WASATCH GLOBAL INVESTORS

Quarterly Commentary

Investor
WHOSX

Wasatch-Hoisington U.S. Treasury Fund

DECEMBER 31, 2022

An Updated Theory of Interest-Rate Cycles Positing The Velocity of Money as Variable Rather Than Stable Better Captures the Entire Cycle

The views expressed in this commentary are those of Hoisington Investment Management Company (HIMCo), the sub-advisor to the Fund, and may differ from the views of Wasatch Global Investors.

DETAILS OF THE QUARTER

With the Treasury bond market posting the worst return since the 18th century, the Wasatch-Hoisington U.S. Treasury Fund, which is invested in long-dated U.S. Treasury securities (bonds with maturities longer than 20 years), declined -1.98% in the fourth quarter and was down -34.14% for the 2022 calendar year. The Fund's benchmark, the Bloomberg US Aggregate Bond Index gained 1.87% in the fourth quarter and fell -13.01% for the 12-month period.

FUND MANAGERS

Van R. Hoisington
Lead Portfolio Manager
26 YEARS ON FUND

V.R. Hoisington Jr.
Portfolio Manager
6 YEARS ON FUND

David Hoisington
Portfolio Manager
6 YEARS ON FUND

Data show past performance and is not indicative of future performance. Current performance may be lower or higher than the data quoted. For the most recent month-end performance data, visit wasatchglobal.com. Investment returns and principal value will fluctuate and shares, when redeemed, may be worth more or less than their original cost. The Advisor may absorb certain expenses, without which total returns would have been lower. Wasatch Funds will deduct a 2% redemption fee on Fund shares held 60 days or less. Performance data does not reflect this redemption fee or taxes. ***Total Expense Ratio: 0.66%. The Advisor has contractually agreed to limit certain expenses to 0.75% through at least 1/31/2023.***

Thirty-year U.S. Treasury bond yields stood at 3.96% at the end of 2022, versus 3.76% on September 30, 2022, and 1.90% at the close of 2021.

The main forces behind the jump in yields of 30-year U.S. Treasury bonds were the fastest yearly increase on record in the federal-funds rate, the key policy interest rate of the Federal Reserve (Fed), and 30-year government bond yield increases of 2.32, 2.83 and 2.41 percentage points, respectively, in Germany, the United Kingdom and France. The yield increases in each of these countries was greater than the rise in the 30-year U.S. Treasury bond yield of 2.06 percentage points. The returns on European bonds for U.S. investors were even worse because the dollar rallied sharply, causing the total loss to be even greater.

The Fed increased its key overnight policy rate a number of times in 2022 in response to the fastest advance in U.S. inflation in about four decades. The inflation rate reflected: supply-side disruptions emanating from the Covid-19 pandemic; Russia's invasion of Ukraine; and overly stimulative monetary and fiscal policies in 2020–21. The inflation rate moderated significantly late in 2022 but ended the year well above the Fed's target.

Overview

A THEORY OF INTEREST-RATE CYCLES

Milton Friedman (1912–2006), in our view, was a truly outstanding economist. Winner of the Nobel prize in economics in 1976, he made important contributions to price theory as well as to macroeconomics. He gave us the permanent income hypothesis, a breakthrough in our understanding of the consumption function. His books *Free to Choose* (written with his wife Rose and originally a PBS TV series narrated by Friedman), and *Capitalism and Freedom* are outstanding introductions to economics. His *Essays in Positive Economics* is a must-read book for those seeking a more comprehensive understanding of the field.

"V"

Although Friedman's monetary theory of inflation has justifiably drawn criticism, major components of his theory of interest-rate cycles remain intact, and the so-called flawed aspect can be overcome by converting money velocity (V) to an endogenous variable rather than assuming that V is stable. Once restated, the model applies very directly to the current interest-rate outlook and suggests that even though the Fed is planning significant further increases in the federal-funds rate in 2023, the direction in long-term Treasury rates will be downward. In this commentary, we modify Friedman's theory to incorporate an endogenous V and then apply the new model to the situation at hand as well as to the tumultuous events of the past three years. The determinants of velocity we will identify serve to reinforce the view that the Treasury bond market's prospects are favorable even though conditions are very likely to remain volatile.

A RESTRUCTURED MODEL

Friedman's theory was first presented in his December 1967 Presidential address to the American Economic Association and published in *The American Economic Review* of March 1968. Economics, although not a hard science like physics and chemistry, is a social science, nevertheless, that has the capability to test hypotheses causing theories to change with the passage of time. Quite reasonably, 55 years is a sufficiently long time period during which monetary theories would have evolved just as have many other parts of economics.

Friedman's theory of interest rates starts with the equation of exchange, (i.e., money [M] x velocity [V] = nominal gross domestic product

[GDP]). From this he derives three components, termed the liquidity, income and Fisher (price) effects. The third effect is named for economist Irving Fisher (1867–1947) who conceptualized both the equation of exchange (1909) and the Fisher equation (1932), which is (the long Treasury bond yield = the real interest rate + inflationary expectations).

The "liquidity effect" is consistent with the leading textbooks on economics, but even this effect, taught to generations of Econ 101 students, as well as the "income and Fisher effects" must, however, take into consideration whether swings in money growth are augmented, neutralized or unaltered by swings in the velocity of money.

Here is Friedman's passage on the "liquidity effect" with the V adjustment (in bold letters): "The initial impact of increasing the quantity of money at a faster rate than it has been increasing is to make interest rates lower for a time than they would otherwise have been, **'provided the velocity of money does not surge rapidly.'** But this is only the beginning of the process, not the end."

Friedman assumes that the more rapid rate of monetary growth will stimulate income and spending, which will serve to reverse the initial downward pressure on interest rates. However, if the velocity of money were to fall sharply, this process would not materialize. Here is how the theory could be modified (in bold letters): "Rising income will raise the liquidity preference schedule and the demand for loans; it may also raise prices, **'unless the velocity of money falls sharply.'**" With velocity stable, Friedman's income and liquidity effects serve to reduce the downward pressure on interest rates. For us, the question of whether velocity is shifting is just as germane as whether money growth is accelerating or decelerating.

This is Friedman's quote on the "Fisher effect," along with our allowance for velocity (in bold letters): "Let the higher rate of monetary growth, **'unchecked by velocity,'** produce rising prices, and let the public come to expect that prices will continue to rise. Borrowers will then be willing to pay, and lenders will then demand higher interest rates—as Irving Fisher pointed out decades ago."

EMPIRICAL SUPPORT

The extreme cyclical and secular volatility in ODL (other deposit liabilities of commercial banks) and M2 velocity and the strong correlation with the long-term Treasury bond yield since 1952 strongly supports the argument that velocity must be a major component of a monetary-based theory of the interest-rate cycle. Both measures of velocity should be examined since ODL V cannot be computed back to 1910, but M2 V can.

ODL Velocity. In the past 70 years, each dollar increase in ODL generated an average $2.50 increase of GDP, but V spent little time at this level. The range of V was from about $1.40 to almost $3.50. Swings in V have coincided positively with swings in the yield on long-term Treasury bonds, with the rate rising with increasing V and falling when V fell. The adjusted R-squared is an impressive 0.84 for 283 observations.

M2 Velocity. The relationship between M2 velocity and long-term Treasury bond yields for the even longer sample since 1910 also indicates that velocity should be in the interest-rate model. M2 V spent very little time over the past 122 years at the average of 1.69, with the range from a high of 2.15 to a low of 1.13. The adjusted R-squared for this sample, based on annual data, is strong at 0.83 and the correlation between M2 V and long-term Treasury bond yields is also positive.

The events of 2020–22. ODL surged at a record 19.5% average pace in 2020–21. The velocity of money fell, but not enough to offset the inflationary repercussions of the liquidity increase and interest rates increased in an early-stage expansion, a highly unusual development. The

inflationary dynamic supported a further rise in yields last year. ODL declined, but insufficiently, as velocity rose in 2022. The normal cyclical pattern is for money and bond yields to reach their cyclical trough several years into an expansion.

The recent pattern is consistent with Fisher's findings 90 years ago, which showed that velocity declines in extremely overindebted economies. For Fisher, monetary policy doesn't work when potential borrowers do not have the balance sheet capacity to take on more debt. When borrowers are loaded with excess houses, office buildings, retail space and plant capacity, no incentive exists for them to go even deeper in debt. Moreover, the prospect of rising foreclosures and delinquencies causes banks and other providers of credit with the great rationale to not put additional risk onto their balance sheets by providing more funds to already over-committed borrowers.

MONEY AND VELOCITY

While ODL velocity is like that of M2, we consider the former already to be a superior measure of money. The two main differences between ODL and M2 are currency and money market mutual fund shares. Currency is accepted at an increasingly fewer number of business establishments and simply cannot be used for very large-sized transactions. Money market mutual fund shares never became an important medium of exchange. Both are becoming far less used mediums of exchange. ODL has the additional advantage in that it is the main source of funding for bank loans and investments, making ODL both a monetary and a credit aggregate. Friedman would not have been surprised that the best definition of what constitutes money would need to change over the years. He made this case in *Monetary Statistics of the United States: Estimates, Sources, Methods* (Columbia University Press for the National Bureau of Economic Research [NBER], 1970) which he cowrote with Anna J. Schwartz (1915–2012). During Friedman's career, he first argued that M1 was the superior money measure then M2. Late in life, he experimented with other definitions on the assumption that the velocity problem could be solved if money could be properly quantified.

DETERMINANTS OF VELOCITY

Velocity is affected by cyclical, fundamental and idiosyncratic forces. While all are constantly at work, the evidence shows that two fundamental forces—the marginal revenue product of debt and the commercial bank loan-to-deposit ratio—are dominant over time.

Idiosyncratic features quite frequently can be very important for a quarter or two, but these influences typically reverse themselves. There have been quarters when the two most volatile components of the economy—inventory investment and net exports—have swung widely due to some aberrant reason. Inventory investment in the farm sector has produced large but short-lived swings due to weather patterns. But major inventory swings in the nonfarm sector have also occurred that were totally unrelated to the business cycle. In the third quarter of 2022, all the growth in real GDP was accounted for by a reduction in net exports. This contributed sharply to the rise in ODL velocity during the third quarter.

ODL growth is estimated to have declined at a record 7.9% annual rate in the fourth quarter, following decreases of 2.7% and 1% annual rates in the prior two quarters. From the last quarter of 2021 to the same quarter in 2022, nominal ODL is estimated to have declined at a record 2.8% annual rate, the largest yearly drop in history. In real terms, ODL also contracted at a record pace. Based upon the Fed's ongoing monthly $96 billion balance sheet reduction and monetary policy lags, the rate of ODL decline will accelerate during at least the first half of 2023. If the Fed sticks with its

plan to raise the federal-funds rate another 0.75 percentage point, the rate of decrease in ODL will be sufficient to neutralize the money mountain of 2020–21 by the second quarter of 2023, when taking into consideration velocity.

Final Thoughts

The rise in velocity in 2022 is a stark example that it is determined by the actions of the private sector, not the Fed. This is the essential aspect of an endogenous variable. The uncontrollable velocity is an important reason why lags in monetary policy are both long and variable. If velocity had been stable in 2022, the Fed would very likely have come much closer to restoring its goal of a 2% rate of increase in core inflation. But the inability of the Fed to achieve its target quickly does not mean that it will be denied success. The planned actions are moving the Fed closer to realizing its 2% inflation objective.

As the sharp deceleration in ODL growth intensifies in 2023 and its effects spread through the economy and combine with the drag of poor business conditions from the rest of the world and the corrosive effects of rapid inflation on modest- and moderate-income households, the marginal revenue product of debt and the loan-to-deposit ratio will resume the declining trend that prevailed prior to the pandemic and velocity will turn down. Additionally, U.S. debt will accelerate both due to recent increases in federal spending as well as the loss of revenues as business conditions deteriorate.

Even if velocity is, contrary to our analysis, relatively stable, this will not be important for the economy or the Treasury bond market, since ODL V was still very depressed in the third quarter of 2022 at 1.561, just 0.09 above the all-time low reached in the second quarter of 2020. The 2022 rise in V is not significantly different from the interim gains from 2003 to 2008 or from 2016 to 2020, neither of which had lasting economic consequences. Such weak V even after the gain in 2022 is still consistent with the low long-term Treasury bond yields to which it is positively correlated.

We believe the better growth in real GDP experienced in the third quarter and early part of the fourth quarter will reverse. Poor consumer spending over the critical holiday shopping period, slumping exports, sharp deterioration in residential construction, and contracting diffusion indexes in both the manufacturing and service sectors will result in business conditions in the first quarter of 2023 that should be dramatically weaker. The risks of recession will become much clearer as 2023 progresses. Headline inflation, as tracked by the Consumer Price Index, is likely to recede further from its current pace. These developments are aligned with interest-rate cycle theory as well as the case for lower Treasury bond yields. Lower long-term Treasury bond yields would bode well for the Fund's return prospects.

Thank you for the opportunity to manage your assets.

Sincerely,

Van Hoisington, V.R. Hoisington Jr. and
David Hoisington

WASATCH
GLOBAL INVESTORS

AVERAGE ANNUAL TOTAL RETURNS

FOR PERIODS ENDED DECEMBER 31, 2022

	Quarter*	1 Year	3 Years	5 Years	10 Years
U.S. Treasury Fund	-1.98%	-34.14%	-9.07%	-3.27%	0.08%
Bloomberg US Aggregate Bond Index**	1.87%	-13.01%	-2.71%	0.02%	1.06%

**Returns less than one year are not annualized.*

Data show past performance, which is not indicative of future performance. Current performance may be lower or higher than the data quoted. To obtain the most recent month-end performance data available, please visit wasatchglobal.com. The Advisor may absorb certain Fund expenses, without which total returns would have been lower. Investment returns and principal value will fluctuate and shares, when redeemed, may be worth more or less than their original cost. **Total Expense Ratio: 0.66%**

Total Annual Fund Operating Expenses include operating expenses, including the management fee, before any expense reimbursements by the Advisor. **The Advisor has contractually agreed to limit certain expenses to 0.75% through at least 1/31/2023.** See the prospectus for additional information regarding Fund expenses.

Wasatch Funds will deduct a 2.00% redemption fee on Fund shares held 60 days or less. Performance data does not reflect the deduction of fees or taxes, which if reflected, would reduce the performance quoted. For more complete information including charges, risks and expenses, read the prospectus carefully.

Investing in bonds, you are subject, but not limited to, the same interest rate, inflation and credit risk associated with the underlying bonds owned by the Fund. Return of principal is not guaranteed. Interest rate risk is the risk that a debt security's value will decline due to changes in market interest rates. The interest rate is the amount charged, expressed as a percentage of principal, by a lender to a borrower for the use of assets. Even though some interest-bearing securities offer a stable stream of income, their prices will fluctuate with changes in interest rates. Inflation risk is the possibility that inflation will reduce the purchasing power of a currency, and subsequently reduce the value of a security or asset, and may result in rising interest rates. Inflation is the overall upward price movement of goods and services in an economy that causes the value of a dollar to decline. Credit risk is the risk that the issuer of a debt security will fail to repay principal and interest on the security when due. Credit risk is affected by the issuers credit status, and is generally higher for non-investment grade securities.

An investor should consider investment objectives, risks, charges and expenses carefully before investing. To obtain a prospectus, containing this and other information, visit wasatchglobal.com or call 800.551.1700. Please read the prospectus carefully before investing.

***The Bloomberg US Aggregate Bond Index is a broad-based flagship benchmark that measures the investment grade, U.S. dollar denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related and corporate securities, mortgage-backed securities (MBS) (agency fixed-rate and hybrid adjustable-rate mortgage [ARM] pass-throughs), asset-backed securities (ABS) and commercial mortgage-backed securities (CMBS) (agency and non-agency). Indexes are unmanaged. Investors cannot invest directly in this or any index.*

The Wasatch-Hoisington U.S. Treasury Fund's investment objective is to provide a rate of return that exceeds the rate of inflation over a business cycle by investing in U.S. Treasury securities with an emphasis on both income and capital appreciation.

Sources: Hoisington Investment Management Co.; Federal Reserve Board; Bureau of Economic Analysis; Haver Analytics; Bureau of Labor Statistics; National Bureau of Economic Research; and St. Louis Federal Reserve.

The Consumer Price Index (CPI), also called the cost-of-living index, is an inflationary indicator that measures the change in the cost of a fixed basket of products and services, including housing, electricity, food, and transportation. The CPI is published monthly. The headline CPI includes volatile food and energy prices, while the core CPI excludes food and energy.

A credit aggregate measures the stock of bank loans outstanding at a point in time.

A diffusion index is a statistical measure often used to detect economic turning points. It aggregates multiple indicators by examining whether they are trending upward or downward but ignores the magnitude of the movement.

The federal-funds rate is the interest rate at which private depository institutions (mostly banks) lend balances (federal funds) at the Federal Reserve to other depository institutions, usually overnight. It is the interest rate banks charge each other for loans.

The Fisher equation in economics estimates the relationship between nominal and real interest rates under inflation. It is named after Irving Fisher, who was renowned for his work on the theory of interest. In economics, this equation is used to predict nominal and real interest rate behavior.

Gross domestic product (GDP) is a basic measure of a country's economic performance and is the market value of all final goods and services made within the borders of a country in a year.

M1 includes the most liquid portions of the money supply—currency, demand deposits and other liquid deposits (including savings deposits)—that either are or can be quickly converted to cash.

M2 money supply consists of currency and checking accounts, consumer-type time and savings accounts and equivalent near monies, while M3 money supply consists of M2 plus business-type time deposits and less liquid near monies. Both M2 and M3 exclude monies and near monies owned by the Treasury, depository institutions and foreign banks and official institutions and IRA and Keogh balances owned by consumers.

The marginal revenue product of debt (MRPD) is the ratio of GDP to debt.

A monetary aggregate measures the stock of money outstanding within an economy at a point in time.

The National Bureau of Economic Research (NBER) is a research organization dedicated to promoting a greater understanding of how the economy works.

Other deposit liabilities (ODL) equals M2 minus currency in circulation and money market mutual fund shares.

R-squared (R^2) is a statistical measure that represents the proportion of the variance for a dependent variable that's explained by an independent variable or variables in a regression model.

The velocity of money (V) is defined as the rate at which money circulates, changes hands or turns over in an economy.

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U.S. TREASURY FUND — TOP 10 HOLDINGS

AS OF SEPTEMBER 30, 2022

Security Name	Percent of Net Assets
U.S. Treasury Bond, 1.250%, 5/15/50	24.2%
U.S. Treasury Bond, 1.375%, 8/15/50	22.6%
U.S. Treasury Bond, 1.875%, 11/15/51	16.3%
U.S. Treasury Bond, 2.250%, 8/15/46	13.8%
U.S. Treasury Bond, 3.000%, 8/15/48	13.4%
U.S. Treasury Bond, 2.500%, 2/15/45	5.9%
U.S. Treasury Bond, 2.250%, 8/15/49	2.4%
Total	98.6%

Portfolio holdings are subject to change at any time. References to specific securities should not be construed as recommendations by the Fund or its Advisor. Current and future holdings are subject to risk.