Commercial Mortgage Performance Index℠

2Q 2020 RESULTS AND ANALYSIS

The **Giliberto-Levy Monitor** reports quarterly results of the **Giliberto-Levy Commercial Mortgage Performance Index℠** and provides comprehensive in-depth market analysis and commentary on key aspects of the commercial mortgage industry. A subscription to the **Giliberto-Levy Monitor** includes access to the **Giliberto-Levy Analyzer**—a custom query tool enabling analysis of total return on a long-term historical basis.

Update from the G-L 2

Our Giliberto-Levy High-Yield Real Estate Debt Index (the G-L 2) offers investors a performance benchmark for mezzanine debt, preferred equity, and A/B note structures, among others. The G-L 2 is fully consistent with other mark-to-market indexes, including other commercial real estate investment performance indexes. For the 12 months ended 3/31/20, the G-L 2 notched a return of 1.32%, which is 736 basis points lower than the 8.68% return tallied since its inception at the beginning of 2010. By contrast, the G-L 1 (our first mortgage, fixed-rate index covered in this Monitor) showed a return of -0.9% - 42 basis points lower – for the 12 months ended 3/31/20. Of equal interest, investment-grade CMBS, as measured by Bloomberg Barclays indices, showed a total return of 0.47% for the same 12 months, with slightly more volatility than the G-L 2.

To learn more about the G-L 2 or join the Founders Group, please contact **John Levy at 804-500-9025** or **jlevy@jblevyco.com**.

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MARKET OVERVIEW

SECOND QUARTER 2020 SUMMARY

Total Return: (in %)	Total (all sectors)	4.27
	Office	3.95
	Multi-family	4.63
	Retail	3.88
	Industrial	4.29
Spreads: (as of 6/30/2020)	Office	271
	Multi-family	256
	Retail	275
	Industrial	256
Index Statistics: (as of 6/30/2020)	Capitalization ($ billion)	276.48
	Duration (years)	5.35
	Coupon (%)	4.18
	Maturity (years)	7.45
	Book LTV (%)	50.40

Spreads are averages for new ten-year loans at 60%–65% loan-to-value ratio. Source: Giliberto-Levy

The Giliberto-Levy Commercial Mortgage Performance Index (G-L 1) rebounded strongly in 2Q 2020, generating 4.27% total return.[1] Total return consisted of 1.04% income return and 3.24% capital value return, which includes price changes and other factors. (The sum of the components may not equal the total due to rounding.) The **surge in capital value was mainly caused by declining commercial mortgage spreads**, which came down 60 to 65 basis points (bp) after peaking at the end of March (see Chart 1).

[1] The Index's components are fixed-rate commercial mortgage loans held on balance sheets of institutions such as life insurance companies and pension funds. Index returns are a market-value-weighted blend of office, apartment, retail, industrial, lodging, mixed-use and other miscellaneous property types. Index performance tracks senior loans only; it does not include construction loans, mezzanine and other subordinate instruments and bridge loans made by such institutions.

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Chart 1: Spreads over Treasuries for Ten-year Commercial Mortgages

In basis points, reflecting 30/360 day count convention

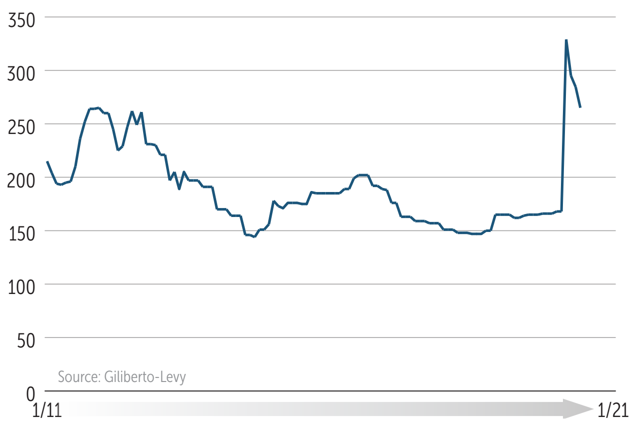


Chart data are averages of office, apartment, retail and industrial property loans.

In contrast, **U.S. Treasury yields barely moved during 2Q** (see Charts 2 and 3). The benchmark ten-year yield fell 4 bp from 0.70% on March 31 to 0.66% on June 30, for example.

Chart 2: US Treasury Yields 3/31/20 and 6/30/20 (in %)

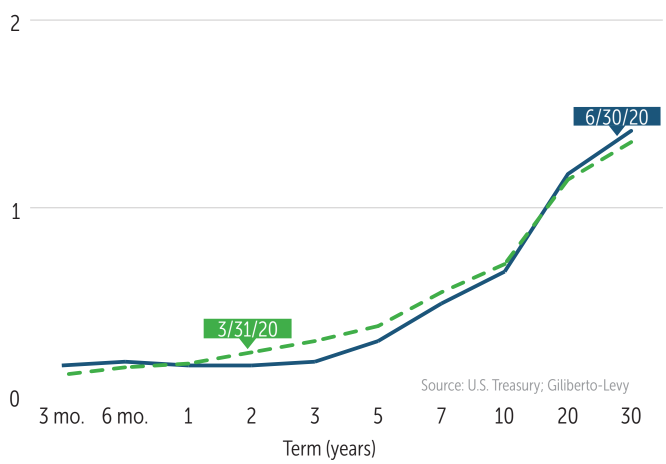
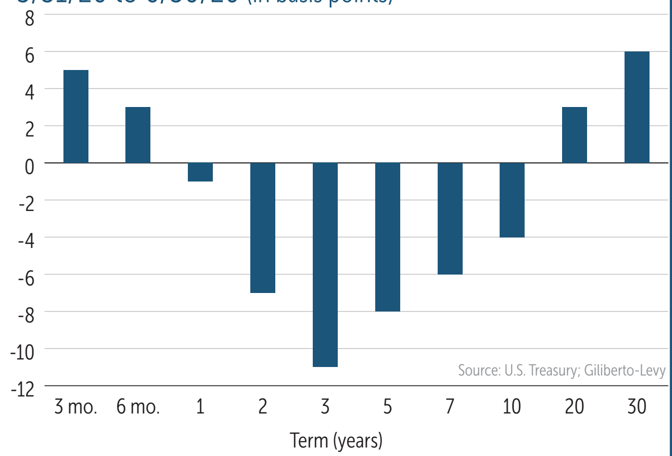


Chart 3: Changes in US Treasury Yields

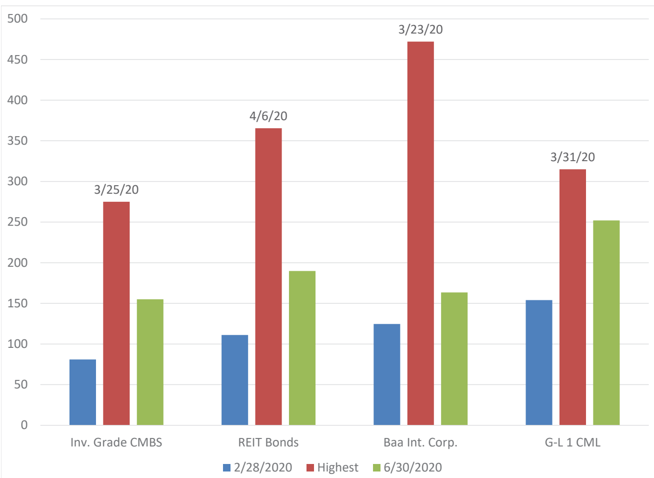
3/31/20 to 6/30/20 (in basis points)



The mortgage spread movement in Chart 1 represents about a 40% "retracing" of the increase that occurred during March. (A 65-bp decline from March 31 to June 30 is 40% of the 161-bp increase registered from February 28 to March 31.)

Public market fixed-income sectors exhibited significantly larger retracing (see Chart 4). As of June 30, the investment-grade CMBS index spread had retraced 62% of the increase from February 28 to its March 25 peak, according to data from Bloomberg Barclays Indices. The majority of CMBS is AAA-rated, and those top-rated securities are eligible for the Federal Reserve's TALF program. Intermediate-term Baa-rated corporate bonds had an even stronger rebound, gaining back nearly 90% of the spread increase sustained in March. The Fed's stated willingness to purchase investment-grade corporate bonds likely propelled this recovery. Unsecured debt from publicly traded real estate investment trusts (REITs) also retraced a significant portion of March's spread increase.

Chart 4: Index Spreads (in basis points)



Source: Bloomberg Barclays Indicies; Giliberto-Levy

PRICING TRENDS: 2Q 2020

Table 1: Key Rates (in %)

	3/31/2020	6/30/2020	change
20-year Treasury Yield	1.15	1.18	0.03
20-year Mortgage Spread	3.29	2.65	-0.64
20-year Mortgage Yield	4.44	3.83	-0.61
10-year Treasury Yield	0.70	0.66	-0.04
10-year Mortgage Spread	3.29	2.65	-0.64
10-year Mortgage Yield	3.99	3.31	-0.68
7-year Treasury Yield	0.55	0.49	-0.06
7-year Mortgage Spread	3.29	2.65	-0.64
7-year Mortgage Yield	3.84	3.14	-0.70
5-year Treasury Yield	0.37	0.29	-0.08
5-year Mortgage Spread	3.29	2.65	-0.64
5-year Mortgage Yield	3.66	2.94	-0.72

Source: U.S. Treasury; Giliberto-Levy

- **The "floor" on coupon rates appeared to be 2.75%, although there were a few loans with slightly lower coupons**. It is possible that some lenders imposed higher floors, particularly on smaller loans. However, we were unable to determine if size premiums generally prevailed, or if we were just observing varying floors by lender that were not related to size.

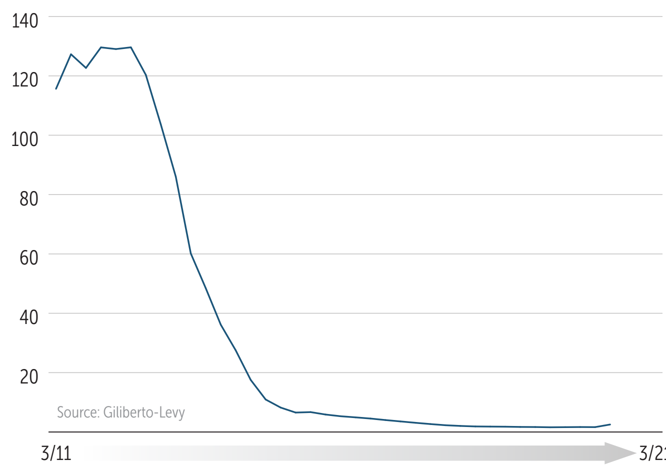
- **Except for industrial, values for all property sectors in the National Council of Real Estate Investment Fiduciaries (NCREIF) Property Index declined**. Not surprisingly, retail and lodging were especially hard hit.

CREDIT EFFECTS

After a long period of essentially zero credit-related effects, the G-L 1 registered a slight uptick in 2Q on this metric (see Chart 5). The annualized rate increased from under 2 bp to about 5 bp. That is still low, but we would be surprised if this were just a blip: more likely, it is the first step down in the credit cycle.

Chart 5: Commercial Mortgage Credit Effects, 1Q 2011 to 2Q 2020

Rolling four-quarter effect as a percentage of book value, in basis points



RELATIVE PERFORMANCE

Last quarter, it was "Treasuries win, everything else loses." This quarter was almost a complete reversal (see Table 2).

- Treasury issues with five to seven years of remaining term were the lowest performing sector in 2Q, but still posted a positive return.
- CMBS, as measured by the Bloomberg Barclays index, with a 3.82% total return, were in line with G-L 1.
- Investment-grade corporate bonds had stunning returns, driven by the spread retracing discussed above. Baa-rated intermediates, adjusted to match G-L 1 duration, scored a double-digit result.

But Treasuries still lead year to date. This is because spreads have not fully retraced their COVID-related rise. Consequently, yields on

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non-Treasury issues have not declined one-for-one with falling rates on Treasuries.

Table 2: Total Return as of June 30, 2020

	Total Return (%)			Duration
Index	2Q 2020	YTD	Last 4Q	as of 6/30/20
Commercial Mortgages*	4.27	3.31	5.61	5.35
Duration-adjusted Baa Bond	10.05	2.81	6.81	5.35
CMBS: Investment Grade	3.82	4.30	5.94	5.26
CMBS 2.0	3.79	2.23	3.99	4.94
TSY Int. Term	0.54	5.82	7.07	3.89
TSY 5-7 yr. Term	0.84	8.54	9.90	5.72
Credit Int. Term	6.67	4.16	6.97	4.46
A Int. Term	5.84	5.41	8.02	4.50
Baa Int. Term	9.67	2.92	6.41	4.76
High-yield Int. Term	9.37	-4.41	-0.76	3.38
Ba Int. Term	10.13	-0.93	3.21	3.56

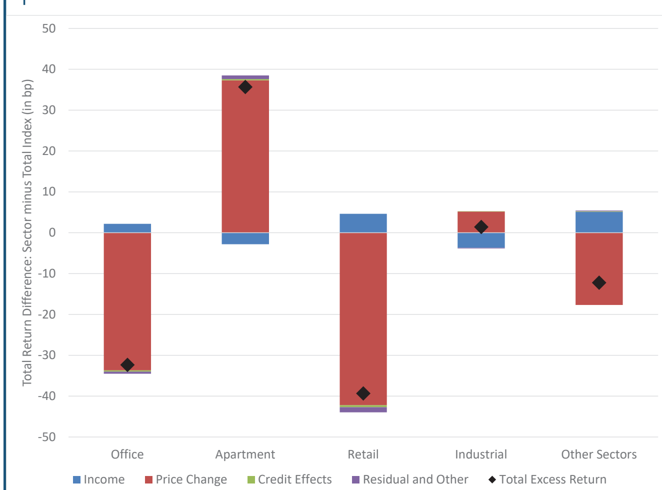
*Giliberto-Levy Total Index includes office, retail, multifamily, industrial, and other

Source: Bloomberg, Barclays; Giliberto-Levy

Property sector relative (to the overall index) performance variation is largely explained by differences in duration and income yields (see Chart 6). Duration is a driver of price performance. With yields falling, sectors with longer (than index average) duration generally benefited.

Chart 6: Sector Performance Attribution 1Q 2020

Sector performance minus Total Index performance, in basis points.



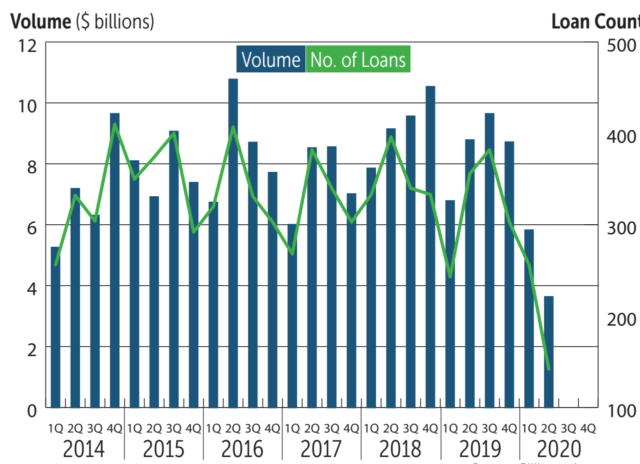
Source: Giliberto-Levy

LENDING ACTIVITY

• **2Q origination of loans eligible for the Index came in at $3.6 billion,** compared with 1Q 2020's $5.8 billion, revised from the previously reported $4.9 billion. The significant drop-off was expected: quite a few lenders stayed out of the market in April, and several remained on the sidelines through June.

Chart 7: Index-eligible Loan Production

1Q 2014 to 2Q 2020



Source: Giliberto-Levy

• **Average loan size was about $26 million**, slightly above last quarter's $23 million. Loan sizes ranged from $1.6 million to well over $200 million. Loans above $25 million made up roughly two-thirds of dollar volume but accounted for only 32% of the number of loans. Despite 2Q's lower volume, these statistics were almost identical to those posted in 1Q.

• **The average LTV on new loans eligible for inclusion in the Index was 63%**. This was an increase from last quarter's 61%. Reported DSC was 2.3 times, up from last quarter's 2.2 times. Neither change seems meaningful. That said, we believe many lenders are re-underwriting property values and expectations about stabilized operating income in light of COVID-19's economic effects.

• The **ten-year segment's market share by volume was a whopping 58%**, well above its recent average, although not unprecedented. Twenty-year loans took second place with 13% of reported volume.

• **New loan production was 37% full-term interest-only loans, 60% loans with partial amortization, and 3% fully amortizing**

loans. Partially amortizing loans often include an interest-only period up front.

Slightly more than $4 billion of new loans was added to the Index (see Table 3 for details). These data come from March, April and May 2020 loans. June 2020 loans, which are included in the production number cited above and depicted in Chart 7, will be added to the Index for 3Q 2020.[2]

Table 3: Total Index Additions
(Second Quarter 2020)

	Amount ($)	No. of Loans	Weighted-Average Coupon (bp)	Spread	DSCR	LTV (%)	Term (years)
Office	237,975,000	14	3.38%	265	2.65	54.9	9.7
Apartment	2,979,103,000	134	3.22%	242	2.18	66.1	11.1
Retail	103,420,000	11	3.24%	233	2.88	56.7	9.6
Industrial	641,890,000	34	3.27%	246	2.16	56.4	10.6
Other	196,630,000	6	3.66%	245	1.83	66.3	22.3
Total	**4,159,018,000**	**199**	**3.26%**	**244**	**2.21**	**63.8**	**11.4**

Source: Giliberto-Levy

Please note that spreads reported in Table 3 are weighted averages of loans made during periods prior to June 2020. These averages do not represent quarter-end pricing parameters. Those pricing spreads are reported in the summary table at the top of this report for standardized ten-year loans at 60% to 65% LTVs. These standardized spreads also appear in Table 1. Standardized spreads are generated from new loan originations and form the baseline for marking to market all loans in the Index.

COMMERCIAL MORTGAGE PERSPECTIVE

Each year, in the fourth quarter issue of the Monitor, we analyze the credit profile of all loans in the G-L 1 that are set to mature during the coming calendar year. We believe it is worthwhile to conduct a similar analysis on the entire G-L 1 index portfolio as of June 30, 2020 to understand risk exposure and stress points.

Importantly, risk analysis needs to look beyond averages. For example, the average book LTV in the G-L 1 currently is about 50%. At a cursory level, this seems reasonably conservative. But a portfolio in which every loan carries a 50% LTV is not the same from a risk perspective as one that is composed of equal amounts of 25% LTV loans and 75% LTV loans, for example. The distribution of LTVs matters.

As we do in the annual analysis of maturing loans, we examined the entire index using marked-to-market DSCR and LTV. For presentation purposes, we chose several threshold values to identify high-risk segments of the index. The LTV threshold was 75%: loans with current LTVs of 75% and higher were deemed to be "high risk" in the event of large declines in collateral values. We selected 1.25 as the DSCR threshold below which loans were considered high-risk. Some loans will meet both high-risk criteria; these are the most vulnerable segments.

Our DSCR threshold choice may appear unduly conservative, but our view is that property income declines pose a greater immediate risk to portfolios than mark-to-market valuation deterioration.
Table 4 shows the percentages of the total current G-L 1 principal balance that fall into high-risk categories by sector and for the overall index. It is no surprise that lodging exhibits the highest risk, and the magnitude is stunning.

Table 4: Principal Balances Classified as High Risk
(Percentage of June 30, 2020 G-L 1 Loans)

	DSCR < 1.25x	LTV > 75%	Both Risks
Office	4.3%	0.3%	0.0%
Multifamily	4.6%	3.4%	0.1%
Retail	7.5%	2.9%	1.5%
Industrial	2.5%	0.0%	0.0%
Lodging	42.8%	28.7%	18.2%
Mixed Use	9.1%	0.0%	0.0%
Other	3.3%	1.1%	0.5%
All G-L 1 Loans	**6.1%**	**2.5%**	**0.6%**

Percentages reported for each sector are with respect to that sector's total principal balance. Source: Giliberto-Levy

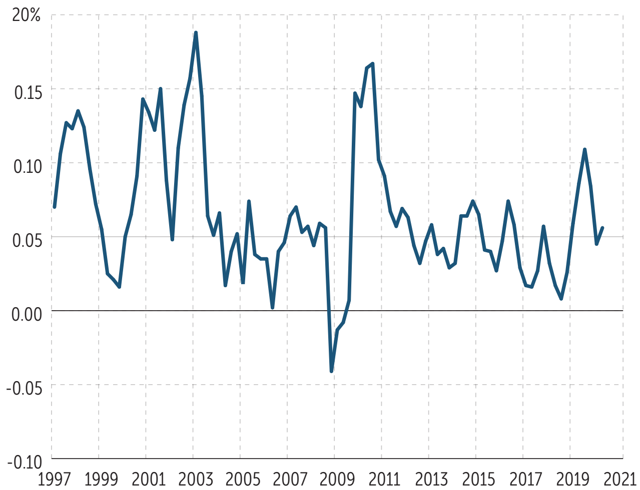
We think it more likely than not that economic forces will push additional loans into the high-risk category. The upshot will be higher credit losses. As we noted above, the down cycle has commenced.

As always, we welcome your comments and questions.

[1] The Index's components are fixed-rate commercial mortgage loans held on balance sheets of institutions such as life insurance companies and pension funds. Index returns are a market-value-weighted blend of office, apartment, retail, industrial, lodging, mixed-use and other miscellaneous property types. Index performance tracks senior loans only; it does not include construction loans, mezzanine and other subordinate instruments and bridge loans made by such institutions.

Chart 8: Commercial Mortgage Performance

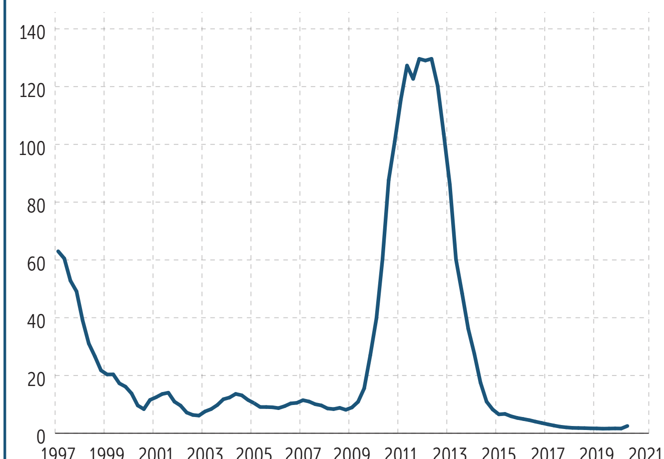
Rolling four-quarter total return for Total Index



Source: Giliberto-Levy

Chart 9: Commercial Mortgage Credit Effects

Rolling four-quarter total effects as a percentage of book value (in basis Points)



Source: Giliberto-Levy

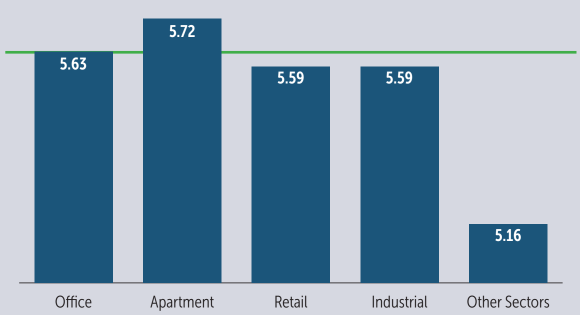
SUPPORTING TABLES AND CHARTS

Table A: Performance by Property Sector - For the quarter ended June 30, 2020

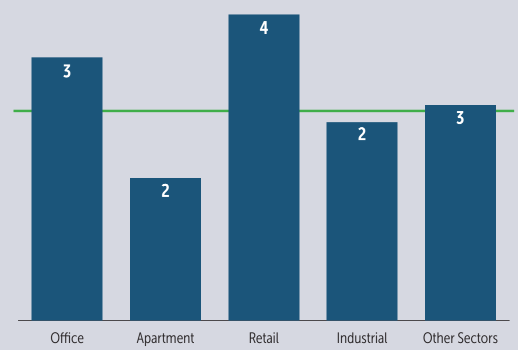
	Returns (%)							**Credit Losses** (book value; bp)		
	Last 3 months				**YTD**	**Last 12**	**Index**	**Last 3**		**Last 12**
Sector	**Income**	**Price**	**Other**	**Total**	**Total**	**Months**	**Level**	**Months**	**YTD**	**Months**
Office	1.06	2.95	-0.05	3.95	3.47	5.63	2251.05	2	2	3
Apartment	1.01	3.66	-0.04	4.63	3.27	5.72	2901.30	1	1	2
Retail	1.08	2.86	-0.06	3.88	3.33	5.59	2676.16	2	2	4
Industrial	1.00	3.34	-0.05	4.29	3.38	5.59	2618.32	1	2	2
Other Sectors	1.09	3.11	-0.05	4.15	2.86	5.16	N/A	1	2	3
Total	**1.04**	**3.29**	**-0.05**	**4.27**	**3.31**	**5.61**	**2448.02**	**1**	**2**	**3**
Aggregate	1.03	3.30	-0.05	4.28	3.35	5.65	3960.90	1	2	3

Aggregate excludes Other Sectors (hotel/motel, mixed-use and miscellaneous)
Other Return is paydown return and compounding
Index bases: Aggregate Dec. 1971 = 100; Total and major sectors Dec. 1977 = 100 bp Basis Points
bp Basis Points

Total Return by Sector Last 12 months (%)



Credit Effect by Sector Last 12 months (bp)



APPENDIX (Following pages)

Supporting Tables and Charts 2Q 2020

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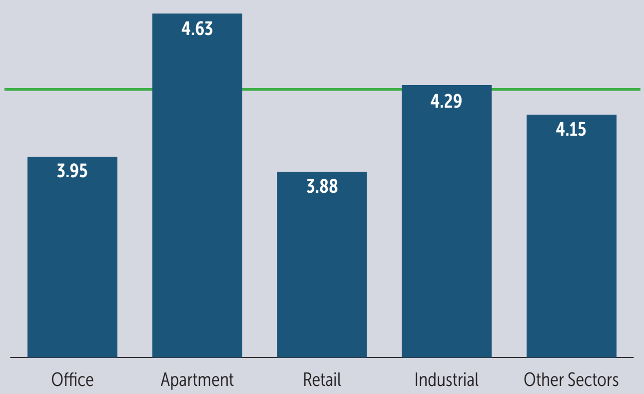
Table B: Giliberto-Levy Index Performance by Property Sector - For the quarter ended June 30, 2020

	Returns (%)				Statistics	Averages						
Sector	Income	Price	Other	Total	Adj. Duration	Coupon	Maturity	Price	Yield	Pct. of Portfolio	No. of Cohorts
Office	1.06	2.95	-0.05	3.95	4.80	4.28	6.71	105.3	2.86	20.6%	2,510
Apartment	1.01	3.66	-0.04	4.63	5.85	4.06	7.96	105.3	2.95	41.0%	5,510
Retail	1.08	2.86	-0.06	3.88	4.94	4.40	7.05	105.0	3.01	17.5%	3,896
Industrial	1.00	3.34	-0.05	4.29	5.03	4.05	6.94	105.5	2.72	13.8%	2,697
Other Sectors	1.09	3.11	-0.05	4.15	5.35	4.33	8.56	103.3	3.42	7.2%	1,293
Total	**1.04**	**3.29**	**-0.05**	**4.27**	**5.35**	**4.18**	**7.45**	**105.1**	**2.94**	**100.0%**	**15,906**
Aggregate	1.03	3.30	-0.05	4.28	5.32	4.17	7.36	105.3	2.91	92.8%	14,613

Aggregate excludes Other Sectors (hotel/motel, mixed-use and miscellaneous)
bp - Basis Points

Total Return by Sector For the quarter (%)



Portfolio Composition by Sector

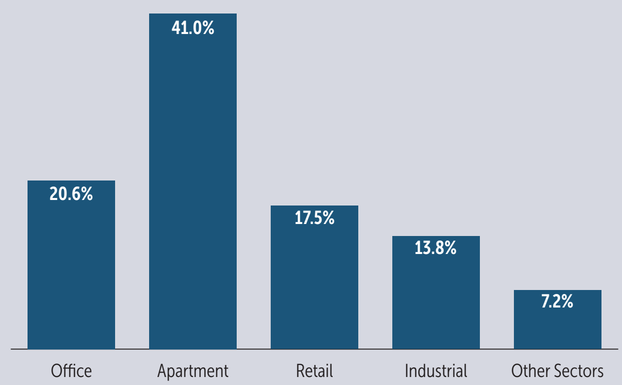


Table C: Giliberto-Levy Index Performance by Book LTV - For the quarter ended June 30, 2020

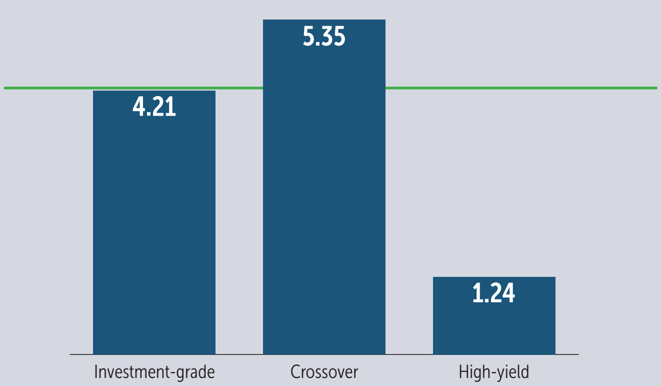
	Returns (%)				Statistics	Averages					
Credit Quality Using Book Value	**Income**	**Price**	**Other**	**Total**	**Adj. Duration**	**Coupon**	**Maturity**	**Price**	**Yield**	**Pct. of Portfolio**	**No. of Cohorts**
Investment-grade	1.03	3.23	-0.05	4.21	5.24	4.19	7.32	105.3	2.90	93.3%	15,070
Crossover	1.04	4.34	-0.03	5.35	6.78	4.08	9.21	102.9	3.53	6.7%	829
High-yield	1.10	0.14	0.00	1.24	4.49	4.34	5.70	93.5	5.09	0.1%	7
Total	**1.04**	**3.29**	**-0.05**	**4.27**	**5.35**	**4.18**	**7.45**	**105.1**	**2.94**	**100.0%**	**15,906**

Credit Quality Definition

	Book LTV	
	Minimum	**Maximum**
Investment-grade	NA	70.0%
Crossover	70.1%	85.0%
High-yield	85.1%	NA

Please note that all G-L 1 loans are senior loans. "Crossover" loans are those with LTVs above 75% and below 85%. They are not subordinate positions that "attach" at 75% LTV and go up to 85% of the capital stack.

Total Return by Credit Quality For the quarter (%)



Portfolio Composition by Credit Quality

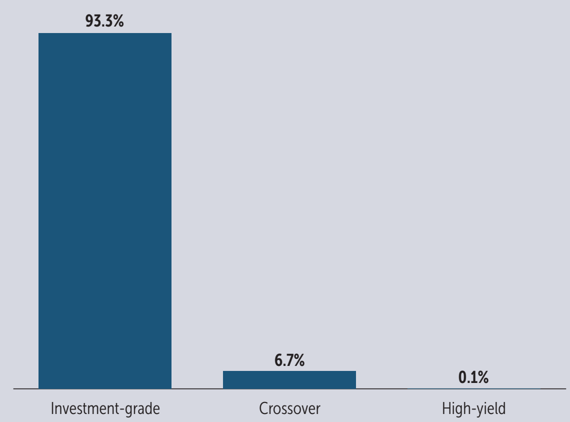
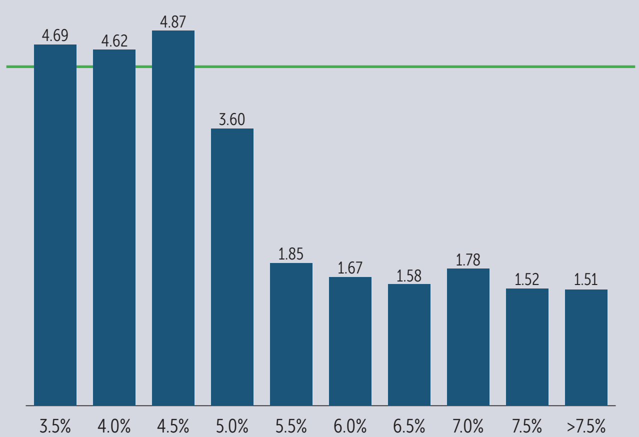


Table D: Giliberto-Levy Performance by Coupon Rate - For the quarter ended June 30, 2020

	Returns (%)				Statistics	Averages					
Credit Quality Using Book Value	Income	Price	Other	Total	Adj. Duration	Coupon	Maturity	Price	Yield	Pct. of Portfolio	No. of Cohorts
0.0% to 3.5%	0.85	3.86	-0.02	4.69	5.51	3.28	7.16	101.1	2.93	13.8%	1,442
3.5% to 4.0%	0.95	3.70	-0.03	4.62	5.29	3.79	6.96	104.0	2.92	32.8%	3,744
4.0% to 4.5%	1.04	3.87	-0.05	4.87	5.94	4.25	8.49	106.6	3.02	31.0%	3,891
4.5% to 5.0 %	1.13	2.52	-0.05	3.60	5.42	4.73	7.98	107.6	3.01	12.8%	1,957
5.0% to 5.5%	1.24	0.68	-0.06	1.85	3.67	5.23	5.77	106.3	2.77	3.8%	991
5.5% to 6.0%	1.36	0.43	-0.11	1.67	3.09	5.74	5.24	106.7	2.71	2.8%	1,266
6.0% to 6.5%	1.45	0.30	-0.17	1.58	3.16	6.24	5.54	107.9	2.70	1.5%	994
6.5% to 7.0%	1.55	0.40	-0.18	1.78	3.21	6.71	5.61	108.7	2.69	0.5%	354
7.0% to 7.5%	1.67	0.07	-0.22	1.52	2.92	7.26	5.29	108.4	2.57	0.5%	341
7.5% and above	1.87	-0.05	-0.32	1.51	2.29	8.08	4.26	108.1	2.56	0.5%	926
Total	**1.04**	**3.29**	**-0.05**	**4.27**	**5.35**	**4.18**	**7.45**	**105.1**	**2.94**	**100.0%**	**15,906**

Total Return by Coupon Rate For the quarter (%)



Portfolio Composition by Coupon Rate

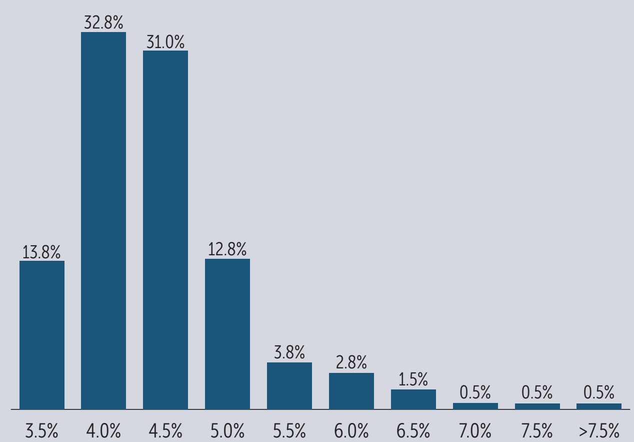
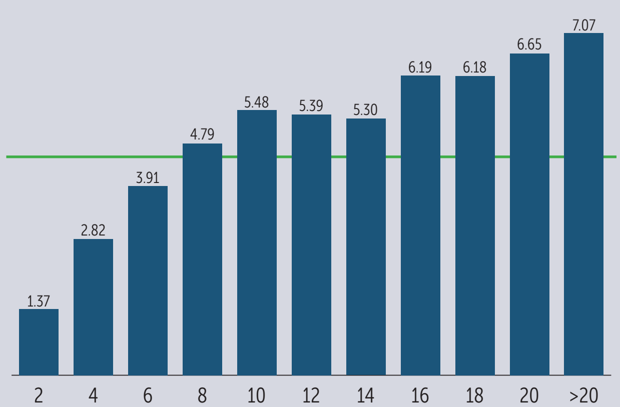


Table E: Giliberto-Levy Total Performance by Remaining Term to Maturity - For the quarter ended June 30, 2020

	Returns (%)				Statistics		Averages				
					Adj.					Pct. of	No. of
Maturity Cell	Income	Price	Other	Total	Duration	Coupon	Maturity	Price	Yield	Portfolio	Cohorts
0 to 2 years	1.13	0.28	-0.04	1.37	1.00	4.53	1.06	101.8	2.59	11.6%	2,573
2 to 4 years	1.03	1.83	-0.04	2.82	2.76	4.22	3.09	104.4	2.64	15.0%	2,644
4 to 6 years	1.01	2.95	-0.05	3.91	4.33	4.10	5.07	105.4	2.80	19.4%	3,012
6 to 8 years	1.00	3.83	-0.04	4.79	5.71	4.06	6.97	105.7	3.01	17.4%	2,355
8 to 10 years	1.02	4.51	-0.04	5.48	7.08	4.08	8.95	105.7	3.15	16.2%	1,904
10 to 12 years	1.03	4.42	-0.06	5.39	7.51	4.19	10.99	106.6	3.12	5.2%	920
12 to 14 years	1.06	4.31	-0.07	5.30	8.36	4.38	13.06	108.2	3.20	4.3%	725
14 to 16 years	1.02	5.23	-0.06	6.19	8.96	4.03	14.88	105.0	3.30	3.5%	625
16 to 18 years	1.07	5.19	-0.07	6.18	9.17	4.35	17.05	107.4	3.34	2.3%	430
18 to 20 years	1.05	5.66	-0.06	6.65	10.20	4.17	18.87	105.9	3.44	1.8%	321
20 years or more	1.08	6.06	-0.06	7.07	11.77	4.26	26.13	105.6	3.56	3.1%	397
Total	**1.04**	**3.29**	**-0.05**	**4.27**	**5.35**	**4.18**	**7.45**	**105.1**	**2.94**	**100.0%**	**15,906**

Total Return by Maturity Cell For the quarter (%)



Portfolio Composition by Maturity Cell

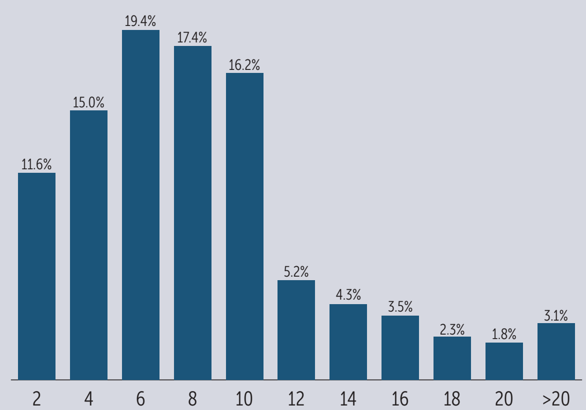
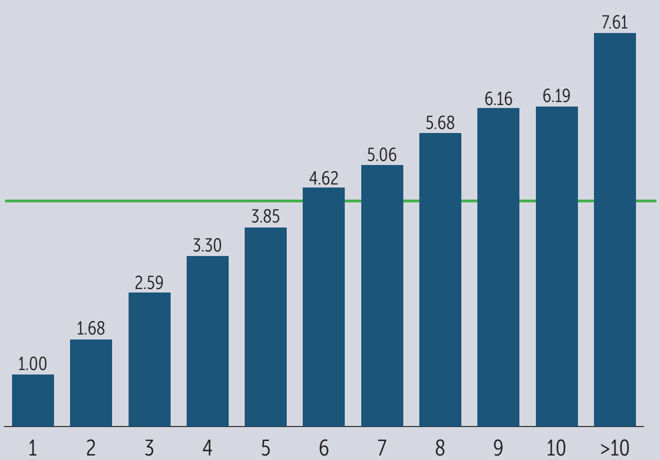


Table F: Giliberto-Levy Index Performance by Duration - For the quarter ended June 30, 2020

	Returns (%)				Statistics	Averages					
Duration Cell	Income	Price	Other	Total	Adj. Duration	Coupon	Maturity	Price	Yield	Pct. of Portfolio	No. of Cohorts
0 to 1 year	1.19	-0.14	-0.05	1.00	0.51	4.75	0.54	101.1	2.60	5.3%	1,579
1 to 2 years	1.11	0.62	-0.05	1.68	1.41	4.50	1.60	102.7	2.58	6.8%	1,736
2 to 3 years	1.03	1.62	-0.06	2.59	2.48	4.23	2.92	104.0	2.63	9.6%	2,121
3 to 4 years	1.05	2.30	-0.05	3.30	3.49	4.28	4.20	105.4	2.70	10.5%	1.835
4 to 5 years	1.01	2.88	-0.04	3.85	4.45	4.14	5.43	105.6	2.81	13.0%	1,877
5 to 6 years	0.99	3.67	-0.04	4.62	5.45	3.97	6.87	105.2	2.97	14.1%	1,763
6 to 7 years	1.03	4.07	-0.05	5.06	6.48	4.23	8.56	107.0	3.09	13.5%	1,728
7 to 8 years	1.02	4.70	-0.05	5.68	7.44	4.08	10.53	106.1	3.19	10.8%	1,337
8 to 9 years	0.98	5.22	-0.05	6.16	8.37	3.89	12.29	104.9	3.23	7.4%	829
9 to 10 years	1.03	5.21	-0.05	6.19	9.50	4.16	15.65	106.4	3.36	3.7%	520
10 years or more	1.05	6.61	-0.05	7.61	11.75	4.11	21.38	105.4	3.51	5.3%	581
Total	**1.04**	**3.29**	**-0.05**	**4.27**	**5.35**	**4.18**	**7.45**	**105.1**	**2.94**	**100.0%**	**15,906**

Total Return by Duration Cell For the quarter (%)



Portfolio Composition by Duration Cell

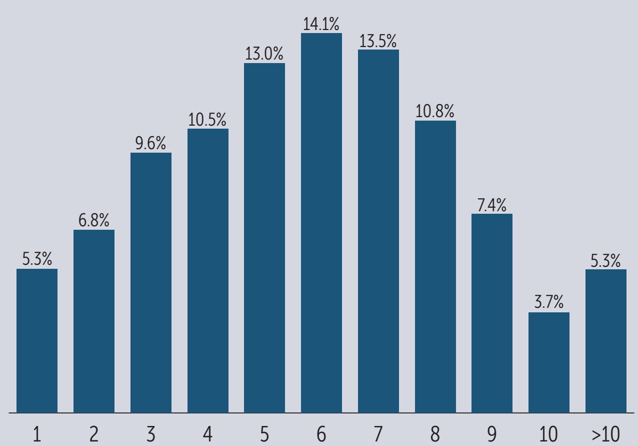


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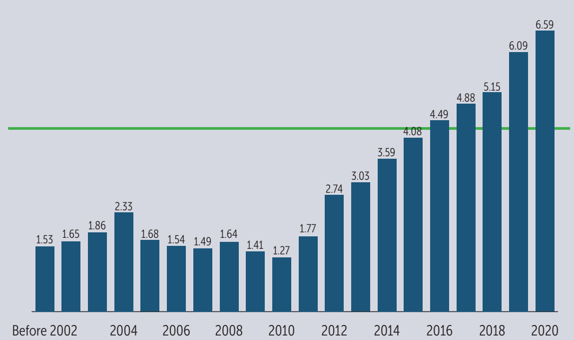
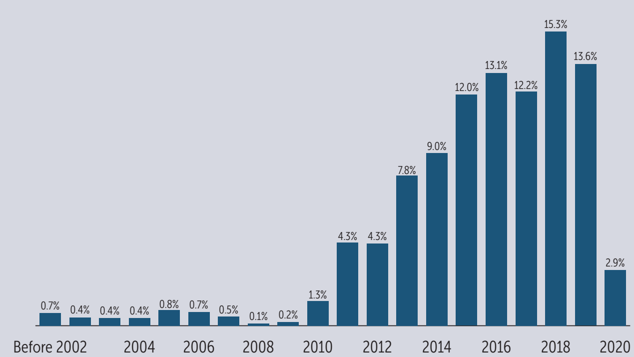
Table G: Giliberto-Levy Index Performance by Vintage Year - For the quarter ended March 31, 2020

	Returns (%)				Statistics	Averages					
Vintage Year	Income	Price	Other	Total	Adj. Duration	Coupon	Maturity	Price	Yield	Pct. of Portfolio	Num. of Cohorts
Before 2002	1.80	0.06	-0.33	1.53	2.46	7.74	4.77	108.2	2.53	0.7%	1,115
2002	1.55	0.30	-0.20	1.65	3.05	6.69	5.66	108.1	2.56	0.4%	294
2003	1.38	0.73	-0.25	1.86	2.75	5.93	4.78	107.7	2.51	0.4%	394
2004	1.40	1.18	-0.24	2.33	3.09	6.06	5.30	109.8	2.57	0.4%	339
2005	1.32	0.54	-0.19	1.68	2.99	5.64	5.17	107.5	2.59	0.8%	743
2006	1.42	0.27	-0.15	1.54	3.00	6.11	5.24	107.4	2.72	0.7%	551
2007	1.44	0.20	-0.15	1.49	3.97	6.21	7.67	108.2	2.81	0.5%	288
2008	1.52	0.29	-0.17	1.64	2.72	6.54	4.46	107.6	2.64	0.1%	51
2009	1.74	-0.20	-0.13	1.41	2.75	7.48	4.44	107.9	2.64	0.2%	28
2010	1.29	0.05	-0.07	1.27	1.26	5.24	1.99	102.7	2.55	1.3%	300
2011	1.22	0.60	-0.05	1.77	2.13	5.05	2.94	104.4	2.58	4.3%	802
2012	1.05	1.75	-0.06	2.74	3.06	4.31	4.37	104.7	2.65	4.3%	837
2013	1.05	2.03	-0.05	3.03	3.98	4.33	5.74	105.7	2.73	7.8%	1,235
2014	1.01	2.62	-0.04	3.59	4.42	4.16	6.20	105.6	2.79	9.0%	1,150
2015	0.97	3.14	-0.04	4.08	4.78	3.92	6.61	104.8	2.88	12.0%	1,555
2016	0.95	3.58	-0.03	4.49	5.22	3.78	7.25	104.0	2.97	13.1%	1,470
2017	0.99	3.93	-0.04	4.88	5.77	3.96	7.78	105.1	3.03	12.2%	1,440
2018	1.06	4.13	-0.04	5.15	6.83	4.37	9.47	107.9	3.10	15.3%	1,524
2019	0.97	5.15	-0.03	6.09	7.57	3.79	10.42	103.8	3.21	13.6%	1,431
2020	0.91	5.71	-0.03	6.59	8.12	3.37	11.02	99.7	3.29	2.9%	359
Total	**1.04**	**3.29**	**-0.05**	**4.27**	**5.35**	**4.18**	**7.45**	**105.1**	**2.94**	**100.0%**	**15,906**

Total Return by Vintage Cohort For the quarter (%)



Portfolio Composition by Vintage Cohort



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About the Giliberto-Levy Index

Established in 1993, the Giliberto-Levy Index provides essential information and accurate research on emerging trends affecting commercial mortgage investments. Investment professionals, actuaries, consultants, plan sponsors, banks, life companies, regulators and rating agencies use the index as a reliable way to evaluate the performance of commercial mortgages on a total return, marked-to-market basis.

Contact

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The Giliberto-Levy Index pulls specific data from several sources to assure the accuracy of its measurement. Information on mortgage rates comes from the John B. Levy & Company National Mortgage Survey. Data on interest rates come from market sources

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