



# Economic Stress Index™





# About LegalShield



**#1 Provider** of subscription-based legal plans to households



**1.8 million+ memberships** paying monthly via credit card/ debit card/payroll deduction



**49 year** history and counting



**47,000** small business accounts



**6,900 broker & agency clients** served by our dedicated B2B division



**39 law firms in 50 states, Canada and the United Kingdom** with a total of 900 lawyers, and a referral network of 4,600 lawyers, with average of 22 years experience



# About the LegalShield Economic Stress Index

- ✓ The LegalShield Economic Stress Index is a suite of leading indicators of the economic and financial status of U.S. households and small businesses.
- ✓ The LegalShield Economic Stress Index is comprised of five sub-indices that are constructed from LegalShield's proprietary data, which reflect the demand for various legal services over the past 15+ years. Each time a LegalShield provider law firm receives a request from a LegalShield customer, the request is logged as an "intake" in one of roughly 70 unique areas of law (e.g., real estate) depending on the nature of the request.
- ✓ Each sub-index reflects the number of intakes in an area of law as a share of total intakes across all areas of law in a given quarter. In some instances, individual indices across multiple areas of law (e.g., bankruptcy, foreclosure, consumer/finance) are combined to produce a composite index (e.g., consumer financial stress).
- ✓ The sub-indices that comprise the LegalShield Economic Stress Index were selected because they tend to lead an existing economic indicator that sheds light on the health of the U.S. economy (i.e., the target economic indicator). In this way, the LegalShield Economic Stress Index provides actionable intelligence about the direction of the U.S. economy in the near term.

# Advantages of the LegalShield Economic Stress Index



## **UNIQUE**

The LegalShield Economic Stress Index is based on inquiries into specific legal services each month. To the best of our knowledge, there is no comparable data on the market.



## **PROPRIETARY**

The LegalShield Economic Stress index is based on data collected through LegalShield's provider law firms in all 50 states, thereby offering information that is not accessible to the general public.



## **HIGH-FREQUENCY**

The LegalShield Economic Stress Index is based on data collected on a near real-time basis, and can be refreshed on a weekly, monthly, or quarterly basis depending on the user's needs.



## **ROBUST**

The LegalShield Economic Stress Index is based on intakes for more than 1.8 million memberships (including individuals and small businesses), providing a window into the experiences of families and businesses across the country at any given point in time.



# Interpreting Each Component of the LegalShield Economic Stress Index

## CONSUMER STRESS INDEX

Consumer spending accounts for more than two-thirds of U.S. economic activity. The flagship Consumer Stress Index tends to lead the Conference Board's Consumer Confidence Index by one to three months. The Consumer Stress Index also provides a useful "hard" data check on the Consumer Confidence Index and similar measures of consumer confidence that are based on "soft" survey data, as these measures are not always consistent with underlying economic conditions.

## BANKRUPTCY INDEX

Bankruptcy data provide an important insight into the overall financial health of consumers and businesses. As witnessed during the Great Recession of 2008-09, an uptick in bankruptcies can foreshadow significant turmoil within the economy. The Bankruptcy Index tends to lead the trajectory of total bankruptcies by roughly one month, providing an early warning signal of an economic downturn.

## FORECLOSURE INDEX

A rise in foreclosures often signals a worsening of household finances, as households typically delay payments on other debt obligations in order to pay their mortgages on time. The Foreclosure Index closely tracks foreclosures as reported each quarter by the Mortgage Bankers Association.

## HOUSING CONSTRUCTION INDEX

The housing market, broadly defined, accounts for up to one-seventh of U.S. economic activity, and the amount of new residential construction (as measured by housing starts) can provide insights into consumers' confidence about their jobs and future income. The Housing Activity Index tends to lead U.S. Census data on housing starts (a key economic indicator) by 1–2 months — providing timely intelligence about near-term housing market health.

## HOUSING SALES INDEX

The housing market accounts for a significant share of U.S. economic activity, and the pace of existing home sales can provide insights into consumers' confidence about their jobs and future income. The Housing Sales Index tends to lead existing home sales as published by the National Association of Realtors and offers an early look at emerging trends in the housing market.



# Consumer Stress Index

**Bottom Line:** The LegalShield Consumer Stress Index improved in January for the second consecutive month. Although inflation is expected to ease in 2023, high prices remain a headwind for consumers. Still, the labor market remains strong and the Consumer Stress Index is below its pre-pandemic average, suggesting that most consumers are well-positioned to weather a slowing economy.

**Latest Reading:** In January, the LegalShield Consumer Stress Index decreased (improved) 2.8 points to 61.3, though it remains nearly 8% above its year-ago level. Meanwhile, the Conference Board's Consumer Confidence Index worsened 1.9 points to 107.1.

**Economic Context:** The labor market remains resilient in the face of rising interest rates. The economy added a remarkable 517,000 jobs in January — more than double market expectations — while both the labor force participation rate and the unemployment rate improved. While the unequivocally strong employment data is welcome news, the Fed may respond by raising rates higher and more quickly than markets previously expected, even as activity cools in other parts of the economy (e.g., housing and manufacturing).

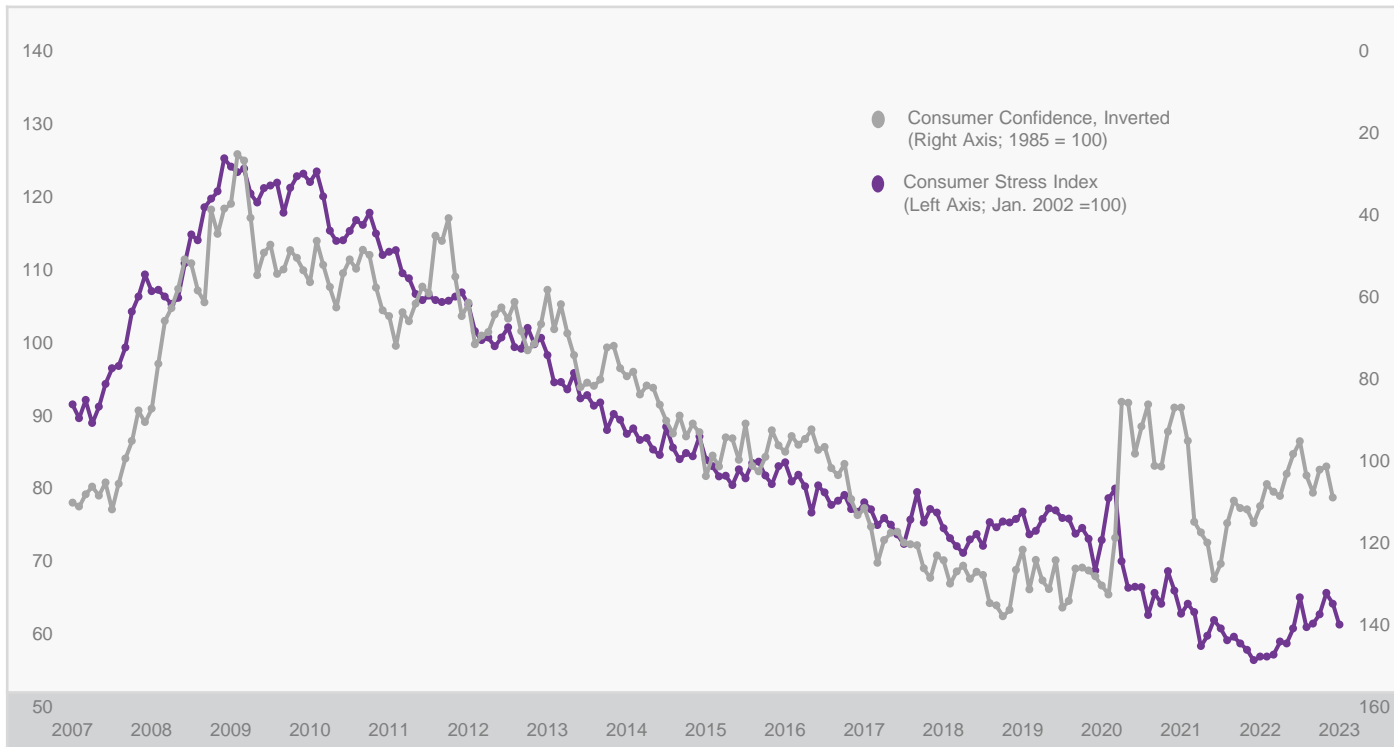
Other economic data point to a more mixed consumer picture:

- Retail sales have fallen in both real and nominal terms for two consecutive months and are at their weakest point since March 2022.
- Consumer spending has slowed across [income levels](#) and the personal savings rate remains near a record low (though it improved slightly in December).
- Some consumers are dipping into their retirement savings: according to the [Vanguard Group](#), the share of consumers tapping their 401(k) reached an all-time high of 2.8% in 2022 (the historical average is around 2%).
- Per the Census Bureau's Household Pulse Survey, the share of card users struggling to afford household expenses has eased since spiking in late summer but remains elevated.

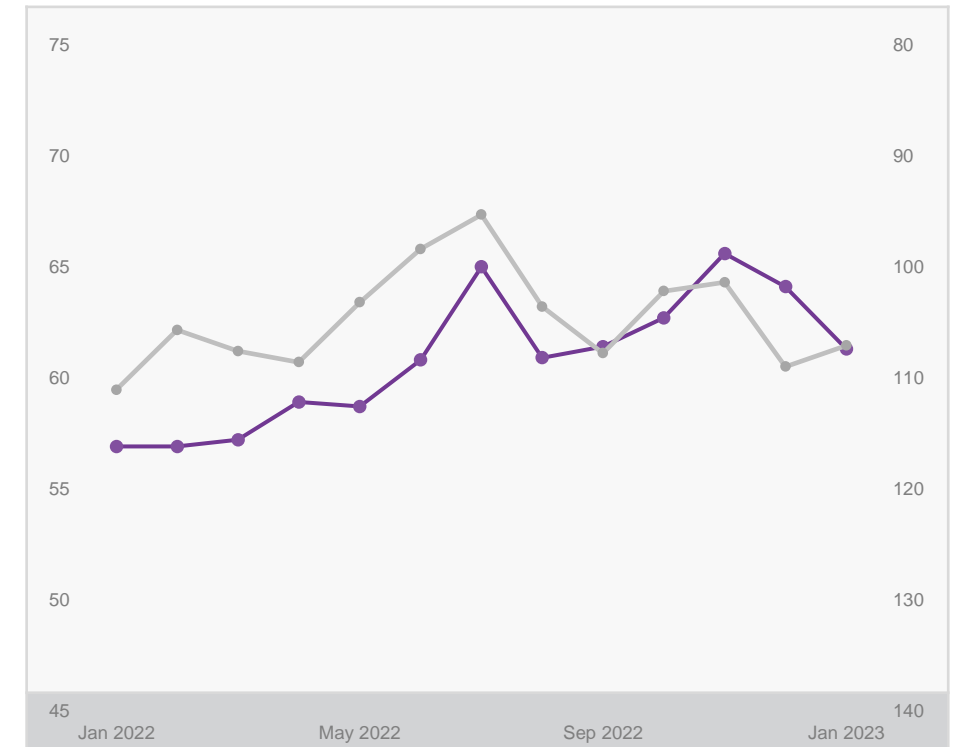
Overall, most measures of financial stress remain muted. However, we expect higher (and still rising) interest rates will slow hiring and economic growth during the first half of the year, which will contribute to rising consumer stress.

# Consumer Stress Index

## Historical Trend Over Past 16 Years



## Movement Over Past 12 Months







# Bankruptcy Index

**Bottom Line:** The LegalShield Bankruptcy Index improved slightly in January and remains at roughly half of its pre-pandemic level. Consumers appear well-positioned to manage their debt for now, and bankruptcies are likely to remain muted in the near term.

**Latest Reading:** The LegalShield Bankruptcy Index decreased (improved) 0.8 points in January to 24.7 after reaching its highest point of the year last month. Meanwhile, total seasonally adjusted bankruptcy filings edged down to 33,011 in January but were up 6.4% from a year prior.

**Economic Context:** Despite mounting economic headwinds, bankruptcies remain well below pre-pandemic levels. However, there are some signs that debt delinquencies may rise in the coming months, which could put upward pressure on bankruptcy filings.

Revolving credit rose 15% Y/Y in December and is far above pre-pandemic levels. As interest rates rise and borrowing becomes more expensive, higher credit card APRs will become a greater burden for cardholders who revolve a balance each month — a group comprising around 46% of [credit cardholders](#) (up from 39% last year). With the share of households who are relying on credit cards to make ends meet, it would not be surprising if credit card delinquency rates rise this year as the economy slows and consumer savings dwindle.

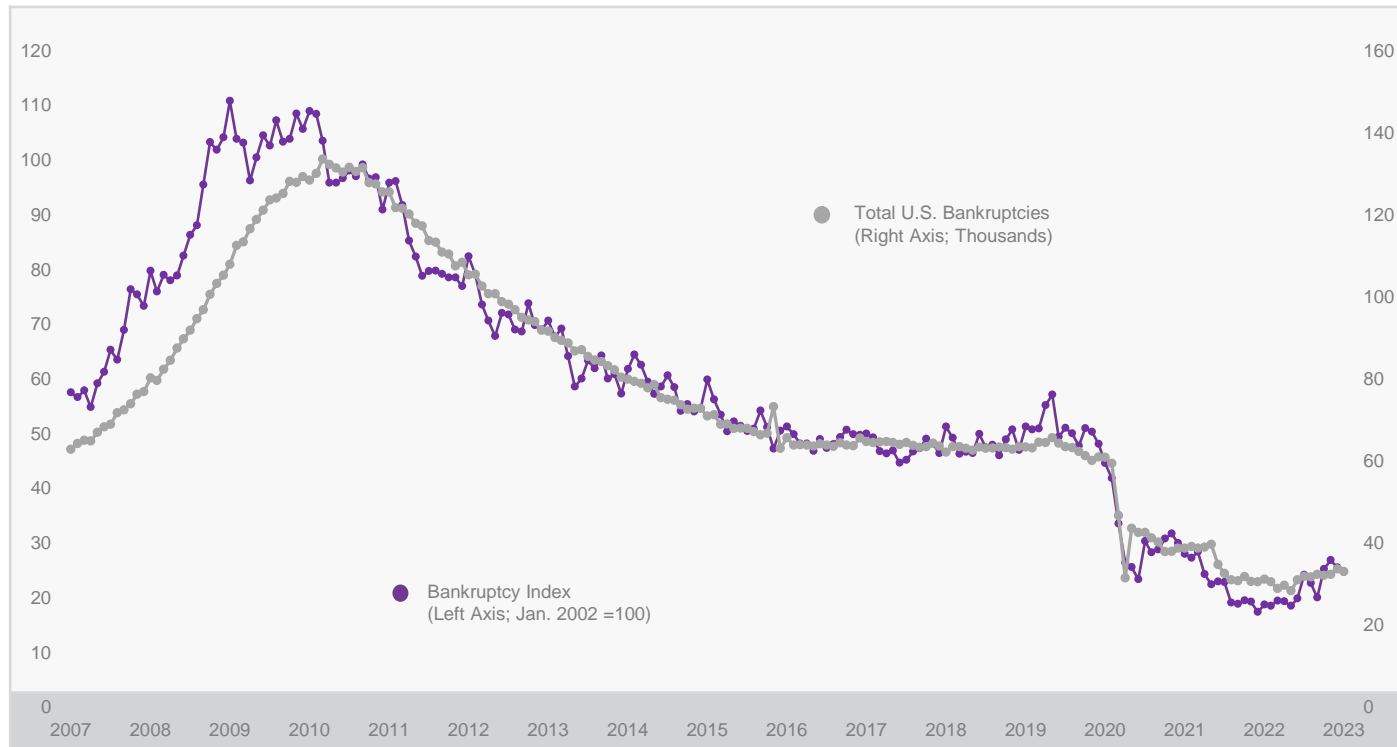
Some borrowers, particularly those with auto loans, are already falling behind on payments. The [share](#) of auto loan borrowers at least 60 days late on their car payments rose to 5.67% in December, more than double the rate from 20 months earlier and well above the 5.04% peak during the 2008–09 recession. Not surprisingly, auto repossessions are also on the rise and will be a trend to watch this year.

For now, however, overall delinquency rates remain historically low, and most consumers are still well-positioned to handle their debt burdens. Given low debt delinquencies and the strong labor market, it is unlikely that bankruptcies will rise dramatically in the coming months, though we believe a more gradual increase is likely.

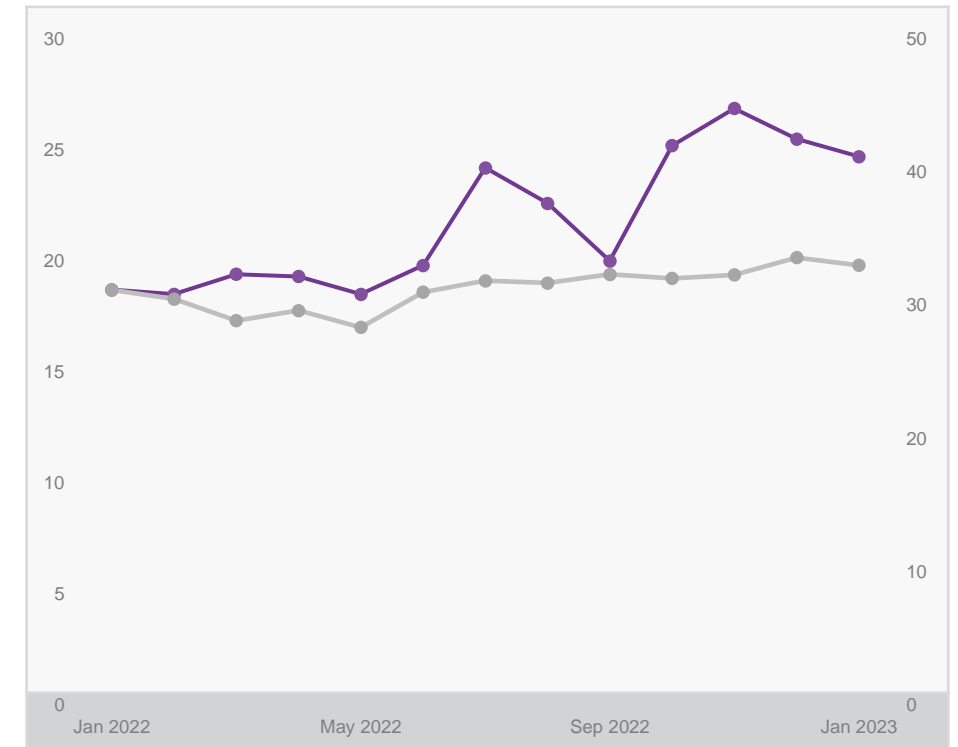


# Bankruptcy Index

## Historical Trend Over Past 16 Years



## Movement Over Past 12 Months





# Foreclosure Index

**Bottom Line:** The LegalShield Foreclosure Index worsened in January after improving slightly the previous month. Though foreclosure starts have gradually risen since the pandemic-era foreclosure moratorium expired, the index remains well below pre-pandemic levels. Over time, further normalization in foreclosure starts is expected.

**Latest Reading:** The LegalShield Foreclosure Index worsened (increased) 0.8 point to 37.9 in January after easing the prior month. Meanwhile, according to ATTOM, there were 30,822 properties with foreclosure filings in December, up less than 1% from the previous month but up 72% from a year prior.

**Economic Context:** Although foreclosures have been gradually increasing since the expiration of the foreclosure moratorium in July 2021, foreclosure activity remains low: after [doubling](#) last year, foreclosures remain below 2019 levels.

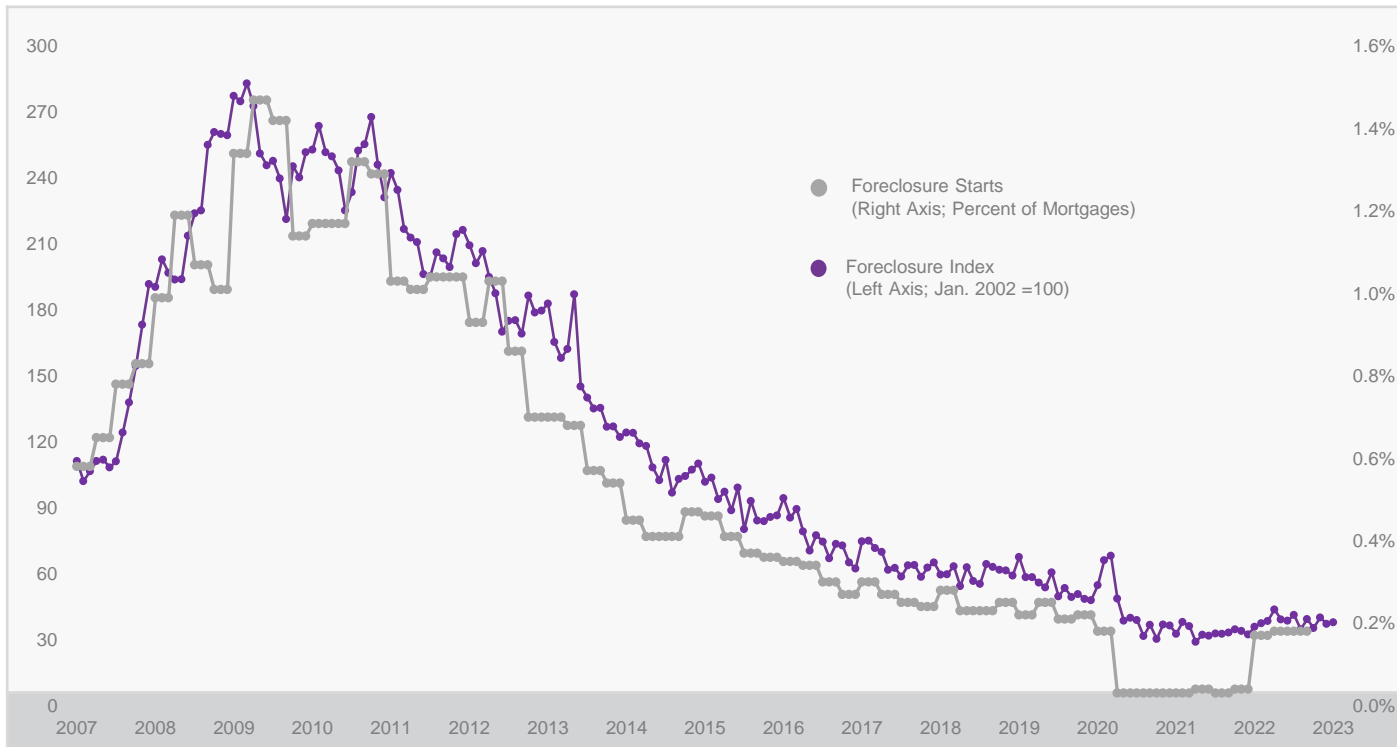
Looking ahead, foreclosures are generally a byproduct of mortgage delinquencies, which according to official readings are still historically low. Prior to the pandemic, the delinquency rate on single-family residential mortgages was 2.35% in Q1 2020. The most recent delinquency rate, reported in Q3 2022, was just 1.86%. One caveat, however, is that the Census Bureau reported in its most recent [Household Pulse Survey](#) that 5.5 million households — nearly 6% of mortgage holders — indicated they were not caught up on their mortgage payment. While these data are based on survey responses rather than lender data and thus may not reflect consumers financial positions, they suggest that mortgage delinquencies may rise in the months ahead.

The good news, however, is that even if homeowners begin to slip on their mortgage payments, most have positive equity in their homes due to increases in home prices in recent years. Indeed, [ATTOM](#) estimates that 93% of borrowers in foreclosure have positive equity, which suggests that most struggling homeowners would be able to sell their homes rather than face foreclosure.

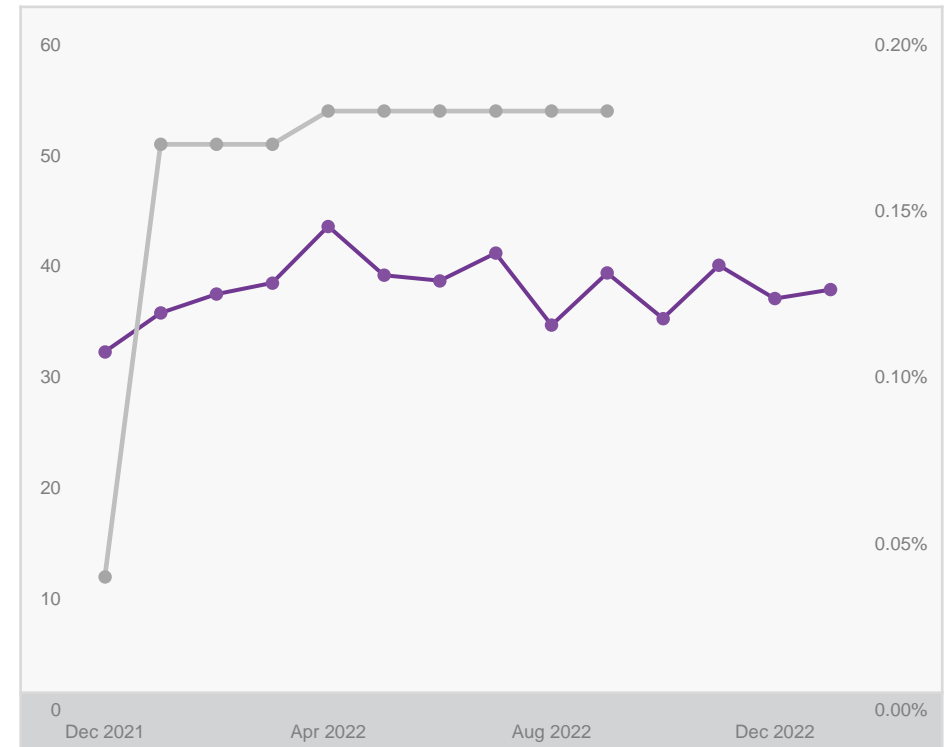
With muted mortgage delinquencies and high homeowner equity to cushion borrowers, it is unlikely that we will see a significant increase in foreclosure activity during the first half of 2023.

# Foreclosure Index

## Historical Trend Over Past 16 Years



## Movement Over Past 12 Months





# Housing Construction Index

**Bottom Line:** The LegalShield Housing Construction Index worsened in January for the fifth consecutive month, falling to its lowest level since April 2020. Homebuilders face strong headwinds from rising interest rates as homebuilding becomes less profitable and the housing market cools.

**Latest Reading:** The LegalShield Housing Construction Index decreased (worsened) 1.1 points to 121.1 in January. Meanwhile, housing starts fell in December and are now down 22% Y/Y.

**Economic Context:** Construction activity continues to face challenges, though there are some signs that the market may be nearing a trough. For example, mortgage rates saw a modest drop in January and are now just above 6% after eclipsing 7% just three months ago. Meanwhile, although building material costs remain elevated, the producer price index for residential construction goods eased to 8.2% Y/Y in December and has trended downward since June.

With these positive trends, homebuilders' spirits have lifted somewhat: [homebuilder confidence](#) finally improved modestly in January after falling for twelve consecutive months. Still, many builders are having trouble selling homes and are using price reductions and other incentives to boost sales, suggesting that some homebuilders are taking on increasing risk as the market cools.

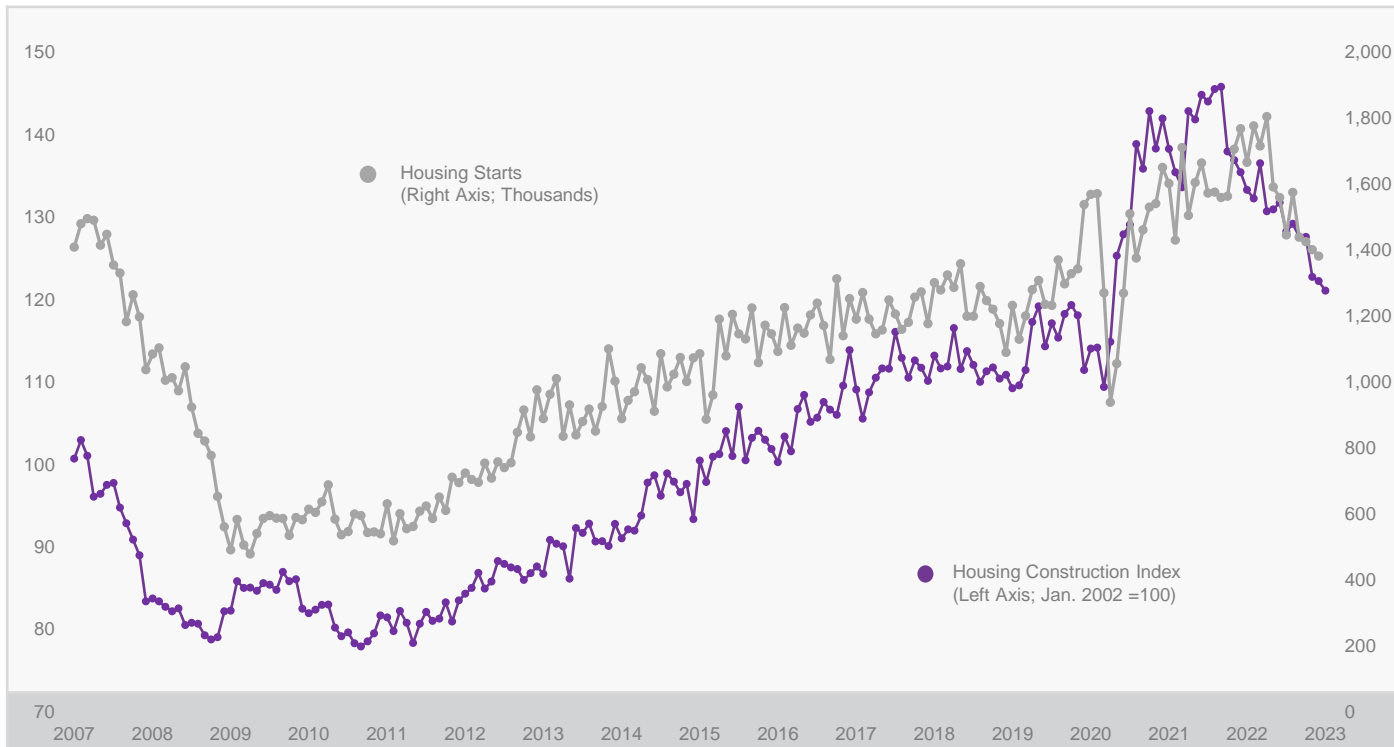
A key factor to watch is the near-term trajectory of interest rates. Recent declines in mortgage rates are in part due to the Fed's signals in late 2022 and early 2023 that the pace of rate hikes would likely slow. However, after February's blockbuster employment report, it is clear that the labor market remains very strong overall. While a strong jobs market is generally a good sign for the economy and for housing demand, in this case it is a double-edged sword, as the Fed may respond by pursuing additional rate hikes, driving mortgage rates higher in the process.

Overall, builders are still pessimistic about the housing market, and LegalShield data suggest that construction activity is likely to ease further over the next few months.

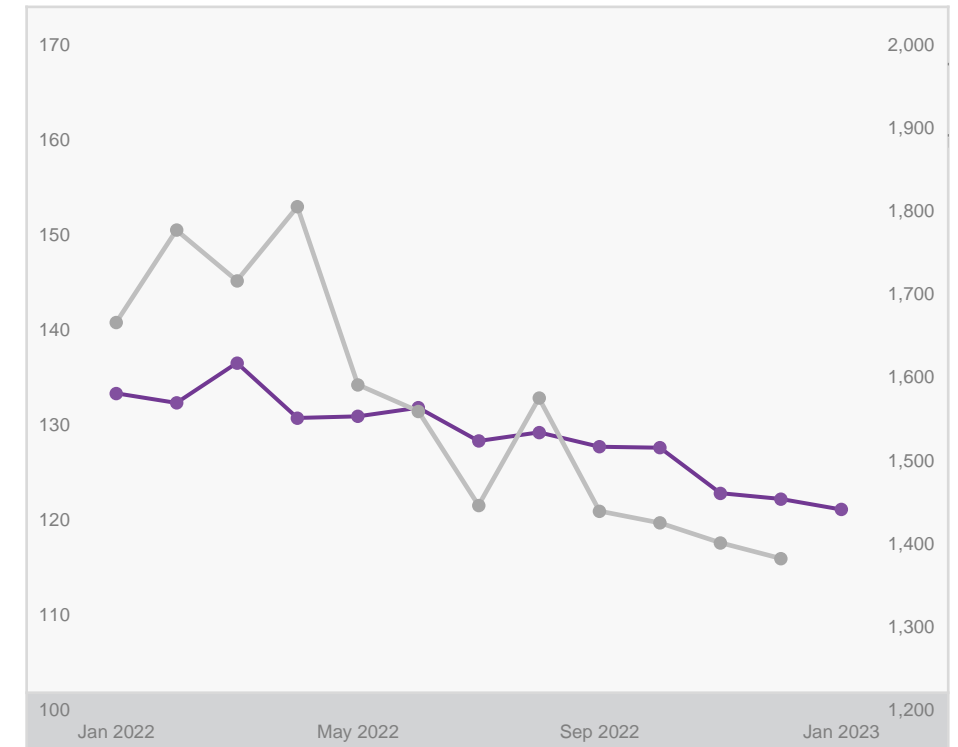


# Housing Construction Index

## Historical Trend Over Past 16 Years



## Movement Over Past 12 Months





# Housing Sales Index

**Bottom Line:** In January, the LegalShield Housing Sales Index worsened to its lowest level since April 2020. The housing market has softened as the Federal Reserve fights inflation, and LegalShield data suggest that existing home sales will weaken further in 2023.

**Latest Reading:** The LegalShield Housing Sales Index decreased (worsened) 0.7 point to 99.2 in January, falling 10% from a year prior. Meanwhile, existing home sales decreased 1.4% in December and were down 34% Y/Y.

**Economic Context:** The housing market continues to soften: home sales fell in December for the eleventh consecutive month, and while mortgage rates eased slightly in December and January, they remain roughly twice the level from late-2021. However, per the familiar adage that “there’s no better cure for high prices than high prices,” several months of concerns regarding housing affordability have dampened housing demand, which in turn has put downward pressure on home prices. According to the Case-Shiller Home Price Index, in the second half of 2022 home prices suffered their steepest declines since the 2008–09 recession. These easing prices could have contributed to the increase in new home sales late last year (though existing home sales continue to disappoint).

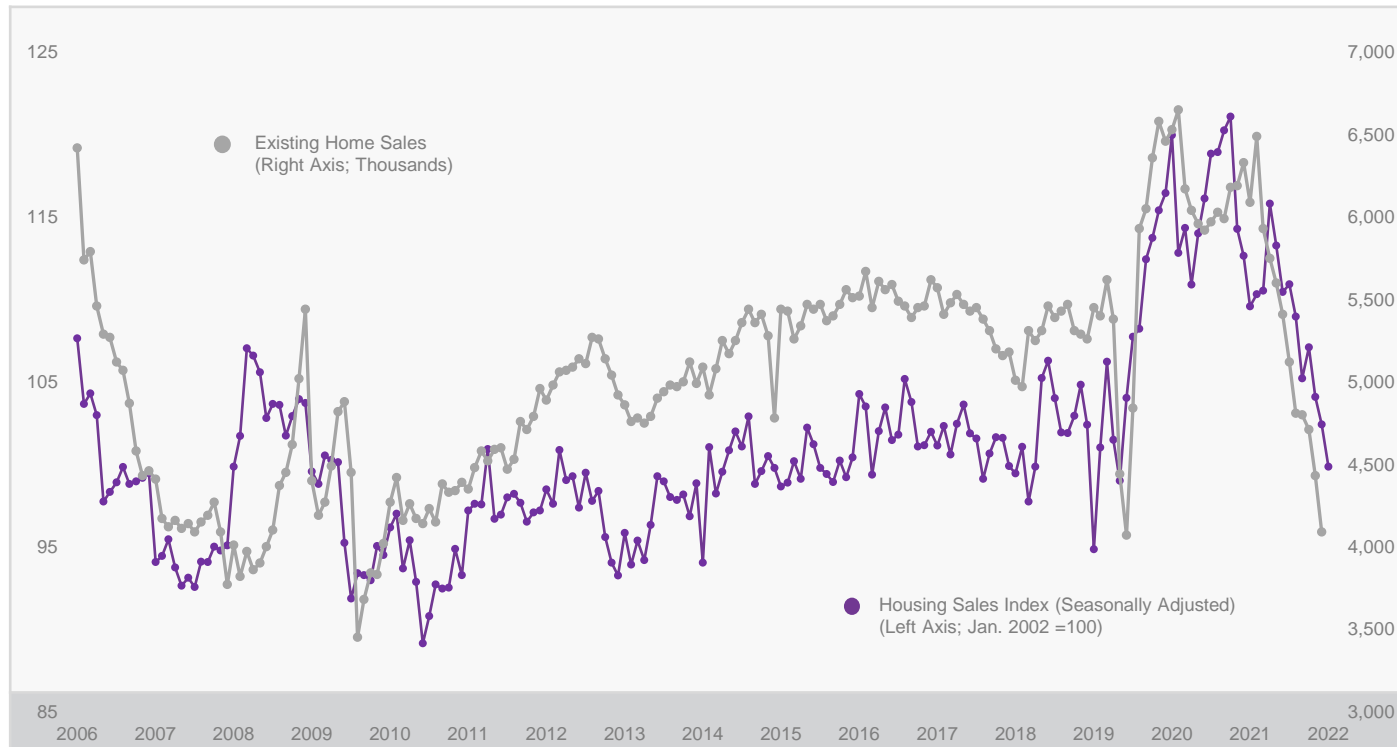
Broadly speaking, however, potential home buyers remain discouraged:

- [Fannie Mae’s](#) Home Purchase Sentiment Index remains well below its pre-pandemic highs and is down 10 points on an annual basis.
- Only 17% of consumers believe it’s a good time to buy a home.
- [Pending home sales](#), a leading indicator of future sales activity, are down 33% Y/Y as of January.

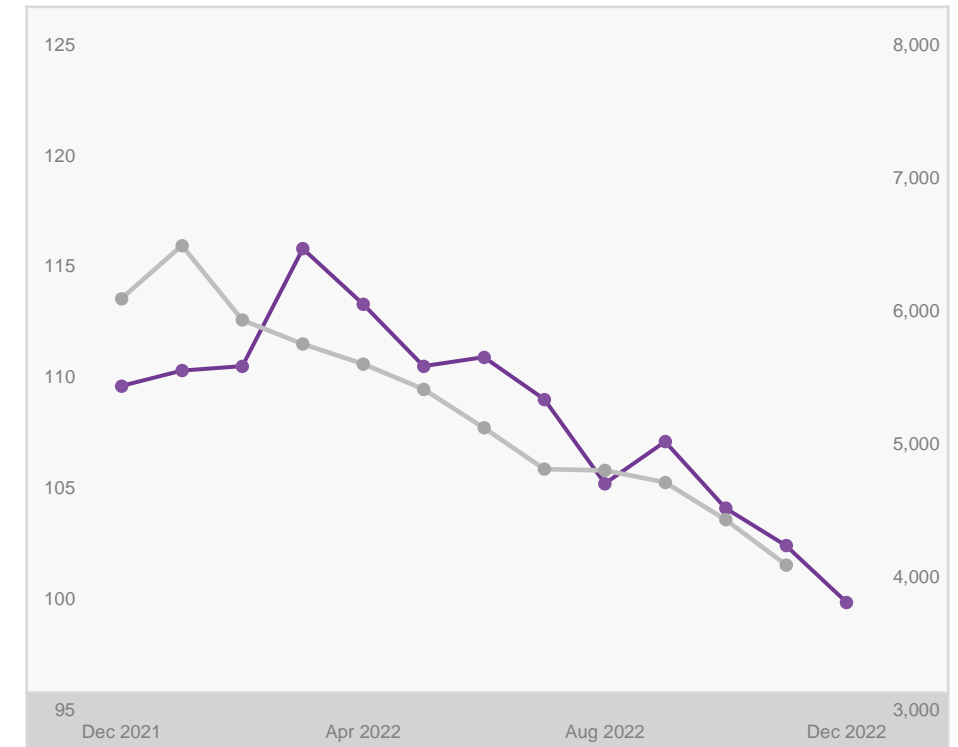
Given these trends, it is no surprise that LegalShield data point to continued weak sales activity in the near term, particularly given expectations of further Fed rate hikes.

# Housing Sales Index

## Historical Trend Over Past 16 Years



## Movement Over Past 12 Months



# Technical Appendix





# Key Findings

Three individual AOLs demonstrated strong correlation and leading properties against five target macroeconomic indicators.

Summary Of Results							
LEGALSHIELD AREA OF LAW	TARGET MACRO INDICATOR(S)	CORRELATION (LEVEL)	CORRELATION (Y/Y)	CORRELATION (Q/Q)	TRACKS HISTORICAL TREND?	ESTIMATED LEAD	ROBUST OVER TIME?
Bankruptcy	Bankruptcies	0.75	0.74	0.22	✓	≈ 1 mo.	✓+
Foreclosure	Foreclosures	0.96	0.88	0.47	✓	Coincident*	✓+
Real Estate	Existing Home Sales	0.87	0.65	0.46	✓	≈ 0-1 mo.*	✓

\*These indices have a timing advantage over their target indicators due to the release schedule of the target series.

# Composite Indices

We developed two composite indexes that are strongly correlated with and tend to lead economic indicators of interest.



LegalShield “Consumer Stress” Index

- ✓ **Component AOLs:** (1) Bankruptcy; (2) Consumer/Finance; (3) Foreclosure
- ✓ **Target Indicator:** Consumer Confidence
- ✓ **Performance:** -0.85 Correlation; 1-3 Month Lead



LegalShield “Housing Construction” Index

- ✓ **Component AOLs:** (1) Real Estate; (2) Foreclosure
- ✓ **Target Indicator:** Housing Starts
- ✓ **Performance:** 0.91 Correlation; 0-2 Month Lead\*

\*In addition to its statistical lead time, the Index also has a timing advantage over housing starts of roughly one week due to release schedules.

# Methodology:

## Individual Index Development



# Methodology

A six-step process was used to convert LegalShield intake data into potential indices.

1

## **CONSTRUCT DATASET:**

Conduct preliminary data cleaning, processing, and formatting.

2

## **DETERMINE SCOPE OF ANALYSIS:**

Examine differences across plan types and subscriber samples to determine the optimal “subscriber universe” for index development.

3

## **DEFINE INTAKE METRIC:**

Test competing approaches for normalizing intake data.

4

## **FILTER AOLS:**

Evaluate and scope the original list of 65 areas of law (AOLs) to identify the best candidates for index development.

5

## **TEST:**

Run the scoped AOLs through a series of transformations and statistical tests to identify quantitative relationships with key macroeconomic indicators.

6

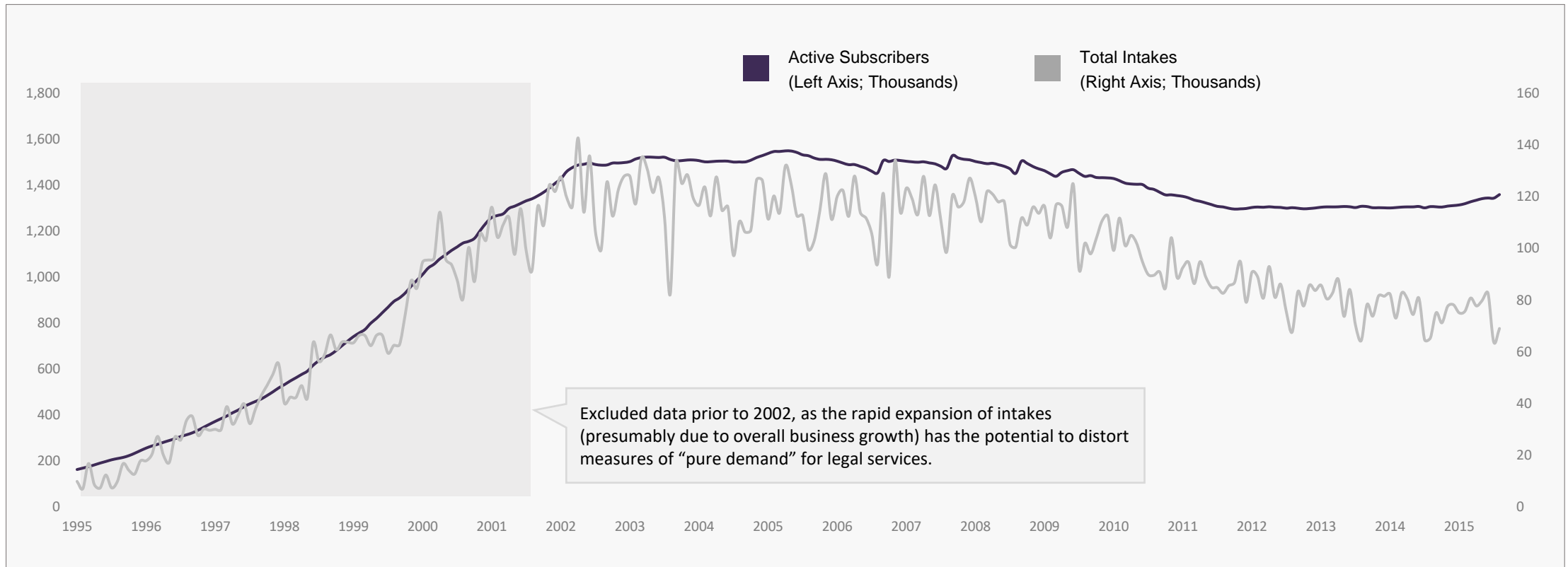
## **DEVELOP INDEXES:**

Combine specific AOLs into composite indexes and test relationships with key macroeconomic indicators.



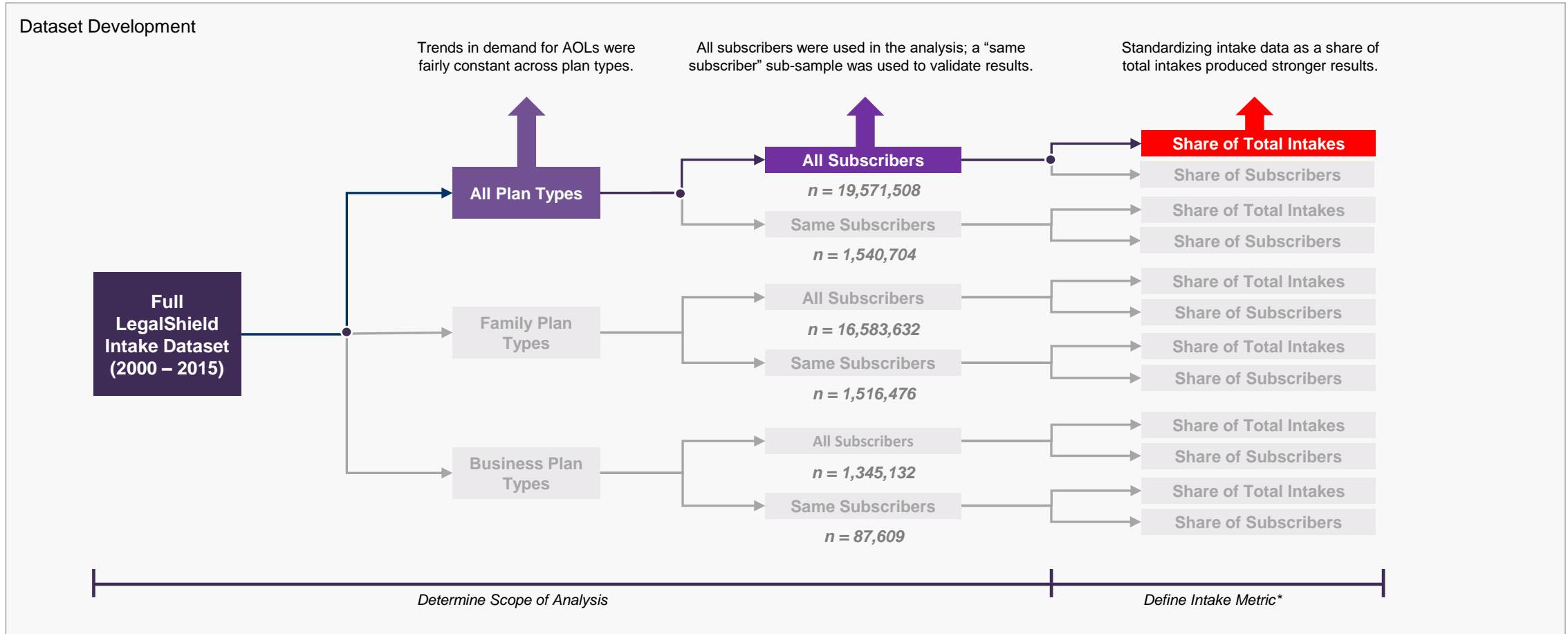
# Data Construction & Cleaning

Monthly subscriber and intake data was trimmed to improve the stability of the dataset over time.



# Analytical Scope

Testing and index development used intake data from all subscribers across all plan types, standardized by total intakes.



\*Standardizing intake data as a share of active subscribers controls for the change in the size of the subscriber base over time. Standardizing intake data as a share of total intakes controls for shifts in the relative demand for different AOLs over time.

# Filter AOLs

Out of 65 AOLs in the original intake data, a three-step filtering process identified 27 as suitable candidates for index development.

## Scoping Intake Data

1

### ORIGINAL DATASET:

Historical intake data from LegalShield included 65 AOLs.



2

### CONSOLIDATE AOLs:

Consolidating “like” AOLs reduced the number from 65 to 49.



3

### CRITERIA 1: HISTORICAL DATA

18 AOLs lacked sufficient historical data.



4

### CRITERIA 2: NARROW SCOPE

4 AOLs were defined too broadly to support a specific index narrative, leaving 27 “qualifying” AOLs.



# Filter AOL

Detailed Inclusion Filter Results (1/2)

ID	LEGALSHIELD AREA OF LAW	ASSOCIATED WITH +/- LIFE EVENT	HISTORICAL DATA	NARROW SCOPE	INCLUDE IN DATASET
1	Administrative Law	Ambiguous		✓	
2	Automobile Accident	-	✓	✓	✓
3	Banking	Ambiguous	✓		
4	Bankruptcy	-	✓	✓	✓
5	Business License, Fees, etc.	Ambiguous	✓	✓	✓
6	Civil Litigation	-	✓	✓	✓
7	Collection	-	✓	✓	✓
8	Consumer/Finance	Ambiguous	✓	✓	✓
9	Contract	Ambiguous	✓	✓	✓
10	Corporate	+	✓	✓	✓
11	Criminal	-	✓	✓	✓
12	Divorce	-		✓	
13	Divorce Uncontested	-		✓	
14	Education	-	✓	✓	✓
15	Elder Law	-	✓	✓	✓
16	Employment	Ambiguous	✓	✓	✓
17	Entertainment	Ambiguous		✓	
18	Estate Planning	Ambiguous	✓	✓	✓
19	Family Law	Ambiguous	✓	✓	✓
20	Firearm	Ambiguous		✓	
21	Foreclosure	-	✓	✓	✓
22	Franchise Law	Ambiguous		✓	
23	General Law	Ambiguous	✓		
24	Identity Theft	-		✓	
25	Immigration	Ambiguous	✓	✓	✓



# Filter AOL

## Detailed Inclusion Filter Results (2/2)

ID	LEGALSHIELD AREA OF LAW	ASSOCIATED WITH +/- LIFE EVENT	HISTORICAL DATA	NARROW SCOPE	INCLUDE IN DATASET
26	Insurance	-	✓	✓	✓
27	Labor Law	-		✓	
28	Landlord Tenant	-	✓	✓	✓
29	Legal Malpractice	-		✓	
30	Loan Modification	Ambiguous		✓	
31	Medical Malpractice	-	✓	✓	✓
32	Military Law/Security Clearance	Ambiguous		✓	
33	Other	Ambiguous	✓		
34	Patents Combined	+	✓	✓	✓
35	Personal Injury	-	✓	✓	✓
36	Probate	-	✓	✓	✓
37	Product Liability	-		✓	
38	Public Service	Ambiguous		✓	
39	Real Estate	+	✓	✓	✓
40	Request for Service	Ambiguous			
41	Small Claims	-	✓	✓	✓
42	Social Security	-	✓	✓	✓
43	Tax	Ambiguous	✓		
44	Trademarks	+		✓	
45	Traffic	-	✓	✓	✓
46	Veteran's Affairs	Ambiguous		✓	
47	Will Workshop	Ambiguous		✓	
48	Workman's Compensation	-	✓	✓	✓
49	Wrongful Death	-		✓	
<b>TOTAL</b>			<b>31</b>	<b>44</b>	<b>27</b>

# Testing

Intake data from the 27 “qualifying” AOLs was then tested against 15 economic indicators of interest to assess potential predictive value.

## **MACROECONOMIC INDICATORS:**

1. Conduct preliminary data cleaning, processing, and formatting.
2. Examine differences across plan types and subscriber samples to determine the optimal “subscriber universe” for index development
3. Test competing approaches for normalizing intake data.

## **HOUSING INDICATORS:**

4. Housing Starts
5. Existing Home Sales (NAR)
6. Residential Construction Permits
7. Small Business Optimism Index (NFIB)

## **FINANCIAL HEALTH INDICATORS:**

8. Total Bankruptcies (Total Filings; Epiq)
9. Delinquencies (All Loans & Leases; St. Louis Fed)
10. Foreclosures (All Mortgage Foreclosures Started; Mortgage Bankers Association)
11. Consumer Credit (Total; Revolving; Non-Revolving)
12. S&P 500 Index
13. Wilshire 5000 Index






## **CONFIDENCE INDICATORS:**

14. Consumer Confidence Index (Conference Board)
15. Small Business Optimism Index (NFIB)

# Testing

Three out of the final 27 AOLs demonstrated a strong statistical relationship to a handful of economic indicators.

## Scoping Intake Data

- 1** **27 SCOPED AOLS:** 27 AOLs were subjected to several rounds of statistical testing. 
- 2** **STATISTICAL RELATIONSHIP:** Test for correlation across various transformations. 
- 3** **TRACKING HISTORICAL TREND:** Visually assess AOL to determine how closely it tracks its target indicator. 
- 4** **LEADING PROPERTIES:** Test for leading / concurrent properties. 
- 5** **ROBUST ACROSS TIME:** Confirm that relationships hold across various out-of-sample time periods. 

# Testing

Testing included computing various correlations, assessing historical trends and leading properties, and evaluating stability over time.

1

## BASIC COORELATIONS:

- Examined the correlation between AOL and target macro indicator using different transformations



2

## HISTORICAL TREND & LEADING PROPERTIES:

- Produced charts of transformed AOL and select economic indicators to confirm/reject if AOL tracks indicator's historical trend
- Examined AOLs on both a concurrent and leading basis

3

## STABILITY TESTS:

- Performed testing to confirm that relationship between AOL and macro indicator was not driven solely by a specific time period within the dataset and ensure that the relationship holds across time
- Test 1: Compared correlations between first half of data (2000 – 2007) and second half of data (2008 – 2015)
- Test 2: Compared correlations between random samples of the data
- Test 3: Compared earliest and latest data (2000 – 2005, 2010 – 2015) with middle of data (2006 – 2009)
- Test 4: Compared correlations between 20% of most recent data (Nov 2012 – Dec 2015) and remaining data



# Testing

Statistical Relationship Testing, Select Results

Correlation Results (2002 – 2017)				
LEGALSHIELD AREA OF LAW	TARGET INDICATOR	CORRELATION (LEVEL)	CORRELATION (Y/Y)	CORRELATION (Q/Q)
Bankruptcy	Bankruptcies	0.76	0.67	0.20
Foreclosure	Foreclosures	0.96	0.87	0.49
Real Estate	Existing Home Sales	0.85	0.58	0.36

# Testing

Historical Trend & Leading Properties Testing, Select Results

Historical Trend & Leading Properties Results (2002 – 2016)				
LEGALSHIELD AREA OF LAW	TARGET INDICATOR	TRACKS HISTORICAL TREND?	LEADING PROPERTIES	APPROXIMATE LEAD TIME
Bankruptcy	Bankruptcies	✓	✓	≈ 1 mo.
Foreclosure	Foreclosures	✓	r	Coincident*
Real Estate	Existing Home Sales	✓	✓	≈ 1 mo.*

\* These indices have a practice lead time of varying length due to the release schedule of the target series.

# Testing

Intertemporal Stability Testing, Select Results

Stability Test Results (2000 – 2015)							
LEGALSHIELD AREA OF LAW	TARGET MACRO INDICATOR(S)	TEST 1*	TEST 2*	TEST 3*	TEST 4*	OVERALL SCORE	KEY TAKEAWAYS
Bankruptcy	Bankruptcies	✓	✓	✓	✓	✓+	Performed well across all tests
Foreclosure	Foreclosures	✓	✓	✓	✓	✓+	Performed well across all tests
Real Estate	Existing Home Sales	r	✓	✓	✓	✓	Performed well on all but one test

\* Test 1: Compared correlations between first half of data (2000 – 2007) and second half of data (2008 – 2015)

\* Test 2: Compared correlations between random samples of the data

\* Test 3: Compared earliest and latest data (2000 – 2005, 2010 – 2015) with middle of data (2006 – 2009)

\* Test 4: Compared correlations between 20% of most recent data (Nov 2012 – Dec 2015) and remaining data

# Methodology:

## Composite Index Development





# Methodology

A five-step process was used to convert LegalShield data into composite indices.

- 1 SELECT AOLS:** Select individual AOLS to be included in the composite index, based on results of statistical tests and desired index “narrative” (e.g., consumer stress).
- 2 TRANSFORM AOLS:** Compute the month-on-month percent change for each AOL.
- 3 STANDARDIZE:** Create a standardization factor for each AOL, based on its standard deviation. Multiply each transformed AOL by the standardization factor to produce an “adjusted monthly contribution” for each AOL.
- 4 SUM COMPONENTS:** Sum the adjusted monthly contribution across each AOL to produce a monthly index growth rate.
- 5 REBASE TO 100:** Rebase the monthly index growth rate to a given month (January 2000 = 100) and to produce a monthly composite index.

# Testing

## Historical Trend & Leading Properties Test Results

Historical Trend & Leading Properties Results (2002 – 2016)				
COMPOSITE INDEX	TARGET INDICATOR	TRACKS HISTORICAL TREND?	LEADING PROPERTIES	APPROXIMATE LEAD TIME
Consumer Stress	Consumer Confidence	✓	✓	1 - 3 mo.
Housing Construction	Housing Starts	✓	✓	0 – 2 mo.*

\*In addition to its statistical lead time, the Index also has a timing advantage over housing starts of roughly a week due to release schedules.

# Testing

## Statistical Relationship Test Results

Correlation Results (2002 – 2017)				
COMPOSITE INDEX	TARGET INDICATOR	CORRELATION (INDEX)	CORRELATION (Y/Y)	CORRELATION (Q/Q)
Consumer Stress	Consumer Confidence	-0.85	-0.58	-0.33
Housing Construction	Housing Starts	0.88	0.55	0.23

# Testing

## Intertemporal Stability Tests

Stability Test Results (2000 – 2015)							
COMPOSITE INDEX	TARGET INDICATOR	TEST 1*	TEST 2*	TEST 3*	TEST 4*	OVERALL SCORE	KEY TAKEAWAYS
Consumer Stress	Consumer Confidence	r	✓	✓	✓	✓	Performed well on all but one test
Housing Construction	Housing Starts	r	✓	✓	✓	✓	Performed well on all but one test

Test 1: Compared correlations between first half of data (2000 – 2007) and second half of data (2008 – 2015)

Test 2: Compared correlations between random samples of the data

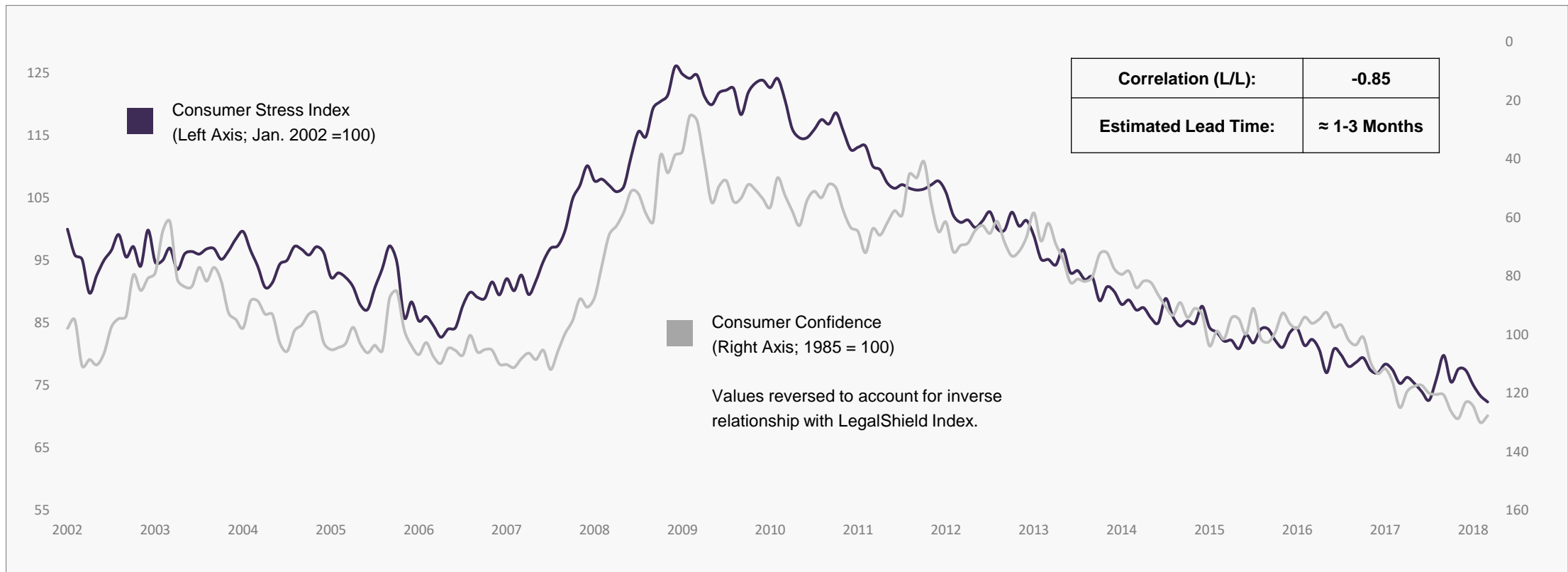
Test 3: Compared earliest and latest data (2000 – 2005, 2010 – 2015) with middle of data (2006 – 2009)

Test 4: Compared correlations between 20% of most recent data (Nov 2012 – Dec 2015) and remaining data



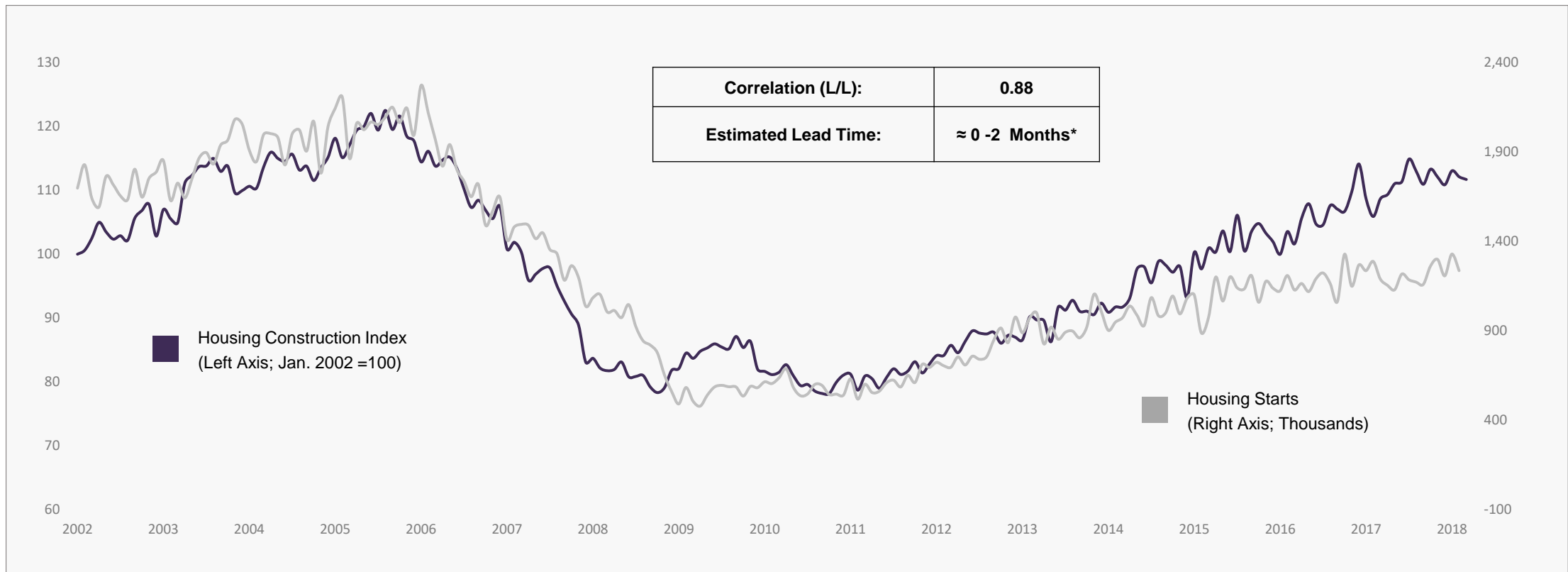
# Composite Index: Consumer Stress

AOLs: Bankruptcy; Foreclosure; Consumer Finance



# Composite Index: Housing Construction Index

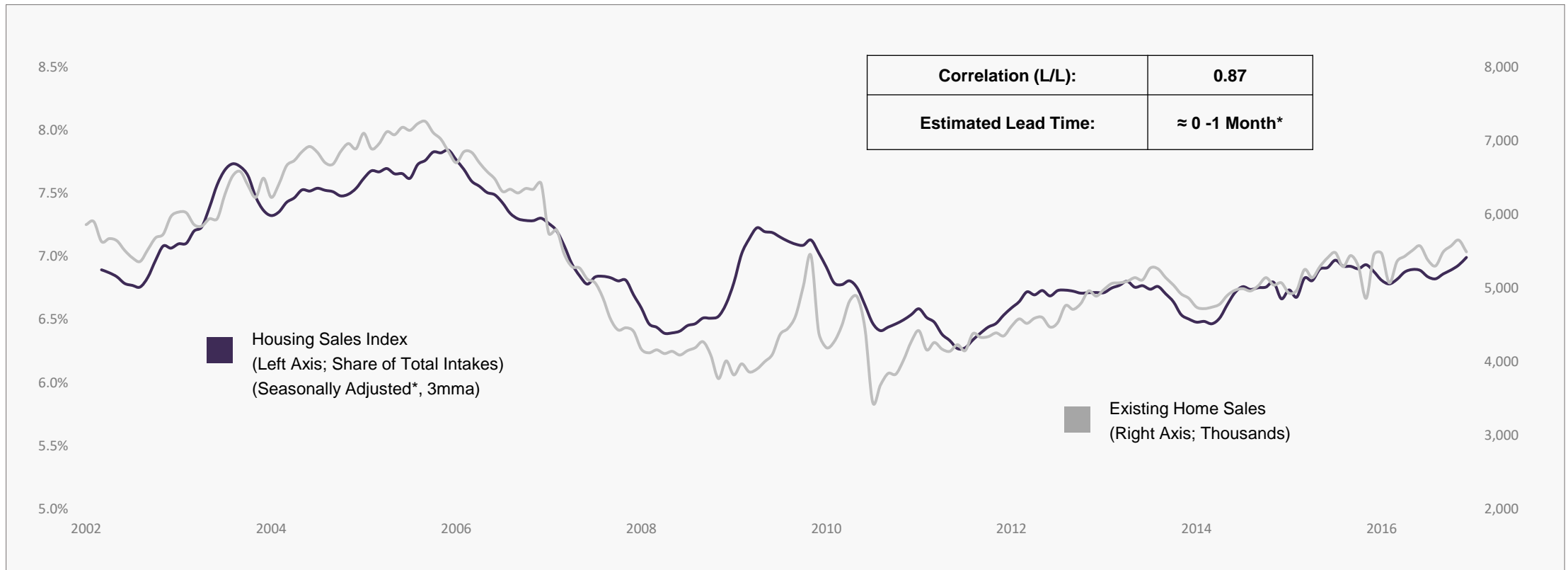
AOLs: Foreclosure; Real Estate\*



\*The Housing Construction Index component of the Housing Activity Index was seasonally adjusted using the Census Bureau's X-13 ARIMA-SEATS Seasonal Adjustment Program. In addition to its statistical lead time, the Index has a timing advantage over housing starts of roughly a week due to release schedules.

# AOL: Real Estate

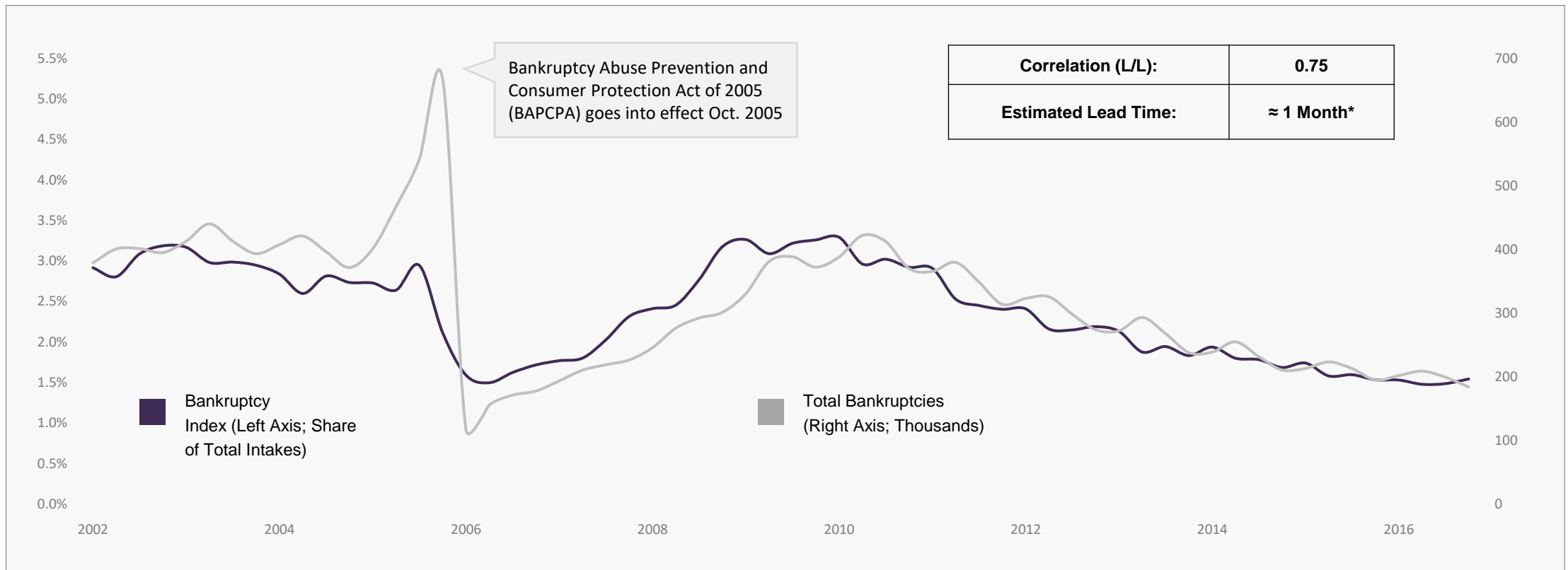
Target Series: Real Estate\*



\*The Housing Sales Index was seasonally adjusted using the Census Bureau's X-13 ARIMA-SEATS Seasonal Adjustment Program. In addition to its statistical lead time, the Index has a timing advantage of roughly two weeks over existing home sales due to release schedules.

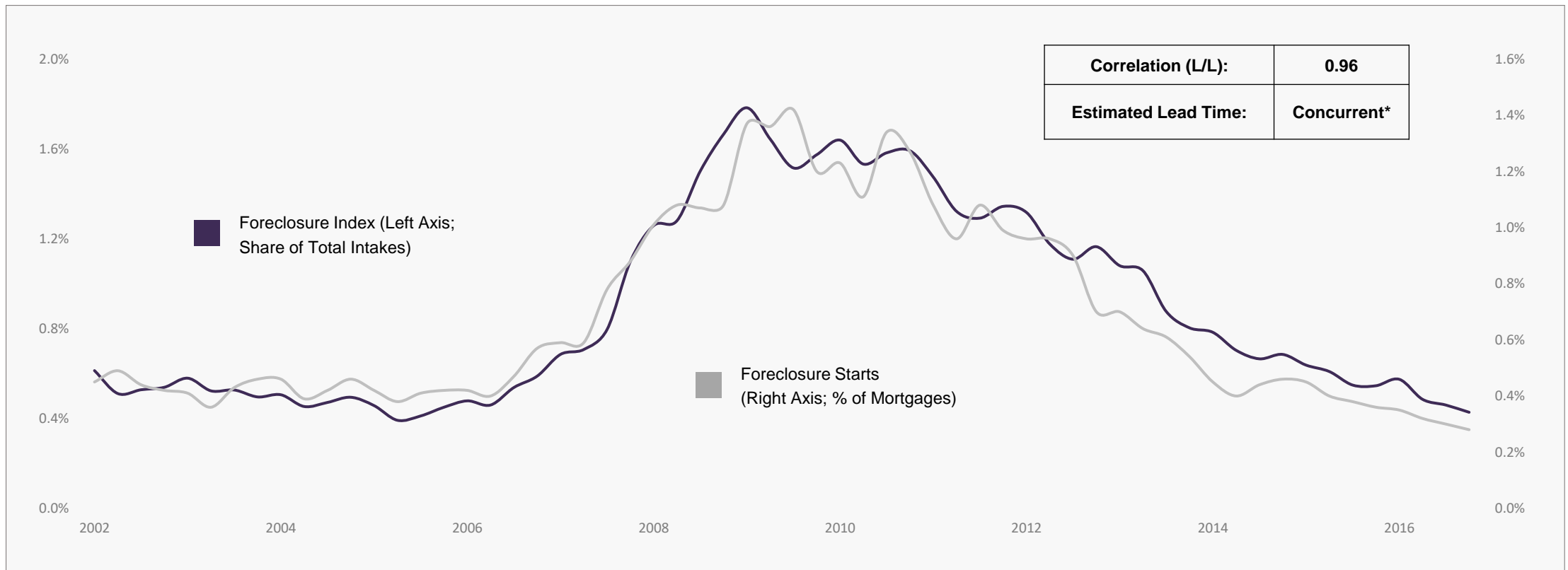
# AOL: Bankruptcy

Target Series: Consumer Bankruptcies



# AOL: Foreclosure

Target Series: Foreclosure Starts



\*Foreclosures starts are statistically coincident with the LegalShield Foreclosure Index, but the Index has a significant timing advantage time due to its monthly release (compared to the quarterly release of foreclosure starts).

# Results

## Summary of Key Findings

Summary of Results						
LEGALSHIELD LAW Index	TARGET SERIES	CORRELATION (LEVEL)	CORRELATION (Y/Y)	CORRELATION (Q/Q)	APPROXIMATE LEAD TIME	ROBUST ACROSS TIME
Bankruptcy	Bankruptcies	0.76	0.67	0.20	≈ 1 mo.	✓+
Foreclosure	Foreclosures	0.96	0.87	0.49	Coincident*	✓+
Housing Sales	Existing Home Sales	0.85	0.58	0.36	≈ 0-1 mo.*	✓
Consumer Stress	Consumer Confidence	-0.85	-0.58	-0.33	≈ 1-3 mo.	✓
Housing Construction	Housing Starts	0.88	0.55	0.23	≈ 0-2 mo.*	✓



Thank you!



**Economic  
Stress Index™**

