Modeling Securitized Credit

Investors looking to assess the potential effects of a securitized credit allocation have limited options given the lack of a widely accepted benchmark or peer universe. Our modeling framework offers an interim solution for optimizing exposure within a higher-yielding multi-asset credit mandate.

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Introduction: Why securitized credit needs a custom framework

The challenge

Securitized credit has come a long way since the global financial crisis. Regulation has improved, the technology for structuring deals is observably better, and more types of securities have emerged. As the market has grown and evolved, the opportunity set has become a diverse range of economic sectors, security structures, coupon types and credit ratings, from AAA to below investment grade and nonrated securities.

Yet this very diversity—a.k.a., *fragmentation*—has posed a significant challenge to index providers, resulting in indexes that have fallen short of fully capturing this market beta. For example, the Bloomberg U.S. Aggregate Index excludes floating-rate securities and any issues not scored by the Big 3 ratings agencies, and size minimums can prohibit entry into the index, leaving the Agg holding mostly agency RMBS. Meanwhile, the J.P. Morgan CLOIE Index and the Vista Credit Risk Transfer indexes only represent single sectors. Furthermore, Morningstar has yet to create a dedicated category for securitized credit funds, lumping them together with dissimilar strategies in either Multisector or Nontraditional bond categories.

We believe the lack of a reliable and reasonably indicative dataset to use in portfolio optimizations has caused investors to consistently underallocate to this dynamic opportunity set.

So we decided to build one. In 2020, we developed an analytical framework that has served as a focal point for countless client conversations, providing an intuitive model in lieu of a standardized benchmark to support allocations to this asset class. Our 2025 report extends the analysis through 2024.

Our approach

1. Define "securitized credit" in the context of a dedicated allocation, focusing on the four major securitized food groups: commercial mortgage-backed securities, asset-backed securities, non-agency residential mortgage-backed securities (including credit risk transfers) and collateralized loan obligations.
2. Identify appropriate constituents, starting with securitized credit weighting constraints, then filtering out tourists and category hoppers that might misrepresent the asset class, and finally confirming broad availability. The outcome is a list of 10 constituent funds we can use to create a performance series.
3. Build a performance series covering 2013 to 2024, using equal-weighted allocations that are rebalanced and reconstituted annually.
4. Define a base portfolio for optimization based on correlations and risk/return characteristics. This analysis leads us to a 50/50 portfolio of high yield and bank loans as our starting point, against which we optimize securitized credit weights. This approach reflects clear parallels among the three asset classes, often referred to as "plus" sectors and frequently combined as part of a higher-yielding multi-asset (or multi-sector) credit mandate.
5. Determine strategic allocation bands that maximize the Sharpe ratio, using (1) constrained analysis that optimizes securitized credit against a static base portfolio and (2) unconstrained analysis that allows weightings to vary freely. Both approaches show improved risk-adjusted returns with the addition of securitized credit, owing primarily to lower volatility.

The resulting optimization shows that a 40-55% weight to securitized credit within an allocation to higher-yielding fixed income "enhancers" is a good starting point. An analysis of other fixed income allocations, overlaid with goals and objectives, may influence allocations when trying to build a better fixed income framework for clients.

Our five-step modeling process

1: Define securitized credit

Before we can optimize a securitized credit allocation, we first need to define the boundaries of the investment universe. Securitized credit includes a diverse set of subsectors, credit ratings and structures, all of which can have a significant impact on investment attributes. These securities can be bucketed into five major categories. Notably, we exclude agency RMBS—pools of mortgages guaranteed by the U.S. government via GSEs—as they have a risk profile more akin to government bonds, with little to no credit risk.

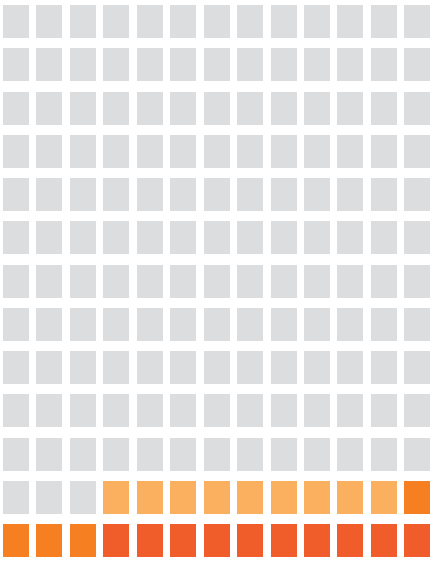
Key categories of securitized credit

	ABS **Asset-backed securities**	**CLOs** **Collateralized loan bligations**	**CMBS** **Commercial mortgage-backed securities**	**CRTs** **Credit risk transfer securities**	**Non-agency RMBS** **Residential mortgage-backed securities**
Typical collateral	Loans on credit cards, tuition (private student loans), autos, aircraft and solar	Business loans, often made to private equity firms for leveraged buyouts	Mortgages on offices, retail, warehouses, apartments and hotels	Cash proceeds from the sale of securities for which credit risk is being transferred	Residential mortgages issued by private institutions
Fundamental driver	Consumer spending	Corporate credit cycle	Commercial real estate	Housing market	
Key sector risks	Income inequality; student loan dynamics	Leveraged loan market dynamics	Office utilization, retail transition	Potential privatization of GSEs	Forbearance resolutions
Typical credit rating	●●●● High investment grade	●●●○ Mid to high investment grade	●●○○ Low investment grade	●○○○ Below to low investment grade	○○○○ Below investment grade
Weighted average life	< 5 years	< 10 years	3-10 years	2-10 years	4-6 years
Coupon	Fixed & floating	Floating	Fixed	Floating	Fixed & floating

As of 12/31/24. Source: Voya IM.

2: Identify securitized credit constituents

Based on the categories above, we narrow the field of funds for the performance series using the selection criteria below. We understand that the resulting list may exclude reasonably suitable candidates. However, we believe the criteria are appropriately transparent and logical for establishing a representative performance series. Moreover, as our industry peers conduct similar research and expand the list of constituents, we believe this will merely fortify the case for securitized credit and further validate our research conclusions.



Start with Morningstar's Multisector and Nontraditional categories (169 funds as of 12/31/24)

Screen 1 → 23 funds

- Must have at least 80% invested in securitized credit
- No more than 15% corporate investments

Screen 2 → 14 funds

Exclude:

- Multi-sector strategies that meet the thresholds above, but which likely represent a tactical move into securitized
- Strategies focused primarily on just one or two securitized subsectors
- Category hoppers with significant changes over their lifespan such that we deemed the historical track record to be not representative of securitized credit
- Funds closed to new investors

Screen 3 → 10 funds

- Validate institutional visibility through eVestment analysis by matching mutual fund with institutional strategy or fund listing

Securitized credit performance series constituents

Mutual fund (Morningstar)	Fund symbol	Institutional strategy (eVestment)
Angel Oak Multi-Strategy Income Fund	ANGIX	Angel Oak Multi-Strategy Income
Columbia Mortgage Opportunities Fund	CLMZX	Columbia Structured Credit
DoubleLine Income	DBLIX	DoubleLine Income
GMO Opportunistic Income VI	GMODX	GMO Opportunistic Income Strategy
Medalist Partners MBS Total Return Fund	SEMMX	Medalist Partners MBS Total Return Fund*
PGIM Securitized Credit Fund	SCFZX	PGIM Fixed Income Securitized Product (Unconstrained)
PIMCO Mortgage Opportunities and Bond Fund	PMZIX	PIMCO Asset Backed Securities Strategy
Pioneer Securitized Income Fund	SYFFX	Amundi Pioneer Securitized Credit Opportunities
Putnam Mortgage Opportunities Fund	PMOTX	Putnam Dedicated Mortgage Strategy
Voya Securitized Credit Fund	VCFIX	Voya Securitized Credit – Opportunistic

As of 12/31/24. Source: Morningstar Direct, eVestment, Voya IM. *Mutual fund listed in eVestment.

3: Build a performance series

With our constituents identified, we construct a portfolio according to the following rules:

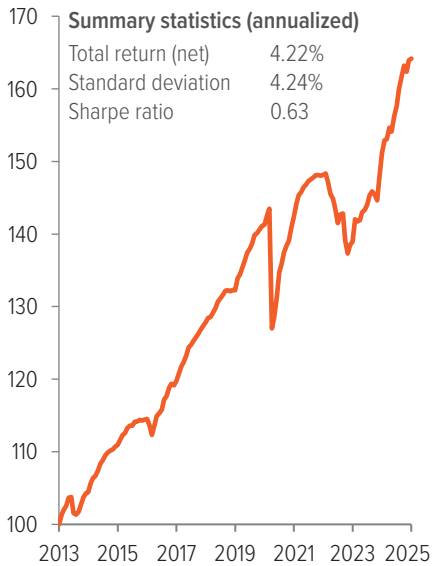
1. At least three funds are required to begin the series.
2. Allocations are distributed equally across each fund.
3. Constituents are added/removed and the portfolio is rebalanced at each year's end.

The resulting securitized credit performance series and the accompanying optimization work span 2013 to 2024. Note that this performance series is net of fees, whereas the indexes used in our optimization analysis do not reflect management fees or other expenses. This *net-of-fee* "haircut" penalizes securitized credit, and the resulting allocation band would likely shift higher if all investments were measured on a common net-of-fee basis.

Securitized credit model portfolio

Constituents (left); series performance, indexed to 100 (right)

Ticker	Inception	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
GMODX	10/03/11	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ANGIX	08/16/12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PMZIX	10/22/12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SEMMX	07/22/13		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CLMZX	04/30/14			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
VCFIX	08/07/14			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
RCTIX[1]	12/30/14			✓	✓	✓	✓	✓	✓				
PMOTX	04/07/15				✓	✓	✓	✓	✓	✓	✓	✓	✓
HITIX[2]	03/01/19								✓	✓	✓		
SCFZX	07/01/19									✓	✓	✓	✓
SYFFX	07/01/21									✓	✓	✓	✓
DBLIX	09/03/19										✓	✓	✓

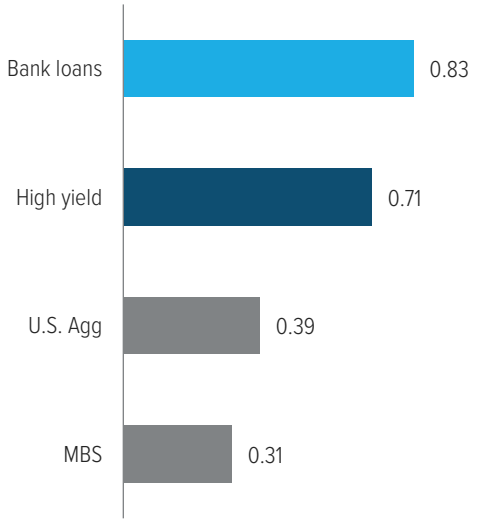


As of 12/31/23. Source: Morningstar Direct, Voya IM. [1] River Canyon Total Return Bond Fund screened out based on our inclusion criteria in 2021. [2] Hartford Schroders Securitized Income Fund ceased operations on 02/28/23. The funds were removed from the performance series as of 12/31 of the prior year, per the annual reconstitution process.

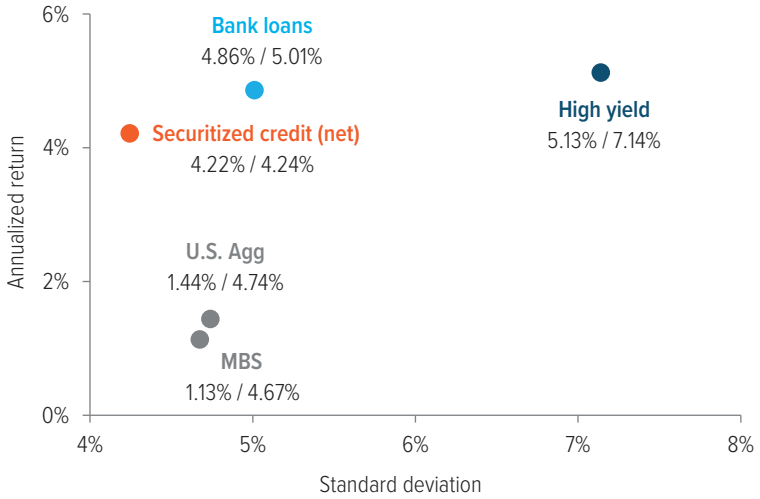
4: Define a base portfolio for optimization

We next seek to identify complementary fixed income asset classes that could serve as potential funding sources. We target four fixed income categories commonly represented in portfolios—the U.S. Agg, agency MBS, high yield and bank loans—analyzing correlations and annualized returns/volatilities with an eye toward enhancing risk-adjusted returns.

Correlations to securitized credit, 2013-2024



Performance characteristics, 2013-2024 (return/risk)



As of 12/31/24. Source: YCharts, Voya IM. Calculations based on monthly data. See back page for index definitions and additional disclosures. **Past performance is no guarantee of future results.**

Both sets of analysis show a clear delineation between core categories (U.S. Agg, agency MBS) and "plus" categories (high yield and bank loans) in their relationship to securitized credit. This suggests that high yield and bank loans are the better starting point for securitized allocations given their higher correlations and similar risk/return profiles. Based on this input, **our optimization analysis uses a base portfolio of equal parts high yield and bank loans.** Although seemingly simplistic, this approach is consistent with the common practice of using 50/50 constructs to benchmark institutional multi-asset credit mandates.

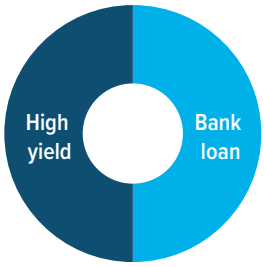
This approach is intuitive and highlights clear parallels among the three asset classes: Securitized credit carries primarily spread risk, is higher yielding, and includes fixed- and floating-rate instruments. In the corporate credit arena, high yield is a fixed-rate opportunity set and bank loans are a floating-rate opportunity set, but both are primarily spread risk assets and have historically offered higher returns accompanied by higher volatility.

What are we optimizing?

Securitized credit…

- Carries primarily spread risk
- Is higher yielding
- Has fixed and floating rates

Home base:



Standard benchmark for institutional multisector credit mandates

Multi-asset credit vs. multisector bond

Take note that multi-asset credit mandates should not be confused with Morningstar's Multisector bond category. **Multisector bond funds** are typically benchmarked to the U.S. Aggregate Bond Index or Bloomberg U.S. Universal Index. Although these funds may invest in below investment grade securities, many have healthy allocations to investment grade bonds and even U.S. Treasuries. By contrast, **multi-asset credit** mandates typically invest across higher-yielding credit instruments such as high yield bonds and bank loans, as well as securitized credit and emerging market debt.

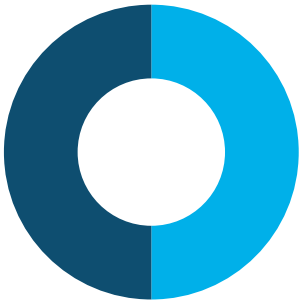
5: Determine a strategic allocation range

We now have all the ingredients to proceed: a defined universe, a list of relevant constituents, a performance series and a base portfolio. From here, optimization analysis can offer insight into potential ranges for a securitized credit allocation, with the goal of maximizing potential risk-adjusted returns.

We use two approaches to optimization: **constrained,** which maintains equal weights to high yield and bank loans, optimizing securitized credit against a static base portfolio, and **unconstrained,** which allows allocations to fluctuate for all three, resulting in optimized weights across the potential investments.

As shown below, the portfolio's Sharpe ratio was maximized with a 51.6% allocation to securitized credit in the constrained scenario and a 44.1% allocation in the unconstrained scenario. In both cases, securitized credit helped to dampen volatility, demonstrating its diversification potential.

Optimization results, 2013-2024

	Base portfolio	Constrained	Unconstrained
			
Allocations			
High yield	50.0%	24.2%	14.5%
Bank loans	50.0%	24.2%	41.5%
Securitized credit	0.0%	51.6%	44.1%
Performance characteristics[1]			
Return	4.99%	4.60%	4.62%
Standard deviation	5.79%	4.74%	4.63%
Sharpe ratio	0.61	0.66	0.68

As of 12/31/24. Source: YCharts, Voya IM. [1] Performance characteristics represent a composite of high yield, bank loans and securitized credit using the respective weightings above. Returns for the securitized credit series based on net-of-fee performance of the constituent funds, whereas index returns for high yield and bank loans do not reflect the deduction of any fees, expenses or taxes. This difference may lead to underrepresentation of securitized credit in optimization analysis. See back page for index definitions and additional disclosures. **Past performance is no guarantee of future results.**

Securitized credit warrants a strategic allocation

In our experience, investor allocations to securitized credit are often well below the range indicated by our optimization analysis, likely influenced by the lack of modeling options. However, investors should not overlook securitized credit's ability to diversify sources of risk and return in fixed income portfolios.

Voya Investment Management has a long history of investing in securitized credit, and we continue to advocate for an industry-standard, market-weighted benchmark and a dedicated category in industry databases. Until that day, **we believe the modeling framework presented here provides a strong foundation for evaluating the potential benefits of a long-term allocation.**

Appendix: Understanding the Covid effect

The market disruptions caused by Covid-19 present a unique opportunity to observe the effects of a "black swan" tail event. We have found the comparison of the full study period with pre-Covid years to be informative, and it has contributed to our decision to identify allocation *bands* rather than a pinpoint forecast.

Some takeaways from the pre-Covid data (shown at right):

1. Correlations to high yield and bank loans were lower pre-Covid, signaling potentially greater diversification potential over a typical business cycle.
2. Securitized credit delivered similar returns as high yield and bank loans but with far less volatility.
3. Adding securitized credit to the base portfolio reduced volatility and improved risk-adjusted returns to a much greater degree before Covid than it did over the full study period.
4. **The pre-Covid constrained optimization is identical to the full study period's, and both scenarios support our allocation band of 40-55% securitized in a multi-asset credit mandate.**

We believe the consistency of optimization results in the two data sets validates our long-held view of the benefits of a strategic allocation to securitized credit.

Pre-Covid optimization outputs are consistent with the full 11-year study period

Analysis	Category	Pre-Covid 2013–2019	Full period 2013–2024
Correlations to securitized credit	U.S. Agg	0.36	0.39
	Agency MBS	0.30	0.31
	High yield	0.54	0.71
	Bank loans	0.50	0.83
Return / std dev (%)	Sec credit (net)	5.06 / 1.72	4.22 / 4.24
	U.S. Agg	2.72 / 3.02	1.44 / 4.74
	Agency MBS	2.49 / 2.27	1.13 / 4.67
	High yield	5.79 / 5.07	5.12 / 7.13
	Bank loans	4.15 / 2.71	4.86 / 5.01
Base portfolio (%)	High yield	50.0%	50.0%
	Bank loans	50.0%	50.0%
	Sec credit	0.0%	0.0%
	Return (%)[1]	4.99	4.99
	Std dev (%)	3.72	5.79
	Sharpe	1.13	0.61
Constrained optimization	High yield	24.2%	24.2%
	Bank loans	24.2%	24.2%
	Sec credit	51.6%	51.6%
	Return (%)[1]	5.03	4.60
	Std dev (%)	2.39	4.74
	Sharpe	1.78	0.66
Unconstrained optimization	High yield	17.0%	14.5%
	Bank loans	36.7%	41.4%
	Sec credit	46.3%	44.1%
	Return (%)[1]	4.88	4.62
	Std dev (%)	2.29	4.63
	Sharpe	1.75	0.68

As of 12/31/24. Source: YCharts, Voya IM. [1] Performance characteristics represent a composite of high yield, bank loans and securitized credit using the respective weightings above. Returns for the securitized credit series based on net-of-fee performance of the constituent funds, whereas index returns for high yield and bank loans do not reflect the deduction of any fees, expenses or taxes. This difference may lead to underrepresentation of securitized credit in optimization analysis. See back page for index definitions and additional disclosures. **Past performance is no guarantee of future results.**

A note about risk

The principal risks are generally those attributable to bond investing. Holdings are subject to market, issuer, credit, prepayment, extension, and other risks, and their values may fluctuate. Market risk is the risk that securities may decline in value due to factors affecting the securities markets or particular industries. Issuer risk is the risk that the value of a security may decline for reasons specific to the issuer, such as changes in its financial condition. The strategy invests in mortgage-related securities, which can be paid off early if the borrowers on the underlying mortgages pay off their mortgages sooner than scheduled. If interest rates are falling, the strategy will be forced to reinvest this money at lower yields. Conversely, if interest rates are rising, the expected principal payments will slow, thereby locking in the coupon rate at below market levels and extending the security's life and duration while reducing its market value.

Index definitions

An investor cannot invest directly in an index, and index performance does not reflect the deduction of any fees, expenses or taxes. Index comparisons have limitations, as volatility and other characteristics may differ from a particular investment. **U.S. Agg:** The Bloomberg U.S. Aggregate Bond Index is an unmanaged index composed of securities from Bloomberg's Government/Corporate Bond Index, Mortgage Backed Securities Index and Asset Backed Securities Index; it includes securities that are of investment grade quality or better and have at least one year to maturity. **Bank loans:** The Morningstar LSTA Leveraged Loan Index is an unmanaged total return index that captures accrued interest, repayments and market value changes. **High yield:** The Bloomberg High Yield Bond 2% Issuer Cap Index is an unmanaged index that includes all fixed income securities with a maximum quality rating of Ba1, a minimum amount outstanding of $150 million, and at least one year to maturity. **MBS:** The Bloomberg U.S. Mortgage Backed Securities Index is an unmanaged index composed of fixed-income security mortgage pools sponsored by GNMA, FNMA and FHLMC, including GNMA Graduated Payment Mortgages. **Securitized credit:** Voya IM securitized credit performance series: Constituents were determined by Voya IM based on a review of funds in the Morningstar Multisector and Nontraditional Bond categories with at least 80% in securitized investments and no more than 15% in corporate investments. Qualitative criteria were used to eliminate funds from the constituent set, including: a) the fund is closed to new investors; b) the current allocation, while meeting the thresholds noted above, likely represented a tactical move into securitized credit within a broader multisector strategy; c) the fund had an outsized concentration in one subsector of securitized credit; and/or d) the fund experienced significant changes over its lifespan across different Morningstar categories such that, while it may accurately be described as a securitized credit fund today, the historical track record was deemed as not representative of an investment in the asset class. Finally, institutional visibility was validated through eVestment analysis by matching each mutual fund with either an institutional strategy or a fund listing. The performance presented is for illustrative purposes only and is based on the net-of-fees performance for the identified share class. The manager universe is based on analysis conducted by Voya IM; other studies could yield a different set of constituents.

Model limitations and risks

While the investment performance presented above does not represent the results of trading actual investor assets, the returns are based on a model portfolio maintained via MorningstarDirect. The changes in the securitized credit model reflect an annual review conducted by Voya IM with constituents added (or removed) at calendar year-end, and allocations are join to equal weight annually. Documentation available by request. Regardless, model trading does not involve the same risks as those of trading of actual investor assets, so results may differ. Returns presented are net of all fees and transaction expenses at the underlying mutual fund level but gross of any fees that may be applicable to specific investment vehicles utilized to implement the intended investment model.

Important disclosures

Past performance does not guarantee future results. This market insight has been prepared by Voya Investment Management for informational purposes. Nothing contained herein should be construed as (i) an offer to sell or solicitation of an offer to buy any security or (ii) a recommendation as to the advisability of investing in, purchasing or selling any security. Any opinions expressed herein reflect our judgment and are subject to change. Certain of the statements contained herein are statements of future expectations and other forward-looking statements that are based on management's current views and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in such statements. Actual results, performance or events may differ materially from those in such statements due to, without limitation, (1) general economic conditions, (2) performance of financial markets, (3) interest rate levels, (4) increasing levels of loan defaults, (5) changes in laws and regulations and (6) changes in the policies of governments and/or regulatory authorities. The opinions, views and information expressed in this commentary regarding holdings are subject to change without notice. The information provided regarding holdings is not a recommendation to buy or sell any security. Fund holdings are fluid and are subject to daily change based on market conditions and other factors.

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