



# 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



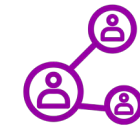
**49 year** history and counting



**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

The LegalShield Consumer Stress Index ticked down to the lowest level on record in November. Financial stress remains low thanks to savings amassed over the pandemic and a favorable labor market, although inflation has been weighing on consumer sentiment.

The LegalShield Consumer Stress Index ticked down (improved) 0.9 point in October to 58.7. Meanwhile, the Conference Board's Consumer Confidence Index fell 2.1 points in November to 109.5, erasing gains from the prior month.

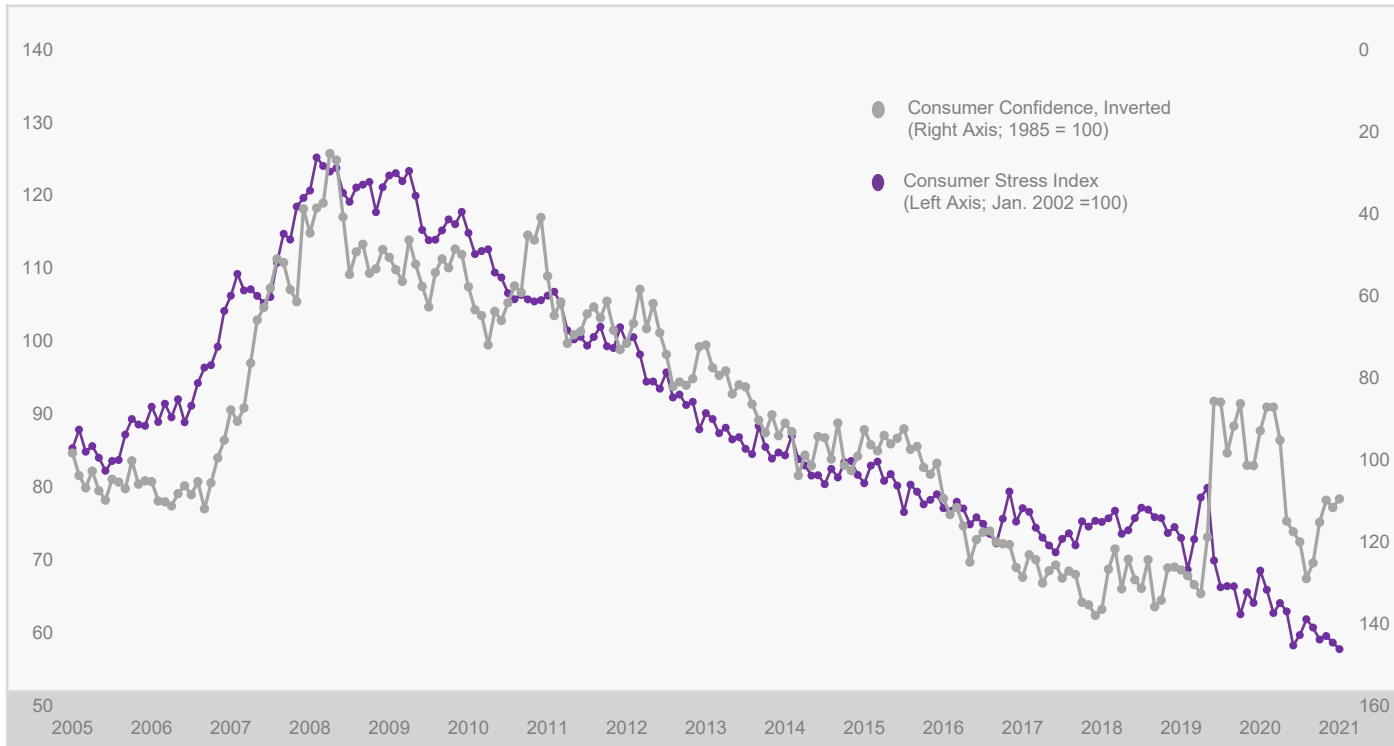
Consumers have shown financial resilience despite accelerating inflation and the expiration of federal support. For example, the Commerce Department reports that retail sales grew 1.7% M/M in October (beating expectations) while Visa's [Spending Momentum Index](#) rose in October as both discretionary and non-discretionary purchases increased. Further, much of this spending is being done in person once again thanks to an improved public health environment compared to last winter. [Black Friday store traffic](#) was 50% above 2020 levels and the Thanksgiving weekend was the busiest period for [air travel](#) since the pandemic began. While the emergence of the Omicron variant is concerning, COVID-19 vaccines and boosters are broadly available and remain highly effective, and vaccine manufacturers have shown confidence in their ability to adapt vaccines to new variants.

While economic data paint a mostly positive picture for consumers, sentiment has fallen due to inflation concerns. A [survey](#) by County Financial conducted in late October found that 88% of respondents are highly concerned about inflation. Indeed, inflation has erased income gains on balance, as real disposable income has declined in six of the last seven months. Meanwhile, the pace of the labor market recovery slowed in November: the economy added 210k jobs — well below expectations — though some economists believe that the employment situation is better than the official report suggests and may have been skewed by the pandemic's impact on normal seasonal patterns.

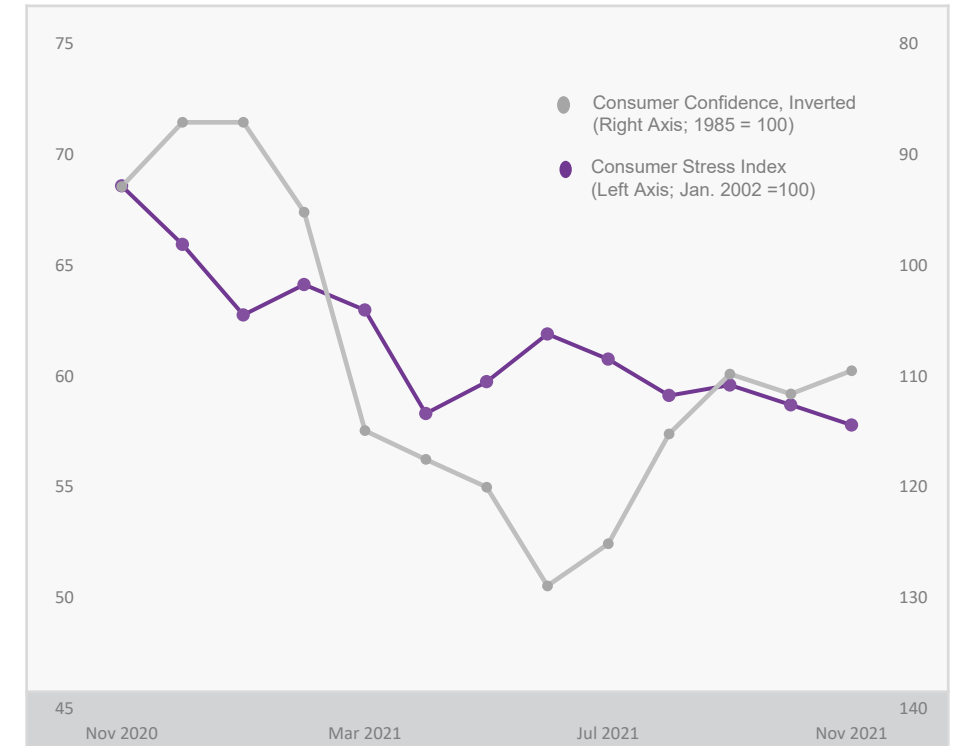
Looking ahead, LegalShield data point to muted consumer financial stress in coming months.

# Consumer Stress Index

## Historical Trend Over Past 16 Years



## Movement Over Past 12 Months





# Bankruptcy Index

The LegalShield Bankruptcy Index was roughly unchanged at one of the lowest readings in series history. Consumers are in good financial health as they continue to spend savings amassed during the pandemic.

The LegalShield Bankruptcy Index edged down (improved) 0.3 point to 19.2 in November. Meanwhile, total seasonally adjusted bankruptcy filings increased by 3.4% to 31,747 in October but were down 16% compared to a year ago.

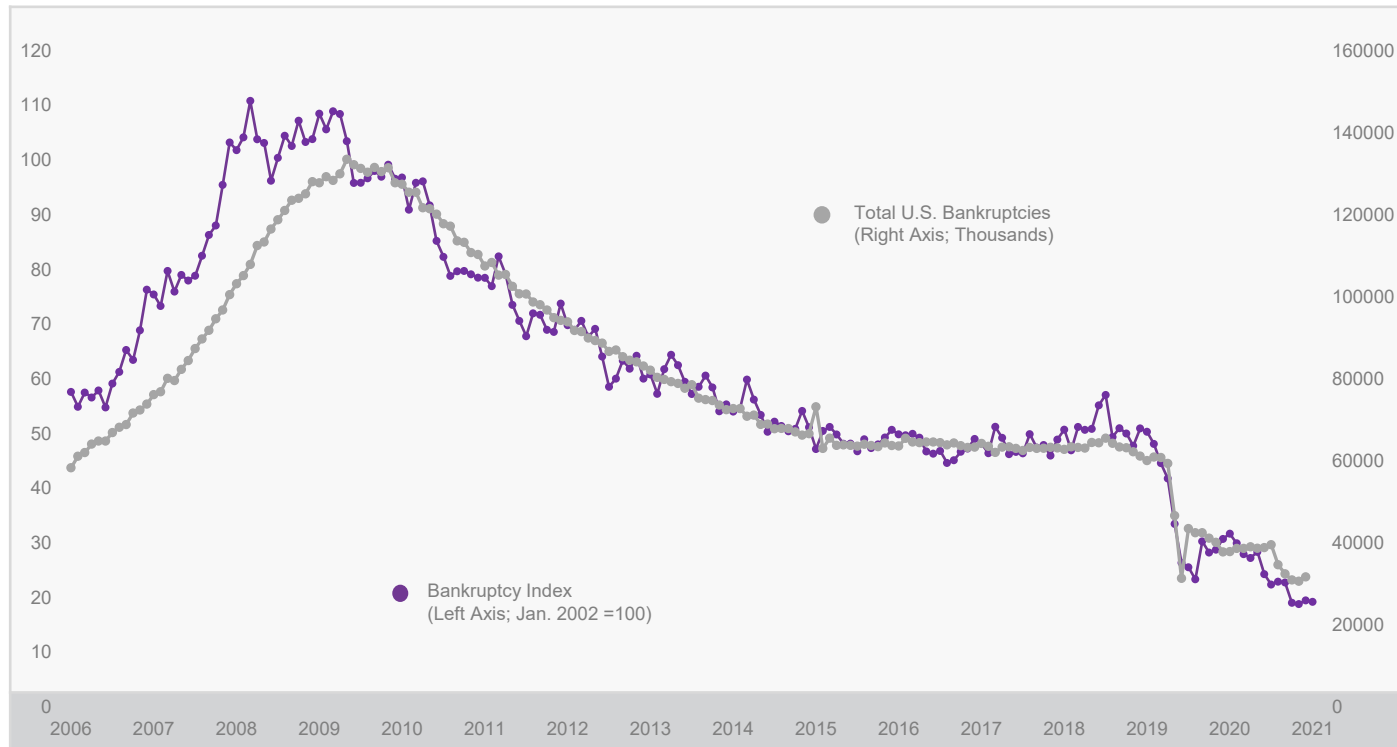
Consumers continue to benefit from the substantial amount of savings accumulated during the pandemic. According to the Federal Reserve Bank of New York, households had about [\\$1.6 trillion](#) in “excess savings” (i.e., savings that would not have accrued absent the pandemic) as of April, and though consumers have undoubtedly drawn down on these savings since then, there are few signs of worsening financial stress. In a separate report, the [New York Fed](#) found that 99,000 borrowers had a bankruptcy notation added to their credit reports in Q3, an all-time low, while the share of consumers with a 3<sup>rd</sup>-party collection on their credit report also fell to a new all-time low in Q3.

Meanwhile, several metrics suggest that consumers are returning to pre-pandemic spending patterns. For example, the Bureau of Economic Analysis reports that the personal savings rate fell back to 2019 levels after four straight quarters of record highs, and consumers opened 217 million new credit accounts in Q3, nearing pre-pandemic levels per the New York Fed. This surge is partially due to efforts by banks to attract cardholders with good credit scores, reflecting confidence in consumers’ financial prospects. [Credit card issuers](#) have increased investments in marketing activities, while mailed credit card solicitations have rebounded to pre-pandemic levels.

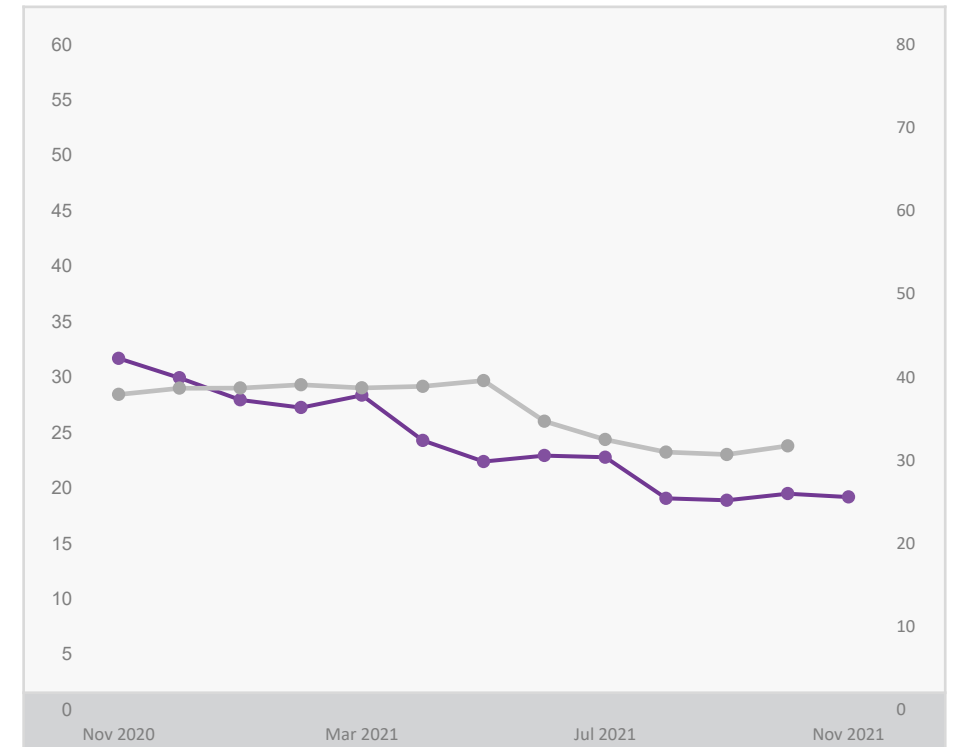
In all, bankruptcies are expected to stay low in the near term as consumers remain in good financial standing thanks to accumulated savings, and the LegalShield Bankruptcy Index supports this outlook.

# Bankruptcy Index

## Historical Trend Over Past 16 Years



## Movement Over Past 12 Months





# Foreclosure Index

The LegalShield Foreclosure Index edged down in November and remains historically low. While foreclosure activity has increased since the expiration of the foreclosure moratorium, it remains well-below pre-pandemic levels.

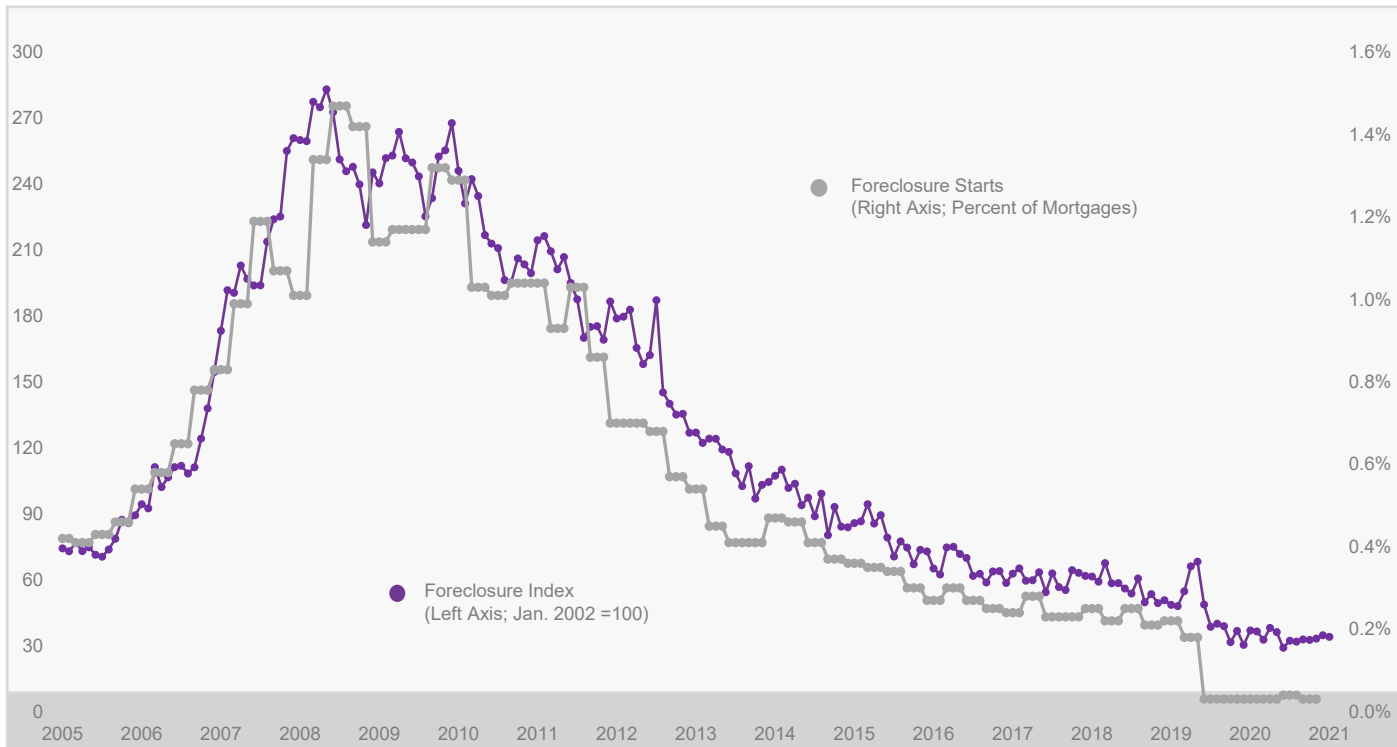
The LegalShield Foreclosure Index decreased (improved) 0.7 point to 34.0 in November. Meanwhile, foreclosure starts ticked down to 0.4% in the third quarter.

Foreclosure filings have edged up since the expiration of the foreclosure moratorium, but filings have not spiked as they did in the aftermath of the Great Recession. [ATTOM](#) reports that foreclosure filings were up 5% M/M and 76% Y/Y in October, marking the sixth straight annual increase. However, the number of monthly foreclosures remains well below pre-pandemic levels, and most of the current activity appears to be on vacant properties or loans that were already in foreclosure prior to the pandemic. Meanwhile, [Black Knight](#) reports that the national delinquency rate has actually improved in recent months, and serious delinquencies (90+ days past due) declined by over 10% in October as the first wave of borrowers in forbearance reached the end of their terms and returned to making payments. In addition to trillions in federal support during the pandemic, homeowners also continue to benefit from a large increase in real estate prices across the country, which has effectively increased homeowner equity.

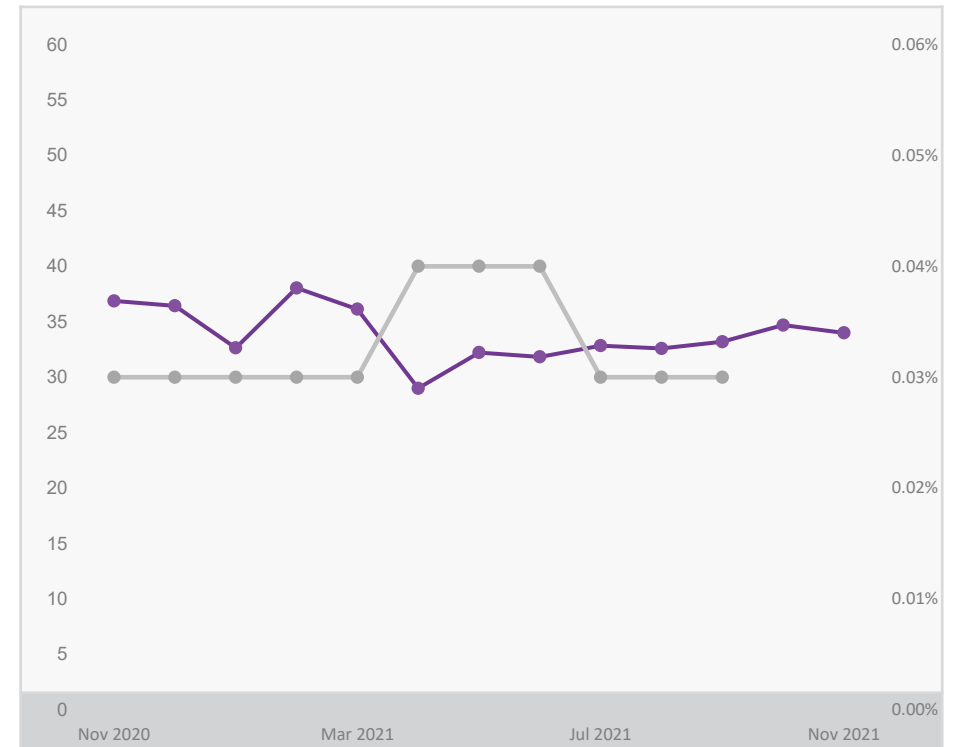
Overall, foreclosure activity may slowly rise in the coming months due to the expiration of the foreclosure moratorium and other federal support efforts. However, conditions in the housing market and overall economy suggest that foreclosure activity will remain low overall for the foreseeable future, an outlook supported by LegalShield data.

# Foreclosure Index

## Historical Trend Over Past 16 Years



## Movement Over Past 12 Months





# Housing Construction Index

The LegalShield Housing Construction Index fell again last month after recording its worst-ever decline in October. While builders are struggling with a lack of developed lots, labor shortages, supply chain disruptions, and high materials cost, sustained demand for homes suggests housing construction should remain healthy for months to come.

The LegalShield Housing Construction Index fell 1.1 points in November, the second consecutive monthly decline. Meanwhile, housing starts fell 0.7% in October and essentially flat on the year, though single-family homes [authorized for construction but not yet started](#) were 43% higher than year-ago levels, revealing a massive backlog of projects. Homebuilders are struggling to keep up with demand due to worker shortages, snarled supply chains, and high input costs.

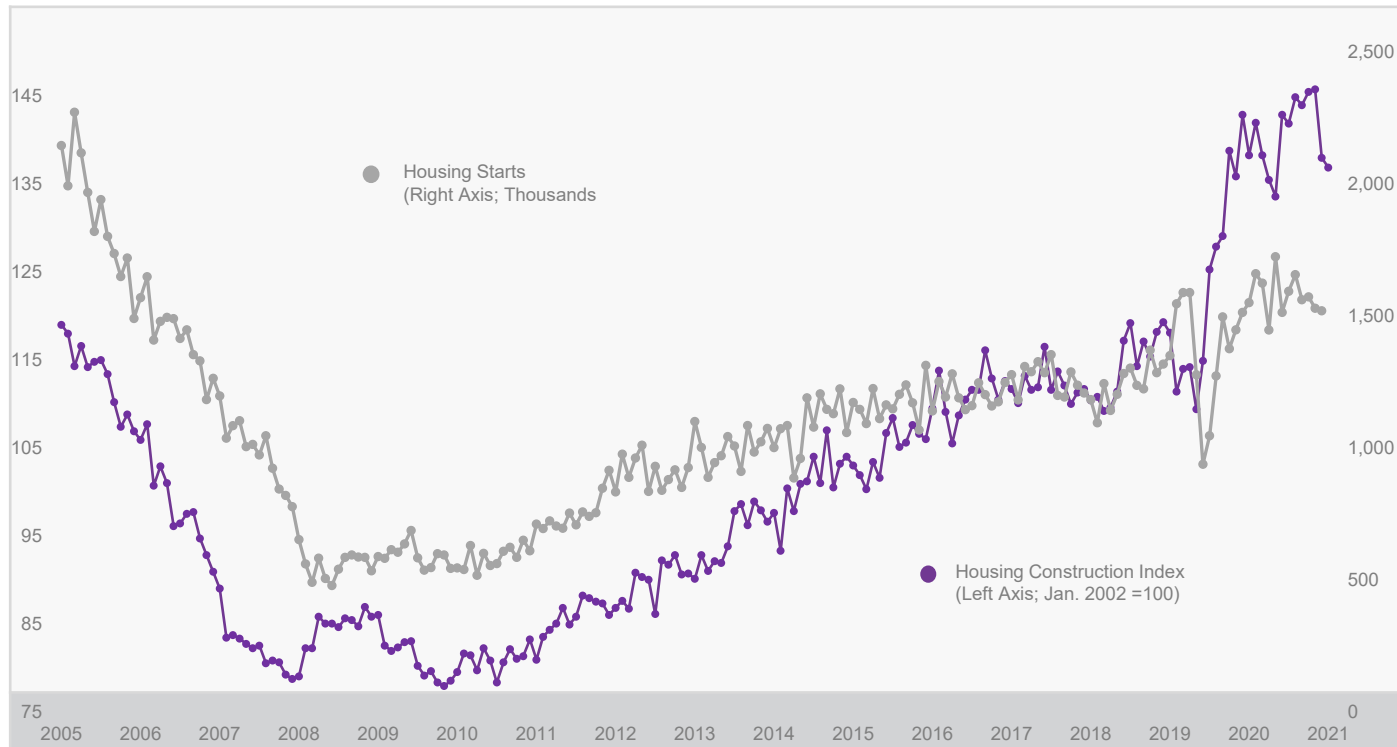
- For example, an unprecedented share of builders are reporting difficulties hiring skilled labor. According to an October [survey](#) by the National Association of Home Builders, a record 76% of single-family home builders said they faced labor shortages, far higher than the previous peak of 67% logged in the 1990s.
- Meanwhile, costs of various materials are continuing to climb. Per the Bureau of Labor Statistics' October [Producer Price Index](#), building material prices have increased 12% year-to-date, far higher than the 4.5% increase over the same period in 2020. Ready-mix concrete logged its largest year-to-date increase in fifteen years, while softwood lumber rose 9.1% M/M – the first increase since May.

While builders deal with these headwinds, they remain confident about their prospects thanks to high demand: homebuilder confidence unexpectedly rose 3 points in November according to the NAHB/Wells Fargo [Housing Market Index](#). Further, earlier this year [Realtor.com](#) estimated that there are 5.24 million fewer homes than needed in the U.S. due to a mismatch between residential construction and household formations, suggesting that demand for new construction will remain high in 2022.

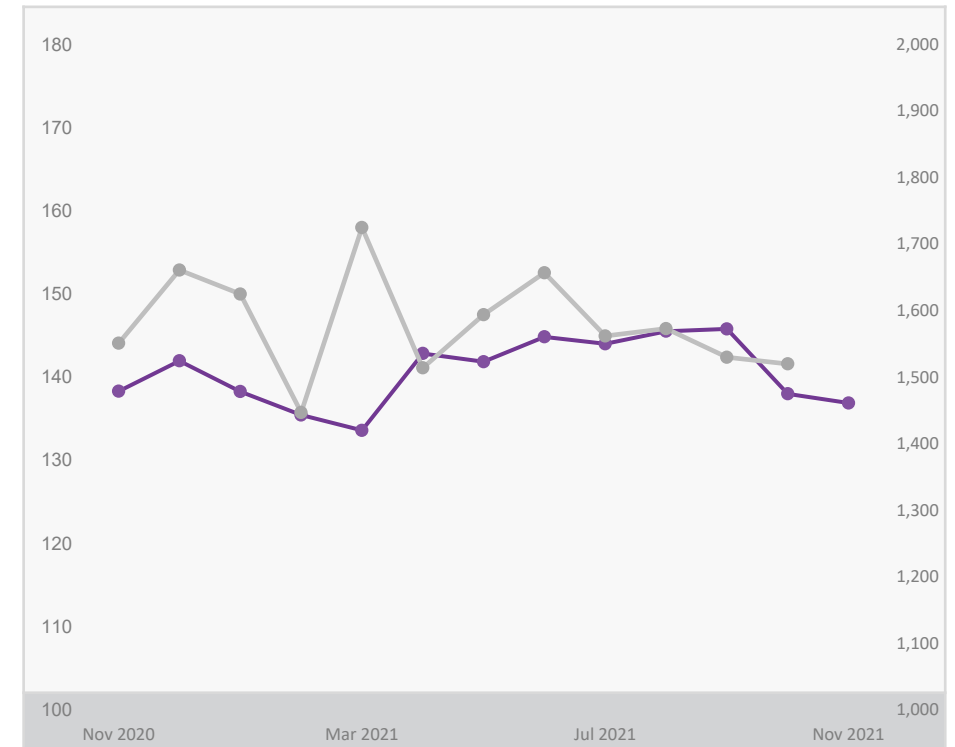
Overall, LegalShield data suggests that while pandemic-related supply-side factors (e.g., labor supply and the cost and availability of key inputs) may constrain housing activity in the near term, homebuilders should continue to benefit from strong consumer demand in 2022.

# Housing Construction Index

### Historical Trend Over Past 16 Years



### Movement Over Past 12 Months





# Housing Sales Index

The LegalShield Housing Sales Index fell for the second straight month in November. While low inventories and high prices are slowing home sales, demand is expected to remain elevated.

The LegalShield Housing Sales Index fell 1.6 points in November to 112.7, the lowest level in seven months. Meanwhile, existing home sales edged up by 0.8% in October but were 5.8% below year-ago levels. Pending home sales (a leading indicator of imminent sales) rose 7.5% in October. Several factors that helped the housing market gain steam earlier in the pandemic like accumulated savings, the need for space for remote work, and low mortgage rates are still tailwinds, and demand has been especially strong for suburban single-family homes. Per [Realtor.com](https://www.realtor.com), prospective buyers looked at suburban listings 24% more than listings in urban areas. Consequently, the price gap between suburban and urban homes is falling; while the difference stood at 10% in 2019, it has shrunk to 7% in 2021. Meanwhile, emerging headwinds like rising rents and potential for mortgage rates to rise earlier than expected may be enough to encourage some “on the fence” homebuyers off the sidelines before market conditions sour.

However, there are some signs that housing sales may lose momentum in the coming months. Chief among them are affordability constraints, which have been exacerbated by record-low inventories. Per the NAHB/Wells Fargo Housing Opportunity Index, affordability is tied for its lowest reading since the revised series began in 2012. Further, according to the [S&P CoreLogic Case-Shiller National Home Price Index](https://www.spglobal.com/commodityinsights/enhanced/cas/index), annual price growth decelerated slightly in September after soaring at historic rates in previous months. This may be a sign that the housing market is exhibiting the traditional seasonal lull, something that was largely absent last winter thanks to booming demand.

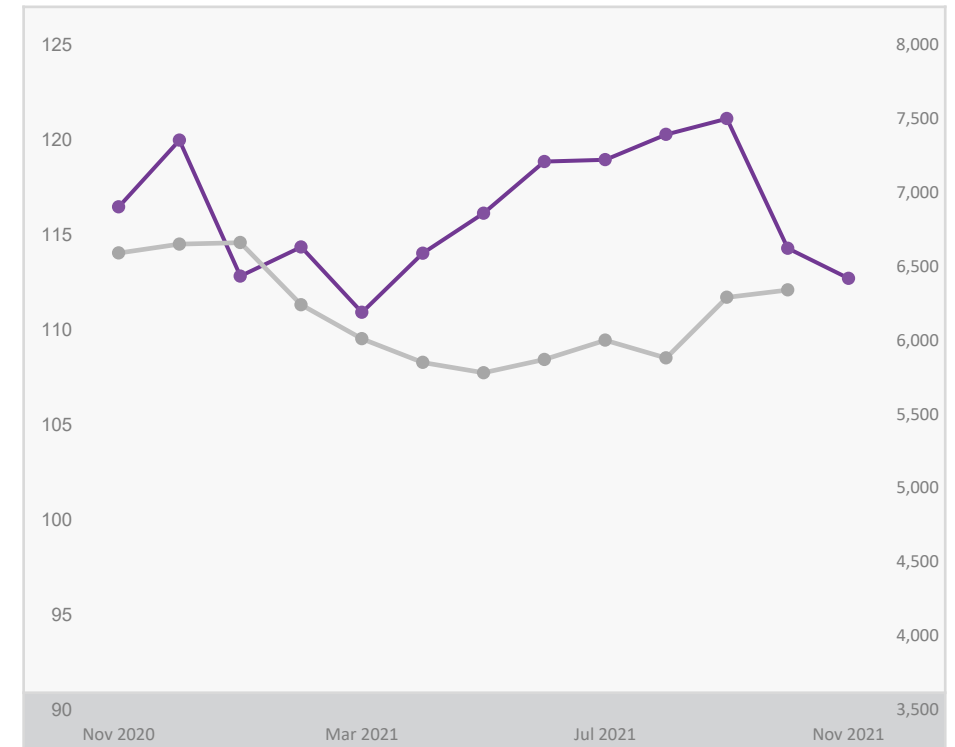
Overall, rising mortgage rates, low inventories, and high prices may dampen sales over the next quarter. At the same time, a significant decline in sales appears unlikely expected based on LegalShield data, and overall demand for housing should remain strong throughout the year.

# 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.

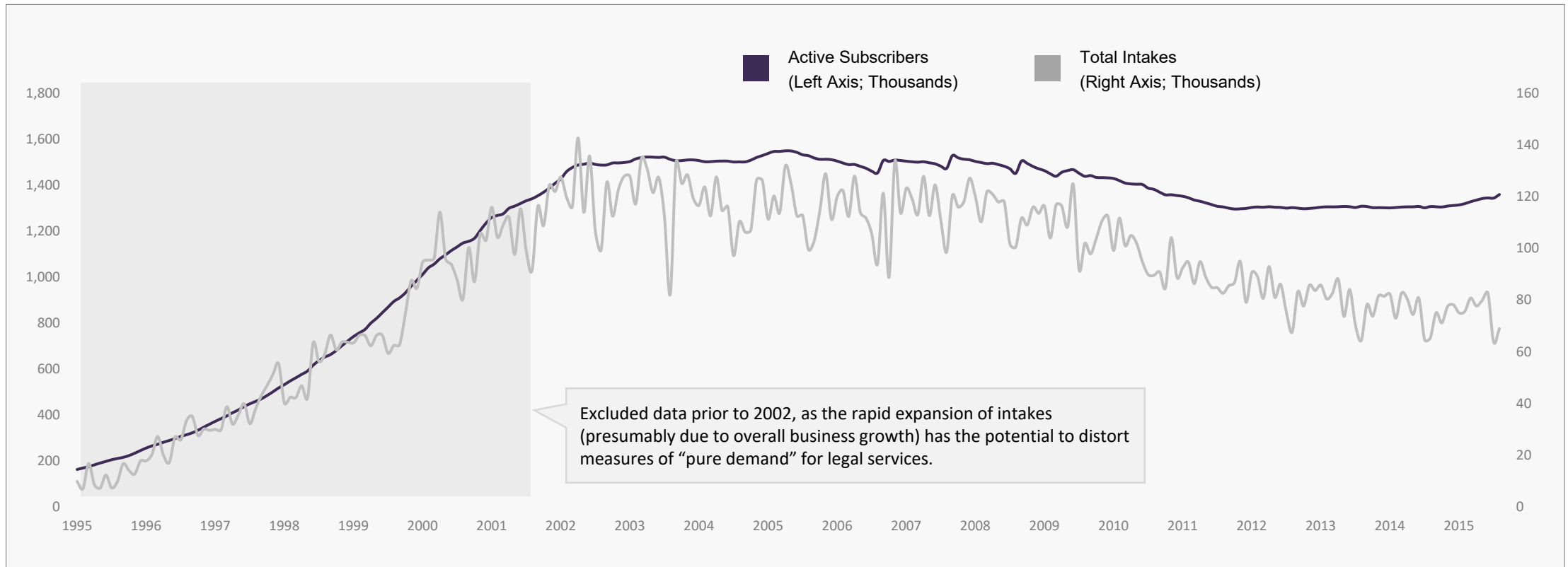
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## **DEVELOP INDEXES:**

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

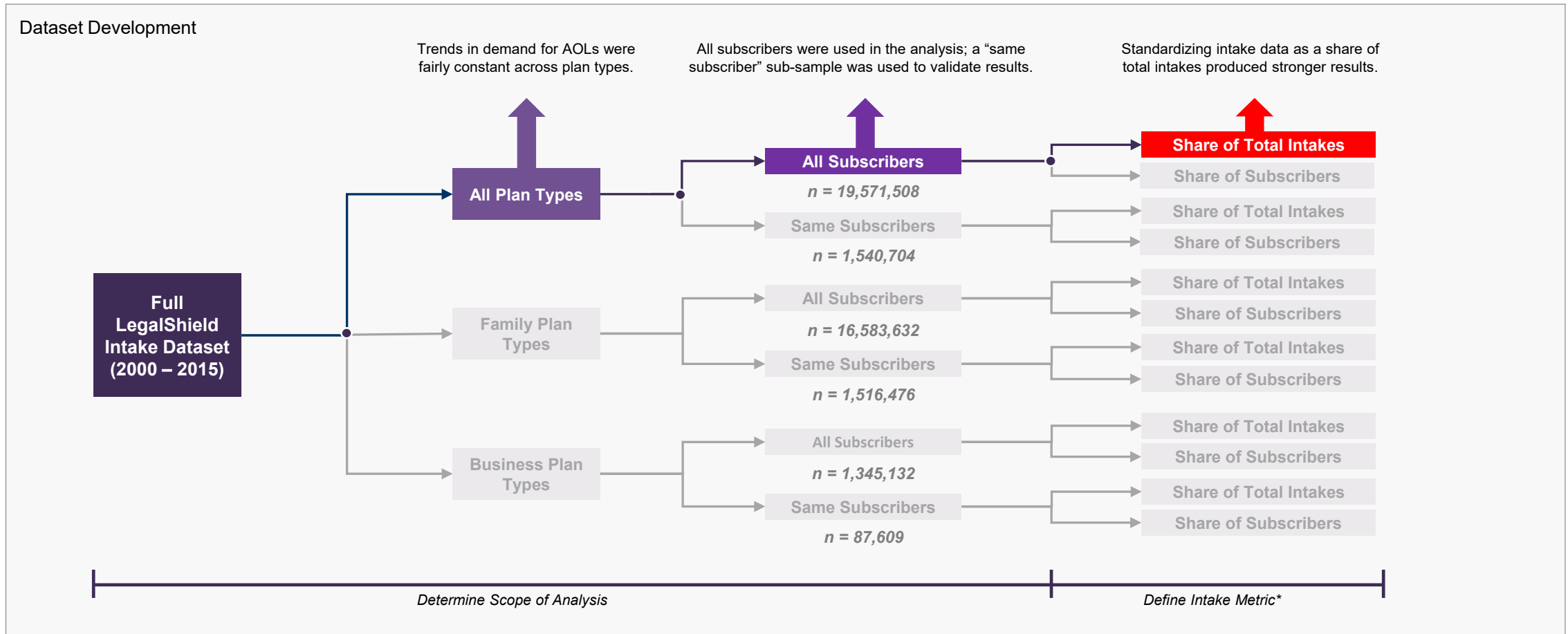
# Data Construction & Cleaning

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)

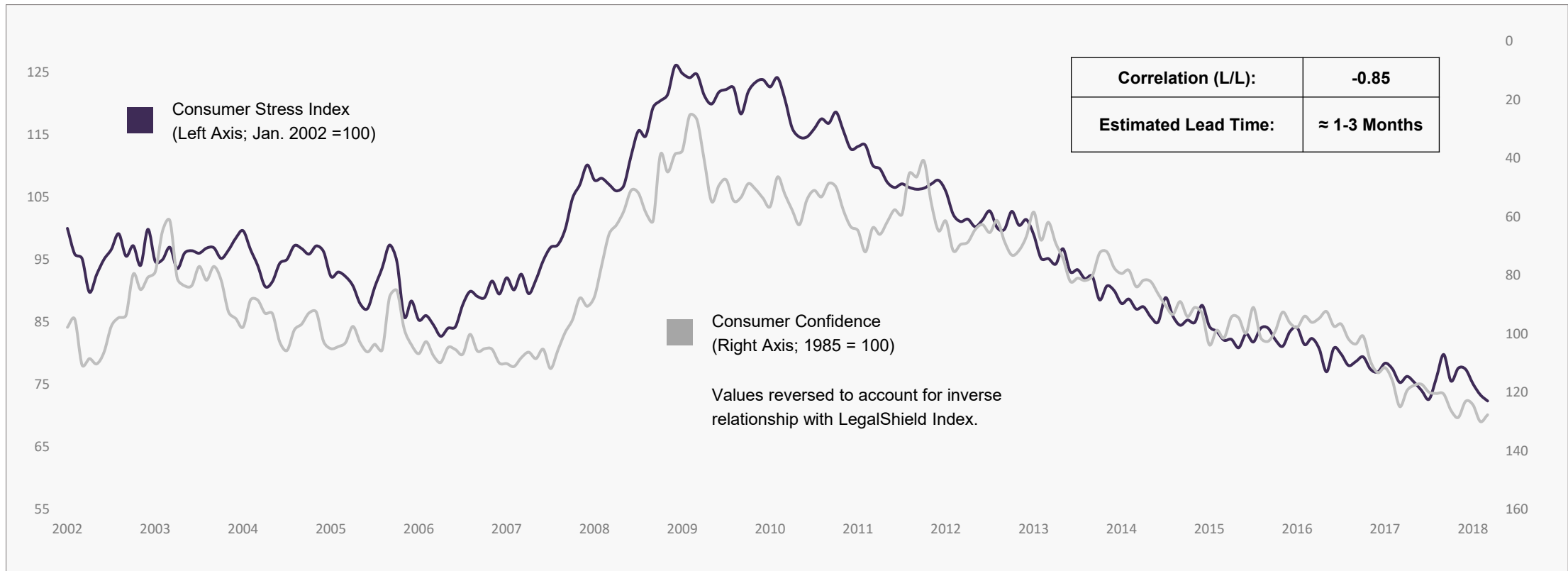
Test 2: Compared correlations between random samples of the data

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

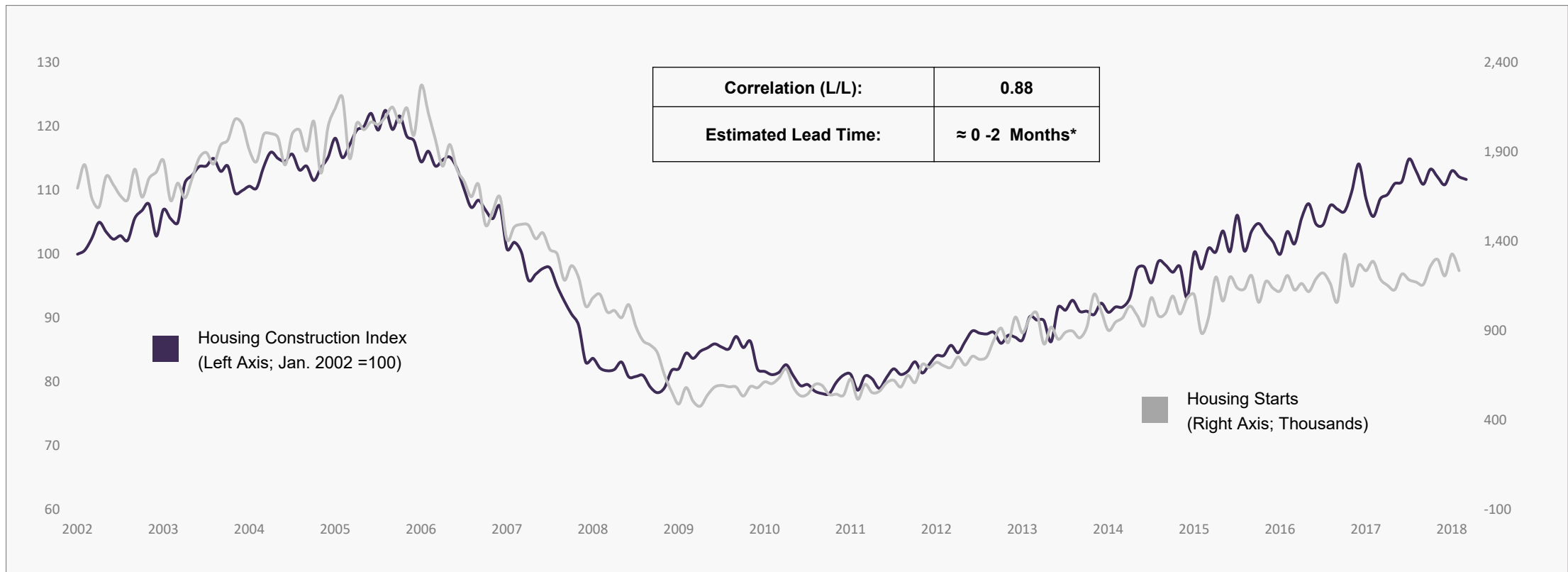
# Composite Index: Consumer Stress

AOLs: Bankruptcy; Foreclosure; Consumer Finance



# Composite Index: Housing Construction Index

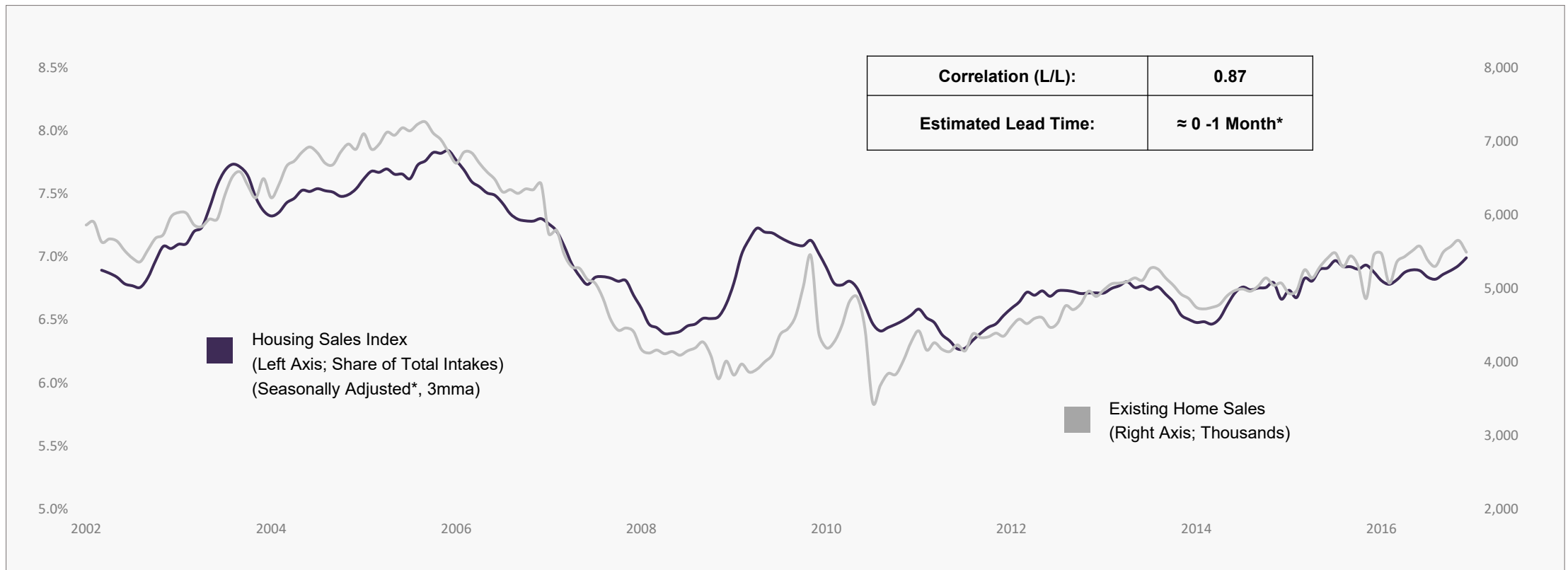
AOLs: Foreclosure; Real Estate\*



\*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

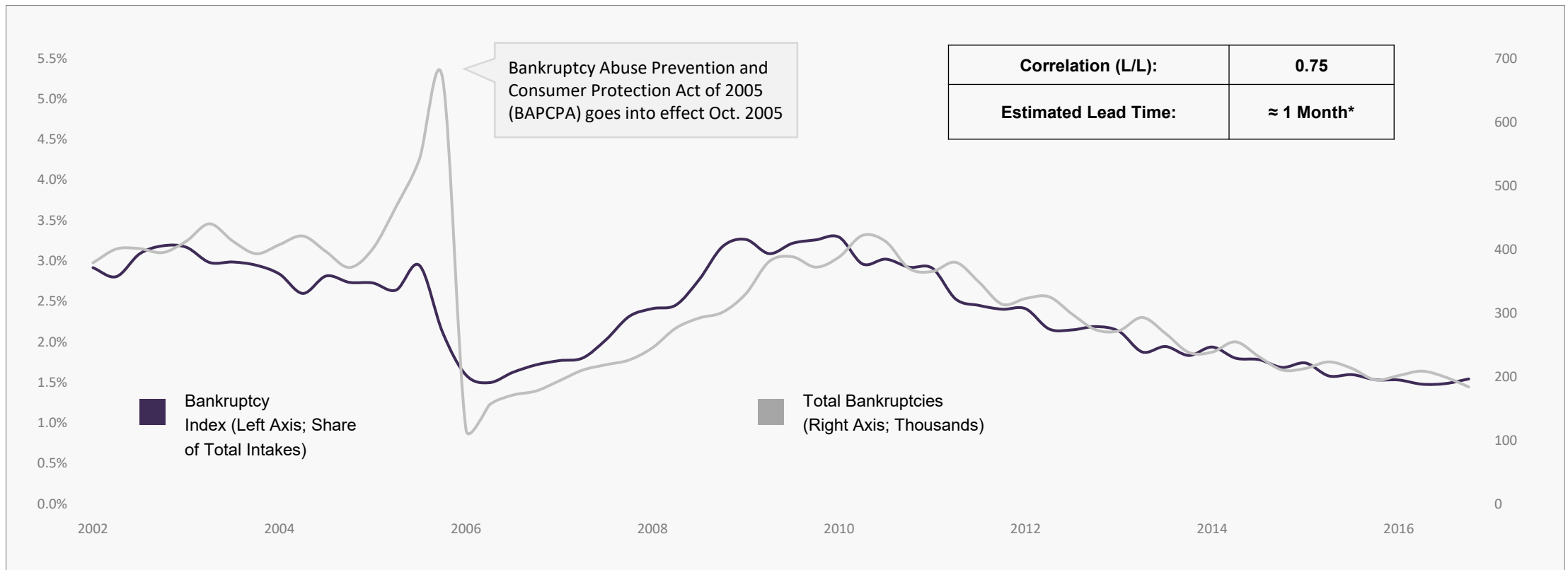
Target Series: Real Estate\*



\*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.

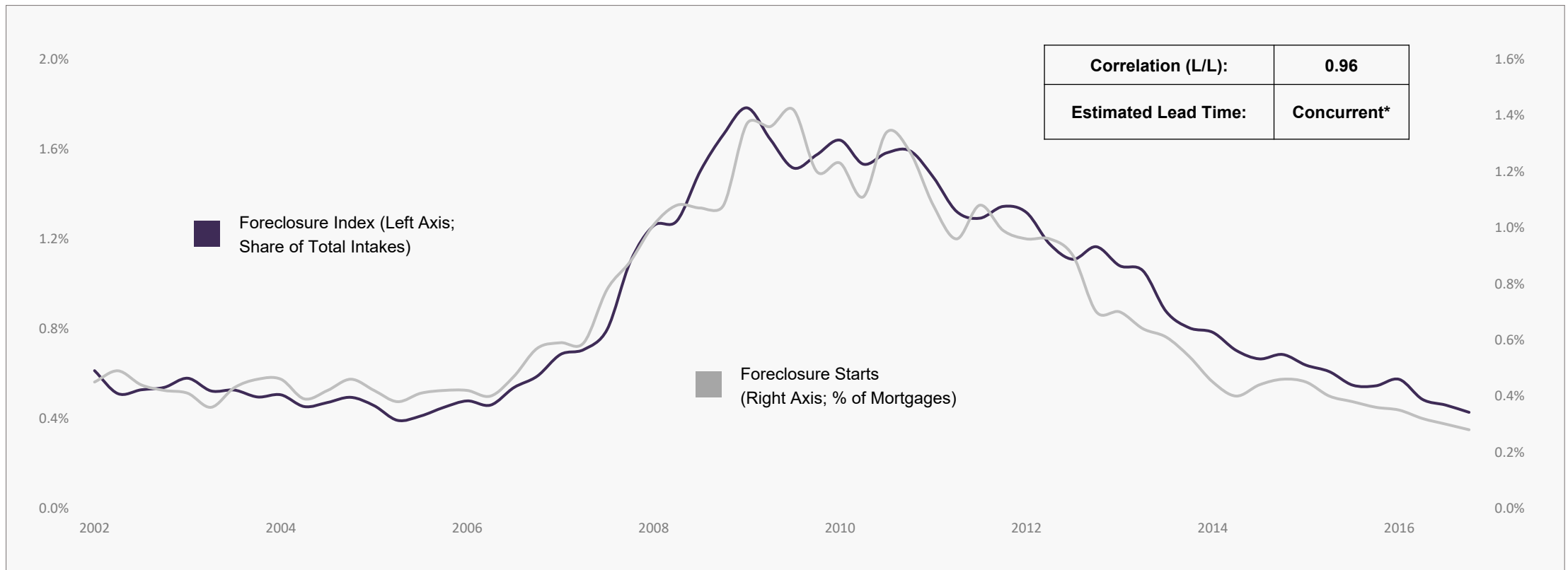
# AOL: Bankruptcy

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™**

