AGRON NICAJ
US Economist

Economic Research Office

anicaj@us.mufg.jp

MUFG Bank, Ltd.
A member of MUFG, a global financial group

Markets are overly optimistic about inflation

25 November 2022

Markets rallied after October's CPI report showed that inflation slowed more than expected, but price growth in the services sector is far from trending downward. Consumption in key spending categories, including medical care, cannot be substituted away, making inflation more ingrained in the economy. Worryingly for the Fed, prices in services are often sticky and less responsive to changes in demand, rendering interest rate increases a less effective tool to combat inflation in these sectors.

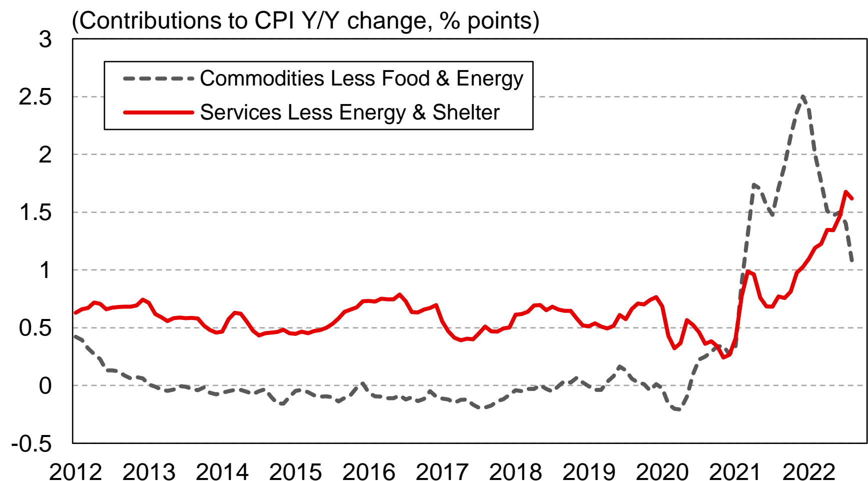
Services are leading price growth

Excluding food and energy prices, inflation for goods and services have trended in opposite directions starting in early 2022. Now in the fourth quarter of the year, core services (excluding energy) has overtaken core goods (excluding food and energy) as the main contributor to inflation. In October, services contributed 3.9 percentage points to the CPI 12-month growth rate, compared to 1.1 percentage points for goods.

The story thus far has focused on the shelter component of the CPI, which comprises around 30 percent of the overall index and an even larger share if you look at just services. Though rent and owners' equivalent rent in the CPI continue to rise, they are less worrisome because they follow a relatively predictable path and are directly impacted by rising interest rates. Private sector measurements of new rents and housing prices have already begun to drop, and it is only a matter of time before this gets reflected in the official inflation figures (signs point to around a 12-month lag).

When excluding shelter, price growth for core services is still rising aggressively, and this will be more difficult for the Fed to control. In October, services less energy and shelter contributed 1.6 percentage points to the CPI 12-month growth rate, up from 1 percentage point at the start of the year.

UNLIKE GOODS, SERVICES INFLATION IS TRENDING UPWARD



Source: BLS, MUFG Bank Economic Research

MUFG

Services prices are stickier and less responsive to interest rate hikes

Services exhibit "sticky" prices and inflation of these spending categories is especially problematic for the Fed for two reasons: they are less responsive to interest rate hikes and they may incorporate future inflation expectations.

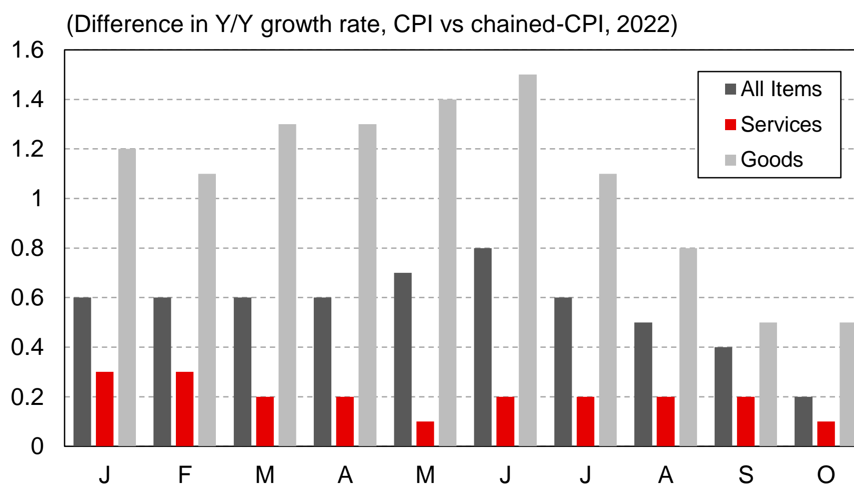
Sticky price items may be less responsive to interest rate hikes because they have low substitution and are relatively immune to demand shocks. Demand for many services is inelastic where prices do not significantly change consumption. Medical care will always be in demand even when prices rise, as will be the need for car insurance, haircuts, and cell phone service. And unlike for goods, consumption for many services cannot be substituted away.

For example, consumers may choose to buy cheaper cuts of beef when prices rise or choose less expensive clothing materials. Services, on the other hand, have much less substitution (e.g., an expensive MRI scan cannot be substituted with a cheaper x-ray scan). The traditional CPI does not account for substitution bias and as a result, may even overstate the level of inflation.

In 2002, the Bureau of Labor Statistics (BLS) developed the chained CPI which attempts to account for substitution changes along with small sample biases. Historically, differences between the CPI and chained CPI have been small, but the post-COVID inflationary period has highlighted how much substitution really occurs.

Differences between the CPI and chained CPI 12-month growth rate in 2022 show that substitution plays a much more significant role for goods compared to services, signalling relatively consistent demand. The Fed's ability to slow inflation rests on their ability to shrink demand. But since demand for many services does not significantly fluctuate, the Fed will be much less effective at controlling inflation for these spending categories whose price growth is driven by labor costs and supply-side pressures.

SUBSTITUTION PLAYS A KEY ROLE IN WHY SERVICES INFLATION IS STICKY



Source: BLS, MUFG Bank Economic Research

In addition to having inelastic demand and low rates of substitution, services change in price much less frequently. Spending categories that infrequently change in price are problematic because they may incorporate expectations about future inflation.

The Federal Reserve Bank of Atlanta publishes a sticky-price CPI, utilizing a flexible basket of goods and services that exhibit infrequent price adjustments. Perhaps not surprisingly, rent and owners' equivalent rent are major contributors to the Atlanta Fed's sticky-price CPI, but as discussed earlier, the Fed has already been relatively successful in quelling demand in the housing market. And while future inflation is

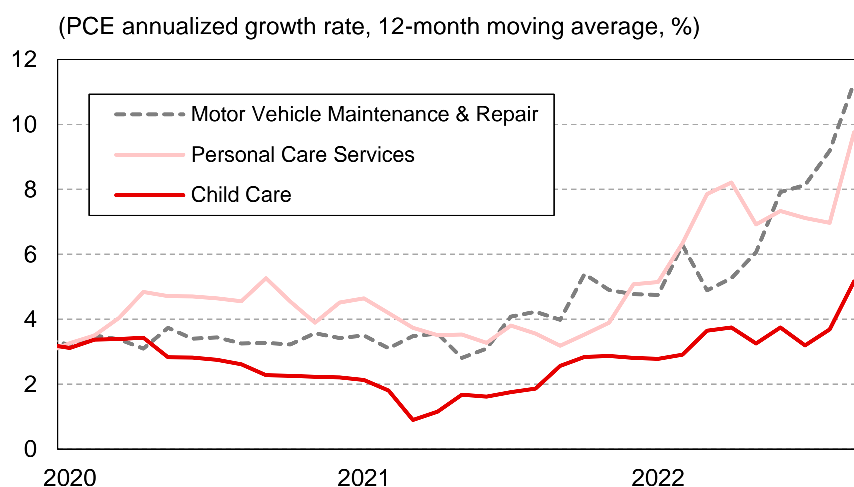
MUFG

expected for shelter, the composite sticky-price CPI makes it difficult to gauge inflation expectation for the other individual items.

Indeed, the rest of the basket is largely made up of services including motor vehicle maintenance and repair, motor vehicle insurance, medical care, communication, personal care services, and more. Price adjustments range from 6 months to 24 months for the sticky-price services components (compared to an average of about 2.5 months for flexible-price goods).

Changing prices may be costly for an employer so when pricing decisions are made, expected inflation of input costs, labor, etc. may be accounted for. This fear is especially potent in services where rising labor costs can impact inflation one year from now.

INFLATION IS ACCELERATING FOR KEY SERVICE CATEGORIES



Source: BEA, MUFG Bank Economic Research

Wages will drive inflation in key services sectors

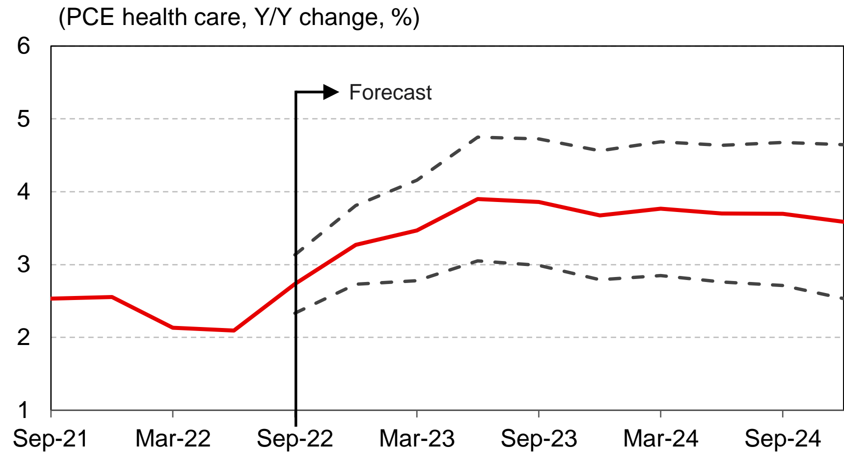
Price "stickiness" is especially true for health care, where prices change infrequently and there is little to no substitution. So far in 2022, inflation for health care has been around 2 percent (12-month growth rate), as measure by the PCE Price Index, but wages are likely to have a lagged effect.

The CPI and PCE differ in their measure of health care costs, with the PCE capturing the cost incurred by both the consumer and by employers or government. This gives medical care nearly double the weight in the PCE (the Fed's preferred measure of inflation).

Historically, wages of medical care workers have been a leading indicator of health care inflation, with the 12-month change in the Employment Cost Index (ECI) for wages and salaries of hospital workers leading the 12-month change in the PCE Price Index for health care by about one year. Research by the Federal Reserve Bank of Dallas shows a strong correlation between today's wage growth and future price growth in health care.

Using an autoregressive model to forecast health care inflation, the Dallas Fed projects the 12-month growth rate in PCE health care to rise from 2.1 percent in Q2 2022 to 3.9 percent in Q2 2023, remaining above 3.5 percent through 2024. Given health care's significant weight, overall inflation will likely remain above the Fed's two percent target for the next couple of years.

WAGES WILL HAVE A LAGGED EFFECT ON HEALTH CARE INFLATION



Note: Dotted lines indicate a 90 percent prediction interval
Source: Dallas Federal Reserve, MUFG Bank Economic Research

What can the Fed do?

The impact of rising interest rates is not linear in many sectors of the economy, but this is especially true for services. Price "stickiness" where spending categories have low levels of substitution and the lagged effects of rising wages make controlling service inflation more difficult for the Fed. Going forward, cooling the labor market will be key for the Fed.

For services like health care, demand will likely not change, making labor shortages the driving force behind inflation. For labor shortages to subside in these key sectors, labor force participation rates must rise, which is unlikely unless the unemployment rate rises as well. It would be premature for the Fed to halt interest rate increases given the strength of the labor market.

Analyst Certification

The views expressed in this report solely reflect the personal views of Agron Nicaj, the primary analyst responsible for this report, about the subject securities or issuers referred to herein, and such views may not necessarily reflect the thoughts and opinions of MUFG Bank, Ltd. and its affiliates or management team. No part of such analyst's compensation was, is, or will be directly or indirectly related to the specific recommendations or views expressed herein.

Disclaimers

The information and views contained herein are not intended for distribution to, or use by, any person or entity in any jurisdiction or country where such distribution or use would be contrary to law or regulation or which would subject MUFG Bank, Ltd. (collectively with its various offices and affiliates, "MUFG Bank") to any registration requirement within such jurisdiction or country. The information and views contained herein are provided for general informational purposes only, are subject to change, and are not intended to be, nor should be used, or considered, as an offer, or the solicitation of an offer, to sell or to buy or to subscribe to or for securities or any other financial instruments, and do not constitute specific investment, legal, tax or other advice or recommendations. The information contained herein reflects the thoughts and opinions of the noted authors only, and such information does not necessarily reflect the thoughts and opinions of MUFG or its management team. Neither this nor any other communication prepared by MUFG Bank should be construed as investment advice, a recommendation to enter into a particular transaction or pursue a particular strategy, or any statement as to the likelihood that a particular transaction or strategy will be effective and it does not take into account the specific investment objectives, financial situation, or the particular needs of any specific person who may receive this information. Any information relating to performance contained herein is illustrative and no assurance is given that any indicative returns, performance or results, whether historical or hypothetical, will be achieved. Before entering into any particular transaction, you should consult an independent financial, legal, accounting, tax, or other advisor as may be appropriate under the circumstances. In any event, any decision to enter into a transaction will be yours alone, not based on information prepared or provided by MUFG Bank. MUFG Bank hereby disclaims any responsibility to you concerning the characterization or identification of terms, conditions, and legal or accounting, or other issues or risks that may arise in connection with any particular transaction or business strategy. While MUFG Bank believes that any relevant factual statements contained herein, and any assumptions on which such statements are based, are in each case accurate, neither the authors nor MUFG have independently verified its accuracy, and such information may be incomplete or condensed. The information is provided "AS IS". The authors and MUFG do not warrant the accuracy of the materials provided herein, either expressly or implied, for any particular purpose and expressly disclaims any warranties of merchantability or fitness for a particular purpose. The authors and MUFG cannot and do not guarantee the accuracy, validity, timeliness or completeness of any information or data made available to you for any particular purpose. MUFG Bank may have issued, and may in the future issue, other reports that are inconsistent with or that reach conclusions different from the information and views contained herein. Such other reports, if any, reflect the different assumptions, views and/or analytical methods of the analysts who prepared them, and MUFG Bank is under no obligation to ensure that such other reports are brought to your attention.

© 2022, MUFG Bank, Ltd. All Rights Reserved.

About Mitsubishi UFJ Financial Group, Inc.'s U.S. Operations including MUFG Americas Holdings Corporation

The U.S. operations of Mitsubishi UFJ Financial Group, Inc. (MUFG), one of the world's leading financial groups, has total assets of $332.4 billion at March 31, 2022. As part of that total, MUFG Americas Holdings Corporation (MUAH), a financial holding company, bank holding company, and intermediate holding company, has total assets of $159.2 billion at March 31, 2022. MUAH's main subsidiaries are MUFG Union Bank, N.A. and MUFG Securities Americas Inc. MUFG Union Bank, N.A. provides a wide range of financial services to consumers, small businesses, middle-market companies, and major corporations. As of March 31, 2022, MUFG Union Bank, N.A. operated 297 branches, consisting primarily of retail banking branches in the West Coast states. MUFG Securities Americas Inc. is a registered securities broker-dealer which engages in capital markets origination transactions, domestic and foreign debt and equities securities transactions, private placements, collateralized financings, and securities borrowing and lending transactions. MUAH is owned by MUFG Bank, Ltd. and Mitsubishi UFJ Financial Group, Inc. MUFG Bank, Ltd., a wholly owned subsidiary of Mitsubishi UFJ Financial Group, Inc., has offices in Argentina, Brazil, Chile, Colombia, Peru, Mexico, and Canada. Visit www.unionbank.com or www.mufgamericas.com for more information.

About MUFG

Mitsubishi UFJ Financial Group, Inc. (MUFG) is one of the world's leading financial groups. Headquartered in Tokyo and with over 360 years of history, MUFG has a global network with approximately 2,500 locations in more than 50 countries. The Group has about 170,000 employees and offers services including commercial banking, trust banking, securities, credit cards, consumer finance, asset management, and leasing. The Group aims to "be the world's most trusted financial group" through close collaboration among our operating companies and flexibly respond to all of the financial needs of our customers, serving society, and fostering shared and sustainable growth for a better world. MUFG's shares trade on the Tokyo, Nagoya, and New York stock exchanges. For more information, visit https://www.mufg.jp/english.