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NEWS RELEASE

EMBARGOED UNTIL RELEASE AT 9:00 A.M. ET, MONDAY, AUGUST 29, 2022.

CFS DIVISIA MONETARY DATA FOR THE UNITED STATES:¹ JULY 2022

On February 23, 2021, the Federal Reserve Board enacted major changes to their H.6 Statistical Release which have impacted how the CFS Divisia Monetary Aggregates are calculated as well as our upcoming release schedule. See page 2 for more details.

The CFS Featured Broad Divisia Monetary Aggregates in July 2022

- CFS Divisia M4, including Treasuries (DM4) – the broadest and most important measure of money calculated by the Center for Financial Stability – grew by 2.3% in July 2022, on a year-over-year basis. In contrast, CFS Divisia M4 increased by 4.5% in July 2021 over the preceding year.
- The narrower version of the CFS Divisia M4, excluding Treasuries, (DM4-), increased by 4.6% in July 2022 over the year, relative to a year-over-year gain of 9.1% in July 2021.
- CFS Divisia M3 (DM3) advanced by 4.9% year-over-year, relative to an increase of 8.9% in July 2021.

The Narrow Divisia Monetary Aggregates in July 2022²

- CFS Divisia M2 (DM2) advanced by 5.2% year-over-year, relative to an increase of 13.8% in July 2021 over the preceding year.
- CFS Divisia M1 (DM1) advanced by 5.3% year-over-year, relative to an increase of 17.1% in July 2021 over the preceding year. Note that the composition of M1 changed in May 2020. See more below.

Most Significant Factors Influencing CFS Divisia M4 in July 2022

Positive Contributors to CFS Divisia M4 Growth

- The largest positive contributor to CFS Divisia M4 growth was demand deposits, contributing an increase of 2.0% in the last 12 months ending July 2022. Their growth-rate weight was 16.4%. Unweighted, they increased 13.2% in the last 12 months. This component is included in all of the aggregates.
- The second largest positive contributor to growth was other liquid deposits, contributing an increase of 0.9% in the last 12 months ending July 2022. Their growth-rate weight was 43.9%. Unweighted, they increased 2.6% in the last 12 months. This component is included in all of the aggregates.
- The third largest positive contributor to growth was repurchase agreements, contributing an increase of 0.4% in the last 12 months ending July 2022. Their growth-rate weight was 4.9%. Unweighted, they increased 10.3% in the last 12 months. This component is included in DM3, DM4-, and DM4, but not in the narrower aggregates (DM1 and DM2).

¹ The CFS Divisia indexes in this release were constructed under the direction of Professor William A. Barnett. Dr. Barnett is the originator of the Divisia monetary aggregates, which he has been developing and refining for decades, in accordance with modern advances in economic aggregation and index-number theory.

² The narrow aggregates are similar to the Monetary Services Index supplied by the St. Louis Federal Reserve until 2013. See page 13 for the relationship between the CFS narrow aggregates and MSI. No other source currently exists for broad Divisia monetary aggregates, DM3, DM4-, and DM4 which are available only from the CFS.



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Negative Contributors to CFS Divisia M4 Growth

- The largest negative contributor to CFS Divisia M4 growth was T-bills, contributing a decrease of 1.6% in the last 12 months ending July 2022. Their growth-rate weight was 9.5%. Unweighted, they decreased 15.0% in the last 12 months. This component is included only in the broadest aggregate (DM4).
- The second largest negative contributor to CFS Divisia M4 growth was commercial paper, contributing a decrease of 0.2% in the last 12 months ending July 2022. Its growth-rate weight was 2.2%. Unweighted, it increased 0.2% in the last 12 months. This component is included in DM4 and DM4-, but not in the narrower aggregates.
- The weighted contribution of small-denomination time deposits was negligible. Their growth-rate weight was 0.3%. Unweighted, they decreased 19.6% in the last 12 months. This component is included in all of the aggregates, except the narrowest (DM1).

Changes in the January 2021 Release

On February 23, 2021, the Federal Reserve Board enacted sweeping changes to the H.6 Statistical Release which are key in constructing all aggregates from the narrow M1 to the broadest M4 grouping. Most significantly for our calculations, the Federal Reserve combined Savings Deposits and interest bearing Other Checkable Deposits into a single “Other Liquid Deposits” category. They further discontinued the distinction in all levels of deposits between commercial bank and thrift accounts. This change affects the Small Denomination Time Deposits (retail level Certificates of Deposit). It was also announced that the levels of Institutional Money Market Funds will be discontinued this year.

The H.6 Survey is no longer publishing weekly seasonally adjusted data. While it will continue to provide weekly non-seasonally adjusted data, the seasonal adjustment of any levels is not completed until the monthly release.

In response to the changes, the CFS adjusted its construction of the Divisia Monetary Aggregates to provide for continued, accurate measure of the supply of monetary service in the US economy. The following series are now ended at April 2020, in line with the H.6 Survey: Savings Deposits at Commercials, Savings Deposits at Thrifts, Other Checkable Deposits at Commercial Banks, Other Checkable Deposits at Thrifts, Small Denomination Time Deposits at Commercial Banks, Small Denomination Time Deposits at Thrifts. The first four of these series are now combined into “Other Checkable Deposits” and paired with a user cost based on the interest rate on savings deposits provided by the FDIC. Small Denomination Time Deposits are now combined into one series and paired with the commercial bank interest rate on 3-month Certificates of Deposit. In line with the Federal Reserve’s data changes, the Divisia Monetary Aggregate data is adjusted back to May 2020 to account for these large survey changes.

To account for the change in the weekly to monthly release of the seasonally adjusted components of the H.6 Survey a new calendar of release dates is now provided in order to accurately gather all necessary data, construct the Divisia aggregate, and release it in a timely and consistent manner. These changes required extensive revision to the construction and scheduling of the Divisia monetary aggregates, and barring any future shocks to the Federal Reserve’s methods of providing data, we look forward to releasing the Divisia aggregates in their new form.



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Download Data

To download the data in Microsoft Excel format, or to see our revised release schedule, go to http://www.centerforfinancialstability.org/amfm_data.php.

To Sign Up For Future Releases And Email Updates From The CFS

Go to <http://centerforfinancialstability.org/updates.php>.

The next CFS Divisia M4 data are scheduled to be released at 9:00 AM ET on Monday, October 3, 2022.



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Figure 1 - Recent Growth in Broad CFS Divisia Monetary Data³

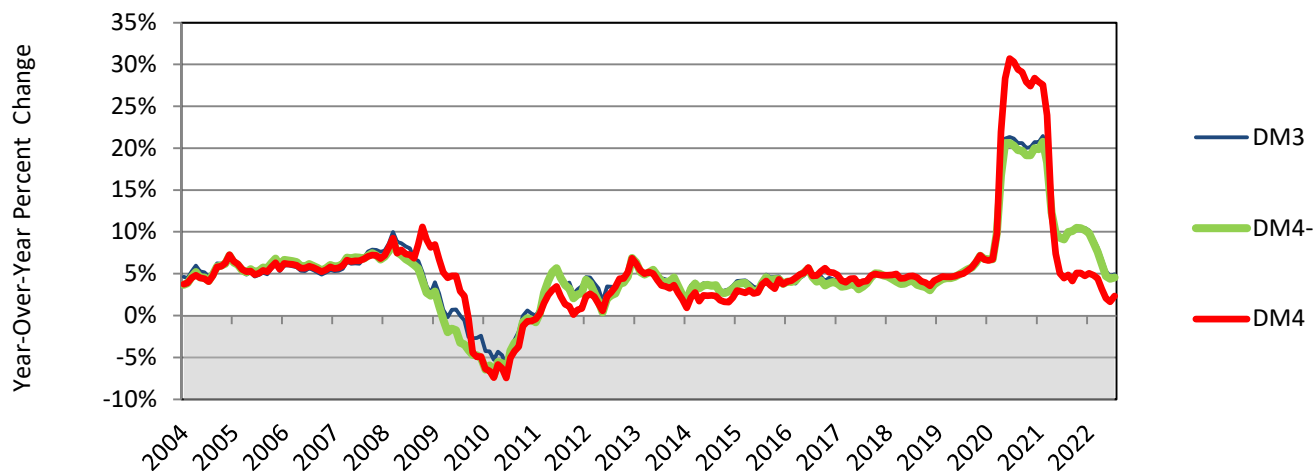
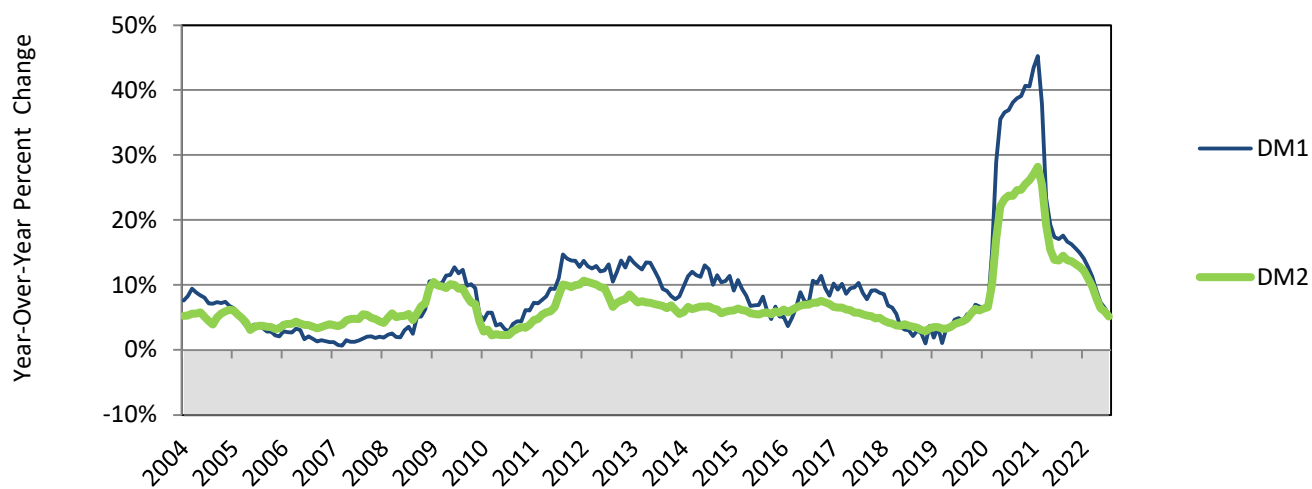


Figure 2 - Recent Growth in Narrow CFS Divisia Monetary Data⁴



³ The broadest CFS Divisia monetary aggregates are **best** for most purposes. See p. 13 for background on the supporting research. We nevertheless provide the narrower CFS Divisia aggregates in Figure 2 for comparison.

⁴ The narrow aggregates shown here, DM1 and DM2, are similar to the MSI (monetary services index) Divisia aggregates, supplied by the St. Louis Federal Reserve Bank. For more information about the St. Louis Fed's MSI Divisia aggregates and their relationship to the CFS Divisia monetary aggregates, see p. 13.



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Figure 3 - CFS Divisia Monetary Aggregates Table, Year-Over-Year Percent Change

Date	Divisia M4 Including Treasuries (DM4)	Divisia M4 Excluding Treasuries (DM4-)	Divisia M3	Divisia M2 (Sweeps Adjusted) ⁵	Divisia M1 (Sweeps Adjusted) ⁵
Oct-19	6.4%	6.3%	6.3%	5.6%	5.6%
Nov-19	7.2%	7.2%	7.2%	6.3%	7.0%
Dec-19	6.7%	6.8%	6.8%	6.1%	6.6%
Jan-20	6.6%	6.7%	6.7%	6.4%	6.4%
Feb-20	6.7%	6.7%	6.7%	6.5%	6.5%
Mar-20	9.7%	9.9%	10.0%	10.1%	15.1%
Apr-20	22.0%	16.7%	17.0%	17.1%	28.9%
May-20	28.3%	20.6%	21.1%	22.1%	35.5%
Jun-20	30.7%	20.6%	21.3%	23.2%	36.5%
Jul-20	30.3%	20.3%	21.1%	23.7%	36.9%
Aug-20	29.4%	19.8%	20.6%	23.7%	38.1%
Sep-20	29.1%	19.7%	20.6%	24.6%	38.7%
Oct-20	27.9%	19.2%	20.0%	24.6%	39.1%
Nov-20	27.4%	19.2%	20.1%	25.5%	40.7%
Dec-20	28.4%	20.0%	20.7%	26.1%	40.5%
Jan-21	27.9%	19.9%	20.7%	27.1%	43.5%
Feb-21	27.6%	20.8%	21.5%	28.2%	45.3%
Mar-21	23.9%	18.3%	18.7%	25.4%	37.8%
Apr-21	12.3%	12.3%	12.5%	19.2%	23.3%
May-21	7.4%	9.8%	9.7%	15.5%	19.3%
Jun-21	5.0%	9.3%	9.3%	13.8%	17.4%
Jul-21	4.5%	9.1%	8.9%	13.8%	17.1%
Aug-21	4.9%	10.0%	9.8%	14.5%	17.6%
Sep-21	4.1%	10.1%	9.9%	13.8%	16.6%
Oct-21	5.1%	10.5%	10.4%	13.7%	16.3%
Nov-21	5.1%	10.4%	10.4%	13.2%	15.6%
Dec-21	4.8%	10.2%	10.5%	12.8%	14.9%
Jan-22	5.1%	9.9%	10.2%	12.2%	14.1%
Feb-22	4.8%	8.7%	9.1%	11.0%	12.8%
Mar-22	4.4%	7.6%	8.1%	9.8%	11.3%
Apr-22	3.2%	6.2%	6.8%	8.0%	9.2%
May-22	2.1%	4.7%	5.3%	6.4%	7.3%
Jun-22	1.7%	4.4%	4.7%	5.9%	6.5%
Jul-22	2.3%	4.6%	4.9%	5.2%	5.3%

Note: Cells are shaded on a gradient from dark green (maximum) to dark red (minimum).

⁵ While the broadest Divisia monetary aggregates are best for most purposes, we provide the narrower CFS Divisia aggregates for comparison. The narrow aggregates shown here, DM1 and DM2, are similar to the MSI (monetary services index) Divisia aggregates, supplied by the St. Louis Federal Reserve Bank. For more information about the St. Louis Fed's MSI Divisia aggregates and their relationship to the CFS Divisia monetary aggregates, see p. 13.



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Figure 4 - CFS Divisia Data Table (DM4, DM4-, and DM3)

Levels are normalized to equal 100 in Jan. 1967

Date	Divisia M4 Including Treasuries (DM4)		Divisia M4 Excluding Treasuries (DM4-)		Divisia M3	
	Level	Yr-Over-Yr % Growth Rate	Level	Yr-Over-Yr % Growth Rate	Level	Yr-Over-Yr % Growth Rate
Oct-19	1,656	6.4%	1,547	6.3%	1,546	6.3%
Nov-19	1,669	7.2%	1,559	7.2%	1,558	7.2%
Dec-19	1,675	6.7%	1,566	6.8%	1,565	6.8%
Jan-20	1,681	6.6%	1,573	6.7%	1,572	6.7%
Feb-20	1,690	6.7%	1,579	6.7%	1,578	6.7%
Mar-20	1,744	9.7%	1,632	9.9%	1,633	10.0%
Apr-20	1,943	22.0%	1,738	16.7%	1,740	17.0%
May-20	2,056	28.3%	1,806	20.6%	1,812	21.1%
Jun-20	2,107	30.7%	1,819	20.6%	1,827	21.3%
Jul-20	2,110	30.3%	1,824	20.3%	1,835	21.1%
Aug-20	2,110	29.4%	1,826	19.8%	1,837	20.6%
Sep-20	2,119	29.1%	1,836	19.7%	1,848	20.6%
Oct-20	2,119	27.9%	1,843	19.2%	1,855	20.0%
Nov-20	2,126	27.4%	1,857	19.2%	1,871	20.1%
Dec-20	2,150	28.4%	1,880	20.0%	1,890	20.7%
Jan-21	2,150	27.9%	1,886	19.9%	1,898	20.7%
Feb-21	2,155	27.6%	1,907	20.8%	1,917	21.5%
Mar-21	2,161	23.9%	1,931	18.3%	1,938	18.7%
Apr-21	2,182	12.3%	1,952	12.3%	1,957	12.5%
May-21	2,207	7.4%	1,983	9.8%	1,987	9.7%
Jun-21	2,213	5.0%	1,988	9.3%	1,998	9.3%
Jul-21	2,204	4.5%	1,991	9.1%	1,999	8.9%
Aug-21	2,213	4.9%	2,008	10.0%	2,017	9.8%
Sep-21	2,206	4.1%	2,021	10.1%	2,031	9.9%
Oct-21	2,227	5.1%	2,037	10.5%	2,047	10.4%
Nov-21	2,234	5.1%	2,051	10.4%	2,065	10.4%
Dec-21	2,253	4.8%	2,072	10.2%	2,088	10.5%
Jan-22	2,258	5.1%	2,072	9.9%	2,090	10.2%
Feb-22	2,259	4.8%	2,074	8.7%	2,092	9.1%
Mar-22	2,257	4.4%	2,078	7.6%	2,096	8.1%
Apr-22	2,251	3.2%	2,072	6.2%	2,089	6.8%
May-22	2,253	2.1%	2,077	4.7%	2,093	5.3%
Jun-22	2,250	1.7%	2,076	4.4%	2,092	4.7%
Jul-22	2,255	2.3%	2,081	4.6%	2,097	4.9%



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Figure 5 - CFS Divisia Data Table (DM2 and DM1)

Levels are normalized to equal 100 in Jan. 1967

Date	Divisia M2 (Sweeps Adjusted)		Divisia M1 (Sweeps Adjusted)	
	Level	Yr-Over-Yr % Growth Rate	Level	Yr-Over-Yr % Growth Rate
Oct-19	1,737	5.6%	2,667	5.6%
Nov-19	1,748	6.3%	2,679	7.0%
Dec-19	1,758	6.1%	2,719	6.6%
Jan-20	1,768	6.4%	2,704	6.4%
Feb-20	1,775	6.5%	2,711	6.5%
Mar-20	1,838	10.1%	2,900	15.1%
Apr-20	1,958	17.1%	3,290	28.9%
May-20	2,054	22.1%	3,464	35.5%
Jun-20	2,090	23.2%	3,535	36.5%
Jul-20	2,108	23.7%	3,578	36.9%
Aug-20	2,119	23.7%	3,607	38.1%
Sep-20	2,145	24.6%	3,665	38.7%
Oct-20	2,165	24.6%	3,709	39.1%
Nov-20	2,194	25.5%	3,769	40.7%
Dec-20	2,217	26.1%	3,821	40.5%
Jan-21	2,246	27.1%	3,880	43.5%
Feb-21	2,276	28.2%	3,938	45.3%
Mar-21	2,305	25.4%	3,997	37.8%
Apr-21	2,334	19.2%	4,058	23.3%
May-21	2,372	15.5%	4,132	19.3%
Jun-21	2,379	13.8%	4,149	17.4%
Jul-21	2,398	13.8%	4,189	17.1%
Aug-21	2,426	14.5%	4,243	17.6%
Sep-21	2,442	13.8%	4,275	16.6%
Oct-21	2,460	13.7%	4,311	16.3%
Nov-21	2,484	13.2%	4,358	15.6%
Dec-21	2,501	12.8%	4,390	14.9%
Jan-22	2,520	12.2%	4,425	14.1%
Feb-22	2,526	11.0%	4,440	12.8%
Mar-22	2,530	9.8%	4,448	11.3%
Apr-22	2,520	8.0%	4,430	9.2%
May-22	2,524	6.4%	4,433	7.3%
Jun-22	2,520	5.9%	4,417	6.5%
Jul-22	2,522	5.2%	4,411	5.3%



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Figure 6 - Components of CFS Divisia M4 - Highlights for July 2022

Components in this table build from the narrowest aggregate at the top to the broadest at the bottom. For example, the darkest green in the left column includes components of DM1. The next tier shows the components included in DM2, but not within DM1.

	Weighted Contribution To DM4 Money Annual Growth Rate*	Divisia Growth-Rate Weights (Average of Last 12 Months)	Unweighted Year-Over-Year Percentage Growth Rate
DM1			
Currency	0.3%	7.4%	4.6%
Demand Deposits	2.0%	16.4%	13.2%
Other Liquid Deposits	0.9%	43.9%	2.6%
Added into DM2			
Retail Money-Market Funds	0.2%	2.6%	10.1%
Small-Denomination Time Deposits	0.0%	0.3%	-19.6%
Added into DM3			
Institutional Money-Market Funds	0.0%	8.2%	-0.1%
Large Time Deposits	0.3%	4.6%	6.0%
Repurchase Agreements	0.4%	4.9%	10.3%
Added into DM4-			
Commercial Paper	-0.2%	2.2%	0.2%
Added into DM4			
T-Bills	-1.6%	9.5%	-15.0%

Note: The row labels in the first column are shaded to show which components are included into which aggregates. Each data column is shaded on a gradient from dark green (maximum) to dark red (minimum). Traveler's Checks were included until their recent discontinuation by the Federal Reserve in January 2019.

* Average of last 12 monthly weighted contributions to CFS Divisia M4 growth rates (annual rates). Unlike the other percent calculations in this report, the weighted contributions use continuous percent changes computed from natural logs.

Components That Are Pulling CFS Divisia M4 Up

The largest positive contributor to CFS Divisia M4 growth was demand deposits, contributing an increase of 2.0% in the last 12 months ending July 2022. Their growth-rate weight was 16.4%. Unweighted, they increased 13.2% in the last 12 months. This component is included in all of the aggregates.

The second largest positive contributor to growth was other liquid deposits, contributing an increase of 0.9% in the last 12 months ending July 2022. Their growth-rate weight was 43.9%. Unweighted, they increased 2.6% in the last 12 months. This component is included in all of the aggregates.

The third largest positive contributor to growth was repurchase agreements, contributing an increase of 0.4% in the last 12 months ending July 2022. Their growth-rate weight was 4.9%. Unweighted, they increased 10.3% in the last 12 months. This component is included in DM3, DM4-, and DM4, but not in the narrower aggregates (DM1 and DM2).

Components That Are Pulling CFS Divisia M4 Down

The largest negative contributor to CFS Divisia M4 growth was T-bills, contributing a decrease of 1.6% in the last 12 months ending July 2022. Their growth-rate weight was 9.5%. Unweighted, they decreased 15.0% in the last 12 months. This component is included only in the broadest aggregate (DM4).

The second largest negative contributor to CFS Divisia M4 growth was commercial paper, contributing a decrease of 0.2% in the last 12 months ending July 2022. Its growth-rate weight was 2.2%. Unweighted, it increased 0.2% in the last 12 months. This component is included in DM4 and DM4-, but not in the narrower aggregates.

The weighted contribution of small-denomination time deposits was negligible. Their growth-rate weight was 0.3%. Unweighted, they decreased 19.6% in the last 12 months. This component is included in all of the aggregates, except the narrowest (DM1).



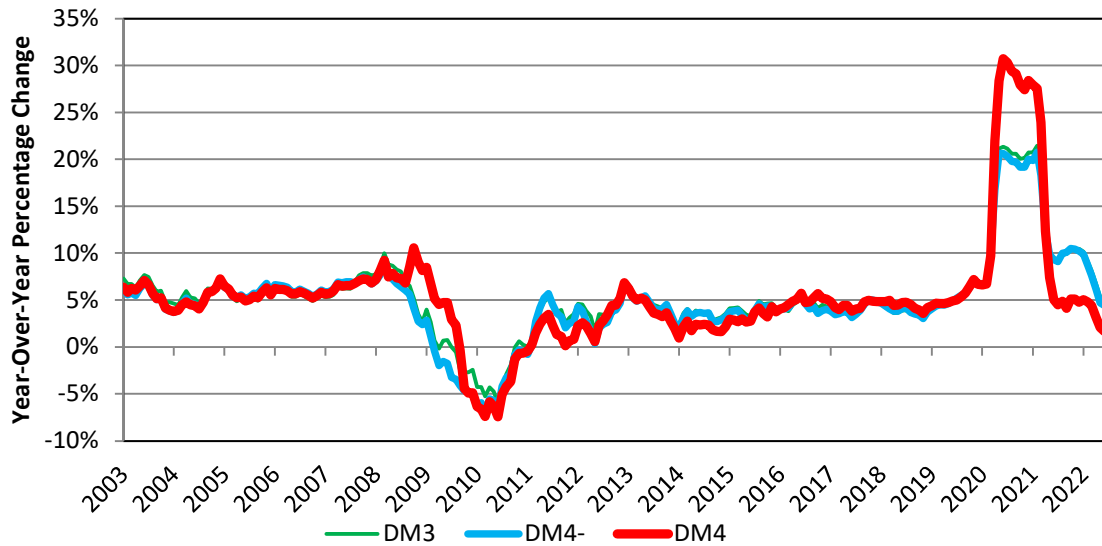
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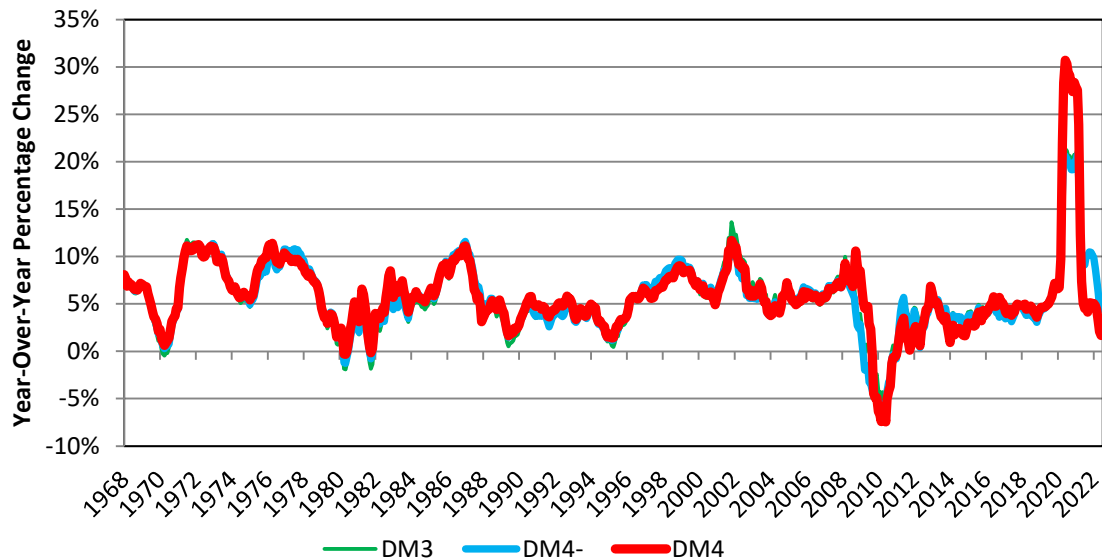
Figure 7 - CFS Divisia Monetary Growth Charts

DM3, DM4-, and DM4 Year-Over-Year Percent Change, Two Date Horizons

2003 to Present



1968 to Present





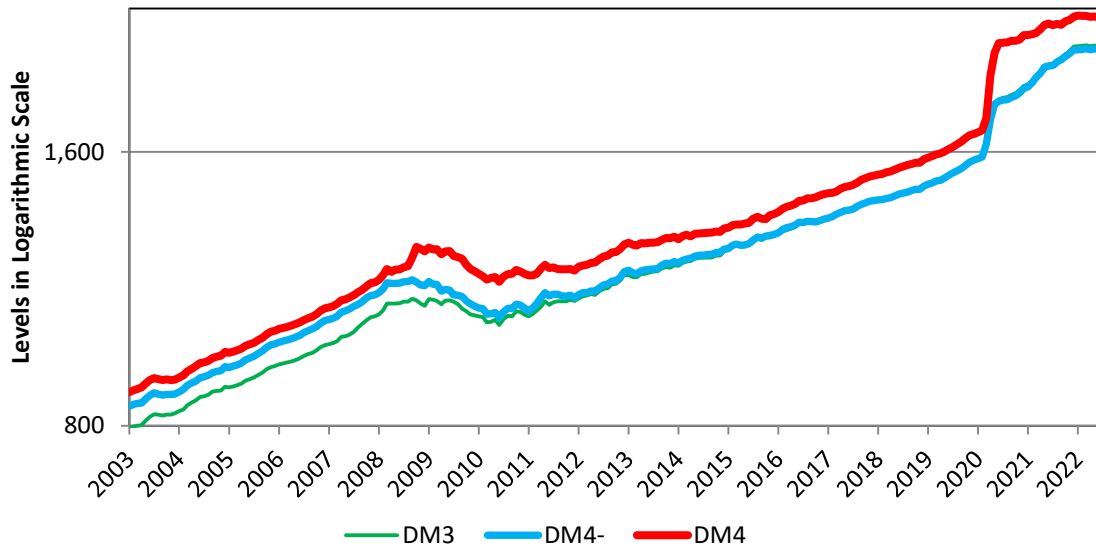
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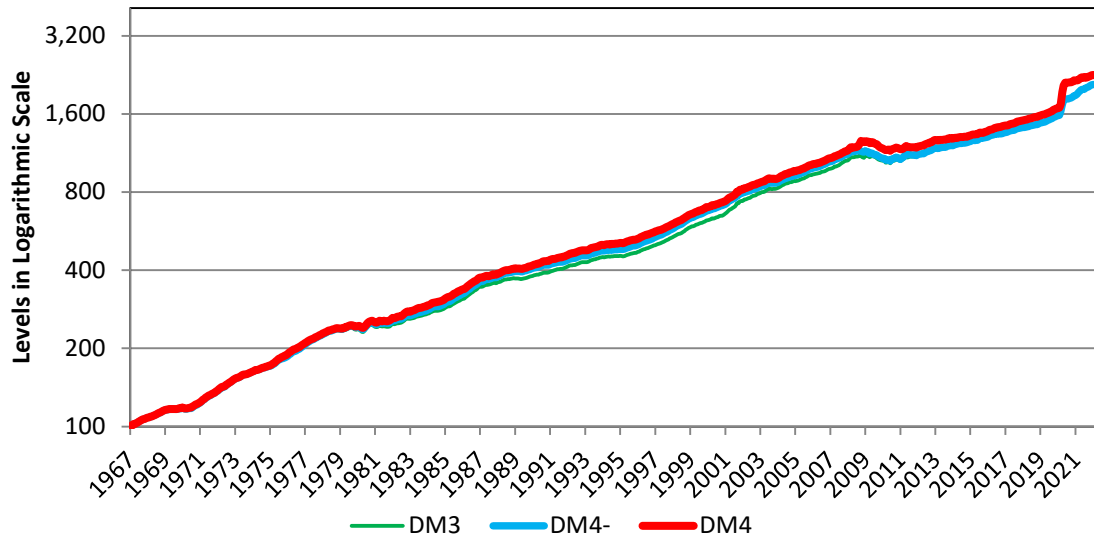
Figure 8 - CFS Divisia Monetary Aggregates Level Charts

DM3, DM4-, and DM4 Levels, Normalized to Equal 100 in Jan. 1967, Logarithmic Scales

2003 to Present



1967 to Present





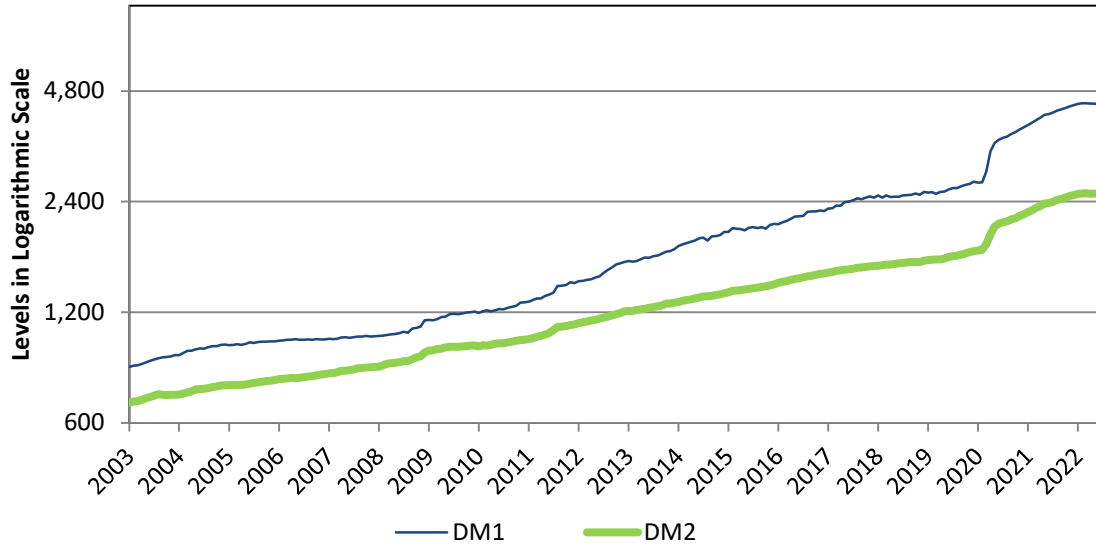
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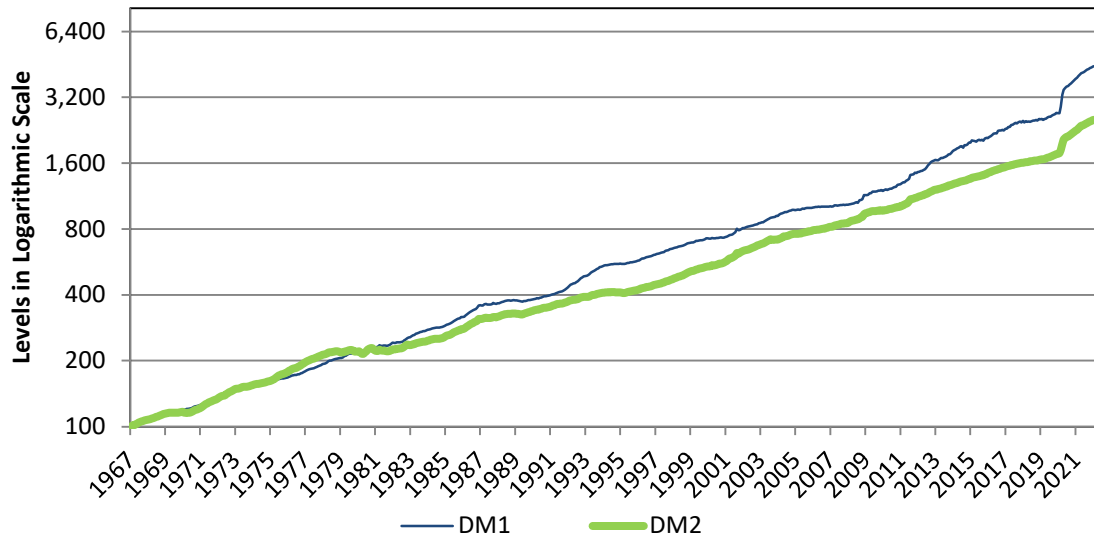
Figure 9 - Narrow CFS Divisia Monetary Aggregates Level Charts

DM1 and DM2 Levels, Normalized to Equal 100 in Jan. 1967, Logarithmic Scales

2003 to Present



1967 to Present





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Figure 10 - Components of All CFS Divisia Aggregates
Growth-Rate Weights Used in Latest Month (July 2022)

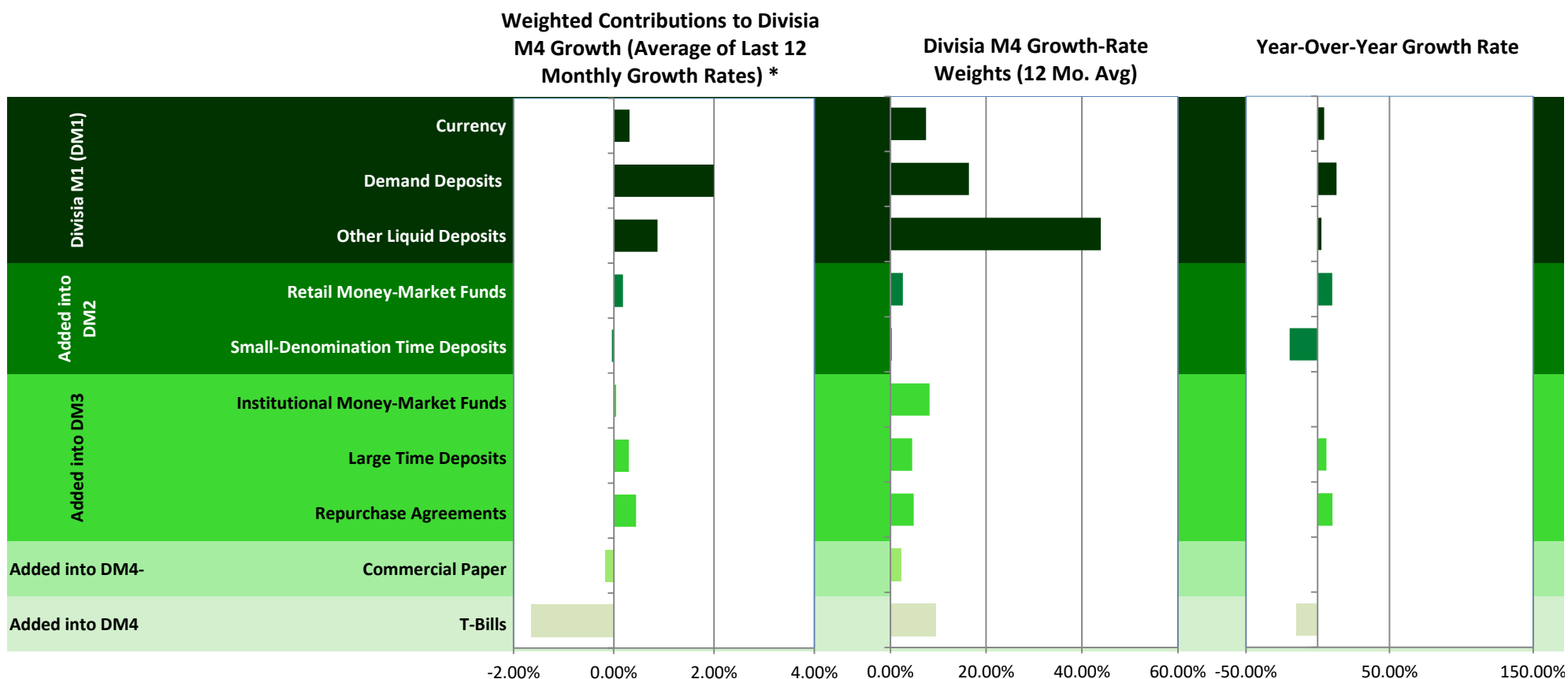
	Divisia M1	Divisia M2M	Divisia M2M	Divisia M2	Divisia ALL	Divisia M3	Divisia M4-	Divisia M4
Currency	10.9%	10.7%	10.1%	10.6%	10.0%	9.1%	9.0%	8.6%
Demand Deposits	24.7%	24.3%	22.9%	24.1%	22.8%	20.7%	20.5%	19.6%
Other Liquid Deposits	64.4%	63.1%	59.6%	62.8%	59.4%	53.7%	53.3%	50.9%
Retail Money-Market Funds		2.0%	1.9%	1.9%	1.8%	1.7%	1.7%	1.6%
Small-Denomination Time Deposits				0.5%	0.4%	0.4%	0.4%	0.4%
Institutional Money-Market Funds			5.5%		5.5%	4.9%	4.9%	4.7%
Large Time Deposits						5.9%	5.8%	5.6%
Repurchase Agreements						3.6%	3.6%	3.4%
Commercial Paper							0.9%	0.8%
T-Bills								4.5%
Sum of Weights	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%



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Figure 11 - Components of CFS Divisia M4 - Highlights for July 2022

Note: Each component's influence on DM4 growth (left chart column) reflects the component's unweighted growth (right chart column) and its growth-rate weight (middle chart column). The background and the bar colors are shaded to show which components are included in which aggregates. The lighter the green, the broader the aggregate.



* Average of last 12 monthly weighted contributions to CFS Divisia M4 growth rates (annual rates). Unlike the other percent calculations in this report, the weighted contributions use continuous percent changes computed from natural logs e.g. $(\ln(x) - \ln(x-1))$.



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Figure 12 - CFS Divisia M4 Quarterly Growth Triangle

Recent Quarterly History (Compound Annual Rates of Change)

This triangular report design was originated by Federal Reserve Bank of St. Louis to show seasonally adjusted annualized growth rates for a variety of time periods.

Terminal Period	Initial Period																				
	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022		
Q4 2017	5.9																				1,502.43
Q1 2018	4.5	3.2																			1,514.16
Q2 2018	4.4	3.6	4.1																		1,529.60
Q3 2018	4.5	4.0	4.4	4.7																	1,547.25
Q4 2018	4.3	3.9	4.1	4.1	3.6																1,560.94
Q1 2019	4.5	4.3	4.6	4.7	4.7	5.8															1,583.23
Q2 2019	4.6	4.4	4.6	4.8	4.8	5.4	4.9														1,602.26
Q3 2019	4.9	4.8	5.1	5.2	5.4	6.0	6.0	7.2												1,630.40	
Q4 2019	5.4	5.3	5.6	5.9	6.1	6.8	7.1	8.2	9.2											1,666.59	
Q1 2020	5.8	5.8	6.1	6.4	6.7	7.3	7.7	8.6	9.3	9.5										1,704.75	
Q2 2020	12.3	12.9	14.0	15.4	17.0	19.4	22.3	27.0	34.4	49.1	103.2									2,035.30	
Q3 2020	12.6	13.2	14.3	15.4	16.9	18.9	21.2	24.8	29.6	37.2	53.6	16.2							2,112.93		
Q4 2020	11.9	12.4	13.2	14.2	15.3	16.9	18.5	21.0	23.9	27.9	34.7	9.7	3.6							2,131.61	
Q1 2021	11.3	11.7	12.5	13.3	14.2	15.4	16.7	18.5	20.5	22.8	26.4	7.9	4.1	4.5						2,155.39	
Q2 2021	11.1	11.5	12.2	12.9	13.7	14.7	15.8	17.2	18.7	20.4	22.7	8.1	5.6	6.6	8.7					2,201.04	
Q3 2021	10.5	10.8	11.4	12.0	12.6	13.4	14.2	15.3	16.4	17.4	18.8	6.7	4.5	4.8	4.9	1.2				2,207.72	
Q4 2021	10.2	10.5	11.0	11.5	12.0	12.8	13.4	14.3	15.1	15.9	16.8	6.5	4.7	5.0	5.1	3.4	5.6			2,237.85	
Q1 2022	9.8	10.1	10.5	10.9	11.4	12.0	12.6	13.3	13.9	14.5	15.1	6.1	4.5	4.7	4.8	3.5	4.6	3.6		2,257.98	
Q2 2022	9.2	9.4	9.8	10.1	10.5	11.0	11.4	12.0	12.5	12.8	13.2	5.2	3.7	3.7	3.5	2.3	2.6	1.2	-1.2	2,251.44	

How to Read this Table:

To find a growth rate for a particular date range, find the column that contains the start quarter; then find the row that contains the end quarter of the date range. The cell where they intersect represents the annualized growth rate for that time period. For example, the last row contains the growth rates ending in the most recent quarter for each starting quarter going back 4 3/4 years. The outer diagonal shows the growth rates that are the quarter-over-quarter rates for the last few years. Red and green shades highlight the largest negative and positive growth rates.

Quarterly Data Highlights:

In the last quarter, CFS Divisia M4 declined by 1.2% (seasonally adjusted annual rate).

In the last year, CFS Divisia M4 grew by 2.3% (seasonally adjusted annual rate).

In the last 2 years, CFS Divisia M4 grew by 5.2% (seasonally adjusted annual rate).

In the last 3 years, CFS Divisia M4 grew by 12.0% (seasonally adjusted annual rate).

In the last 4 years, CFS Divisia M4 grew by 10.1% (seasonally adjusted annual rate).



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Introduction to CFS Divisia Monetary Aggregates

Conventional money-supply measures are not adjusted to account for differences in the degree to which various assets actually serve as money, and hence implicitly assume that all assets in the aggregates contribute equally to the economy's monetary services. This assumption has not been reasonable since monetary assets began yielding interest over a half century ago. Divisia measures, using a mathematical formula derived by the famous 20th-century French economist, Francois Divisia, are a weighted aggregate, providing a more accurate picture of what is really happening to the economy's monetary service flow. The growth-rate weights for each component asset are based on their expenditure shares, with expenditures within the shares evaluated with user-cost pricing. The user-cost prices measure the interest foregone by owning the asset in question, instead of the higher, expected, benchmark rate, defined to be the rate of return on pure investment capital, providing no monetary services.

When their components are properly weighted, the broadest monetary aggregates (DM3, DM4-, and DM4) are almost always the best monetary aggregates, with DM4 commonly being the most useful of the three. As a result, this report focuses on the broadest, CFS Divisia aggregate (DM4). See W. A. Barnett, "The Optimal Level of Monetary Aggregation," *Journal of Money, Credit, and Banking*, November 1982.⁶ But we nevertheless provide the narrower CFS Divisia aggregates for comparison.

The CFS Divisia indexes in this release were developed by Professor William A. Barnett, based on his decades of work studying and refining Divisia measures of money supply, in accordance with the latest advances in economic measurement, modern economic aggregation theory, and state-of-the-art economic index-number theory. The Divisia formula for aggregating over imperfect substitutes was adapted for monetary and financial aggregation by W. A. Barnett in his seminal paper, "Economic Monetary Aggregates: An Application of Index Number and Aggregation Theory," *Journal of Econometrics*, September 1980, pp. 6-10.⁷ For more information about the history and methodology in this large literature, see <http://www.centerforfinancialstability.org/amfm.php>.

We consider the St. Louis Fed's MSI (monetary services index) Divisia aggregates to be an admirable and important contribution to public information, and we are indebted to the St. Louis Fed for helping us develop our Divisia monetary aggregates. Our narrowest Divisia monetary aggregates are similar to the St. Louis Fed's MSI Divisia aggregates, which are available only as narrow aggregates. However, we use a different benchmark interest-rate assumption, based on the recently introduced Bank of Israel formula. Since the Divisia quantity-index formula is relatively robust to the benchmark rate,

⁶ Reprinted in W. A. Barnett and A. Serletis, *The Theory of Monetary Aggregation*, Elsevier, 2000, chapter 7, pp. 125-149. Also see W. A. Barnett, *Getting It Wrong: How Faulty Monetary Statistics Undermine the Fed, the Financial System, and the Economy*, MIT Press, 2012, section 4.4, pp. 143-144.

⁷ Reprinted in W. A. Barnett and A. Serletis, *The Theory of Monetary Aggregation*, chapter 2, pp. 11-48. Also see W. A. Barnett, *Getting It Wrong: How Faulty Monetary Statistics Undermine the Fed, the Financial System, and the Economy*, appendix A, pp. 159-215.

the CFS narrow Divisia quantity indexes can be expected usually to behave similarly to the St. Louis Fed's MSI Divisia aggregates; but the CFS and St. Louis Fed's corresponding user-cost price aggregates behave very differently. For more information about the St. Louis Fed's MSI, see <http://research.stlouisfed.org/msi/> and <http://research.stlouisfed.org/fred2/release?rid=62&soid=4>.

The broad Divisia monetary aggregates, DM3, DM4-, and DM4, are available only from the CFS, since no other source currently exists for broad Divisia monetary aggregates for the US.



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CFS Divisia Resources on the Center for Financial Stability Site

See www.centerforfinancialstability.org/amfm.php for more information about the following topics:

- Introduction to Advances in Monetary and Financial Measurement (Divisia)
- Monetary Data for the US: including methodology, data sources, and key takeaway points
- International Advances in Monetary and Financial Measurement: Divisia and Fisher-ideal monetary aggregates for a vast number of countries throughout the world
- Library: Key articles and books regarding advances in monetary and financial measurement

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