GILIBERTO-LEVY
COMMERCIAL REAL ESTATE DEBT INDEXES

HIGH-YIELD CRE DEBT PRINCIPAL LOSS EXPOSURE JULY 2022

Giliberto-Levy White Paper

Abstract

This paper examines how declines in property values might affect principal amounts in the G-L 2 index of high-yield commercial real estate (CRE) debt. For example, a 30% downturn in property values exposes the index to a potential 10% loss.

High-yield Commercial Real Estate Debt Principal Loss Exposure

July 2022

Summary

- Using a simple model and assumptions, which are described in the article, we examined how declines in property values might affect principal amounts in the G-L 2 index.
- Under a 30% decline in value, which is roughly the maximum drawdown experienced from the global financial crisis (GFC), potential loss exposure is 9.7% of total outstanding principal as of March 31, 2022.
- Under the same scenario, the average loan in the index would experience a loss of about 21%. The average loss exceeds the overall index outcome because small loans tend to be higher up in property capital stacks. As a result, such loans have higher loss exposure, pulling up the (unweighted) average.

Introduction

The sharp increase in U.S. Treasury yields and the associated heightened potential for a U.S. recession has had a chilling effect on commercial real estate's hitherto strong outlook. One investment professional we spoke with labeled the transactions market "the land of broken deals." The comment reflects uncertainty around pricing given less confidence about future earnings and more downside risk.

How would high-yield debt on U.S. commercial real estate (CRE) fare under a downturn? To frame an answer, we carried out a stress test using the Giliberto-Levy High-Yield Commercial Real Estate Debt Index or "G-L 2". The analysis is like one G-L did in June 2020 when the extent of the COVID-19 epidemic and attendant economic fallout were unclear.

Exposure Model and Assumptions

We constructed a simple model to examine exposure of principal to potential credit loss. The model uses what might be called a "burn through" approach: as value declines, loss sequentially affects a property's capital stack. The burn starts by reducing the borrower's (common) equity and then proceeds through the stack until it burns out upon reaching a selected percentage decline in property value.

Consider this example. A property is financed with senior, non-recourse debt at 75% loan to value (LTV), and the remaining 25% is common equity. For convenience, assume the current value of the property is 100.

What is the loan principal's exposure to a 30% decline in property value?

After the decline the asset is valued at 70. In theory, the borrower's equity is gone – burned through in my analogy – and suffered a 100% loss. The senior loan, on paper at least, experienced a decline of 5 / 75 or about 7%. It has been singed but not burned through.

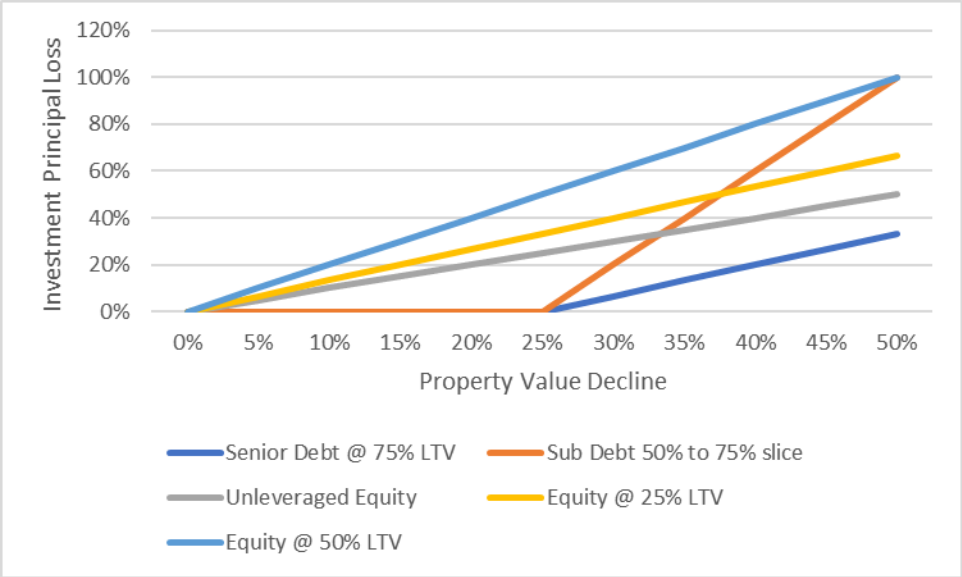
This approach is not a predictive model that estimates credit losses. A credit loss model needs to account for other factors and apply more sophisticated analysis. A refined model would consider the inherent optionality when non-recourse debt is used, what mark-to-market or fair value approaches might require compared with actual loss realizations, strategic borrower-lender negotiations, interest capitalization and so forth. That said, the simple model clearly illustrates differential potential loss exposure in the capital stack.

The model also provides insight into how potential loss exposure changes as declines in property value increase. We looked at declines in value ranging from 0% to 50% and how five different investments in the same property might be affected. The five investments are:

1. Unleveraged ownership. This investment obviously experiences a one-for-one decline as property value decreases.
2. Equity leveraged at 25% LTV, which roughly corresponds to the aggregate LTV reported for NCREIF's ODCE Fund Index.
3. Equity leveraged at 50% LTV, which would be regarded as moderate leverage for commercial real estate.
4. Senior, non-recourse debt at 75% LTV.
5. Subordinate debt that "attaches" at 50% LTV and "detaches" at 75% LTV.

The LTVs for 3 and 4 were chosen to match the subordinate debt's attach and detach LTVs. This will highlight several critical aspects of credit-loss exposure. Chart 1 shows results for the five investments.

Chart 1. Potential Principal Loss Exposure to Property Value Decline: Single-Asset



Source: Giliberto-Levy

Key takeaways from Chart 1:

- Both senior and subordinate debt have full downside protection up to a 25% decline in property value. This is because both debt positions have 75% detach LTVs.
- Subordinate debt is less exposed to downside than equity investments, *up to a point*.
    - If property value goes down by less than 33%, the principal loss of the subordinate debt position is smaller than losses for any of the equity investments.
    - At a property value decrease of 33%, the subordinate debt investment has an identical 33% principal loss.
    - At higher property value declines, subordinate debt starts to underperform low-leverage equity, per the 25% LTV case in Chart 1.
    - Ultimately, the subordinate debt position is completely burned through at a 50% decline in property value. Equity leveraged at 50% suffers an identical 100% effect.

Recall that the model's purpose is to show potential exposure. Leveraged borrowers and subordinate debt lenders might opt to inject capital to stave off a complete loss if they have a favorable outlook for a value recovery. (Capital may or may not be available to do so, of course.)

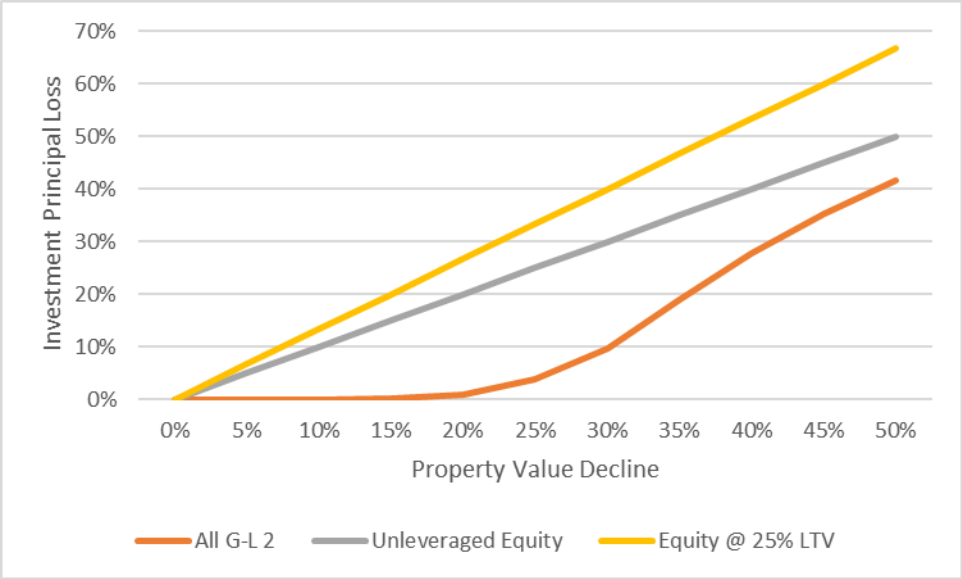
Portfolio Losses

Using the same range of value declines, we applied the model to each active G-L 2 loan that had complete capital stack information as of March 31, 2022.[1]

Chart 2 shows potential G-L 2 principal loss exposure in the aggregate and includes equity investments 1 and 2 from the above section for comparison. The "All G-L 2" line is loss across a diversified set of investments due to a systematic decline in property values, while Chart 1 shows the effect of a decline in a single property value; that decline may be systematic or property specific.

[1] About 85% of the G-L 2 had this information. The remainder were either unavailable or in process of being collected.

Chart 2. Potential Principal Loss Exposure to Property Value Decline: G-L 2 Index



Source: Giliberto-Levy

Equity losses are linear with respect to property value changes, and leverage magnifies changes. In contrast, the high-yield debt portfolio's response is nonlinear.[2]

To put these results in context, consider that the largest drawdown recorded in the NCREIF Property Index (NPI) was a 29% decline in the wake of the global financial crisis (GFC).[3] The calculated potential principal loss exposure for G-L 2 in the event of a 30% decline is 9.7%.

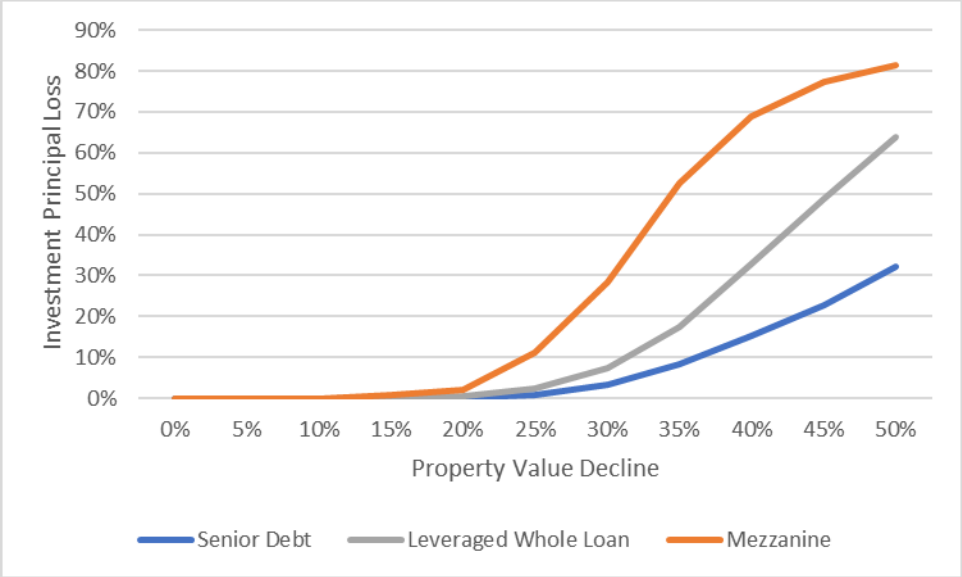
Importantly, G-L 2 is quite heterogeneous. It includes many different types of high-yield debt, ranging from unleveraged senior loans to preferred equity. All property types and many metro areas are represented. There is a wide range of attach and detach LTVs, capital stack slice sizes, and underlying real estate asset strategies.

It is unlikely that any actual debt portfolio is as diverse as G-L 2. Depending on its specific construction, a portfolio could be more or less exposed to loss. For example, compare loss exposure for unleveraged senior debt (in G-L 2) with exposure for some subordinate debt types (see Chart 3).

[2] Nonlinearity arises due to the distribution of loan sizes and capital stack positions in the index. For an individual G-L 2 investment, the response curve will be piecewise linear like the debt examples in Chart 1.

[3] The largest sector drawdown was a 31% decline for office. The smallest were retail and lodging, both at about -23%. Apartments and industrial were each down about 30%. NPI's historical data begins in first quarter 1978.

Chart 3. Potential Principal Loss Exposure to Property Value Decline: Selected G-L 2 Loan Types



Note: Other forms of subordinate debt, such as B notes, are smaller shares of G-L 2 and are not shown in the chart. Their loss potential in the aggregate is similar to that of mezzanine debt.

Source: Giliberto-Levy

At a 30% across the board decline in property values, unleveraged senior loans lose about 3.4%. Leveraged whole loan losses are roughly twice that rate at 7.3%. Mezzanine debt, which tends to be higher up in the capital stack, registered 28.6% loss, nearly equal to the property value decline.[4]

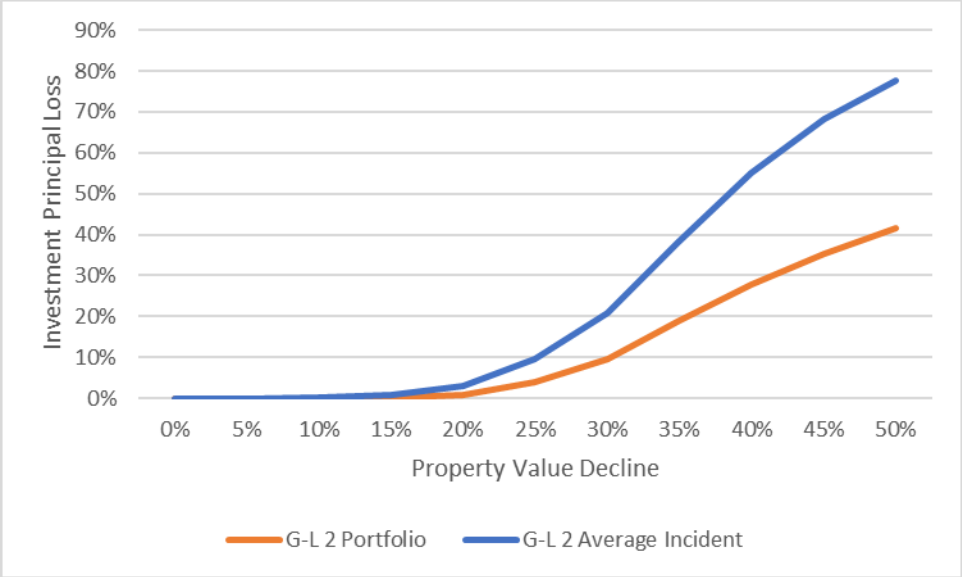
Average Loan Loss

At the index or portfolio level, aggregate loss reflects distributions of loan principal balances and capital stack positions. This means portfolio loss is a weighted average, with weights being unpaid principal balances.

In G-L 2, as of March 31, 2022, loan size was negatively correlated with capital stack position. This relationship causes (weighted by loan balance) portfolio loss generally to be less than the simple or unweighted average loss per loan, an "incident". Chart 4 shows both portfolio and per incident measures. The higher the decline in property values, the greater the difference between the two.

[4] Average LTV for unleveraged senior loans was 69%. For leveraged whole loans, the average capital stack position was 44% to 68%; for mezzanine debt, 61% to 73%.

Chart 4. Potential Principal Loss Exposure to Property Value Decline: Portfolio versus Average Incident



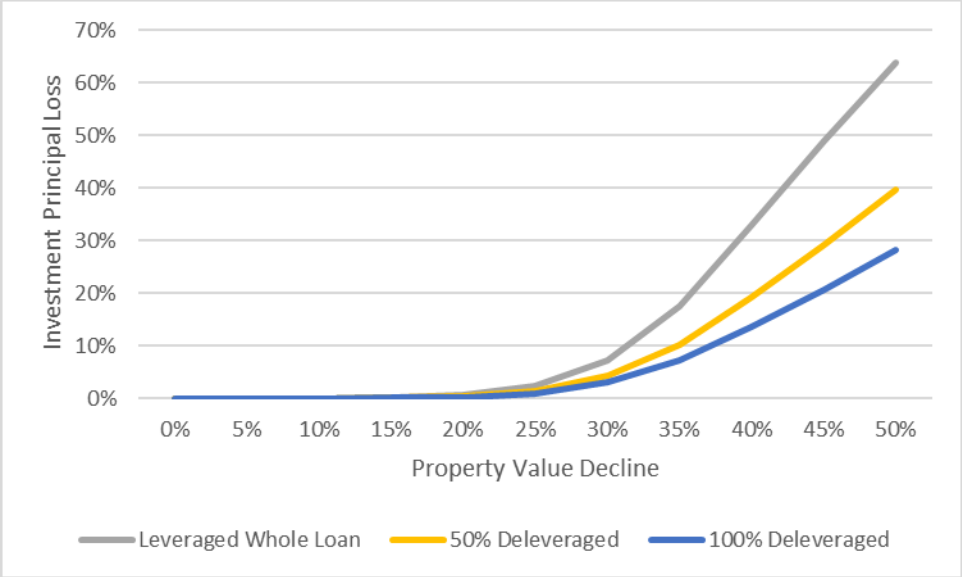
Source: Giliberto-Levy

The Special Case of Leveraged Whole Loans

In analyses above, leveraged whole loan results use current in-place leverage.[5] However, unlike other forms of subordinate debt, leveraged whole loans can be deleveraged at the lender's discretion by repaying some or all of the amount used to finance the whole loan. (Again, if capital is available to do so.) Chart 5 shows how deleveraging could reduce potential loss.

[5] The average advance rate was 63% as of March 31, 2022.

Chart 5. Leveraged Whole Loans: Potential Loss Exposure Reduction From Deleveraging



Source: Giliberto-Levy

Completely deleveraged outcomes for these loans are, not surprisingly, very similar to other senior loans in G-L 2. It also is apparent, and again not surprising, that deleveraging has more efficacy at higher levels of value declines.

Conclusions

We used a simple model to assess exposure to the loss of principal in a broad-based index of U.S. high-yield commercial real estate debt. At a macro level, such debt appears to have reasonable downside protection up to and including a reduction in real estate values similar to what occurred as a result of the GFC. I also noted that the "average investment" has higher risk and can experience greater loss than the portfolio average.

Finally, it should be noted that marking these investments to market is not the same as realizing a loss. The potential for the latter was what this white paper focused on. As many of us learned during and after the GFC, some positions were marked near zero and subsequently recovered as the economy rebounded. Unfortunately, others did indeed experience losses up to and including 100% write offs. Investors in high-yield CRE debt should remain vigilant.

The Giliberto-Levy Indexes

The G-L Commercial Mortgage Performance Index or G-L 1 tracks investment results for fixed-rate senior mortgages made by lenders such as life insurance companies, GSEs, pension funds and investment managers and held on their balance sheets. G-L 1 has been produced continuously since 1993, with a return inception date of January 1, 1972.

The G-L High-yield Real Estate Debt Index or G-L 2 measures performance for a variety of investments, such as mezzanine loans, leveraged whole loan and B-notes. G-L 2 production started in 2018. The return inception date is January 1, 2010.

To receive more information about the indexes, please contact Julia Grant (jgrant@jblevyco.com).