A Tale of Two Economies: Pandemic dictates contour of GDP for 2021

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KPMG Economics

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Summary

- As has been the case since the outset of the pandemic, the virus is dictating the economic outcomes. The faster governments can overcome the virus, the less economic scarring and the faster a full recovery can commence.

- The economic and social response to the pandemic has not been uniform. Likewise, the geographic, industry, and household impact has not been uniform. This has led economists to call the recovery “K” shaped denoting the upper and lower legs of the K as it reflects the relative performance of various geographies, industries, and households.

- Fiscal relief packages have been enacted in most countries and have been targeted towards those industries and households most impacted. Because the pandemic destroyed the supply of goods and services due to lockdowns and decimated demand due to reduced propensity and capacity to consume, it is believed that relief efforts to date, though large, are unlikely to ignite runaway inflation.

- Monetary policy is also highly accommodative and can be withdrawn gradually as the recovery progresses should inflation worries be justified by highly elevated consumption and wage growth.

- Looking past the pandemic, it is possible that some of the shocks brought about by the pandemic, such as the technology shock, may endure in the years to come. Digital transformation at the corporate level has the possibility to buttress productivity gains and enable greater diffusion of productivity beyond the pandemic.
COVID-19 still dictating economic outcomes

New COVID-19 Cases
7D moving avg

Source: KPMG Economics, Johns Hopkins University (March 4, 2021), Bloomberg
Interplay of vaccinations and government assistance key for GDP

The U.S. is expected to be one of the best performing developed markets due in no small part to significant fiscal and monetary stimulus and substantial progress on vaccinations.

The E.U. and U.K. are expected to experience a soft patch in Q1 2021 in the aftermath of rising infections and lock downs seen at the end of 2020.

China is still facing headwinds from low levels of consumption though for the time being government sponsored fixed asset investment is bolstering GDP growth.

Source: KPMG Economics, Respective Countries’ National Statistics Office, Bloomberg, Haver Analytics
Covid demanded significant fiscal and monetary policy action

**Canada**
- **Fiscal Operations**: C$438bn (20% of GDP)
- **Monetary Operations**: Rate cuts to 0.25% and C$16bn per month in government bonds

**U.S.**
- **Fiscal Operations**: $3.8tn (18% of GDP)
- **Monetary Operations**: Rate cuts to 0.25% and $120bn per month in asset purchases

**U.K.**
- **Fiscal Operations**: £438bn (20% of GDP)
- **Monetary Operations**: Rate cuts to 0.1% and £450bn per month in asset purchases

**Brazil**
- **Fiscal Operations**: 1.4 trillion reais (19.3% of GDP)
  - Extra funds to households and businesses worth 7.4% of GDP
- **Monetary Operations**: Policy rate cut 225 bps to historical low of 2%
  - Liquidity injections (up to 17.5% of GDP), special credit line to small- and medium-size enterprises (0.5% of GDP), lower capital requirements

**E.U.**
- **Fiscal Operations**: Germany, Italy, France €646bn (8.1%, 3.7%, and 5.6% of GDP respectively)
- **Monetary Operations**: ECB rate cut to -0.5% and enhanced asset purchases by €120bn, TLTRO as low as -1.0% from Jun-20 to Jun-22. Net asset purchases under Pandemic Emergency Purchase Program to run until Mar-22, with an envelope of €1.85tn

**Japan**
- **Fiscal Operations**: ¥89.7tn (18.5% of GDP)
- **Monetary Operations**: Negative rate cut to -0.1%
  - 10 year yield target at 0%
  - No limit on Japanese government bond purchases

**China**
- **Fiscal Operations**: Fiscal stimulus of 11% of GDP
- **Monetary Operations**: Loan Prime Rate cut 30-bps to 3.85%
  - Targeted reserve requirement ratio cut 1.8 trillion yuan re-lending quota and 400 billion yuan loan-purchase scheme

**Source**: KPMG Economics, Bloomberg, IMF
Vaccination are essential to return economies to pre-Covid state

Global COVID-19 Vaccine Deployment
Vaccine Dose Administered per 100 Population

- COVID-19 vaccines have been shown to be remarkably effective at preventing severe virus cases with all major vaccines reporting no hospitalizations, or adverse reactions to vaccine resulting in death.
- Vaccine deployment has accelerated with nearly 19 doses per 100 population in the U.S.
- The U.S. has outperformed most of the world in vaccinations with the 4th highest vaccinations per capita.

Vaccine Trial Data

<table>
<thead>
<tr>
<th>Vaccine trial</th>
<th>Effectiveness at preventing COVID-19</th>
<th># of hospitalizations, COVID-19 deaths, vaccine deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pfizer</td>
<td>95%</td>
<td>0</td>
</tr>
<tr>
<td>Moderna</td>
<td>94%</td>
<td>0</td>
</tr>
<tr>
<td>Novavax</td>
<td>89%</td>
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<tr>
<td>AstraZeneca</td>
<td>70%</td>
<td>0</td>
</tr>
<tr>
<td>Johnson &amp; Johnson</td>
<td>66%</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: As of March 4, 2020 or most recent public reporting
Source: KPMG Economics, OurWorldInData.org, Bloomberg, Company Vaccine Trials
Geographic K to be driven by efficacy of virus response

Manufacturing Purchasing Managers Index (PMI)
50+ = Expansion, 3-Month Moving Average

- PMI indices in areas with the highest vaccine deployment show economic expansion above the global trend.
- Should the dispersion between vaccination rates persist, it is likely that those countries with higher vaccination rates will continue to outperform economically.
- The manufacturing sector is displaying expansionary PMI readings in most parts of the world as demand for goods has bolstered the industry.

Source: KPMG Economics, IHS Markit (February 2021), Haver Analytics

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US GDP forecast driven by vaccinations and fiscal assistance

— 2021 growth depends heavily on the success of vaccine deployment in the United States.
— We expect vaccinations to exceed 1.5 million per day until approximately 70% of the population has been vaccinated. It is anticipated this will result in declining virus cases and deaths.
— The combination of full reopening in late Q3 or early Q4 and additional fiscal support will provide conditions for a full rebound of GDP nearly 6% growth for the year.

Source: KPMG Economics, Bureau of Economic Analysis, Haver Analytics
### Annual Growth Rates %

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<td>2.1</td>
<td>1.8</td>
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<td>6.0</td>
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<td>2.3</td>
<td>1.1</td>
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<td>-13.0</td>
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<tr>
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<td>4.1</td>
<td>1.1</td>
<td>-9.3</td>
</tr>
</tbody>
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Note: Annual % change, inflation adjusted
Source: KPMG Economics, Bureau of Economic Analysis, Haver Analytics

— 2020 GDP showed a slowdown in most major components with two main outliers: goods consumption and residential investment in housing.

— With services consumption severely impacted by lockdowns and aversion behavior, consumers shifted purchases to goods.

— Historically low interest rates and high levels of savings facilitated the demand for greater utility from homes. The rebound in residential investment began in the two quarters before the pandemic, but the pandemic helped accelerate demand in 2020.
Services sector heavily impacted by pandemic behavior

Real Personal Consumption Expenditures
Trillions of 2012 Dollars

- Services consumption makes up approximately 45% of GDP while goods made up 21% of GDP prior to the Pandemic.
- The Fear of Going Out (FOGO) and lack of supply of many services has curtailed services consumption while boosting goods consumption.
- Goods such as home furnishings, home work out equipment, and food purchased at home are above pre-pandemic levels.
- Services such as restaurants, travel and leisure, sporting events, beauty services, and healthcare are down significantly due to FOGO and supply constraints.

Source: KPMG Economics, Bureau of Economic Analysis (Q4 2020), Haver Analytics
Anatomy of a K – the pandemic caused shifts in supply and demand

- Online entertainment/media
- Housing, home improvement
- Online retail
- Firms that can take workforce remote
- Manufacturing – meeting soaring demand for goods
- Computer equipment and software

- Leisure and hospitality, air travel
- Live arts and entertainment, sports
- Healthcare
- Apparel sales
- Oil and gas industry

Economists have termed the uneven impact of the pandemic a K-shaped recovery, meaning it is a recovery for the top leg of the K and not for the bottom leg.

Companies that are delivering goods and services to households to improve their experience or enable work from home are doing well.

Goods consumption is rising due to higher demand.

Services consumption lags due to the lack of supply of many services within the economy as well as lack of demand due to FOGO.

Source: KPMG Economics, Bureau of Labor Statistics, Census Bureau, Federal Reserve Board, Haver Analytics
COVID-19 impacts different sectors than the ‘08-’09 crisis

Total Change in Employment by Industry
% Change during Recession Period

- Leisure & Hospitality
- Mining and Logging
- Health Care & Social Assistance
- Utilities
- Professional & Technical Services
- Finance & Insurance Services
- Real Estate
- Retail Trade
- Manufacturing
- Administrative & Waste Services
- Construction

Source: KPMG Economics, Bureau of Labor Statistics (January 2021), Haver Analytics

- COVID-19 Pandemic
- Global Financial Crisis

Pandemic worse than GFC
GFC worse than Pandemic

Source: KPMG Economics, Bureau of Labor Statistics (January 2021), Haver Analytics
Business investment in digital transformation visible in the data

Surge in Pandemic-induced Digital Transformation

- The pandemic propelled digital transformation across industries.
- Firms invested tens of billions in information processing equipment and software leading to a rarely visible jump in these investment categories.
- It is likely the surge in consumption of information processing equipment and software will facilitate greater diffusion of technology which could create the right conditions for a productivity burst in the years following the pandemic.

Source: KPMG Economics, Bureau of Economic Analysis, Haver Analytics
Retail sales accelerate to 7.4% y/y, amid shifting composition

<table>
<thead>
<tr>
<th>Retail Sales by Industry</th>
<th>12-Month % Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Oct</td>
</tr>
<tr>
<td>Total Retail Sales &amp; Food Services</td>
<td>5.4%</td>
</tr>
<tr>
<td>Food Services &amp; Drinking Places</td>
<td>-14%</td>
</tr>
<tr>
<td>Clothing &amp; Accessory Stores</td>
<td>-11%</td>
</tr>
<tr>
<td>Gasoline Stations</td>
<td>-14%</td>
</tr>
<tr>
<td>Electronics &amp; Appliance Stores</td>
<td>-4%</td>
</tr>
<tr>
<td>General Merchandise Stores</td>
<td>4%</td>
</tr>
<tr>
<td>Health &amp; Personal Care Stores</td>
<td>4%</td>
</tr>
<tr>
<td>Miscellaneous Stores Retailers</td>
<td>2%</td>
</tr>
<tr>
<td>Furniture &amp; Home Furnishing Stores</td>
<td>5%</td>
</tr>
<tr>
<td>Food &amp; Beverage Stores</td>
<td>10%</td>
</tr>
<tr>
<td>Motor Vehicle &amp; Parts Dealers</td>
<td>11%</td>
</tr>
<tr>
<td>Building Materials, Garden Equipment &amp; Supply Dealers</td>
<td>18%</td>
</tr>
<tr>
<td>Sporting Goods, Hobby, Book &amp; Music Stores</td>
<td>16%</td>
</tr>
<tr>
<td>Nonstore Retailers (Online Sales)</td>
<td>27%</td>
</tr>
</tbody>
</table>

Source: KPMG Economics, Census Bureau (January 2020), Haver Analytics

— The month-over-month rebound in restaurant and bar consumption hints that some may be losing their FOGO and regaining their FOMO motivations.

— Likewise, the rise in gasoline consumption speaks to greater mobility as well as rising prices. (Retail sales are nominal data, not adjusted for inflation.)

— Continued strength in furniture and building materials consumption suggests that the housing boom has room to run as rates will remain low for the medium-term.
COVID-19 purchases hint a limit for online sales

E-Commerce as a Share of Retail Sales

Electronic & Mail Order Sales as a % of Non-Gasoline Store Retail Sales

Aversion behavior and lockdown procedures forced many stores to close during the early stages of the pandemic leading to a step-level change in online sales.

That number is inching back towards 12.5% as the pandemic abates. While online channels continue to expand, it appears consumers do not want to engage in as much online consumption as they did during maximum lockdown.

Note: We exclude gasoline store sales because these sales must occur in person at the gas pump.
New normal is greater on-line shopping by more households

Online Sales as a % of Industry Retail Sales

Source: KPMG Economics, Census Bureau (Q4 2020), Haver Analytics
Anatomy of a K – the pandemic hits low income families most

- Can Work From Home – **3.8%** Unemployment Rate
- Bachelor’s Degree or Higher – **$72,000** Median Income
- Total Assets (51st to 90th Percentile) – **$740,000**
- Home Ownership Rate (Above Median Income) – **79.4%**

- Work at Employer – **8.1%** Unemployment Rate
- Less than Bachelor’s Degree – **$41,000** Median Income
- Total Assets (0 to 50th Percentile) – **$94,000**
- Home Ownership Rate (Below Median Income) – **52.3%**

Source: KPMG Economics, Bureau of Labor Statistics, Census Bureau, Federal Reserve Board, Haver Analytics

— Economists have termed the uneven impact of the pandemic a K-shaped recovery, meaning it is a recovery for the top leg of the K and not for the bottom leg.

— Unemployment is highest in the services industry where workers tend to need less than a bachelor’s degree.

— The average leisure and hospitality worker earns below $36,000/year, putting them below the national median income and in the bottom portion of the K.
Ability to work from home a privilege of the educated

Percent Working From Home Due to the Pandemic

- Graduate Degree: 52%
- Bachelors Degree: 38%
- Associate's Degree or Some College: 17%
- High School Degree Only: 9%
- No High School Degree: 3%

Source: KPMG Economics, Bureau of Labor Statistics (December 2020)

— Highly educated workers were more able to adapt to the pandemic as most of their jobs were easily adaptable to a remote work environment.
— The pandemic hit less-educated workers the hardest with less than 10% of workers with a high school degree or less able to work remotely.
Will take conquering Covid to see low-income jobs return

U.S. Employment by Income Distribution

- Labor market outcomes have diverged considerably during the pandemic, with high-income jobs experiencing growth since the start of 2020 and low-wage jobs growth down more than 20% with little prospect of recovery until the pandemic is over.

- Many of these low-income jobs were in the leisure & hospitality and retail sectors, which remain hamstrung by behavior changes and lockdown rules brought about by the pandemic.

- The winter surge in cases had a considerably larger impact on low- and middle-income work.

Source: KPMG Economics, Opportunity Insights Tracker (January 31, 2020)
Spotlight on Real Estate Dislocation and K Within this Sector
Spotlight on real estate

- Prior to the pandemic, the housing market downturn that began in 2018 precipitated the three rate cuts the Federal Reserve undertook in 2019.
- The residential housing market was beginning to turn around in the two quarters before the pandemic hit.
- The pandemic has brought into stark relief the utility one obtains from one’s home – increasing demand for homes and home improvement.
- This rise in demand for utility coupled with the ability for 35% of the workforce to work from home (WFH) has led to a fall in demand for high-cost urban housing in favor of suburban homes and homes in cities with lower living costs.
- The ongoing WFH phenomenon is affecting central business district real estate with everything including offices to retail to apartments being adversely impacted.
- The big question for central business district real estate centers is the WFH factor. While many firms will keep a greater WFH component in place than prior to the pandemic, they recognize the need for in person collaboration, establishing and maintaining corporate culture, and the benefits of passive learning that occurs with multiple generations of employees working together in the same office.
- While it may take time, we believe central business districts will come back from the pandemic and that the centuries-old progression of humans urbanizing will not be substantially reversed.
Anatomy of a K – all real estate is local

- Home improvement
- Suburban homes near major metropolitan areas
- Lower cost cities with larger homes available
- Outdoor venues
- Fulfillment centers

- Central business district office, retail, and bars/restaurants
- Some urban apartments
- High tax jurisdictions, especially high tax/high WFH
- Malls

Source: KPMG Economics, Bureau of Labor Statistics, Census Bureau, Federal Reserve Board, Haver Analytics

— Real estate truly is the Tale of Two Economies with residential housing experiencing a boom while urban commercial real estate is under pressure.

— The trend of increasing millennial home ownership that was underway prior to the pandemic has accelerated pushing up home prices.

— Central business districts continue to suffer as limits on social gathering and high levels of work from home occupations mean many downtowns are seeing significantly less foot traffic.
Researchers at University of Chicago estimate that 37% of U.S. jobs can be done from home – accounting for 47% of all wages.

Those cities with a high percent of jobs that can be done from home are interestingly most vulnerable to negative impacts from COVID.

High WFH cities tend to have higher average wages which pushes up housing costs.

Enough workers in these cities that can WFH have fled to lower cost locations, impacting central business districts residential housing, leisure and hospitality demand.

Source: KPMG Economics analysis of data from “How Many Jobs Can be Done from Home,” John Dingel and Brent Neiman, 4/2020, Bureau of Economic Analysis, Census Bureau
Largest rent declines in high cost, high WFH cities

Rents Decline in Large Cities
Annual Change in Apartment Rents in January 2021

- San Francisco: -21.5%
- San Jose, CA: -17.8%
- New York: -15.5%
- Boston: -8.9%
- Seattle: -6.4%

— This rise in demand for utility coupled with the ability for 37% of the workforce to work from home (WFH) has led to a fall in demand for high-cost urban housing in favor of suburban homes and homes in cities with lower living costs.

— The ongoing WFH phenomenon is affecting central business district real estate, notably apartment and office rents in high cost cities.

— New York City and San Francisco have been especially hard hit as closures of restaurants and cultural attractions have limited the allure of large cities.

Source: KPMG Economics, Bloomberg, RealPage Inc.
Adjusted cap rates impacted by COVID-19 and interest rates

10-Year Rate Adjusted Cap Rates

Source: KPMG Economics, Real Capital Analytics (January 2021), Bloomberg
Residential real estate likely very sensitive to mortgage rates

— Weekly mortgage applications for new loans (not refinancings) are a good way to forecast future housing investment.

— Housing is normally a leading indicator, turning down before a recession starts, as one can see in 2018.

— After the Fed lowered rates in 2019, housing began to rebound, interrupted by the shock of COVID-19.

— Fed rate cuts in 2020 reduced the mortgage rate by over 100 basis points, making housing more affordable in the face of higher demand due to FOGO.

Source: KPMG Economics, Mortgage Bankers Association (February 26, 2021), Bureau of Economic Analysis (Q4 2020), Haver Analytics
Millennial home ownership rates rise despite the pandemic

Low Rates and Savings Propel Millennial Homeownership

Source: KPMG Economics, Census Bureau, Haver Analytics
Low rates allow broader portion of population to buy homes

Homeownership Rates Break from Previous Recessions

Source: KPMG Economics, Census Bureau, Haver Analytics
Fast growing states weathered the pandemic better than peers

Short and Long Term Trends in State Employment

Source: KPMG Economics, Bureau of Labor Statistics, Haver Analytics

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K dynamics in housing even in the outperforming states

Percentage of adults who are not current on rent or mortgage payments, or who have slight or no confidence that their household can pay next month’s rent or mortgage on time

Note: Week of February 15, 2020
Source: KPMG Economics, Census Bureau
Looking Past the Pandemic
The Post-Pandemic Economy

- The first priority of governments is to maintain the firewall built around the Covid-impacted parts of the economy until we reach the post-pandemic economy.

- The cornerstones of the firewall are income support, excess liquidity to prevent capital market dislocation, and support to firms to prevent net business exit. Efforts around income support and preventing capital markets dislocation have been very successful and the efforts to prevent business exit have been better than prior recessions. However, there will likely be some scarring in highly impacted industries such as leisure and hospitality, retail and healthcare.

- Much of the Biden $1.9 trillion fiscal relief is aimed at maintaining the economic firewall around the impacted parts of the economy. Much of the remainder is focused on increasing vaccination rates, providing assistance to impacted state and local governments, and funding to allow schools to reopen and child care to be available.

- The pandemic has caused a large number of workers to leave the labor force. More than two million workers over the age of 55 have left the labor force, likely due to health concerns for themselves or their households. An additional 2.1 million prime age workers (ages 25-54) have left the labor force.¹ Several studies suggest child care issues and health concerns have been the main drivers.²

- The return of these workers during the recovery will contribute to keeping wages and inflation in check despite significant fiscal assistance.

- Pockets of the economy will see rising prices due to growing demand and, at times, supply bottlenecks as the full economy comes back on line.

¹ Bureau of Labor Statistics; ² Federal Reserve Bank of Minneapolis, RAND Corporation
Source: KPMG Economics, White House
## Green on the screen for 2021

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<td><strong>Consumption</strong></td>
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<td><strong>Goods</strong></td>
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<td>7.9</td>
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<td><strong>Services</strong></td>
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<td>-7.3</td>
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<td><strong>Business Investment</strong></td>
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<td><strong>Residential Investment</strong></td>
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<td><strong>Imports</strong></td>
<td>4.1</td>
<td>1.1</td>
<td>-9.3</td>
<td>18.0</td>
</tr>
</tbody>
</table>

Source: KPMG Economics, Bureau of Economic Analysis, Haver Analytics
Massive savings increase a source of future spending growth

Personal Savings
Seasonally-Adjusted Annualized Rate (SAAR), Trillions of Dollars

Savings have risen for several reasons:

- consumers are consuming less high-contact services such as recreation, dining out, and health care.
- consumers are engaging in precautionary savings.
- Government relief is being saved initially and slowly spent down.
- Once the virus is tamed, savings will likely be a catalyst for renewed economic activity provided further economic deterioration can be forestalled until then.

December 2020 Relief
Care’s Act Relief

Source: KPMG Economics, Bureau of Economic Analysis (January 2021), Haver Analytics
Unprecedented monetary policy response an economic tailwind

The Federal Reserve Leads the Way on Monetary Policy

Money Supply: M2

— At the beginning of the pandemic, the Federal Reserve acted swiftly to provide liquidity and increase money supply, going well beyond what was supplied during the global financial crisis.

— China was the world’s monetary engine post-global financial crisis. During COVID-19, the U.S. is the world’s monetary engine.

— The Federal Reserve is acting in its role as lender of last resort in two key ways: direct purchases of fixed income securities (Treasuries, Agencies MBS, Municipal Bonds, Corporate Fixed Income) and creating lending facilities for corporations. This is shoring up the firewall by preventing financial intermediation impairment.

Source: KPMG Economics, Bank of Japan, Federal Reserve Bank, European Central Bank, People’s Bank of China, Haver Analytics
Inflation dynamics suggest moderate overall price increases

Core CPI Components
CPI Inflation Less Food and Energy, 12-month % Change

Source: KPMG Economics, Bureau of Labor Statistics (January 2021), Haver Analytics
Sharp decline in labor force participation hints at lid on wages

Labor Force Participation Rate
S&L Crisis and Gulf War Recession

S&L Crisis and Gulf War Recession

Dot Com Bubble

Global Financial Crisis

COVID-19 Pandemic

Source: KPMG Economics, Bureau of Labor Statistics, Haver Analytics
Inflation likely to be slightly elevated and stimulative to growth

Source: KPMG Economics

— Assessing the competing and self-regulating factors that influence inflation and growth is complex and economists are constantly learning from changing structural and cyclical dynamics.

— Labor market dynamics are likely to dominate the medium-term inflation outlook. As workers who left the labor force during the pandemic return this will keep a lid on wages and in turn inflation.

— However, some increase to inflation at or slightly above 2% would indicate healthy levels of demand and could spur investment and further growth. This is the scenario policy makers are hoping for.
**Legislative Endgames**

**RESCUE** (Feb-Mar)

- **RESCUE ($1.9T?)**: $1,400 direct payments, various tax credits, unemployment insurance extension and augmented benefits, state and local funding, small biz grants/loans.

**RECOVER** (Apr-Dec?)

- **RECOVER ($1.5T?):** Infrastructure including transportation, energy, broadband, healthcare, water, education. Likely to include tax increases to pay for part of the plan.

**ENVIRONMENT/CLIMATE**: In addition to fiscal relief and stimulus, the Biden administration is more focused on environmental and climate issues than any previous administration.

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As of 2/18/2021, the Budget Reconciliation process for FY 2021 is being leveraged to move a rescue package quickly through Congress and to the President's desk.

- The final and finer details are still being assembled, and there is the prospect that some proposals may not survive in the Senate under Reconciliation rules.

- The Recover package remains today one of conjecture. Some elements could advance through more routine policymaking; other elements might advance through a Budget Reconciliation package for FY 2022 later in CY 2021.

- The American Rescue Plan is aimed at building the firewall around the Covid impacted parts of the economy. Components related to vaccine distribution, health care, education and child care are also included.

Source: KPMG Economics, White House
Debate regarding who should receive direct support continues

The Biden proposal to give $1,400 to individuals is popular among voters -- 79% support the measure according to YouGov.

However, economists question if it is targeted enough. More than half of economists polled by the WSJ on February 9, 2021 thought a stimulus package of $1tn or less would be sufficient to provide relief to those most impacted by the pandemic.

Some economists, notably former CEA chair, Larry Summers questions if stimulus of this kind to those earning above median income could overheat the economy and be deleterious to the goal of encouraging long-term growth.

American Rescue Plan Proposal by Filing Status

- Married Filers, 1 Dependent
- Married Filers, No Dependents
- Single Filer, No Dependents

Source: KPMG Economics, Tax Foundation
Companies recognize climate impacts to earnings

Percent of Firms Anticipating The Environment is Material to Bottom Line

<table>
<thead>
<tr>
<th>Year</th>
<th>Utilities</th>
<th>Energy</th>
<th>Materials</th>
<th>Food Products</th>
<th>Real Estate</th>
<th>Insurance</th>
<th>Industrials</th>
<th>Banks</th>
<th>Consumer Discretionary</th>
<th>Diversified Financials</th>
<th>Health Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>100%</td>
<td>96%</td>
<td>80%</td>
<td>75%</td>
<td>66%</td>
<td>65%</td>
<td>54%</td>
<td>44%</td>
<td>42%</td>
<td>22%</td>
<td>11%</td>
</tr>
<tr>
<td>2018</td>
<td>96%</td>
<td>97%</td>
<td>72%</td>
<td>69%</td>
<td>59%</td>
<td>62%</td>
<td>46%</td>
<td>42%</td>
<td>37%</td>
<td>15%</td>
<td>5%</td>
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<tr>
<td>2017</td>
<td>96%</td>
<td>97%</td>
<td>71%</td>
<td>62%</td>
<td>47%</td>
<td>57%</td>
<td>41%</td>
<td>37%</td>
<td>36%</td>
<td>11%</td>
<td>5%</td>
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<tr>
<td>2016</td>
<td>93%</td>
<td>86%</td>
<td>70%</td>
<td>33%</td>
<td>28%</td>
<td>57%</td>
<td>38%</td>
<td>11%</td>
<td>30%</td>
<td>19%</td>
<td>0%</td>
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<tr>
<td>2015</td>
<td>93%</td>
<td>89%</td>
<td>70%</td>
<td>42%</td>
<td>28%</td>
<td>52%</td>
<td>33%</td>
<td>11%</td>
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<td>15%</td>
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<tr>
<td>2014</td>
<td>96%</td>
<td>86%</td>
<td>61%</td>
<td>30%</td>
<td>33%</td>
<td>52%</td>
<td>31%</td>
<td>6%</td>
<td>24%</td>
<td>15%</td>
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<td>37%</td>
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<tr>
<td>2012</td>
<td>85%</td>
<td>81%</td>
<td>61%</td>
<td>18%</td>
<td>33%</td>
<td>48%</td>
<td>27%</td>
<td>19%</td>
<td>21%</td>
<td>15%</td>
<td>0%</td>
</tr>
<tr>
<td>2011</td>
<td>85%</td>
<td>81%</td>
<td>57%</td>
<td>18%</td>
<td>34%</td>
<td>48%</td>
<td>27%</td>
<td>19%</td>
<td>18%</td>
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<td>2010</td>
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<td>2009</td>
<td>78%</td>
<td>75%</td>
<td>45%</td>
<td>9%</td>
<td>13%</td>
<td>48%</td>
<td>26%</td>
<td>19%</td>
<td>14%</td>
<td>12%</td>
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<tr>
<td>2008</td>
<td>52%</td>
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<td>33%</td>
<td>0%</td>
<td>7%</td>
<td>38%</td>
<td>11%</td>
<td>13%</td>
<td>9%</td>
<td>4%</td>
<td>0%</td>
</tr>
<tr>
<td>2007</td>
<td>50%</td>
<td>29%</td>
<td>28%</td>
<td>0%</td>
<td>0%</td>
<td>35%</td>
<td>6%</td>
<td>6%</td>
<td>8%</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td>2006</td>
<td>15%</td>
<td>20%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>5%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Source: KPMG Economics, Bloomberg
Fiscal relief a key factor in near-term growth projections

— A $1.9tn relief plan is judged to be excessive by most economists surveyed by the Wall Street Journal on February 9, 2021.

— At the time of publishing several aspects of the relief plan are being debated and the ultimate size of the plan is unknown.

— Economic modeling suggests that the near-term path of the recovery is highly dependent on fiscal assistance.

— This is due to lower levels of economic scarring for those most impacted by the pandemic including households and businesses.

LFP: Labor Force Participation
Source: KPMG Economics, Bureau of Economic Analysis, Macroeconomic Advisors by IHS
Does debt matter?
Does Debt Matter?

- More precisely, economists and market participants are asking if debt matters for governments that issue reserve currencies.
- We know that debt matters for household and corporations. Households in the U.S. reduced debt levels prior to and during the pandemic while corporations were on a trajectory of rising debt levels prior to the pandemic.
- The fiscal and monetary assistance provided to weather the pandemic has helped many corporations and bankruptcies are down from high levels seen early in the pandemic. Nevertheless, it would seem companies cannot keep elevating debt levels indefinitely and some reckoning will be in store unless companies grow their way out of debt.
- For governments, the question is more complex. Low interest rates, that are substantially below the growth and inflation rate, suggest it would be wise to borrow now to return the economy to pre-pandemic levels.
- This is not the same thing as debt having no consequences. For the United States and Japan—both large economies and having reserve currency (U.S.) or quasi-reserve currency (Japan) status earned from years of responsible governance—the ability to roll over debt is exceptionally high.
- Debt levels could become unsustainable for governments should interest costs rise substantially in the future as the U.S. Congressional Budget Office is forecasting. Therefore, we believe debt does ultimately matter in the long run and government spending and investment should be mindful of how debt is used to enhance growth.
Record high corporate debt is a bet on reflation

Household and Business Sector Debt as a % of GDP

- Household and business sector debt have spiked as firms and individuals took advantage of low interest rates.
- Firms used the additional credit to weather the difficult pandemic period and individuals borrowed to fund large purchases.
- While bankruptcies are well below pandemic highs, firms are deeply dependent on growing revenues to reduce debt levels in the coming quarters before the yield curve steepens significantly.
- A day of reckoning with higher rollover costs is a distinct possibility.

Source: KPMG Economics, Federal Reserve Board, Haver Analytics
Do low real rates run risk of sustaining zombie firms?

Zombie Companies
Percent in Russell 3000

Note: Bank of International Settlements defines zombie firms as firms with interest coverage ratio less than one for more than three years; excludes financials and real estate, 4Q moving average
Source: KPMG Economics, Bloomberg (Q3 2020)

- Low interest rates over the past decade have allowed for greater corporate borrowing.
- Some firms have been able to borrow so much that they must keep borrowing to make interest payments, these are the zombie firms.
- A high number of zombie firms is not good for economic health.
- Zombie firms compete with non-zombie firms, holding back productivity growth and often keeping a lid on profit margins and overall business dynamism.
High debt justified by a long R&D cycle?

— Not all zombie firms have the same impact on the overall economy.

— Prior to the bursting of the dot com bubble there were a great number of zombie firms in the technology and communication sectors. These firms eventually went out of business and did not hold back growth.

— Similarly, the high number of health care and technology zombie firms in the economy today are unlikely to hold back overall growth and could see a shifting composition as healthcare is at the nexus of the current pandemic induced recession.

2020 Zombie Firms by Sector

- Health Care: 43%
- Technology: 20%
- Consumer Discretionary: 8%
- Industrials: 8%
- Communications: 7%
- Energy: 7%
- Materials: 3%
- Consumer Staples: 3%
- Utilities: 0.5%

Note: Russell 3000 companies with interest coverage ratio less than one for more than three years; excludes financials and real estate
Source: KPMG Economics, Bloomberg (Q3 2020)
Demographic disadvantage and low growth led to rising debt

Government Debt as Percent of GDP

Source: KPMG Economics, Haver Analytics
Debt has increased significantly over the past 20 years

— Debt levels rose significantly after the global financial crisis and again when rescuing the economy from the impact of the pandemic.

— Economists have softened their stances on the deleterious impact of rising government debt as decades of rising debt levels in Japan have caused neither inflation, nor high borrowing rates, nor currency collapse.

— Some economists believe that so long as interest rates are below the rate of growth, in times of crisis, taking on debt to finance GDP-enhancing spending can be done without crowding out private consumption.

Have We Crossed the Rubicon?
Trillions of Dollars

Source: KPMG Economics, Bureau of Economic Analysis, U.S. Treasury, Haver Analytics, Olivier Blanchard, Adam Tooze, Stephanie Kelton
Tax receipts are pro-cyclical; a long growth cycle reduces debt

Government Receipts Exhibit Procyclicality

- Federal Receipts as a Percentage of GDP (FY, %)

Source: KPMG Economics, Office of Management and Budget, Haver Analytics

- Tax receipts as a percent of GDP tend to grow as an expansion ages.
- This is often due to several factors:
  - Tax breaks to help an economy out of recession expire
  - Capital gains taxes on market assets and homes tend to rise along with a growing economy and rising asset prices
  - Greater consumption expands the tax base
  - The Tax Cuts and Jobs Act resulted in lower revenues and higher deficits leading to an increase in debt levels ahead of the pandemic.
We have paid down high debt in the past….

Federal Debt Held by the Public
Percent of GDP

Source: KPMG Economics, Congressional Budget Office (September 2020), Haver Analytics
Low interest rates help make debt manageable, for now

Federal Debt and Net Interest Payments as a % of GDP

Source: KPMG Economics, Federal Reserve Board, BEA, Haver Analytics
Can healthcare and interest costs be reduced?

Federal Outlays by Expenditure Category
Billions of 2012 Dollars, Average Annual Outlay

<table>
<thead>
<tr>
<th>Year</th>
<th>Net Interest</th>
<th>Major Health Care Programs</th>
<th>Social Security</th>
<th>Other Spending</th>
<th>Discretionary Spending</th>
</tr>
</thead>
<tbody>
<tr>
<td>1962-1970</td>
<td>7%</td>
<td>8%</td>
<td>13%</td>
<td>14%</td>
<td>8%</td>
</tr>
<tr>
<td>1971-1980</td>
<td>14%</td>
<td>6%</td>
<td>9%</td>
<td>16%</td>
<td>20%</td>
</tr>
<tr>
<td>1981-1990</td>
<td>45%</td>
<td>27%</td>
<td>26%</td>
<td>22%</td>
<td>19%</td>
</tr>
<tr>
<td>1991-2000</td>
<td>32%</td>
<td>27%</td>
<td>20%</td>
<td>21%</td>
<td>19%</td>
</tr>
<tr>
<td>2001-2010</td>
<td>6%</td>
<td>6%</td>
<td>6%</td>
<td>22%</td>
<td>21%</td>
</tr>
<tr>
<td>2011-2020</td>
<td>6%</td>
<td>6%</td>
<td>6%</td>
<td>22%</td>
<td>21%</td>
</tr>
<tr>
<td>2021-2030</td>
<td>6%</td>
<td>6%</td>
<td>6%</td>
<td>22%</td>
<td>21%</td>
</tr>
<tr>
<td>2031-2040</td>
<td>6%</td>
<td>6%</td>
<td>6%</td>
<td>22%</td>
<td>21%</td>
</tr>
</tbody>
</table>

*Other category includes defense spending for 2031-2040 period
Source: KPMG Economics, Congressional Budget Office (September 2020), Haver Analytics
Total pandemic outlays are more than four times larger than GFC

The severe nature of the pandemic and the economic dislocation it caused required a large response to prevent a lasting economic depression.

While a pandemic response of $2.4 trillion was approved, total spending increased by closer to $2 trillion in fiscal year 2020.
Pandemic focused spending will fall significantly post-pandemic

Due to the nature of the crisis, health care spending increased significantly in fiscal year 2020 and is set to increase by more in fiscal 2021.

Income security in the form of unemployment insurance and food stamps increased significantly during the pandemic due to targeted payments and an expanded unemployment safety net. This has been an improvement over previous unemployment responses and is likely to be deployed in future severe recessions.

Commerce and housing credit was also targeted and will help to reduce economic scarring allowing a faster recovery.
Is this time different?

NBER Dating Committee Recession Indicators
Logged and Indexed, June-2009=0

Source: KPMG Economics, Macroeconomic Advisors by IHS Markit, BEA, BLS, Haver
Note: Data are logged and indexed. Data are seasonally adjusted. Total sales is Real Manufacturing & Trade Sales for All Industries

— One of the indicators used by the dating committee is real personal income excluding transfers, this excludes federal and state unemployment benefits, and any other benefits to households such social security or disability payments.

— The extraordinary increase in benefits during COVID-19 boosted household incomes more than normal (dotted blue line.) These benefits have provided significant support to consumer spending and savings rates amid the pandemic.

— Including transfer payments, income remains above pre-pandemic levels.
WWII level debt paid off by growing working age population

**Total Federal Debt Per Working Age Population**

$2019 per Person Age 15-64

- Demographic headwinds will make paying off the large increase in federal pandemic debt more difficult suggesting the main option for better debt/GDP ratios will be growing our way out of debt allowing for continuous rollover at relatively low interest rates.

- The prospect of higher taxes remains and this is another reason why debt does matter in the long run even if it may be prudent to spend now to reduce economic scarring and spur a swift recovery.

Note: Real Federal Debt Held by the Public (2019 Dollars)
Source: KPMG Economics, Congressional Budget Office (September 2020), Haver Analytics

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Conclusion
Conclusion

- The COVID-19 shock is both a supply shock and a demand shock.
  - The supply of services has been significantly reduced due to the pandemic. There is also a decline in demand due to reduced employment and FOGO (Fear of Going Out) among the public. Both of these will greatly dissipate once the pandemic is over.
  - The contour of the recovery is K-shaped meaning that it impacts businesses, households, and even geographies differently.
    - This impacts the way fiscal relief is structured, with relief targeted at the bottom legs of the K likely to have the best chance of limiting long-term economic scarring and enabling a swifter and broader recovery.
    - The residential housing market is benefiting from low interest rates, high savings, and shifting demand for what people want out of their homes.
    - The corporate real estate market is suffering from a negative supply shock as some business are not allowed to open and a demand shock as others choose to remain shuttered until vaccinations allow the resumption of in-office work.
  - After the pandemic, the trajectory for recovery is dependent on a supportive monetary environment and likely a step change in the level of technological know-how among firms and households.
  - The question of how debt levels will interplay with interest rates will likely be determined by the level and type of inflation: demand-pull inflation is more durable and desirable than cost-push inflation, though some level of both is to be expected, even preferred, provided that inflation does not get out of hand.
Thank you

For more information, please see KPMG LLP’s Covid-19 resource page: https://www.kpmg.us/insights/2020/covid-19-resilience-readiness.html