreement or not, you likely have created a policy.
- ***A "Marshall Plan," as previously mentioned, to ensure energy security*** for us and our European allies, requiring us to secure proper energy supplies immediately for the next few years (which can be done while reducing CO_2 emissions and combatting climate change).

- ***The strongest military in the world — continually maintained,*** though used judiciously and in conjunction with our allies. The strength of the military needs to be matched by the strength of our diplomatic, development and intelligence agencies.
- ***A more equitable labor market*** that maximizes employment and values all jobs, effective and continuous job training for workers of all ages, and practices that better promote sharing the wealth — i.e., higher minimum wages, an increased Earned Income Tax Credit (EITC), broader healthcare coverage and other related policies.
- ***A strong America that respects all its citizens,*** helps the poor and disadvantaged, honors again the dignity of work, and demonstrates character and civility. And we all want well-functioning, healthy social safety nets.

The war in Ukraine and the growing competitiveness of China — including its growing military and strategic alliances across the globe — dictate that we move forward on our comprehensive needs. If we do not resolve our problems and restore effective long-term leadership, it is easy to envision darker days ahead in both the economic and geopolitical realms. But with great leadership, America, our allies and the rest of the world will enjoy a brighter future.

Learning from Other Countries' Successes – and Failures

It is always instructive to look around the world at policies and countries that work — and policies and countries that don't work. For example, you can find countries that have done a great job providing safety nets — without damaging labor — and building infrastructure efficiently without crippling regulations. A number of countries have succeeded in developing themselves, surprisingly often with minimal natural resources: Ireland, Israel, Singapore, South Korea and Sweden. Singapore has developed effective healthcare programs. Germany and Switzerland have created impressive work apprenticeship models, and Hong Kong has excelled at infrastructure. Another inspiring example is Ireland. After decades of sectarian strife and terrorism, Ireland is now a melting pot with a thriving economy due to good government policies.

Then there are the counterexamples, countries sometimes flush with natural resources — Argentina, Cuba and Venezuela. Rarely is the successful nation the socialist or autocratic one. And all of the negative cases are either socialist governments or governments hypothetically run in the name of the people. The successful nations, on the other hand, all are market-based economies of slightly different types with policies that grow their economy and share the nation's wealth. Sweden is a good example of a country that many consider socialist, but it is far from it. By most measures, Sweden is actually more of a market-based economy than the United States, and it has enormous wealth and extremely strong social safety nets.

Competitive Threat Redux

The growing competition to banks from each other, shadow banks, fintechs and large technology companies is intensifying and clearly contributing to the diminishing role of banks ***and*** public companies in the United States and the global financial system. Before we give an update on the structural shifts taking place, it would be good to address the question: How did banks perform during the recent COVID-19 crisis?

BANKS PERFORMED MAGNIFICENTLY DURING THE COVID-19 CRISIS.

Within days of realizing COVID-19 was a pandemic that would virtually close large parts of the world's economies, the U.S. government moved with unprecedented speed. Fortunately, most banks were part of the solution – unlike during the Great Recession when many banks were not. And fortunately, unlike during the Great Recession, the U.S. economy was actually in good shape going into the COVID-19 recession.

Yes, of course, it is true that large government actions dramatically helped individuals, companies (including banks) and the economy overall. But it is also true that banks performed magnificently during the COVID-19 crisis. They extended a huge amount of credit, waived fees and postponed debt repayment, and were at the forefront of delivering Paycheck Protection Program (PPP) loans to small businesses. And they did it the right way, protecting government money by trying to make legitimate loans to borrowers in need. By contrast, nonbanks were involved in instances of illegitimate PPP loans and Economic Injury Disaster Loan assistance, as well as stimulus money fraud, often at rates almost ***five times*** those of traditional banks. As for us:

- JPMorgan Chase was the #1 PPP lender – over the life of the program, we funded more than 400,000 loans totaling over $40 billion.
- Since March 13, 2020, we delayed payments due and refunded fees for more than 3.5 million customer accounts – refunding more than $250 million for nearly 2 million consumer deposit and lending accounts and offering delayed payments and forbearance on more than 2 million mortgage, auto and credit card accounts, representing approximately $90 billion in loans.
- In 2020, we raised capital and provided credit totaling $2.3 trillion for customers and businesses of all sizes, helping them meet payroll, avoid layoffs and fund operations during that first year of the pandemic crisis.
- In 2020, we committed $250 million in global business and philanthropic initiatives, with particular focus on the people and communities most vulnerable and hardest hit by the pandemic.
- In addition, JPMorgan Chase launched several ambitious flagship programs, including our $30 billion commitment to help close the racial wealth gap and drive economic inclusion, which is described in more detail within this letter.

While the U.S. government's actions were a benefit to the whole economy, including the banking industry, banks were more than able to weather the terrible financial storm while setting aside extensive reserves for potential future loan losses. Importantly, during this time, the Fed conducted two additional, severely adverse Comprehensive Capital Analysis and Review stress tests, which projected bank results under extreme unemployment, GDP loss, market disruption and a smaller government stimulus. The results showed that banks could withstand these extreme conditions while continuing to finance the economy.

Size of the Financial Sector/Industry

($ in trillions)

			2010	2021
Size of banks in the financial system	Total U.S. debt and equity market		$ 57.6	$ 136.4
	U.S. G-SIB market capitalization		$ 0.8	$ 1.5
	U.S. bank loans		$ 6.6	$ 10.9
	U.S. bank liquid assets[1]		$ 2.8	$ 8.6
	Total U.S. broker dealer inventories		$ 4.1	$ 4.5
Shadow banks	Hedge fund and private equity AUM[2]		$ 3.1	$ 9.7
	U.S. private equity backed companies (K)	1996	1.6	10.1
	U.S. publicly listed companies (K)[3]	7.3	4.2	4.8
	Total private direct credit[4]		$ 14.0	$ 20.4
Size of nonbank competitors	Google, Amazon, Facebook, Apple market capitalization[5]		$ 0.5	$ 6.9
	Payments market capitalization[6]		$ 0.1	$ 1.2
	Private and public fintech companies market capitalization[6]		NA	$ 1.2
	Cryptocurrency market capitalization		NA	$ 2.2
	U.S. neobanks – # of users (M)[7]		–	>50
	Global exchanges and financial data companies market capitalization		$ 0.2	$ 1.0
	Nonbank share of mortgage originations[8]	2000	9%	68%
	Nonbank share of leveraged lending	54%	82%	87%

Sources: FactSet, S&P Global Market Intelligence, Assets and Liabilities of Commercial Banks in the United States H.8 data, Financial Accounts of the United States Z.1 data, World Federation of Exchanges, Pitchbook, Preqin and CoinMarketCap

G-SIB = Global Systemically Important Banks
AUM = Assets under management
NA = Not applicable
K = Thousands
M = Millions
For footnoted information, refer to page 47 in this Annual Report.

I also have very little doubt that if the severely adverse scenario played out, JPMorgan Chase would perform far better than the stress test projections. One supporting data point: From March 5, 2020 to March 20, 2020, when the stock market fell 24% and the bond index spread gapped from 191 to 446 prior to major Fed intervention, our ***actual*** trading revenue was higher than normal as we actively made markets for our clients. By contrast, the ***hypothetical*** stress test had us losing a huge amount of money in market-making, based on the way it is calculated. While I understand why regulators stress test this way — they are essentially trying to ensure that banks survive the worst-case scenario — the methodology clearly does not result in an accurate forecast of how our company would perform under adverse circumstances.

THE ROLE OF BANKS IN THE GLOBAL FINANCIAL SYSTEM IS DIMINISHING.

Banks have advantages and disadvantages. Some of the advantages, including economies of scale, profitability and brand, may only diminish slowly. Unfortunately, it also seems likely that some of the disadvantages, such as uneven or costly regulation, may not diminish at all. Other disadvantages, like legacy systems, will diminish over time.

Regulations have consequences, both intended and unintended — but many regulations are crafted with little regard for their interplay with other policies and their cumulative effect. As a result, regulations often are disconnected from their likely outcomes. This is particularly true when trying to determine what products and services will remain inside the regulatory system as opposed to those likely to move outside of it.

Keep in mind that markets, not regulators, set capital requirements. If regulators set capital standards that are too high for banks to hold loans, then the markets will drive those loans outside of the banking system. There are also non-capital regulatory standards that can force activities out of the regulatory system, such as excessive reporting and social requirements, among others.

Banks around the world are already engaged in tough competition with each other. A quick review of the chart on page 27 shows the phenomenal size of nonbanks — from payments companies and fintechs to exchanges and Big Tech — that compete with traditional banks, but outside of the banking regulatory system, in providing certain financial services. And those don't include many others, such as Schwab, Fidelity or Vanguard — which also provide banking-type services. The data also doesn't show that last year alone, $130 billion was invested in fintech, allowing them to speed things up — and at scale.

The pace of change and the size of the competition are extraordinary, and activity is accelerating. Walmart, for good reason (over 200 million customers visit their stores each week) can use new digital technologies to efficiently bring banking-type services to their customers. Apple, already a strong presence in banking-type services with Apple Pay and the Apple Card, is actively extending services into other banking-type products, such as payment processing, credit risk assessment, person-to-person payment systems, merchant acquiring and buy-now-pay-later offers. The large tech companies, already 100% digital, have hundreds of millions of customers, enormous resources in data and proprietary systems — all of which give them an extraordinary competitive advantage.

Properly regulated banks are meant to protect and enhance the financial system. They are transparent with regulators, and they strive mightily to protect the system from terrorism financing and tax evasion as they implement know your customer (KYC) and anti-money laundering laws. They protect clients' assets and clients' money in movement. They also help customers — from protecting their data and minimizing fraud and cyber risk to providing financial education — and must abide by social requirements, such as the Community Reinvestment Act, which requires banks to extend their services into lower-income communities. Regulators need to figure out what they really want to achieve.

The chart on page 27 shows banks' decreasing role in the global economy, but a few examples will put it in stark contrast.

- Banks' size and market cap (U.S. global systemically important bank [G-SIB] market cap is $1.5 trillion) have dramatically diminished relative to their nonbank competitors.
- U.S. banks' broker-dealer inventories have barely kept pace with the large increase in total markets. Banks' dramatic decline in market-making ability relative to the size of the public markets is a factor in the periodic disruptions that occur in the public markets.
- U.S. banks' loans in an 11-year period have only grown 65% and now represent only 8% of total U.S. debt and equity markets, down from 11% in 2010.
- Conversely, U.S. banks' liquid assets are up more than 300% to $8.6 trillion, most of which is needed to meet liquidity requirements.
- Banks' share of mortgage originations has gone from 91% to 32%.
- Banks' share of the leveraged loan market has decreased over the last 20 years from 46% to 13%.
- Neobanks, now with over 50 million accounts, bypass the Durbin Amendment and so earn higher revenue per debit swipe — and they don't have to abide by certain other regulatory or social requirements.
- Other companies providing banking-type services have hundreds of millions of accounts that hold consumer money, process payments, access bank accounts and extensively use customer data.
- A sizable and growing portion of equity trading has moved off transparent exchanges to non-traditional trading firms, causing a loss of access to on-exchange liquidity for many market participants.

I can go on and on, but suffice it to say, we must be prepared for this trend to continue.

It seems unlikely to me that all the banks, shadow banks and fintech companies will thrive as they strive to take share from each other over the next decade. I would expect to see many mergers among America's 4,000+ banks — they need to do this, in some cases, to create more economies of scale to be able to compete. Other companies will try different strategies, including bank-fintech mergers or mergers just between fintechs. You should expect to see some winners and lots of casualties — it's just not possible for everyone to perform well.

POSSIBLY MORE IMPORTANT: THE ROLE OF PUBLIC COMPANIES IN THE GLOBAL FINANCIAL SYSTEM IS ALSO DIMINISHING.

In addition to banks' shrinking global role, you can see that the number of public companies, which should have grown substantially over the past decade, is remarkably reduced. Instead, U.S. public companies peaked in 1996 at 7,300 and now total 4,800. Conversely, the number of private U.S. companies backed by private equity companies has grown from 1,600 to 10,100 — a remarkable increase.

This migration is worthy of serious study. The reasons are complex and may include public market factors, such as onerous reporting requirements, higher litigation expenses, costly regulations, cookie-cutter board governance, less compensation flexibility, heightened public scrutiny and the relentless pressure of quarterly earnings.

It's incumbent upon us to figure out why so many companies and so much capital are being moved out of transparent public markets to less transparent private markets — and whether this is in the country's long-term interest. We do need to ask some questions: Do we want public companies? Are we okay with more and more of our capital markets being private and, therefore, less regulated? If I were a shareholder of a company, I would ask myself, do I really think that all the rules we impose on public companies actually make them better? Finally, we need to consider, is it a good thing that many investors won't have the opportunity to invest in these companies if and when they are private?

There are good and bad reasons why capital is going private. For example, private companies can raise money more easily now than in the past. Private companies' boards and management teams can focus primarily on the business, and private investors can be more patient with capital — they are not necessarily worried about short-term results.

We need to study this public market diminishment thoughtfully and deeply — particularly since more regulation is coming that will affect this trend. This is a good time to think through and create the outcomes we ***want*** — and not just let multiple, often well-meaning but uncoordinated legal, regulatory and policy decisions take us where we do not want to go.

MORE REGULATION IS COMING — 10 YEARS AFTER THE CRISIS, WE ARE STILL ROLLING OUT BASEL IV — AND WE NEED MORE THOUGHTFUL CALIBRATION OF THE RULES.

Basel IV seems likely to increase capital requirements for banks on credit, loans, trading books and operational risk, some of which is unnecessary. These risks are real, but they need to be properly and rationally calculated. For example, operational risk is real; it exists in all enterprises and is usually handled in the ordinary course of business. If all large companies had to hold capital for operational risk, following the standard set for banks, trillions of dollars of additional capital would be permanently held in idle funds. The question for all capital requirements is: How much is enough?

If done properly, bank regulations could be recalibrated, adding virtually no additional risk, to make it easier for banks to make loans, intermediate markets and finance the economy. When it comes to political debate about banking regulations, there is little truth to the notion that regulations have been "loosened" — at least in the context of large banks.

We should keep in mind the enormous unintended consequences that could result from any policy (e.g., regulations) not being properly thought through. Policy with no forethought — designed without a comprehensive plan or instigated out of anger or false morality — can have bad outcomes. A few examples will suffice:

- The U.S. government management of student lending has been a disaster. In the 11 years since they've taken over student lending, they have extended an additional $1 trillion in loans. Prior to the pandemic, $300 billion of these loans were either severely delinquent or not being paid. We are not against student lending, but the disciplined use of capital should be applied here, too. I generally agree with the position that for loans that should not have been made and where the borrower reaped no benefit, there should be some forgiveness. However, many loans were properly made and brought the benefit that was expected. Government should reform its policies to stop making loans that should never be made.
- Fannie Mae and Freddie Mac contributed to the crisis in the mortgage market. In the mad rush to improve home ownership levels, these government-guaranteed institutions played a major part (along with many others engaged in the mortgage markets), over decades, in loosening mortgage underwriting standards. Ultimately, this proved catastrophic, leading to nearly $1 trillion in mortgage losses. Conversely, since then, mortgage regulations' excessive tightening is not only pushing the mortgage market into the unregulated financial system but also making mortgages less available to mostly lower-income Americans.

Services for Consumers and Small Businesses

Account Access and Management

- Savings accounts
- Checking accounts
- Overdraft protection
- Paperless statements
- Account alerts
- Debit cards
- Direct deposit
- Credit cards
- Assistance from bankers
- 24/7 customer service
- 24/7 Chase Mobile® app support
- Digital wallets
- Banking on the go
- Mobile check deposits
- Access to 4,800 Chase branches
- Access to over 16,000 ATMs
- Cash withdrawals at non-Chase ATMs

Home and Auto

- Home loan prequalification
- Mortgage calculator
- Home value estimator
- Home refinancing resources
- Car buying guidance
- Auto financing prequalification
- Vehicle trade-in value

Moving Money

- Pay people through Zelle
- Bill payments
- Money transfers
- Checks
- Money orders
- Cashier's checks
- Same-day wire transfers

Financial Health

- Financial health and planning tips
- Spending summary
- Automatic saving tools
- Budgeting tools
- Credit score checks
- Financial education workshops
- Banking account access for kids

Wealth Management and Investing

- Guidance from financial advisors
- Online investing tools
- Self-directed investing accounts
- Online trading
- Investment checkups
- Market research

Security

- Debit and credit card fraud monitoring
- Fraud alerts
- Replacement debit cards
- Rushed replacement cards
- Zero Liability Protection on credit cards
- Account monitoring

Small Businesses

- Check monitoring for businesses
- Business budgeting
- Insights for businesses
- Employee deposit cards
- Educational content for businesses

Travel, Shopping and Entertainment

- Trip cancellation insurance
- Debit card currency exchanges
- Extended warranties on card purchases
- Deals on your favorite stuff
- Auto rental collision damage waiver
- Access to early ticket sales

HOW SHOULD WE ADDRESS OUR G-SIB CONUNDRUM?

The U.S. implementation of G-SIB requirements does not enable a level playing field — plain and simple. Not only have American rules made the G-SIB designation worse for American banks (if JPMorgan Chase could operate on the same basis as large European banks, our Tier 1 capital requirements would be reduced by $30 billion), but the rules have not been adjusted as the framework allows. G-SIB capital requirements were supposed to be modified to account for the increasing size of the global economy and the smaller size of banks in relation to that global economy — this simply has not happened. So JPMorgan Chase will be required to hold 2% more common equity Tier 1 capital as a consequence.

We have always said that the G-SIB calculation is nonsensical as it is not risk-based at all. It drives absurd behavior, such as favoring various acquisitions that may be imprudent but don't require G-SIB capital or encouraging very risky loans that require no more G-SIB capital than risk-free loans. Being a large, diversified company, with strong revenue and profit streams, is normally a source of strength in troubled times, but this is a negative in regard to G-SIB capital. Even though American banks are performing well today, these extra capital requirements we are required to meet will have long-term negative consequences.

This extra capital is a drag on our return on equity (ROE), effectively reducing whatever our ROE would be by approximately 15% (hypothetically, our 17% target should be 20%). As a result, the dilemma is this: Do we restrict our growth and our ability to serve our clients in order to reduce our capital requirements over time and seek a higher ROE or do we invest our capital to grow with our clients (and in many cases remain competitive) and accept a permanently lower ROE?

BANKS NEED TO ACKNOWLEDGE THE DRAMATICALLY CHANGING COMPETITIVE LANDSCAPE.

If banks want to compete in this new and increasingly competitive world, they need to acknowledge the truth of this new landscape and respond appropriately — sometimes it truly is change or die.

As they adopt new technologies like cloud, artificial intelligence (AI) and digital platforms, banks may have an advantage in being able to leverage their large customer base to offer increasingly comprehensive products and services, often at no additional cost. While many fintech companies specialize in one area, you already see many fintechs moving in this direction — trying to deepen and broaden their client relationships.

The chart on the preceding page shows the extensive number of services we already offer to our customers — many of which, depending on the product and customer relationship, are at no additional cost.

We have always invested for the future, and that is even more true today than it has been in the past. But the principle is the same — constantly invest and innovate to ensure our future prosperity.

We expect to achieve double-digit market share over time in Payments, being the world's most innovative bank, as well as the safest and most resilient.

- We built the capability for our Self-Directed Investing, which now has 800,000 new investment accounts totaling nearly $60 billion on the platform. We are excited to enhance and roll out this product to all of our customers, as we think it is a critical offering in today's new competitive environment.
- Increasingly, we are investing more money (think hundreds of millions of dollars) each year on AI for very specific purposes. For example, we use AI to generate insights on existing and prospective clients from public information, such as KYC protocols, regulatory filings, social media, news, public websites and documents. Once standardized, the information is then applied to multiple uses, such as generating leads, identifying companies and investors, onboarding clients, and detecting environmental, social and governance (ESG) themes. In all of these cases, there are identifiable returns due to lower prospecting costs or improved services. One specific example will suffice:
  – In the consumer world, we have spent about $100 million since 2017 on AI, machine learning and other technology initiatives to improve fraud risk systems. We know this investment is working. Our annual fraud losses have come down 14% since 2017 despite volumes being up almost 50%, and we estimate that our technology investments alone have contributed about $100 million in annual savings.
- We have developed over 1,000 application programming interfaces that give various types of customers access to our systems in a controlled way, allowing them to automate our banking systems into their enterprise systems.
- There are plenty of forward-looking and exciting R&D investments, too. For example, we are working on several research-based projects that have the potential for significant future impact. These involve multi-agent simulation, synthetic data and encryption methods — elements that have the capacity to unlock new ways of trading, managing risk and assessing productivity. Multi-agent simulations, for example, enable the exploration of strategies that can handle challenging regimes as variations of novel historical data. Synthetic data, well-calibrated by real data, enables effective testing, experimentation and development without triggering privacy and regulatory restrictions associated with using real data. Encryption methods give us better tools to protect our clients' privacy and also equip us with the necessary techniques to handle the metaverse. This category also includes investment in the critical area of quantum computing.

While we measure each of these incremental investments (and there are hundreds of them) as diligently as we can, you can assess the overall results by asking the following questions: Do we maintain the competitiveness of our products? Are we gaining market share? Do we have real wins against some tough competitors, both in the banking world and in fintech companies? What are our customer satisfaction scores? Have we built wonderful new products, like Credit Journey and Self-Directed Investing, that may not generate revenue but clearly have improved our business? How are our products serving our clients' needs to access our systems how and when they want?

Finally, also consider: Is the bank sustaining its overall competitive position, growing at pace and still maintaining a very healthy return on tangible common equity while investing for the future? We hope you will see some great new and exciting products and services this year.

Investments and Acquisitions: Determining the Best Use of Capital and Assessing ROIs

We have always said that a steady and increasing dividend along with reinvestment in one's own business — organically and inorganically, offensively and defensively — are the highest and best use of capital. Reinvestment would ordinarily come before stock buybacks unless the stock is extraordinarily cheap. And we generally only buy back stock when we don't see a clear need for the capital over the next few years.

In fact, stock buybacks at our company will be lower in the next year or so because we may need to retain more capital due to required capital increases (which, by any real measure, we definitely do not need) and because we have made some good acquisitions that we believe will enhance the future of our company.

We try to be rigorous in how we invest for the future. Above all, we try to free up our capital and capabilities with the following in mind: 1) we reduce complexity in our company and simplify as much as possible; 2) we periodically assess and eliminate hobbies (which have a danger all their own); and 3) we assess investments and activities that seemed good when we started them but are not working out as planned. However, some things simply are complex (like airplanes, pharmaceuticals, technology and banking) but worthwhile — and in fact necessary to compete. We don't let fear of that complexity stop us from investing.

Before we talk about different types of investments, we should recognize that our most important asset — far more important than capital — is the quality of our people.

We announced earlier in the year that our total expenses would increase by approximately $6 billion. Of that amount, $2.5 billion is mostly related to people, reflecting both inflationary and competitive labor market dynamics. (We have been quite adamant that we will do what is necessary to retain talent — we cannot be one of the best companies without having some of the best talent.) Included in this $2.5 billion are certain expenses (think travel and entertainment) as economies have reopened.

In this section of the letter, I am going to focus on investments — describing how and why we do them and offering a few examples. We have always believed that investing continuously and rigorously for the future is critical for our ongoing success. This year, we announced that the expenses related to investments would increase from $11.5 billion to $15 billion. I am going to try to describe the "incremental investments" of $3.5 billion, though I can't review them all (and for competitive reasons I wouldn't). But we hope a few examples will give you comfort in our decision-making process.

SOME INVESTMENTS GENERATE PREDICTABLE RETURNS.

Some investments have a fairly predictable time to cash flow positive and a good and predictable return on investment (ROI) however you measure it. These investments include branches and bankers, around the world, across all our businesses. They also include certain marketing expenses, which have a known and quantifiable return. This category combined will add $1 billion to our expenses in 2022.

Our shareholders should also know that when we make investments like these, we incorporate through-the-cycle thinking — we don't only look at current margins and charge-offs but also evaluate what we expect them to be over the next several years.

ACQUISITIONS SHOULD PAY FOR THEMSELVES — AND EACH ONE HAS ITS OWN LOGIC.

Acquisitions generally extend products, add services or bring in technology that we would have had to otherwise build ourselves. These acquisitions are described in more detail in the letters from the other CEOs included in this report. Over the last 18 months, we spent nearly $5 billion on acquisitions, which will increase "incremental investment" expenses by approximately $700 million in 2022.

We expect most of these acquisitions to produce positive returns and strong earnings within a few years, fully justifying their cost. In a few cases, these acquisitions earn money — plus, we believe, help stave off erosion in other parts of our business. Importantly, on an ongoing basis, many of our acquisitions will be relatively capital-lite, meaning they can grow over time but require little additional regulatory capital.

WE WANT TO BUILD UPON OUR GLOBAL FOOTPRINT.

While we don't disclose our investment here, our international consumer expansion is an investment of a different nature. We believe the digital world gives us an opportunity to build a consumer bank outside the United States that, over time, can become very competitive — an option that does not exist in the physical world. We start with several advantages that we believe will get stronger over time: a global brand, with long-term capital and staying power; a global Payments business; an international Private Bank; global Asset Management products; and best-in-class trading platforms. We have the talent and know-how to deliver these through cutting-edge technology, allowing us to harness the full range of these capabilities from all our businesses. We can apply what we have learned in our leading U.S. franchise and vice versa. We may be wrong on this one, but I like our hand.

WE MAKE EXTENSIVE INVESTMENTS IN TECHNOLOGY FOR A BROAD RANGE OF REASONS, FROM IMPROVING OPERATIONS AND SECURITY TO ENHANCING OUR PRODUCTS AND SERVICES.

Investments in technology and operations, as well as related products and services, are the most complicated category. Some of these investments simply must be done to sustain the company's health. Investments in this bucket help keep the ship in tip-top shape and touch a broad range of workplace needs: regulatory requirements and necessary improvements for cybersecurity, as well as operational resiliency and security. Some things we have done with no direct revenue benefit, rather simply to maintain our competitive position. I call these table stakes — think of digital account opening for consumer and small business accounts. Other investments are specific improvements to products and services, often with identifiable benefits. Finally, there are specific investments in this category that are more like forward-looking R&D, as described in the examples that follow.

Combined, this category will add a little bit less than $2 billion to our "incremental investment" expenses in 2022 (the actual expense lines could be for people, hardware or software, or purchased services). Almost all of the $2 billion in expenses are analyzed and studied for their ROI or other significant benefits.

Sometimes people refer to some of these expenses as modernizing or adopting new technologies. I prefer not to talk about it that way because, effectively, we have been modernizing my entire life. Also, the term implies that once you get to a modern platform, these expenses should dramatically decrease — which is rarely the case. In fact, when we analyze these expenses, we incorporate not only the cost to ***build*** the product or service but also the cost to maintain it going forward. Furthermore, once you have built the new platforms, they generally create a whole new set of investment opportunities to be analyzed. Technology always drives change, but now the waves of technological innovation come in faster and faster. The science behind them is also increasingly complex as technology (including AI) is "embedded" in more products. In today's world, I cannot overemphasize the importance of implementing new technology.

We hope a few examples will explain how these expenses are managed. To do so, we are going to talk about two different types of investments that are clearly related: infrastructure and software.

First, on the path to new and modern infrastructure, cloud-based systems, whether private or public, will ultimately be faster, cheaper, more flexible and also AI-enabled — all extremely valuable features. A few other additional details:

- We have spent $2.2 billion building new, cloud-based data centers. Our total expensed cost of data centers is higher than in previous years — mostly because of the duplicative expense that is generated as we run both the new and older centers.
- Thousands of applications (and their related databases) are being replatformed and refactored to run in the private and public cloud environment. To give you an example: We migrated our Card mainframe to the new data center and are already seeing approximately 20% faster response times for our major customer-facing applications. This one application will use only 1.5% of the capacity of our new data centers: Of our more than 5,000 applications that will still be in use in two years, 40% will have been replatformed.
- These "infrastructure" costs include things like modernizing developer tools and embedding operational resiliency and cybersecurity controls.

Second, much of our "incremental investment" technology spend involves building software for new products and services. There are hundreds of these, large and small. Again, a few examples will describe the process:

- In certain product areas, we made large, multi-year investments to improve a specific business. In Payments, we have been investing consistently over the past five years to modernize our businesses and compete with both banks and fintech companies. Since 2016, we have invested more than $1.5 billion in technology, operations, sales, products and controls and generated an incremental $4 billion in organic revenue annually, taking our overall market share in Treasury Services from 4.5% in 2016 to 7.2% in 2021. In 2021, we continued this strong momentum, initiating a large majority of all real-time payments in the United States in our cloud-native, faster payments platform, which is now live in 45 countries. We are also winning more than 80% of all global bids that include virtual account solutions available on our liquidity platform.

  We now process payments for eight of the top 10 global Big Tech companies (up from three out of 10 companies five years ago), consistently winning business from strong competitors. We continue to bring to the market and commercialize innovative products, such as embedded banking; AI-driven fraud controls and forecasting; and account validation and programmable payments on JPM Coin. Decentralized finance and blockchain are real, new technologies that can be deployed in both public and private fashion, permissioned or not. JPMorgan Chase is at the forefront of this innovation. We use a blockchain network called Liink to enable banks to share complex information, and we also use a blockchain to move tokenized U.S. dollar deposits with JPM Coin. We believe there are many uses where a blockchain can replace or improve contracts, data ownership and other enhancements; for some purposes, however, it is currently too expensive or too slow to be deployed.

Updates on Specific Issues Facing Our Company

WE ARE VIGILANT AGAINST CYBER ATTACKS.

As we have highlighted in previous letters, ***we cannot overemphasize*** how cyber threats pose extreme hazards to our company and our country. This has become even more evident as the cost of ransomware has increased dramatically (cyber attacks may have caused the death of some people as hospitals could not provide the necessary procedures). And it is evident to everyone, with the war in Ukraine, that grave damage could be inflicted if cyber is widely used as a tool of war. We believe that our company has some of the best cyber protections in place, as well as the best talent to monitor and guard our information. We also work extensively, and increasingly, with the appropriate agencies of the U.S. government to help protect the financial system and the country.

OUR COMMITMENT TO SUSTAINABILITY IS INFORMED BY ENERGY REALITIES.

Despite the growth in well-intended climate pledges from governments and companies, the world is well short of meeting its net zero emissions goals by 2050. But the war in Ukraine and sanctions on Russia are driving gasoline prices up and threatening Europe's access to natural gas. Resource scarcity leads to higher energy costs and reduces reliability, hindering national security and hurting the most vulnerable. Disruptions to the global energy system are again highlighting our urgent global need to provide energy resources ***securely, reliably and affordably*** and, at the same time, address long-term clean energy solutions and strategies to reduce our carbon footprint.

These objectives are ***not mutually exclusive***. We can — and must — do both.

To begin, we need to find a better way forward that can bring diverse stakeholders together in pursuit of the North Star: another "Marshall Plan" (as described earlier). Here are four ways to jump-start that process:

- First, we must promote energy security. Constraining the flow of capital needed to produce and move fuels, especially as the war in Ukraine rages on, is a bad idea. The world still needs oil and natural gas today, but not all hydrocarbons are equal when it comes to their carbon footprint. We should be directing more capital toward less carbon-intensive fuel sources and investing in innovations, such as carbon capture and sequestration, as we look to transition to green technologies delivered at scale for society. Our company is firmly committed to helping finance these kinds of investments and expediting the use of lower-carbon fuels. This is why we established the Center for Carbon Transition, centralizing client access to financing, advisory and research solutions to help them make the low-carbon transition and thrive.
- Second, we need to scale investment massively in clean technologies. As the International Energy Agency has emphasized, "huge leaps in clean energy innovation" are core to achieving net zero. This is because the world will rely on traditional fuels until alternatives, like clean hydrogen, are fully available. To accelerate progress, JPMorgan Chase has a goal of financing and facilitating $1 trillion by 2030 to advance climate action — supporting initiatives such as renewable energy, green buildings and vehicle electrification.
- Third, governments should play a leadership role by enacting thoughtful policies that spur long-term and large-scale capital deployment for low-carbon solutions that create jobs and benefit the global economy. Here are some examples: a carbon tax that directs some proceeds to help offset energy costs for under-

served communities; measures to promote investment in technology R&D; and reductions in permitting timelines for energy infrastructure, such as wind and solar farms and liquefied natural gas.

- Finally, let's set meaningful goals and identify a few tangible, cost-effective solutions to reduce emissions today. This should include minimizing fugitive methane emissions and virtually eliminating wasteful flaring of natural gas. Immediately actionable opportunities like these might require ***more financing***, not less, to reduce the short-term rate of climate change and prepare companies to thrive in a lower-carbon future. In 2021, JPMorgan Chase set 2030 targets to reduce the carbon intensity of our financing portfolio, starting with oil and gas, electric power and automotive manufacturing — with more to come.

There is no silver bullet to meet the world's energy and climate goals. But we can start by prioritizing emissions reductions, developing meaningful short- and long-term goals and crafting innovative policy solutions. The curve toward net zero can still be bent before it's too late.

PROGRESS CONTINUES IN OUR DIVERSITY, EQUITY AND INCLUSION EFFORTS.

We've made tremendous progress over the past few years to create a more inclusive company and promote equity in all our communities. The work is not easy, but we are as committed as ever to doing what is right and just. I'll spotlight a few areas of focus and describe the progress we've made.

A More Diverse Workforce

We continue to believe that if our team is more diverse, we will generate better ideas and better outcomes, enjoy a stronger corporate culture and outperform our competitors. This appears to be proving true.

Despite the pandemic and talent retention challenges, we continue to boost our representation among women and people of color. Here are some examples:

- More women were promoted to the position of managing director in 2021 than ever before; similarly, a record number of women were promoted to executive director. By year's end, based on employees who self-identified, women represented 49% of the firm's total workforce. Overall Hispanic representation was 20%, Asian representation grew to 17% and Black representation increased to 14%.
- We expanded our global Diversity, Equity and Inclusion department to include three new Centers of Excellence: Advancing Hispanics and Latinos, The Office of Asian and Pacific Islander Affairs, and The Office of LGBT+ Affairs.
- To promote greater participation in our workforce by Black professionals, we expanded our Historically Black Colleges and Universities partnerships to ***17 schools*** across the United States to boost recruitment connections, expand student career pathways, and support long-term student development and financial health.
- We continue to find ways to lift our LGBT+ employees, professionals with disabilities and military veteran colleagues. We just celebrated the 10th anniversary of the Veteran Jobs Mission, which is a coalition JPMorgan Chase co-founded in 2011 as the 100,000 Jobs Mission. It began as 11 companies committed to hiring military talent across the private sector, and now membership exceeds 300 companies with more than 830,000 veterans hired.

Finally, I want to be clear: We oppose any and all forms of discrimination against anyone. Being the bank of choice for all is our goal — and we want everyone to feel welcome here and be able to contribute to our core mission to the best of their ability.

An Update on Our $30 Billion Racial Equity Commitment

The murder of George Floyd in 2020 highlighted what we already knew: More was required by all of us to address systemic racism. In October 2020, less than five months after his tragic murder, our company made a five-year, $30 billion commitment to help close the racial wealth gap. We committed to trying new things and putting the full force of our firm behind solutions that could really make an impact.

By the end of 2021, we had deployed or committed more than $18 billion toward our goal. That commitment focuses on increasing homeownership, expanding affordable rental housing and growing small businesses, spending more with Black, Hispanic and Latino suppliers, improving financial health and access to banking, investing in minority depository institutions (MDI) and community development financial institutions (CDFI), and investing in communities through philanthropic capital. Here are some details on our progress to date:

- Supplier Diversity: In 2021, we spent an additional $155 million with 140 Black, Hispanic and Latino suppliers — more than doubling the first-year spend goal and increasing the number of new Black, Hispanic and Latino suppliers by more than 40% over 2020.
- Affordable Rental Housing: We approved funding of approximately $13 billion in loans to create and preserve more than 100,000 affordable housing and rental units across the United States.
- Homeownership: We established a Community and Affordable Home Lending business, hiring over 150 Community Home Lending Advisors and expanding the Chase Homebuyer Grant to $5,000 to help cover customers' closing costs and down payments for homes purchased in 6,700 minority neighborhoods nationwide.
- Small Business: We hired 25 diverse senior business consultants to provide free one-on-one coaching for minority business owners in 14 U.S. cities and to mentor more than 1,000 small businesses.
- MDIs: We invested more than $100 million in equity in 16 diverse financial institutions that serve nearly 90 communities in 19 states and the District of Columbia.
- CDFIs: We provided more than $350 million in financing to CDFIs to support communities that lack access to traditional financing.
- Access to Banking: We helped more than 200,000 customers open low-cost checking accounts with no overdraft fees; opened 10 Community Center branches (the sidebar that follows includes more details about this initiative), often in areas with larger Black, Hispanic and Latino populations; and hired over 100 Community Managers in underserved communities to build relationships with community leaders, nonprofits and small businesses.

Our dedication to racial equity is not simply a five-year effort. We might not always get it right, but we are committed to advancing racial equity and sharing our progress on the journey.

Community Building through Community Banking

Americans have lost trust in the ability of large institutions like the federal government, national media and big companies — even big banks — to understand or care about their needs. This view is well earned, particularly among communities of color and low-income households. Simply put, our country has done a bad job of looking out for and creating opportunity for everyone. We need to consider more thoughtfully the unique needs of communities across the United States. Companies of all sizes need to show up, listen, and make the right investments and decisions to earn a neighborhood's trust. And it needs to be done on the ground and in the community itself to be authentic and sustainable. Impact is most effective when it is local.

A local bank branch, especially in a low-income neighborhood, can be successful only when it fits the community's needs. That is why over the last several years we have shifted our approach to how we offer access to financial health education, as well as low-cost products and services, to help build wealth, especially in Black, Hispanic and Latino communities. We are delivering this approach through our ***Community Center branches,*** unique spaces in the heart of urban communities. Beginning with Harlem in New York City and Ventura Village in Minneapolis, we have opened 10 more Community Center branches in neighborhoods like Stony Island in the South Shore of Chicago, Crenshaw in Los Angeles, and Wards 7 and 8 in Washington, D.C. Ten of these branches were opened since we announced our $30 billion commitment to racial equity in October 2020. These branches have more space to host grassroots community events, small business mentoring sessions and financial health seminars. The majority were ***built with minority contractors,*** and we hire local artists to make these locations complement their neighborhoods. With branches expanding to Atlanta, Baltimore, Miami, Philadelphia and Tulsa, we expect to have 17 Community Center branches serving customers in underserved communities by the end of 2022.

The ***Community Manager,*** a new role within the bank, primarily functions as a local ambassador to build and nurture relationships with community leaders, nonprofit partners and small businesses. We have now hired over 100 Community Managers in underserved communities and intend to keep growing that number. Our Community Managers have hosted more than 1,300 financial health events with over 36,000 people in attendance and have participated in 600+ community service events. We want people who live and work in these communities to feel welcome and included when they visit our branches. We ask them to come as they are and bring the family or their dog. They are also likely to know the employees in the branch, as we ***hire locally*** — people who live in the community and care about serving their neighbors.

I've attended many grand openings of our Community Center branches in person. The energy is contagious. We've hosted mayors, community partners, students and small business customers who have shared their sense of pride and optimism about what these branches mean for their community. Our Community Managers are always front and center at these events, connecting people to one another and forging new relationships.

We know that to be sustainable, this effort must be measured by results. Our company is closely tracking the number of accounts opened, the number of mortgages funded, the pace and scale of new small business loans extended, and a host of other metrics to ensure that we are achieving results and listening to feedback so we can have even greater impact. In October 2021, we published a detailed report on our racial equity initiatives, including our Community Center branches and Community Managers, which we intend to continue to provide, letting others learn from our experience.

We're also taking a local approach to our community investments and advocating for local policy solutions. Our business is only as strong as our communities, so we increased our investments in places like Mattapan in Boston and Oak Cliff in Dallas to help local minority small businesses access the capital and support they need to grow. We've expanded our homebuyer grant program, which provides $5,000 to cover closing costs and down payments when customers buy homes in 6,700 minority neighborhoods nationwide. We are also looking at ***alternative credit scores*** and other ways to increase homeownership in underserved communities and build generational wealth and stability.

We call this going from "community banking" to "community building," and it is an important evolution in serving communities where it is long overdue. While it is early, our approach has the promise to create real local impact.

MORGAN HEALTH IS HELPING US LEAD IN HEALTHCARE TRANSFORMATION.

JPMorgan Chase spends $39 billion on compensation and benefits for our 270,000+ employees. Of that amount, about $1.5 billion is directed to medical costs for our employees and their families — approximately 460,000 people. Our employees also spend approximately $500 million on their own medical care. Medical care costs may be our most important benefit costs because they have a critical impact on the health and well-being of our employees and their families. As our employees remain our most valuable asset, improving the quality and delivery of healthcare services is a high priority.

Managing the complexities of healthcare is staggering, whether you are an individual or a corporation — from coping with actual health issues (covering the spectrum of a bad back to diabetes to cancer) and locating suitable primary or specialist care to deciphering incomprehensible insurance plans and pricing, resolving excessive surprise bills and other issues. While the U.S. healthcare system is exceptional in many ways, it also has many flaws that must be addressed. Healthcare costs, which are already the highest in the world, continue to rise (average premiums for family coverage have increased 22% since 2016) for both employers and employees — with no evidence that outcomes are improving (e.g., only 46.5% of adults with private insurance have their blood pressure controlled, and that number has declined in the last 10 years).

This is why, in 2021, we launched Morgan Health, a new business unit. With Morgan Health, we have an opportunity to deliver and scale new healthcare models that improve the quality, equity and affordability of employer-sponsored healthcare. We're focused on connecting healthcare to improved health outcomes for our employees. JPMorgan Chase has approximately 20 talented people on our Human Resources Benefits team helping employees and their families access the best possible medical care. In hindsight, it is shocking how few people we had dedicated to this vitally important issue. With Morgan Health, we are adding approximately 30 more individuals who will help our Benefits team attack this problem from many different angles.

Looking forward, Morgan Health is investing $250 million to accelerate the development and delivery of accountable care (managing a patient's total care from prevention to outcomes), completing its first $50 million investment in Vera Whole Health — and its subsequent investment in Castlight — with plans to deploy these services to our employees in Columbus, Ohio, this year. Morgan Health just completed another investment in healthcare analytics company Embold Health, which will help facilitate how consumers access the highest-quality care available. We are also working toward providing equal access to equal healthcare, regardless of race, income or other personal characteristics for our employees and in the communities we serve. Addressing inequities in healthcare is fundamental to Morgan Health's strategy, and our partnership with Kaiser Permanente in California is moving forward quickly on its collaborative effort focused on the collection and reporting of health equity performance metrics.

WE CONTINUE TO SUPPORT DATA-DRIVEN POLICYMAKING THROUGH THE JPMORGAN CHASE *POLICY*CENTER AND INSTITUTE.

Last year, I wrote that one lesson of leadership is putting in place good decision-making processes. An essential part of that is good data because the challenges we face are complex and interconnected. Too often, decision makers use "facts" to justify a pre-existing point of view or do not accurately represent reality. Good data that is granular and timely and, when possible, leverages big data sources must be at the heart of all policy processes to ensure measurable and equitable outcomes.

Six years ago, we created the JPMorgan Chase Institute to deliver unique data and insights to help solve some of our most pressing economic challenges. This information offers a unique lens into the financial habits of millions of small businesses and households, leveraging anonymized and aggregated customer data that represents half of U.S. households. The Institute's data and analyses have helped policymakers better understand the impact of decisions — ranging from student loan relief and targeted investments in underserved Chicago and Detroit neighborhoods to small business support and insights about how families manage income volatility and use their tax refunds. Importantly, the Institute has also helped shape some of our own products and employee benefits, including how we incentivize customers to save more money and reduce health insurance deductibles for our lower-paid employees.

The Institute's work has also helped inform our policy advocacy efforts that support inclusive growth. Two years ago, we launched the JPMorgan Chase *Policy*Center to drive this work. Grounded in data, we are developing and advocating for policy aimed at reducing structural barriers to economic mobility and broadening opportunity for millions of families who live on the financial margins and have been most impacted by COVID-19. For example, as Congress was debating expanded unemployment benefits, our research showed how these benefits had boosted spending and stimulated economic activity during COVID-19. Additional research has provided insight into household balances, cutting across income levels and providing an important barometer on how households are faring as government support expires.

This work is not easy, but we believe it's imperative that policymaking include private and public sector partnership. We continue to need better data to understand what is happening in the real economy so we can help shape policies that make a significant and positive impact on those who need help the most.

WE JOIN OTHER COMPANIES IN EVOLVING OUR VISION OF THE WORKPLACE.

Today, in many places COVID-19 has moved from pandemic to endemic status, although there is still suffering in some parts of the world. And we are cognizant that the risk of new variants is real and that if they occur, we will need to take appropriate action.

As a company, while we continually prepare for multiple business resiliency scenarios (e.g., data center failures, closures of cities, major storms, even widespread disease), we never fully prepared for a pandemic that entailed a large-scale shutdown of the global economy. Although some of our employees, particularly in the branches, continued to work on our premises every day, we quickly set up the technology — ranging from call centers and operations to trading and investment banking — that enabled many of our employees to work from home. We learned that we could function virtually with Zoom and Cisco and maintain productivity, at least in the short run.

Although the pandemic changed the way we work in many ways, for the most part it only accelerated ongoing trends. While it's clear that working from home will become more permanent in American business, such arrangements also need to work for both the company and its clients. I believe our firm's on-site versus remote work will sort out something like this:

- Generally speaking, many employees (approximately 50%) will necessarily work at a location full time. That would include nearly all employees in our retail bank branches, as well as jobs in check processing, vaults, sales and trading, critical operations functions and facilities, amenities, security, medical and many others.
- Some employees (approximately 40%) will work under a hybrid model (e.g., some days on-site and other days at home). Increased flexibility and hybrid working arrangements will vary by job type. We do hope to provide these types of arrangements where they are appropriate and for those who want them.

- A small percentage of employees, possibly 10%, may work full time from home in very specific roles.

In all situations, these decisions depend upon what is optimal for our company and our clients, and we will extensively monitor and analyze outcomes to ensure this is the case. As we reopen, and we mostly are, we will, of course, follow government guidelines.

Remote work will change how we manage our real estate. We will quickly move to a more "open seating" arrangement in which digital tools will help manage seating arrangements (people will have regular neighborhoods where they can congregate), as well as needed amenities, such as conference room space. As a result, for every 100 employees, we may need seats for approximately 60 to 75 on average — with an appropriate increase in conference room, private office and amenity space to make it a great work environment.

The virtual world also presents some serious weaknesses. For example:

- Performing jobs remotely is more successful when people know one another and already have a large body of existing work to do. It does not work as well when people don't know each other.

- Most professionals learn their job through an apprenticeship model, which is almost impossible to replicate in the Zoom world. Since the onset of COVID-19, JPMorgan Chase has hired over 80,000 new people into the company — and we are making sure they are properly trained on all aspects of our business, from their special role to the significance of conduct and culture. But this is harder to do over Zoom. Over time, this drawback could dramatically undermine the character and culture you want to promote in your company.

- A heavy reliance on Zoom meetings actually slows down decision making because there is less immediate follow-up.

- Remote work eliminates much spontaneous learning and creativity because you don't run into people at the coffee machine, talk with clients in unplanned scenarios or travel to meet with customers and employees for feedback on your products and services.

- Finally, the negative effects of the weaknesses outlined above are cumulative — they weren't as obvious earlier in the pandemic — and they get worse over time.

We are moving full steam ahead with building our new headquarters in New York City. We will, of course, consolidate even more employees into this building, which will house between 12,000 and 14,000 people. We are extremely excited about the building's public spaces, state-of-the-art technology, and health and wellness amenities, among many other features. It's in the best location in one of the world's greatest cities.

Two final points. Of our total overhead of $71 billion, $39 billion represents our people costs. Over time, using lots of data, surveys and other metrics, we believe we can gain efficiencies while still keeping our people happy, healthy and motivated, at an increasingly lower cost.

And finally, our leaders must lead. They have to walk the floors, they must see clients, they need to be visible, they need to teach and educate, and they need to be able to conduct impromptu meetings. They cannot lead from behind a desk or in front of a screen.

Management Lesson: The Benefit of Purpose and the Tremendous Value of Work

Great management and leadership are critical to any large organization's long-term success, whether it is a company or a country. Strong management is disciplined and rigorous. Facts, analysis, detail … facts, analysis, detail … repeat. You can never do enough, and it does not end. But creating an exceptional management team is an art, not a science.

In the section on Investments, I described what we consider our ***most important investment*:** our people, who in accounting terms are not even considered an asset. But we all understand the value of building a great team.

In the rest of this section, I talk about some management lessons — I always enjoy sharing what I have learned over time by watching others and through my own successes and failures.

PERFECT YOUR PICASSO — HAVE SOMETHING TO STRIVE FOR AND MOTIVATE YOU.

It seems to me that people are happier and more motivated when they have a passion, a moral purpose, something they are devoted to — when they are painting their own Picasso, striving for something. Some people find it in religion, the military, teaching, science, athletics, parenthood, entrepreneurship or simply being their best at their craft. Whatever it is, all these things combined — when done well — create a wonderful society. And most people I know get an enormous sense of satisfaction from the exploration and learning that take place on the journey.

Personally and professionally, I am motivated by the desire to leave the world a better place — if I do my job well, this company can do so much for individuals, shareholders, communities, countries and humanity. I am motivated when I see our customers and employees in action, knowing there is increased opportunity for each of them when we do better as a company. I am motivated when I go to our annual National Achievers Conference, which recognizes some of our most successful bankers and managers in the branches. Sometimes they have tears in their eyes as they accept this recognition — many have never been recognized before — and it is hard to describe how this deepens my own sense of responsibility.

RECOGNIZE THE TREMENDOUS VALUE OF WORK.

Work, all work, has value. It was a beautiful thing during the onset of COVID-19 when we celebrated our essential workers (in New York City, it was unbelievable to hear the sound of 1 million New Yorkers shouting thanks out their windows every evening at 7:00), including nurses, firefighters, emergency medical service staff, sanitation workers and police officers (although recently that spirit seems to have waned). They were ***always*** essential workers, and they appreciated our recognition.

Along the same lines, some in society diminish "starter" jobs, such as cashiers, office workers, bank tellers, fast food cooks and others. These "starter" jobs bring dignity, provide security for many families and create a solid work ethic. Often, they result in better social outcomes in terms of reductions in drug use and crime, similar to outcomes we have seen from summer youth employment. For many, these jobs are the first rung on the career ladder, leading to bigger and bigger jobs. For example, more than 95% of Domino's franchise owners started as delivery drivers or pizza makers. At JPMorgan Chase, about one-third of our branch managers started as tellers or personal bankers.

I have expressed regret for many years in this letter that we, as a society, have not found a way to better prepare our young people for jobs, whether through conventional schooling or apprenticeships and skills-based training, which is more important today than ever before. Offering better training and getting more income to lower-paid workers would hugely benefit the economy, the individuals involved and social outcomes – and would help rectify income inequality. We must do a better job improving the outcomes of an education; i.e., that it leads to well-paying jobs. I also believe that we should immediately increase the minimum wage and the EITC to both entice more people into the workforce and to get more income into the hands of the lower paid.

NURTURE THE EXTRAORDINARY VALUE OF TRUST.

Trust is earned, given and received. To maximize human creativity and freedoms – which are the greatest gifts of capitalism – trust is essential. We must make it safe to argue, disagree and challenge each other while continuing to dig deeper in areas where we're not doing as well as we'd like. It must be okay to fail or make mistakes. Trust is the force multiplier that gets the best out of everyone. You do not earn trust if you finger-point, don't admit to your own mistakes or don't share the credit.

COMBAT THE ENEMY WITHIN.

While trust is the force multiplier, a workplace cannot devolve into excessive, feel-good collaboration and bureaucracy. I have seen work environments in which everyone is so nice to each other and so collaborative that it slowly creates crippling bureaucracy as everyone's opinion is sought out – and everyone has a veto.

The other disease that arises from within is a workplace completely run by corporate headquarters: It is very easy to be critical of people in the field for their failures when you don't walk in the trenches with them.

Very often, the enemy within fights change, resists making bold decisions and balks at investments that are hard, such as growing the salesforce. When the enemy within takes over, energy and creativity wither quickly … although it may take decades for the company to die.

DRIVE HIGH PERFORMANCE, THE RIGHT WAY.

So how do you drive high performance while creating a safe workplace that values relationships built on trust and respect? The best leaders treat all people properly and respectfully, from clerks to CEOs. Everyone needs to help one another at a company because everyone's collective purpose is to serve clients. When strong leaders consider promoting people, they pick those who are respected by their colleagues and ask themselves, "Would I want to work for him? Would I want my kid to report to her?"

We must strive for continuous improvement, set high standards and emphasize the negatives when we observe them but always remember to make life fun. When I travel around the world and see our people and our company in action, I love it. And you must make it fun – not only because it has a positive effect on retention, attitude and the overall culture of the company but also because it leads to sharing and truth-telling.

I've enjoyed the show "Ted Lasso." He tries to get the best out of everybody, and he displays great gratitude. While I could get a little better at showing more gratitude on a day-to-day basis with my management team (I did give them biscuits in little pink boxes this year), they do know how much I trust, respect, appreciate and admire them.

Three additional things: You don't create a winning team by pandering to individuals. You must deal with conflict immediately, directly and forthrightly – problems do not age well. When people cannot do their job, they should not have that job. We should either work with them to find another role where they can thrive or ask them to leave. Just do it respectfully to everyone involved – do not embarrass people who have been working for the company.

Bring energy and drive – not just every day – but to every meeting and interaction.

Finally, sharing credit, recognizing the contributions of others, and not casting blame or finger-pointing all are critical to earning trust.

RETAINING TALENT IS IMPORTANT AND SO IS LIFE OUTSIDE OF WORK.

Retaining your best talent is essential. In addition to being treated with enormous respect, what people want most is a challenging job with meaningful work.

All companies have turnover in staff, and all turnover is not necessarily bad. People seek out new challenges, may find outside advancement opportunities or may just want a change in lifestyle. Sometimes good people leave because they are getting a better opportunity or increased compensation at another company. You should not be angry when someone receives a higher compensation offer from another company. No one likes to feel they are being taken advantage of — everyone wants to go home each day thinking they are treated fairly and equitably. And everyone has their own needs in terms of family, income, work-life balance and other factors.

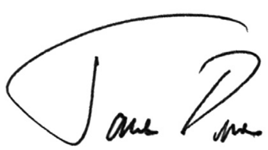
But turnover can be bad, too. It is bad when inefficiency or bureaucracy or ineffective managers drive out good talent. It is still true that most people leave their job because they don't like their boss.

We also recognize and ask our employees to take care of their mind, body, spirit, soul, friends and family. While we do what we can to help them, we recognize that these are the most important things in their life, and we try to constantly remind them to give the needed time and attention to what they cherish most.

In Closing

I would like to express my deep gratitude and appreciation for the 270,000+ employees, and their families, of JPMorgan Chase. From this letter, I hope shareholders and all readers gain an appreciation for the tremendous character and capabilities of our people and how they have helped communities around the world. They have faced these times of adversity with grace and fortitude. I hope you are as proud of them as I am.

Finally, we sincerely hope that all the citizens and countries of the world see an end to this terrible pandemic, see an end to the war in Ukraine, and see a renaissance of a world on the path to peace and democracy.



Jamie Dimon
Chairman and Chief Executive Officer

April 4, 2022

Footnotes

Client Franchises Built Over the Long Term (page 8)

1 Certain wealth management clients were realigned from Asset & Wealth Management to Consumer & Community Banking in the fourth quarter of 2020. 2006 & 2011 amounts were not revised in connection with this realignment.

2 Federal Deposit Insurance Corporation ("FDIC") 2021 Summary of Deposits survey per S&P Global Market Intelligence. Includes a $1B deposit cap for market share. Includes all commercial banks, savings banks, and savings institutions as defined by the FDIC.

3 Barlow Research Associates, Primary Bank Market Share Database as of 4Q21. Rolling 8-quarter average of small businesses with revenue of more than $100,000 and less than $25 million.

4 Total payment volumes reflect Consumer and Small Business customers' digital (ACH, BillPay, PayChase, Zelle, RTP, ExternalTransfers, Digital Wires), non-digital (Non-digital Wires, ATM, Teller, Checks) and credit and debit card payment outflows. 2011 is based on internal JPMorgan Chase estimates.

5 Digital non-card payment transactions include outflows for ACH, BillPay, PayChase, Zelle, RTP, external transfers, and some wires, excluding Credit and Debit card sales. 2006 and 2011 are based on internal JPMorgan Chase estimates.

6 Represents general purpose credit card spend, which excludes private label and Commercial Card. Based on company filings and JPMorgan Chase estimates.

7 Represents general purpose credit card loans outstanding, which excludes private label, American Express Company (AXP) Charge Card and Citi Retail Cards, and Commercial Card. Based on loans outstanding disclosures by peers and internal JPMorgan Chase estimates.

8 Represents users of all web and/or mobile platforms who have logged in within the past 90 days.

9 Represents users of all mobile platforms who have logged in within the past 90 days.

10 Based on 2021 sales volume and loans outstanding disclosures by peers (American Express Company, Bank of America Corporation, Capital One Financial Corporation, Citigroup Inc. and Discover Financial Services) and JPMorgan Chase estimates. Sales volume excludes private label and Commercial Card. AXP reflects the U.S. Consumer segment and JPMorgan Chase estimates for AXP's U.S. small business sales. Loans outstanding exclude private label, AXP Charge Card, and Citi Retail Cards.

11 Inside Mortgage Finance, Top Primary Mortgage Servicers as of 4Q21.

12 Experian AutoCount data for 4Q21. Reflects financing market share for new and used loan and lease units at franchised and independent dealers.

13 ~$90 billion represents the December 31, 2021 balances for accounts provided payment relief, including those currently enrolled in relief and those who have exited relief. Includes Auto DCS and residential real estate loans held in Consumer & Community Banking, Asset & Wealth Management and Corporate.

14 Dealogic as of January 3, 2022.

15 Coalition Greenwich Competitor Analytics. Share is based on JPMorgan Chase's internal business structure and revenues; rank is based on Coalition Index Banks. 2006 rank analysis is based on JPMorgan Chase analysis. 2021 excludes the impact of Archegos.

16 Client deposits and other third-party liabilities pertaining to the Payments and Securities Services businesses.

17 Coalition Greenwich Competitor Analytics. Reflects Global Firmwide Treasury Securities business (Corporate & Investment Bank and Commercial Banking).

18 Based on Firmwide data using Regulatory reporting guidelines as prescribed by the Federal Reserve Board.

19 Institutional Investor.

20 Based on third-party data.

21 Nilson, Full Year 2020.

22 Assets under custody based on company filings.

23 Client deposits and other third-party liabilities.

24 Represents total JPMorgan Chase revenue from investment banking products sold to Commercial Banking clients.

25 Represents product revenue excluding deposit net interest income.

26 S&P Global Market Intelligence as of December 31, 2021.

27 Refinitiv LPC, Full Year 2021.

28 Aligns with the affordable housing component of the firm's $30 billion racial equity commitment.

29 Represents the Nomura star rating for Japan-domiciled funds and Morningstar for all other domiciled funds. Includes only Asset Management retail open-ended mutual funds that have a rating. Excludes money market funds, Undiscovered Managers Fund and Brazil- and Korea-domiciled funds. Mutual fund rating services rank funds based on their risk-adjusted performance over various periods. A 5-star rating is the best rating and represents the top 10% of industry-wide ranked funds. A 4-star rating represents the next 22.5% of industry-wide ranked funds. A 3-star rating represents the next 35% of industry-wide ranked funds. A 2-star rating represents the next 22.5% of industry-wide ranked funds. A 1-star rating is the worst rating and represents the bottom 10% of industry-wide ranked funds. The 'overall Morningstar rating' is derived from a weighted average of the performance figures associated with a fund's three-, five-and 10-year (if applicable) Morningstar Rating metrics. For U.S.-domiciled funds, separate star ratings are given at the individual share class level. The Nomura star rating is based on three-year risk-adjusted performance only. Funds with fewer than three years of history are not rated and hence excluded from this analysis. All ratings and the assigned peer categories used to derive this analysis are sourced from these fund rating providers as mentioned. Past performance is not indicative of future results.

30 In the fourth quarter of 2020, the firm realigned certain Wealth Management clients from Asset & Wealth Management to Consumer & Community Banking. Prior-period amounts have been revised to conform with the current presentation.

31 Traditional assets include Equity, Fixed Income, Multi-Asset and Liquidity assets under management; Brokerage, Administration and Custody assets under supervision.

32 Assets under management only for 2006.

33 Euromoney.

34 All quartile rankings, the assigned peer categories and the asset values are sourced from the fund ranking providers. Quartile rankings are based on the net-of-fee absolute return of each fund. The data providers re-denominate the asset values into U.S. dollars. This percentage of assets under management is based on fund performance and associated peer rankings at the share class level for U.S.-domiciled funds, at a primary share class level to represent the quartile ranking of the U.K., Luxembourg and Hong Kong funds and at the fund level for all other funds. The primary share class, is defined as C share class for European funds and Acc share class for Hong Kong and Taiwan funds. In case the share classes defined are not available, the oldest share class is used as the primary share class. The performance data could have been different if all share classes would have been included. Past performance is not indicative of future results. Effective September 2021 the firm has changed the peer group ranking source from Lipper to Morningstar for U.S.-domiciled funds (except for Municipal and Investor Funds) and Taiwan-domiciled funds to better align these funds to the providers and peer groups we believe most appropriately reflects their competitive positioning. This change may positively or adversely impact, substantially in some cases, the quartile rankings for one or more of these funds as compared with how they would have been ranked by Lipper for this reporting period or future reporting periods. The source for determining the rankings for all other funds remains the same. The classifications in terms of product suites and product engines shown are J.P. Morgan's own and are based on internal investment management structures.

35 Source: Company filings and JPMorgan Chase estimates. Rankings reflect publicly-traded peer group as follows: Allianz Group, Bank of America Corporation, Bank of New York Mellon Corporation, BlackRock, Inc., Charles Schwab Corporation, Credit Suisse Group AG, DWS Group, Franklin Resources, Inc., The Goldman Sachs Group, Inc., Invesco Ltd., Morgan Stanley, State Street Corporation, T. Rowe Price Group, Inc. and UBS Group AG. JPMorgan Chase ranking reflects Asset & Wealth Management client assets, U.S. Wealth Management investments and new-to-firm Chase Private Client deposits.

36 iMoneyNet.

37 Represents assets under management in a strategy with at least one listed female and/or diverse portfolio manager. "Diverse" defined as U.S. ethnic minority.

JPMorgan Chase Is in Line with Best-in-Class Peers in Both Efficiency and Returns (page 12)

1 Best-in-class peer overhead ratio represents the comparable business segments of JPMorgan Chase (JPM) peers: Capital One Domestic Card & Consumer Banking (COF-DC & CB), Goldman Sachs Investment Banking and Global Markets (GS-IB & GM), PNC Bank (PNC), Credit Suisse Private Banking (CS-PB) and T. Rowe Price (TROW).

2 Best-in-class all banks ROTCE represents implied net income minus preferred stock dividends of the comparable business segments of JPM peers when available, or of JPM peers on a firmwide basis when there is no comparable business segment: Bank of America Consumer Banking (BAC-CB), Goldman Sachs Investment Banking and Global Markets (GS-IB & GM), KeyBank (Key), UBS Global Wealth Management (UBS-GWM) and Morgan Stanley Investment Management (MS-IM).

3 Best-in-class G-SIB ROTCE represents implied net income minus preferred stock dividends of the comparable business segments of JPM G-SIB peers when available, or of JPM G-SIB peers on a firmwide basis when there is no comparable business segment: Bank of America Consumer Banking (BAC-CB), Goldman Sachs Investment Banking and Global Markets (GS-IB & GM), Wells Fargo & Company Commercial Banking (WFC-CB) and Morgan Stanley Wealth Management and Investment Management (MS-WM & IM). WFC-CB is the only G-SIB peer to disclose a comparable business segment to Commercial Banking.

4 Comparisons are at the applicable business segment level, when available; the allocation methodologies of peers may not be consistent with JPM's.

5 Bank of America Corporation (BAC), Citigroup Inc. (C), The Goldman Sachs Group, Inc. (GS), Morgan Stanley (MS) and Wells Fargo & Company (WFC).

6 Managed overhead ratio = total noninterest expense/managed revenue; revenue for GS and MS is reflected on a reported basis.

Size of the Financial/Sector Industry (page 27)

1 Consists of cash assets and Treasury and agency securities.

2 AUM includes Dry Powder, 2021 figure is annualized based on available data through Q1.

3 NYSE + NASDAQ; excludes investment funds, exchange-traded fund's unit trusts and companies whose business goal is to hold shares of other listed companies; a company with several classes of shares is only counted once.

4 Loans held by nonbank entities per the Federal Reserve Bank Z.1 Financial Accounts of the United States.

5 Facebook not included in 2010.

6 Private companies use the latest valuations.

7 Active users where applicable; data as of various points throughout the year due to the inconsistency of disclosure.

8 Inside Mortgage Finance and JPMorgan Chase internal data; consists of Top 50 Originators.