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Equity Research
Americas | United States

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U.S. Equity Strategy

CS Guide to Recessions

Strategy | Economics and Strategy

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Identifying a Recession

With negative QoQ GDP in each of the past 2 quarters, and economic momentum weak, investors are questioning whether we are—or will soon be—in a recession. While it might appear straightforward to ascertain when a contraction begins, the National Bureau of Economic Research (NBER)—the organization responsible for officially declaring recessions—does not employ a simple formula or set of rules in making their determination (see appendix).

It's All About Jobs

The NBER considers a variety of factors in determining a recession; however, the data indicates that a sharp deterioration in the labor market is the only consistent gauge. Given the recent decline in the Unemployment Rate to 3.5%, we are clearly not in a recession, despite weakness. Based on history, a proper recession would likely erase 4 million American jobs.

Recessions Are Determined with the Benefit of Hindsight

While a turn in labor conditions is the clearest sign of recession, this is only visible with the benefit of hindsight (the inflection in unemployment typically coincides with a recession's onset). For this reason, the NBER's decisions are problematically delayed: 4 months following the Covid recession's onset, 12 months after the GFC, and 8 months after the prior 2 contractions.

Economic Growth, Stock Returns and Profits

On average, YoY GDP peaks 10 months prior to a recession's onset, and troughs 12 months after. Stock price declines average -32% around a recession, -9% 5 months prior and -26% in the 10 months after. S&P 500 profits decline -39% from peak (-24% ex-GFC).

An Analysis of Prior Downturns

Nearly everyone seems comfortable with the term "recession"; however, economic data, stock returns and corporate profits vary meaningfully around such events. Inconsistencies between cycles, differences between high and low inflation environments, and a bias toward more recent periods, lead to confusion in forecasting and diagnosing these contractions. The analysis that follows evaluates 50 years of recessions (excluding the Covid-induced experience).

Review of Current Landscape

The problem with declaring a recession's onset is that the exercise is not based on its own characteristics, but rather the depth of the deterioration that follows. In the current context, whether we're in a recession today depends entirely on whether we're in a more vicious downturn tomorrow. While we see meaningful weakness in a number of important variables, we are not yet close to the type of events that would indicate a recession without further downside. That said, the Unemployment Rate has never increased by more than 50-60 bps outside a recession, challenging the idea that the current tightness of the labor market can be eased without a recession.

DISCLOSURE APPENDIX AT THE BACK OF THIS REPORT CONTAINS IMPORTANT DISCLOSURES, ANALYST CERTIFICATIONS, LEGAL ENTITY DISCLOSURE AND THE STATUS OF NON-US ANALYSTS. US Disclosure: Credit Suisse does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the Firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

Below we provide a brief historical context around key economic variables. These are explored further throughout the piece.

Stock Performance

Equities typically fall -32.4% around a recession, -9.3% 5 months prior and -26.1% in the 10 months after. In the selloff from January to June 2022, the S&P 500 declined -23.6%, before rebounding. Over the past 50 years, the 1987 crash was the only 20%+ fall outside a recession, not a good sign. However, the market's recent bounce might be a sign that the worst is already behind us.

Economic Growth

While GDP (QoQ annualized) has fallen for 2 quarters in a row, inventory adjustments, trade and government outlays were the culprits, not consumer or business demand. Importantly, economists forecast a re-acceleration in activity in 2H22, and GDPNow (Atlanta Fed) indicates above trend growth in 3Q. Further, forward-looking surveys, such as ISM, point to continued expansion, albeit at a weaker pace. Only 1 of the past 6 recessions began with an ISM over 50.

Employment

The most important set of indicators in determining a recession, current labor conditions, appear inconsistent with an economic contraction. While Jobless Claims began to increase several months back, an ominous harbinger, this indicator often provides false signals. The Unemployment Rate and Payrolls—more reliable but less forward-looking—remain quite strong.

Inflation and Interest Rates

Differences in the inflationary backdrop between recessions make comparisons quite difficult. In high inflation environments such as 1973 and 1980, the Fed had to balance both parts of their dual mandate, resulting in more volatile Fed Funds cycles. By contrast, in the 2001 and 2007 contractions, they could focus primarily on growth, leading to more uniform policy. Relative to past cycles, the magnitude of Fed hikes is quite modest.

In terms of rates, the yield curve (3 mo-10 yr) inverted in advance of each of the past recessions. While this yield curve measure is positive today, futures indicate that it will invert before year end, and the less reliable 2-10 yr spread is currently negative. This signal of tighter financial conditions is a clear headwind.

Earnings and Multiples

Profits tend to roll over well in advance of a recession. This is not the case today, with YoY growth of 10-11% in 2Q. While analyst estimates have contracted meaningfully over the past 1-2 months, forecasts remain positive for the back half of the year.

During recessions, earnings and stock multiples tend to move in opposite directions, with P/Es rising as profits collapse. Valuations have fallen meaningfully YTD, while earnings continue their upward ascent, a pattern inconsistent with a contracting economy.

Article intended for: Nadeem.Kassam#raymondjames.ca

Key Indicators

Stock Performance
S&P 500: Summary

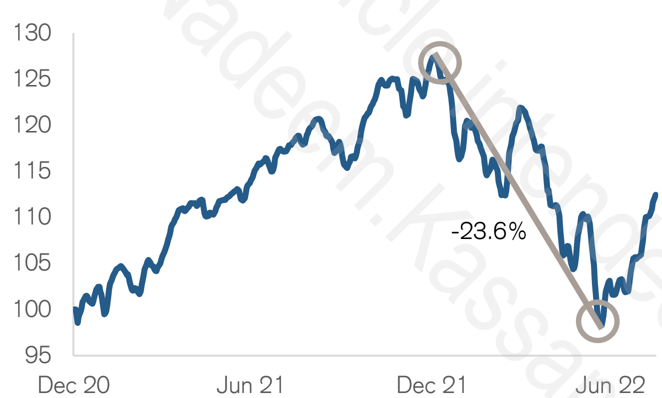
On average, stock prices declined -32.4% around a recession, -9.3% in the 5 months prior to its onset and -26.1% in the 10 months following.

In 3 of the past 6 cycles (1973, 1981 and 2001), the market peaked an average of 9 months prior to the recession's onset. The other 3 (1980, 1990 and 2007) peaked just 1 month prior.

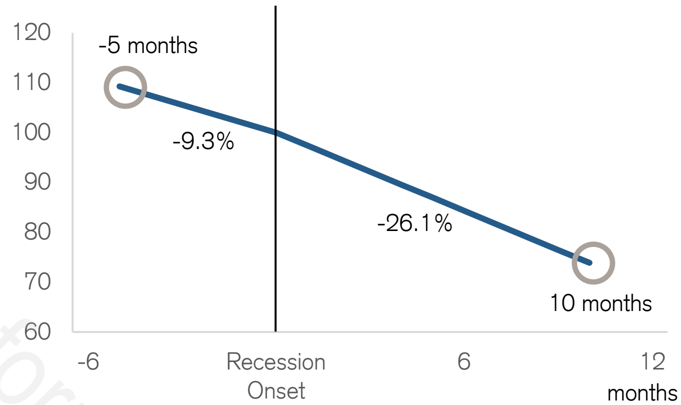
From peak to trough stocks declined -23.6% from January to June 2022. Only the 1987 stock market crash (-33.5%) had a larger decline outside of a recession.

S&P 500 (Indexed)

Current Cycle



Historical Average



Note: Indexed at 100 at recession onset; average calculated over the past 6 recessions
Source: Standard & Poor's, NBER, Haver, Factset, Credit Suisse

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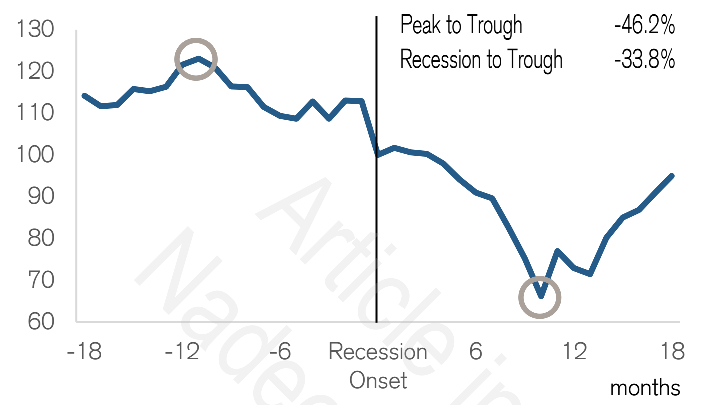
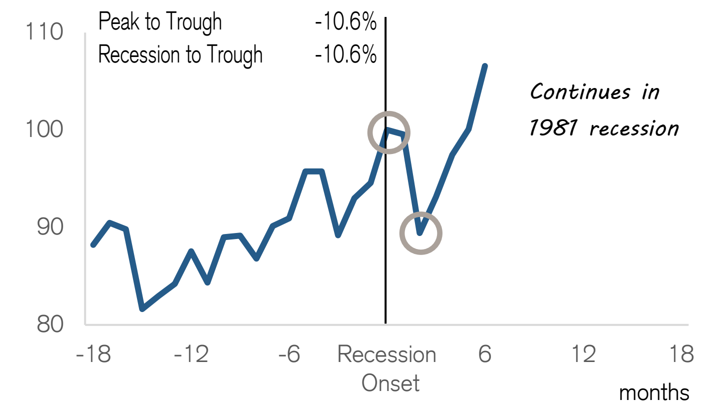
Stock Performance
S&P 500: Detail

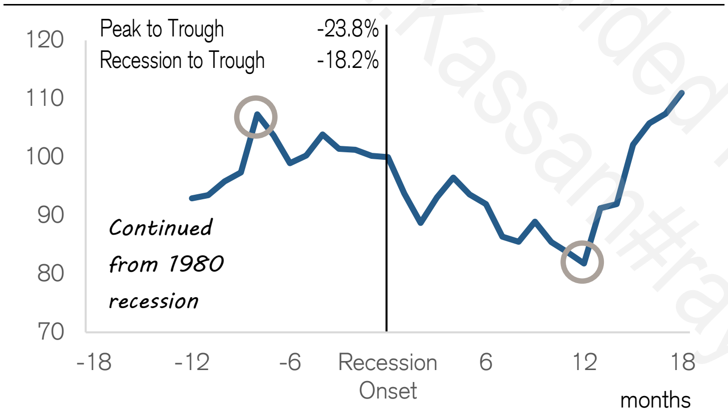
1973 Recession



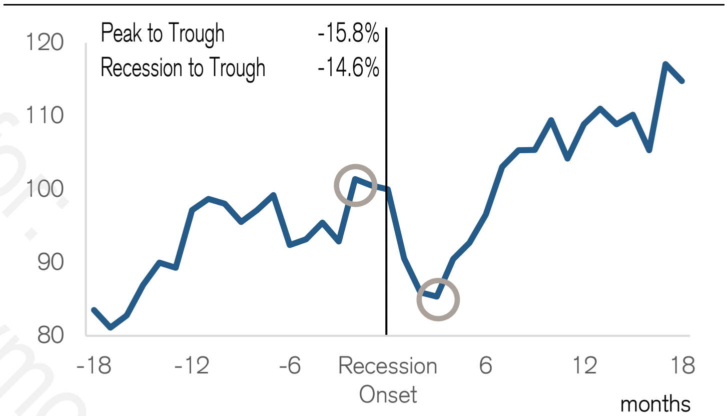
1980 Recession



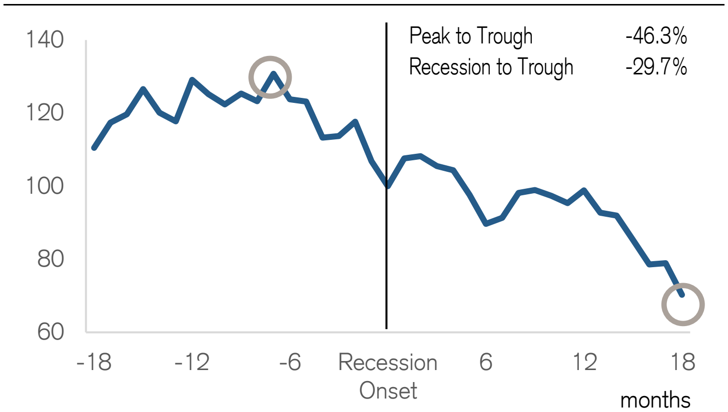
1981 Recession



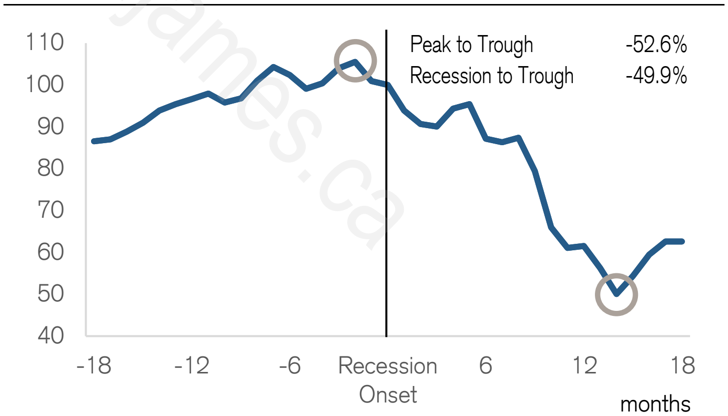
1990 Recession



2001 Recession



2007 Recession



Note: Indexed at 100 at recession onset
Source: Standard & Poor's, NBER, Haver, Factset, Credit Suisse

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Economic Growth
Real GDP QoQ Annualized: Summary

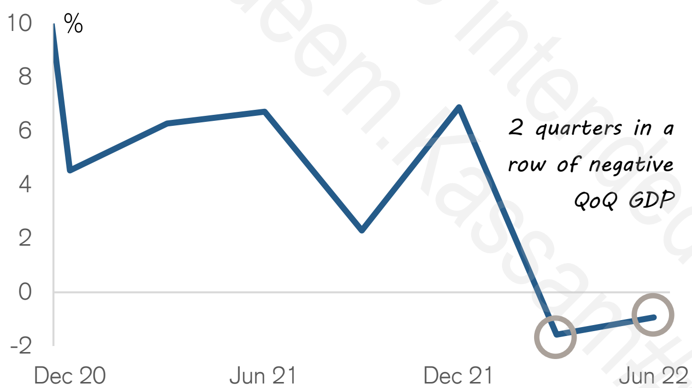
GDP (QoQ annualized) contracted in each of the past 2 quarters. Only 1 of the past 11 recessions (1969) began with 2 consecutive quarters of negative GDP.

Only 3 of the past 6 recessions (1973, 1981 and 2001) began while GDP was negative. In each, the following quarter was positive. Conversely, the other 3 recessions (1980, 1990 and 2007) began while GDP was positive.

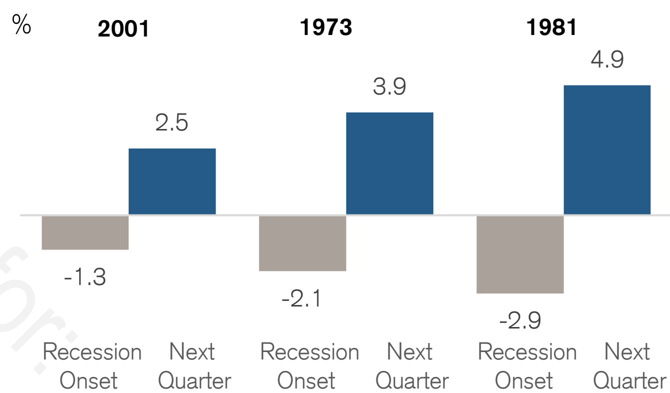
Contractions in GDP don't necessarily indicate a recession. For example, GDP was negative 3 times between 2011-14 without a recession being declared.

Consensus 3Q-4Q22 GDP estimates are +1.5% and +1.3%.

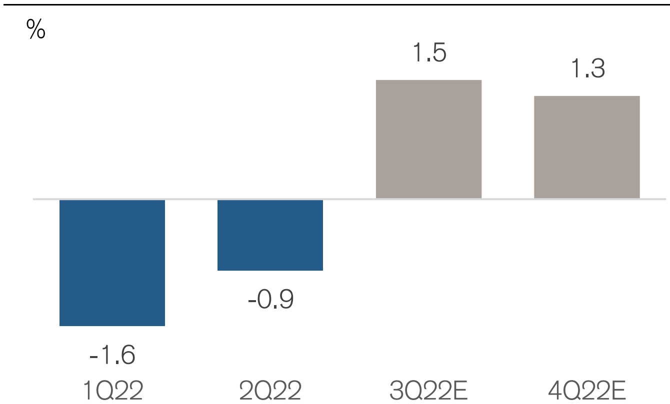
GDP QoQ Annualized
Current Cycle



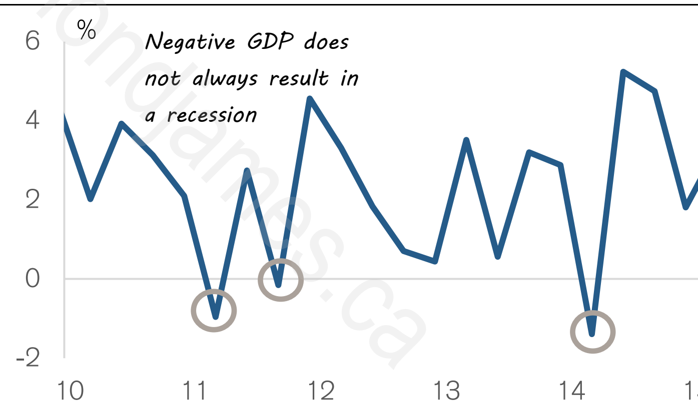
Recessions with Negative GDP at the Onset



GDP QoQ Annualized
2022 Actual Quarters & Consensus Estimates



2010—2015



Source: BEA, NBER, Haver, Factset, The BLOOMBERG PROFESSIONAL™ service, Credit Suisse

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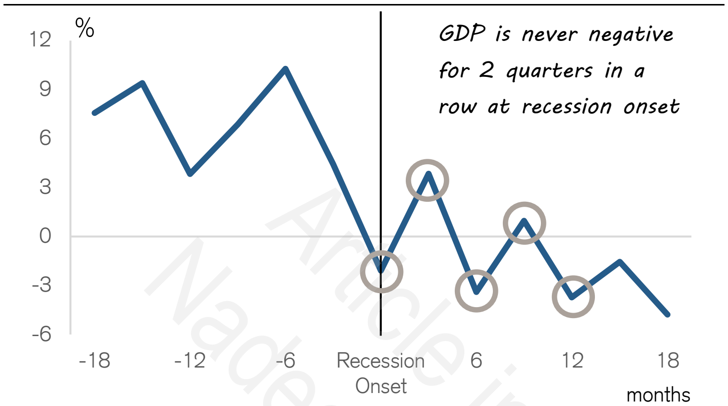
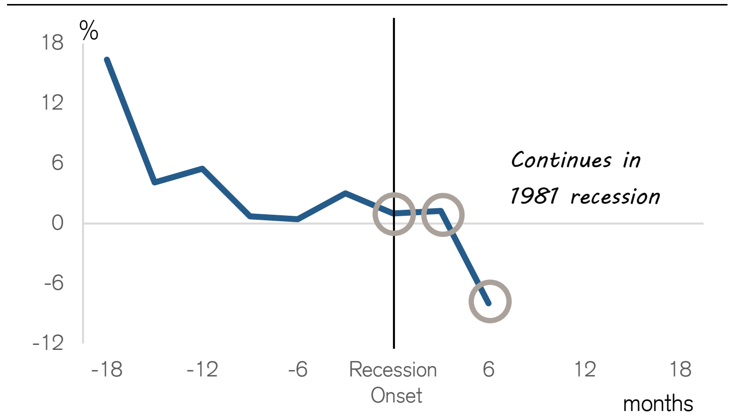
Economic Growth
Real GDP QoQ Annualized: Detail

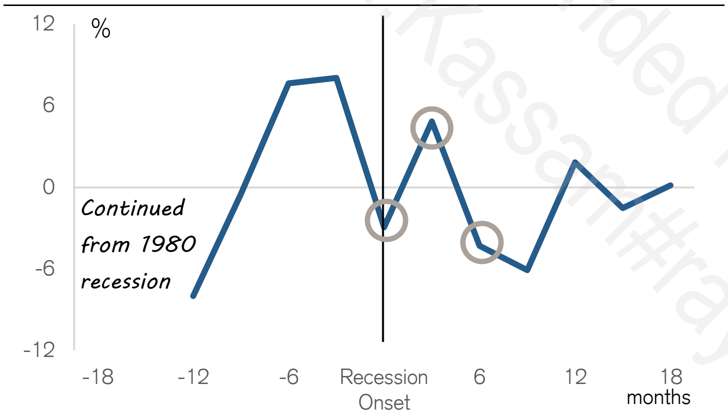
1973 Recession



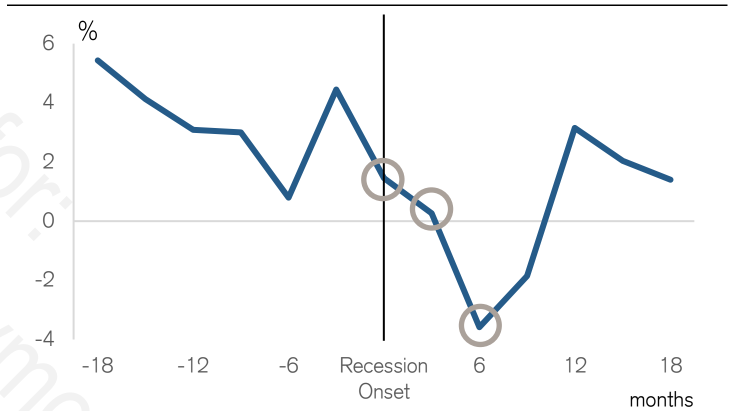
1980 Recession



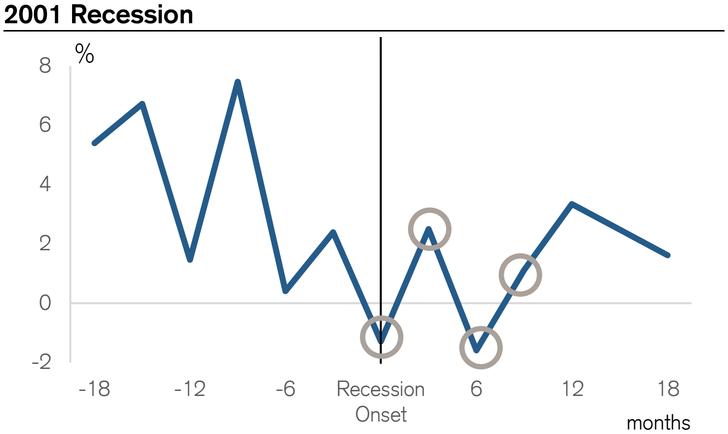
1981 Recession



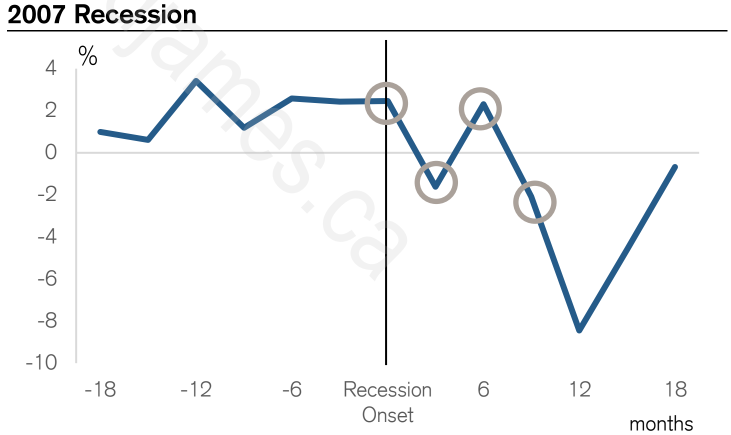
1990 Recession



2001 Recession



2007 Recession



Source: BEA, NBER, Haver, Factset, Credit Suisse

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Economic Growth
Real GDP YoY: Summary

Sequential measures of economic activity (MoM, QoQ) are much better at signaling changes in economic momentum; however, they are also extremely volatile and tend to provide false signals.

YoY measures, by contrast, are more stable. Since they are slow to react to changes in momentum, their absolute level is less important than their change in direction.

YoY GDP growth peaks an average of 10 months prior to a recession's onset. In 5 of the past 6 cycles, it peaked prior to the recession's onset. In the 1981 recession, it peaked after.

YoY GDP growth tends to be positive at a recession's onset and remains positive for 6 months after. It never turned negative in the 2001 recession.

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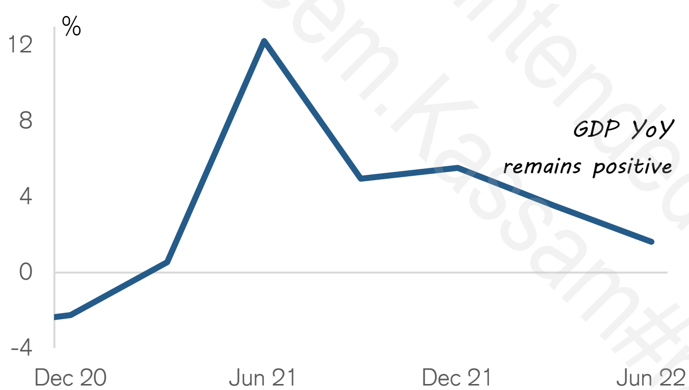
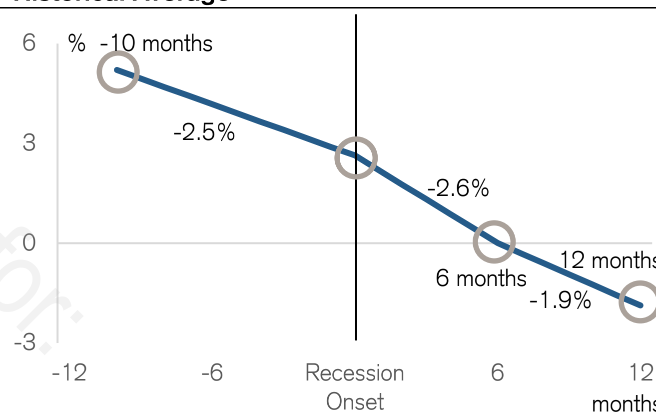
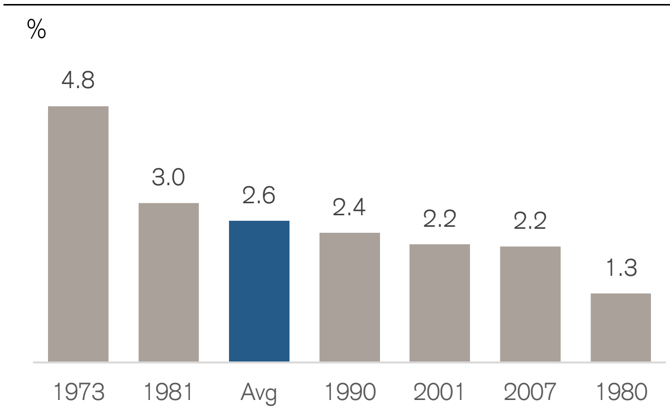
GDP YoY
Current Cycle



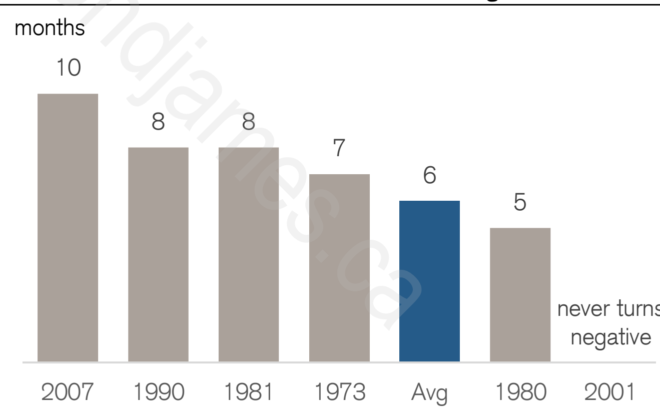
Historical Average



GDP YoY
At Recession Onset



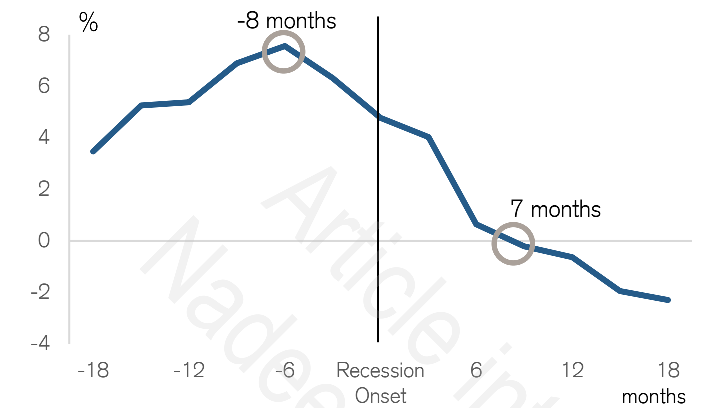
Months from Recession Onset to 1st Negative Quarter



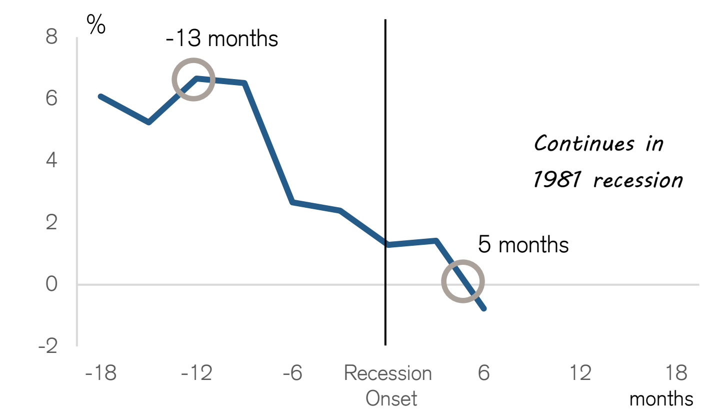
Source: BEA, NBER, Haver, Factset, Credit Suisse

Economic Growth
Real GDP YoY: Detail

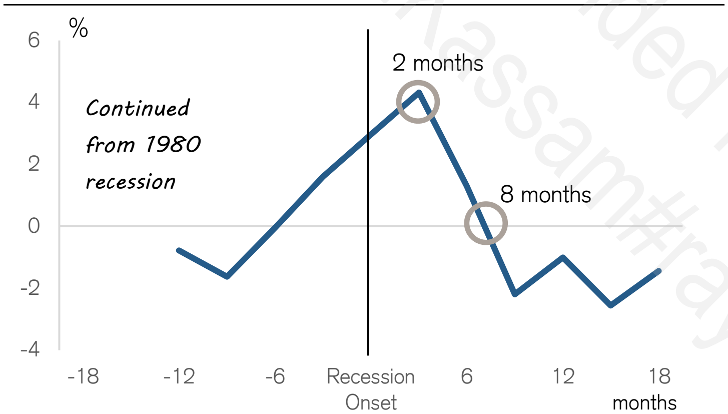
1973 Recession



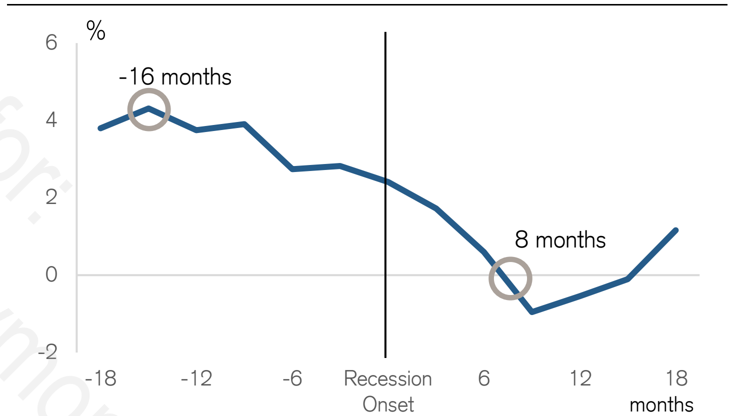
1980 Recession



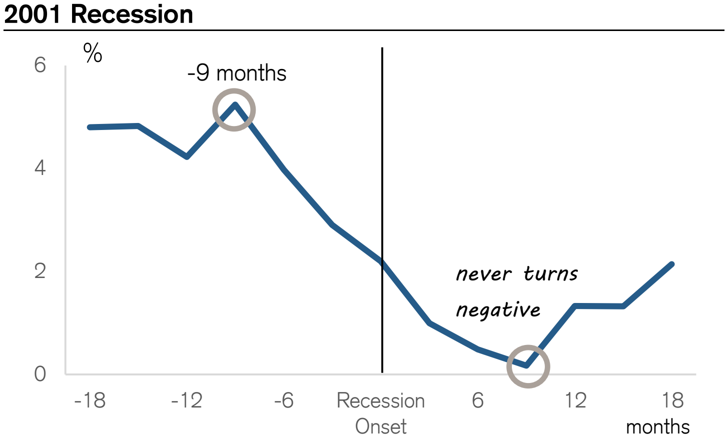
1981 Recession



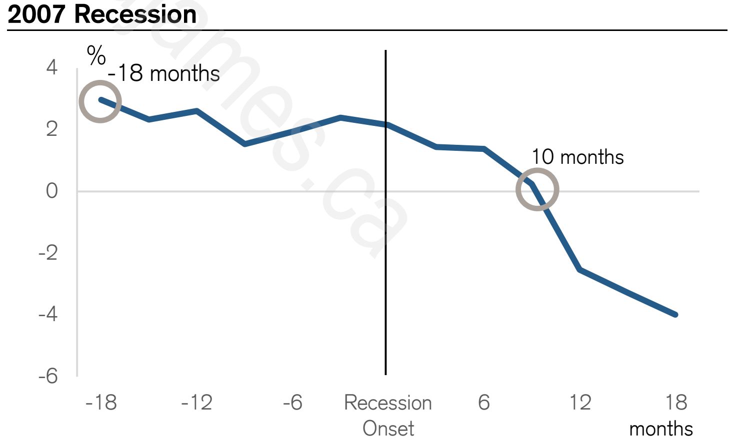
1990 Recession



2001 Recession



2007 Recession



Source: BEA, NBER, Haver, Factset, Credit Suisse

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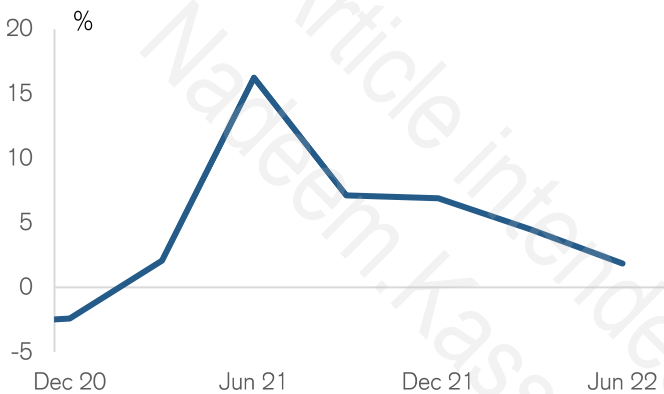
Economic Growth
Personal Consumption YoY: Summary

Personal Consumption typically peaks an average of 12 months prior to a recession's onset. The 1981 recession (a continuation of the prior contraction) was the only outlier, with Consumption peaking at the recession's onset.

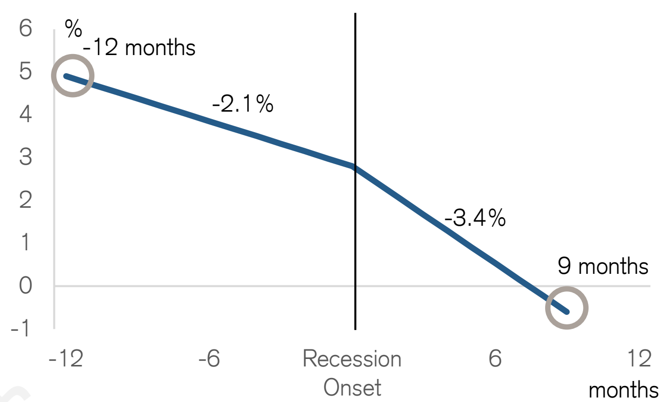
YoY Consumption never turned negative in 2001 (troughing at 1.8%) or 1981 (0.1%) and contracted only slightly in 1990 (-0.4%).

Personal Consumption

Current Cycle



Historical Average



Source: BEA, NBER, Haver, Factset, Credit Suisse

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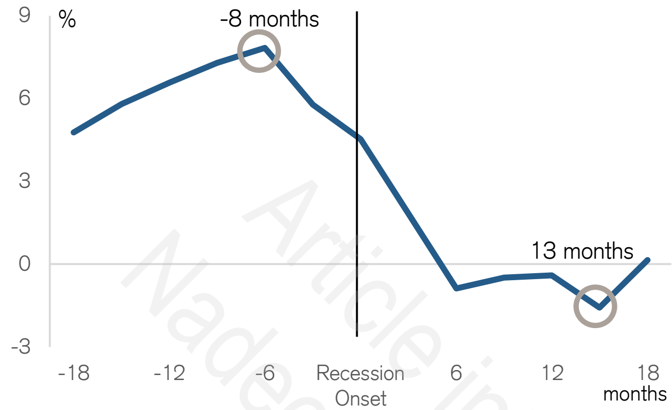
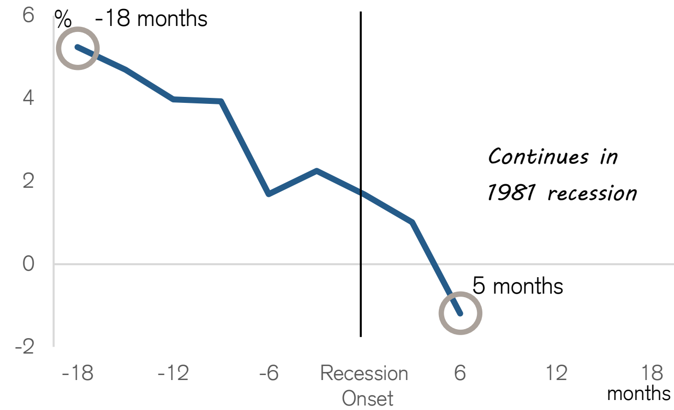
Economic Growth
Personal Consumption YoY: Detail

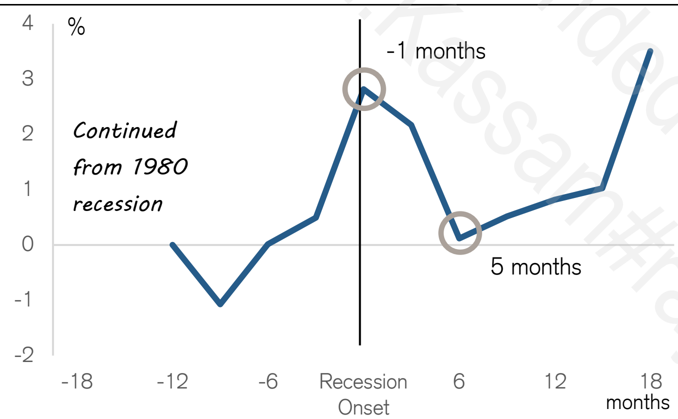
1973 Recession



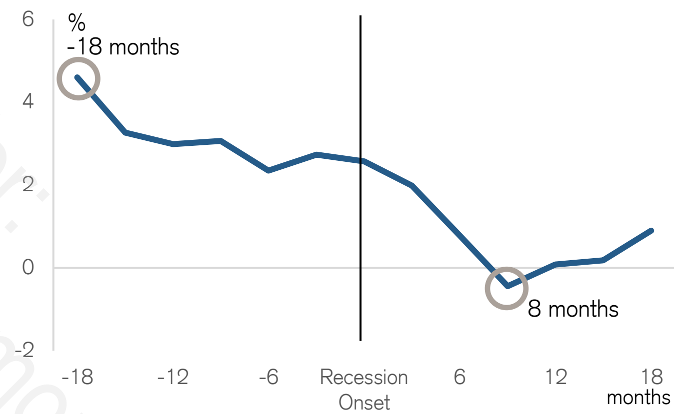
1980 Recession



1981 Recession

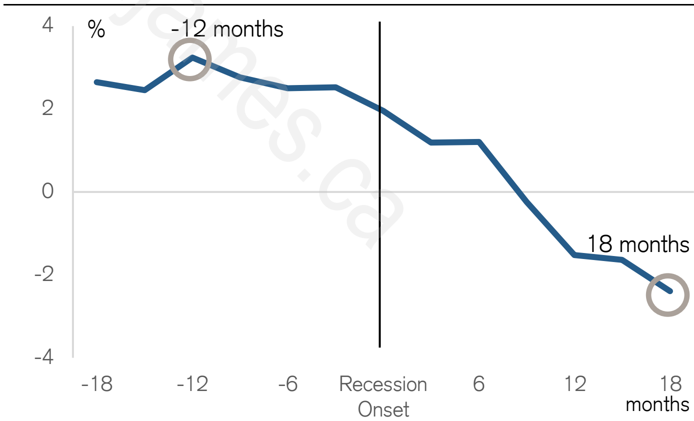


1990 Recession



2001 Recession

2007 Recession



Source: BEA, NBER, Haver, Factset, Credit Suisse

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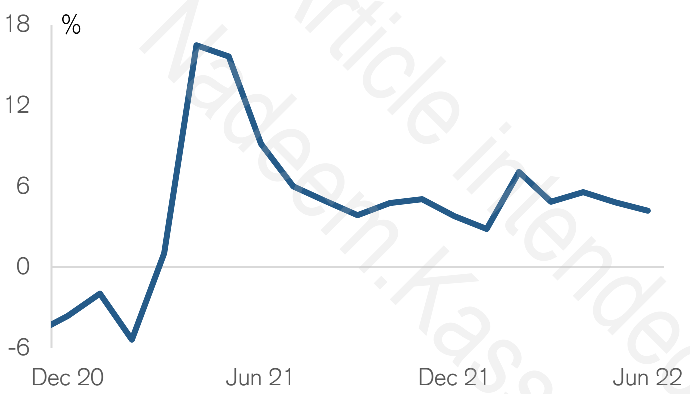
Economic Growth
Industrial Production YoY: Summary

While Industrial Production YoY peaks an average of 6 months prior to a recession's onset, 3 of the past 6 recessions (1973, 1980 and 2001) peaked 12 months prior, while the others (1981, 1990 and 2007) rolled over at the very onset.

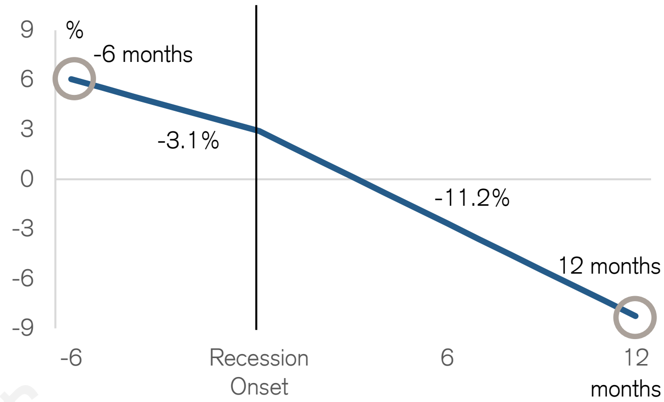
IP tends to be positive at a recession's onset and remains so for 3 months after.

There are quite a few instances when IP turns negative without a recession ensuing (e.g., 2015, 2019).

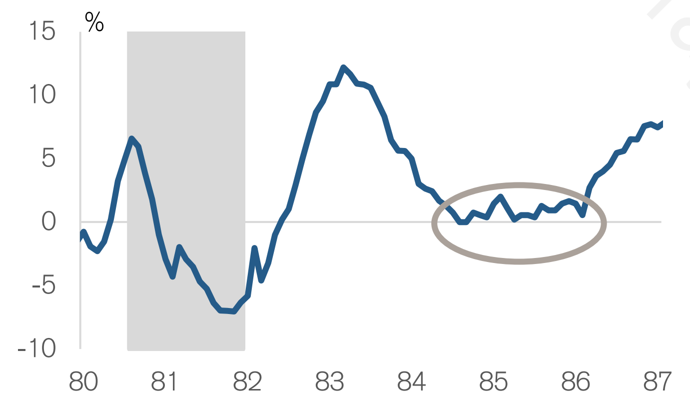
Industrial Production YoY
Current Cycle



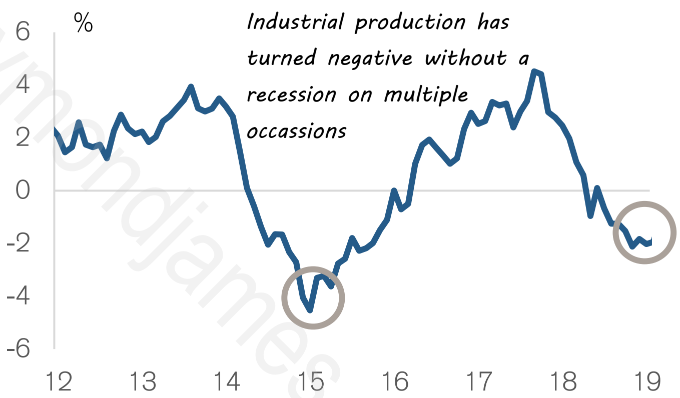
Historical Average



Industrial Production YoY
1980—1987



2012—2019



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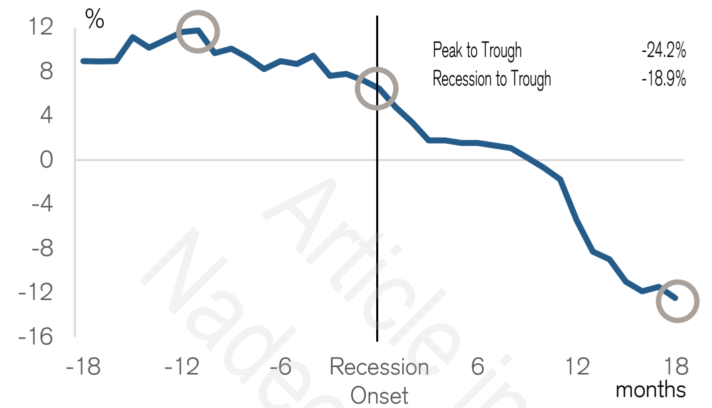
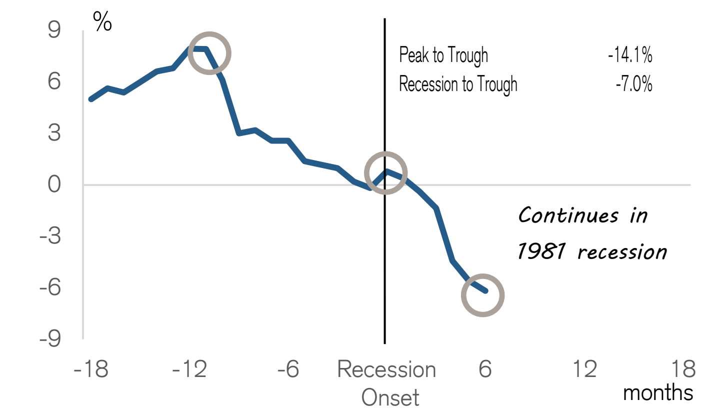
Economic Growth
Industrial Production YoY: Detail

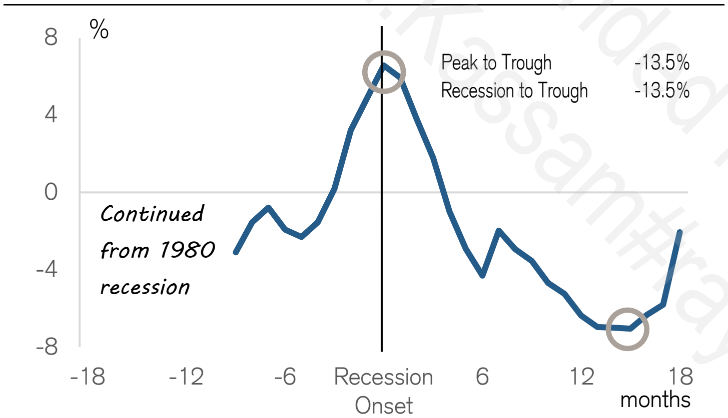
1973 Recession



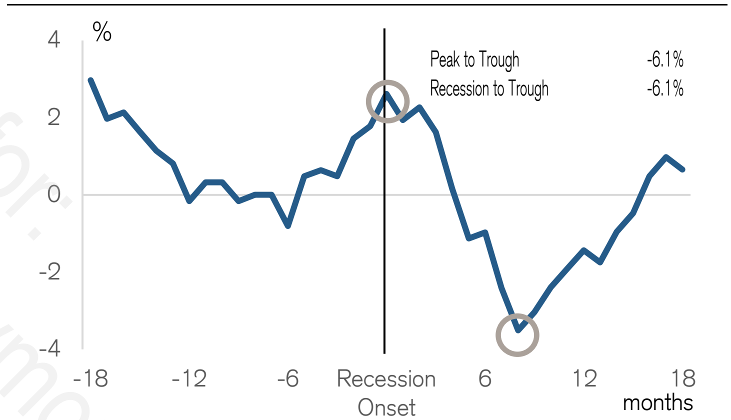
1980 Recession



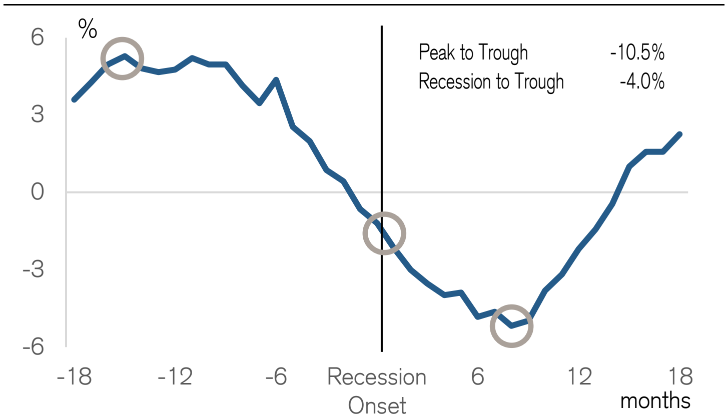
1981 Recession



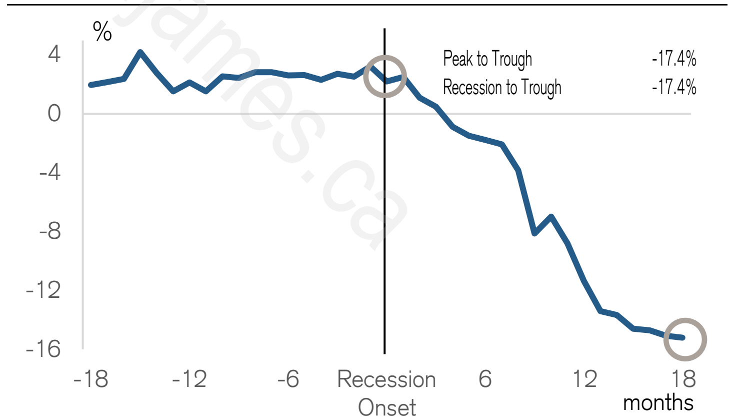
1990 Recession



2001 Recession



2007 Recession



Source: BEA, NBER, Haver, Factset, Credit Suisse

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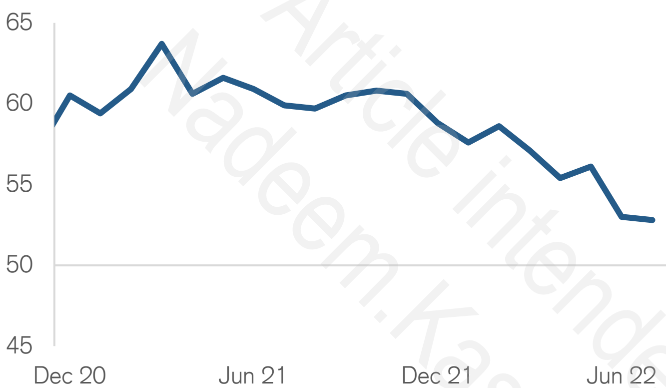
Economic Growth
ISM Manufacturing: Summary

At the onset of the past 6 recessions, the ISM was above 50 once, at 50 once, and below 50 four times.

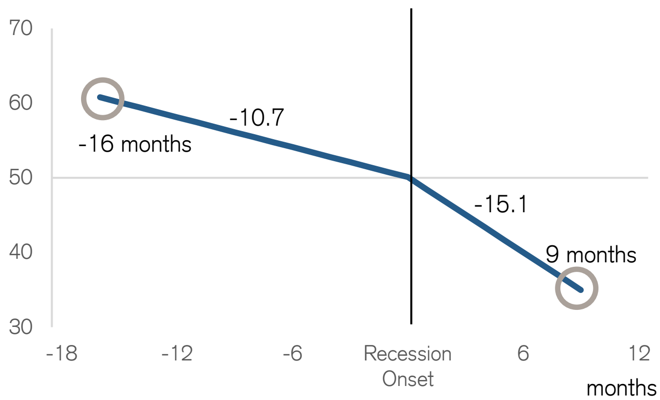
The ISM has fallen below 50 on numerous occasions that did not materialize into a recession.

On average, the ISM fell to 35 during recessions.

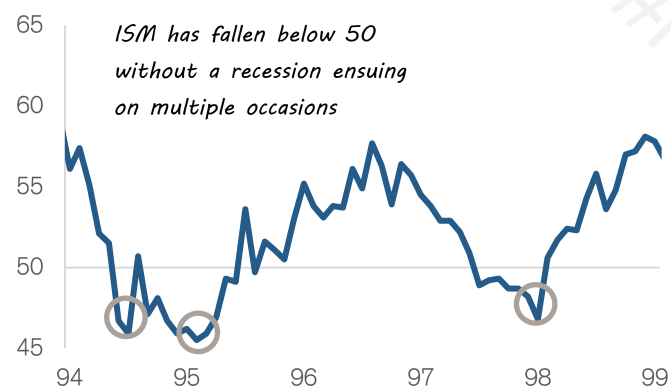
ISM Manufacturing
Current Cycle



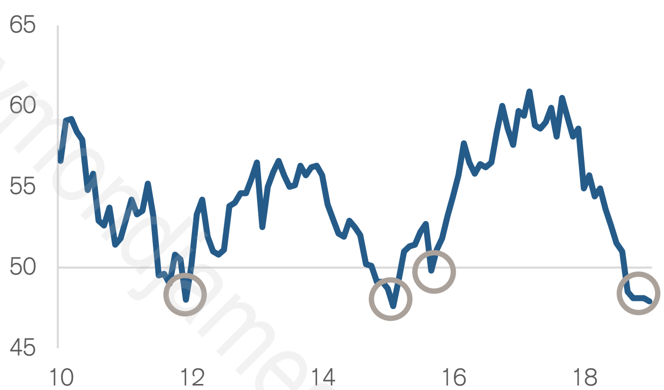
Historical Average



ISM Manufacturing
1994—1999



2010-2019

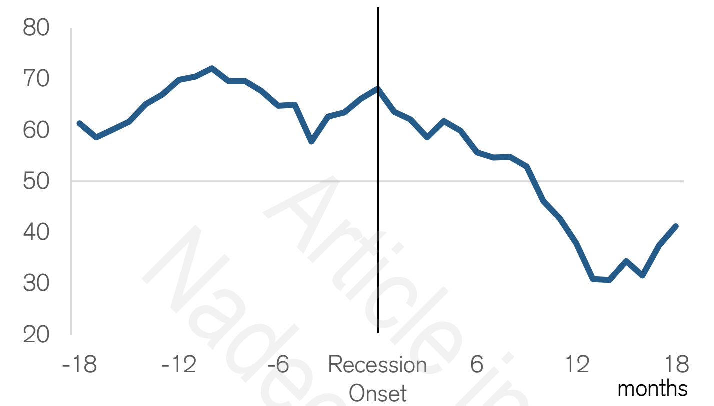


Source: ISM, NBER, Haver, Factset, Credit Suisse

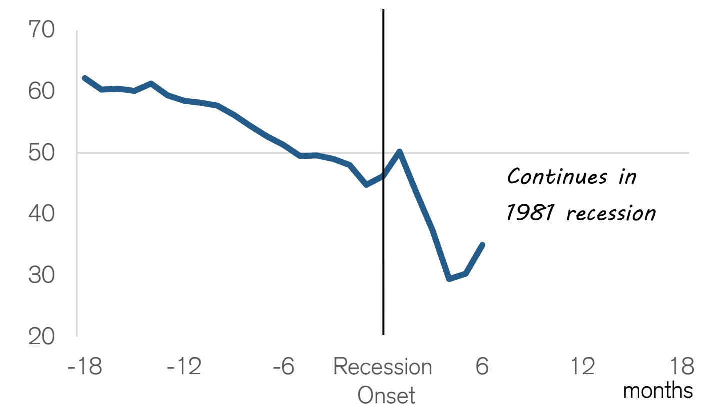
Article intended for: Nadeem.Kassam@raymondjames.ca

Economic Growth
ISM Manufacturing: Detail

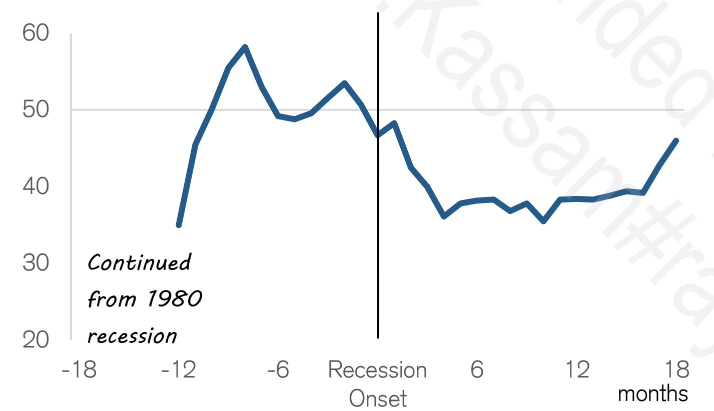
1973 Recession



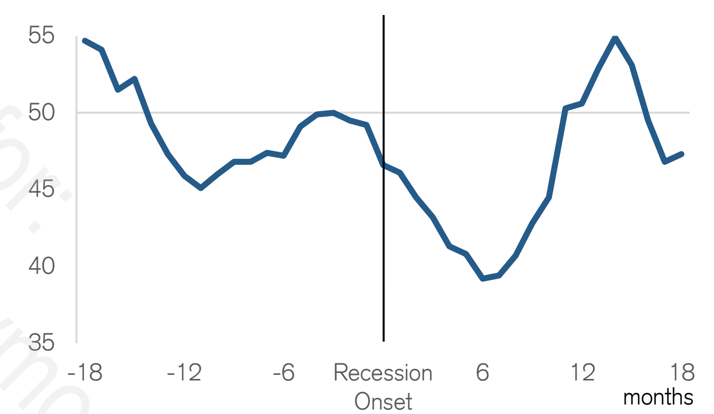
1980 Recession



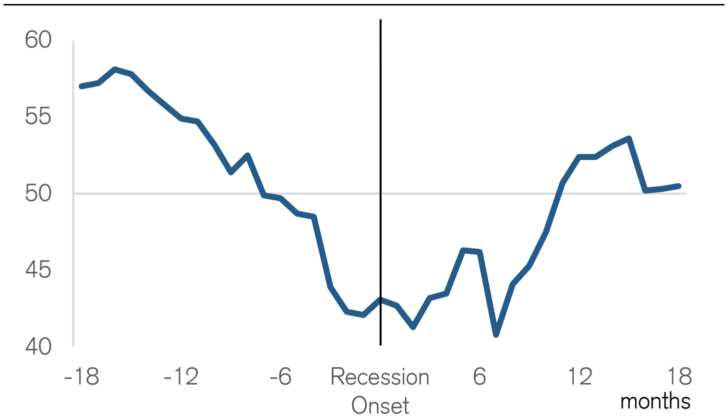
1981 Recession



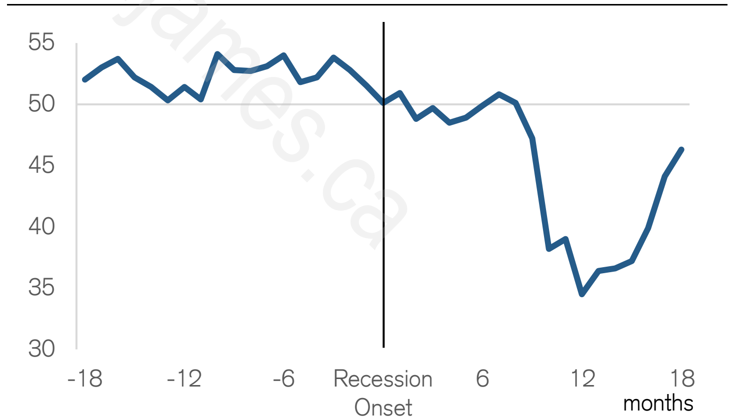
1990 Recession



2001 Recession



2007 Recession



Source: ISM, NBER, Haver, Factset, Credit Suisse

Article intended for: Nadeem.Kassam#raymondjames.ca

Employment
Unemployment Rate: Summary

The Unemployment Rate is the most important indicator for recessions. It tends to be stable for extended periods leading into a contraction, but spike (almost) exactly at a recession's onset.

The Unemployment Rate has increased 2.9% on average during recessions, with the smallest increase of 1.5% to the largest of 4.5%.

Over the course of the business cycle, the Unemployment Rate is perhaps the most orderly of all economic indicators, steadily falling during economic expansions and spiking during contractions.

The Unemployment Rate has never increased by more than 50-60 bps outside of an economic contraction, challenging the idea that current labor market tightness can be eased without a recession.

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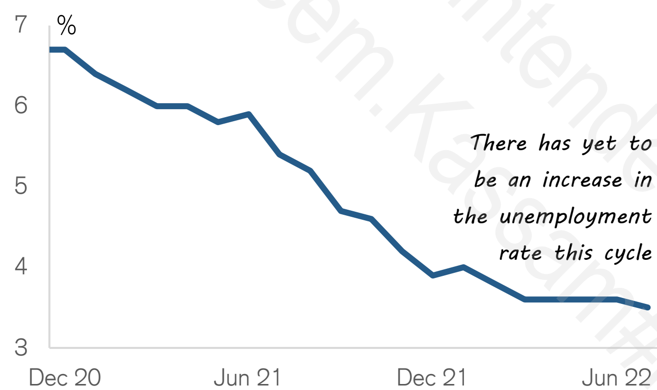
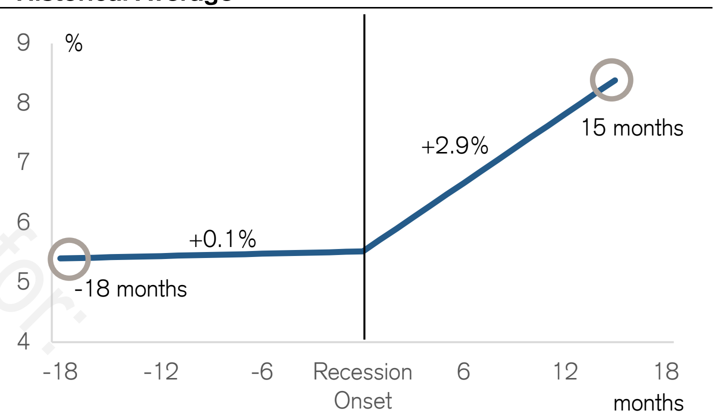
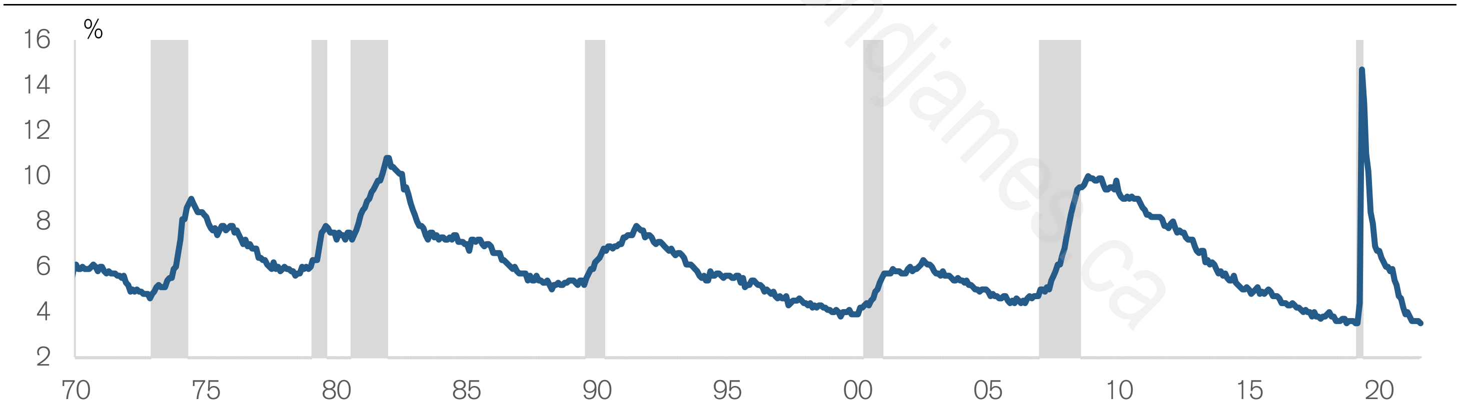
Unemployment Rate
Current Cycle



Historical Average



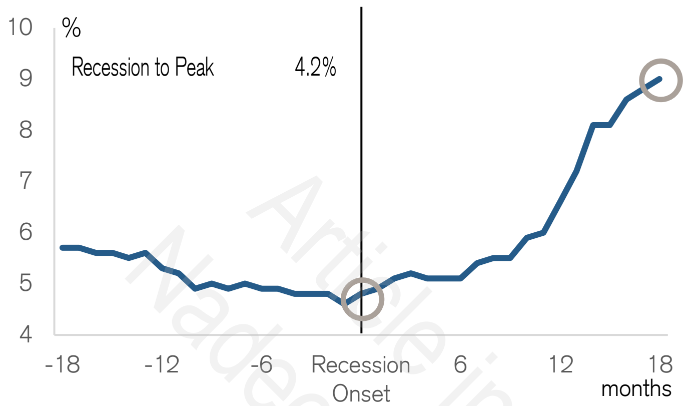
Unemployment Rate
1970-2022



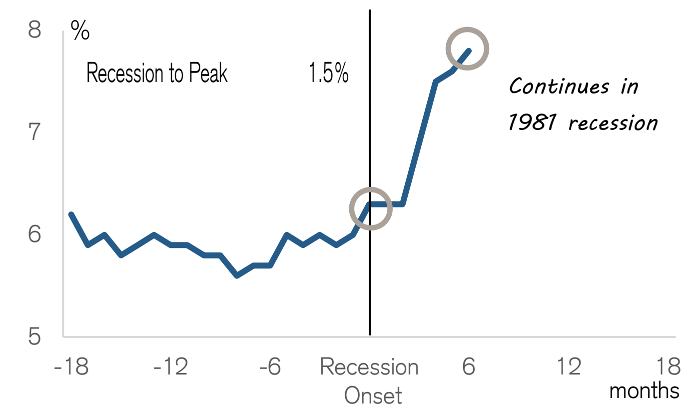
Source: BLS, NBER, Haver, Factset, Credit Suisse

Employment
Unemployment Rate: Detail

1973 Recession



1980 Recession



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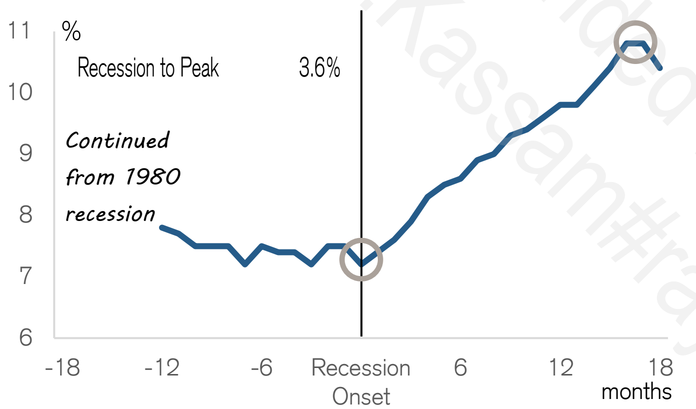
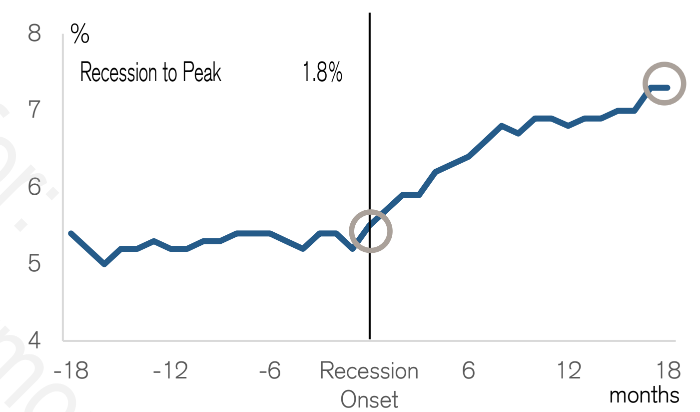
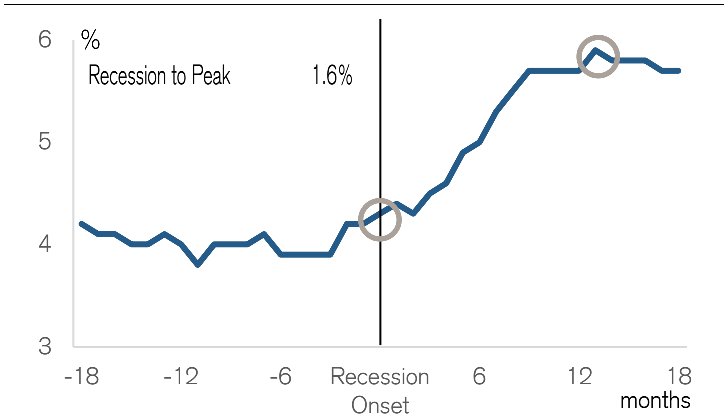
1981 Recession



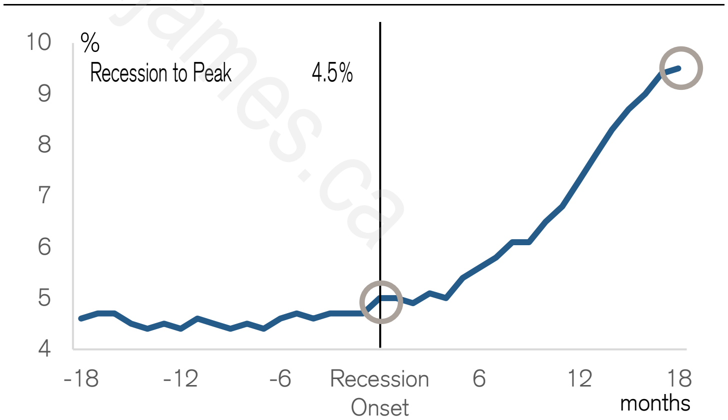
1990 Recession



2001 Recession



2007 Recession



Source: BLS, NBER, Haver, Factset, Credit Suisse

Article intended for: Nadeem.Kassam#raymondjames.ca

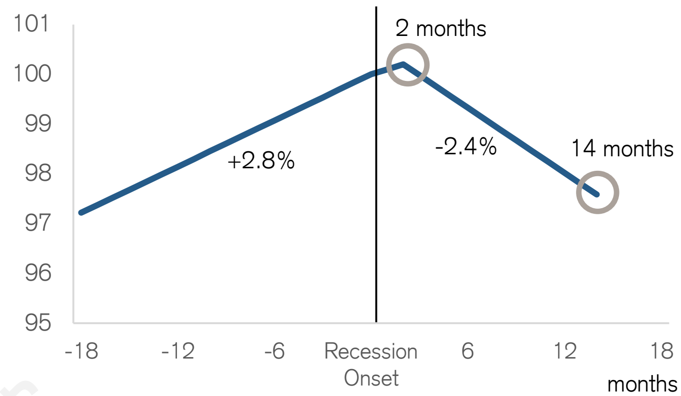
Employment
Non-Farm Payrolls: Summary

Non-Farm Payrolls provide a similar recessionary signal as the Unemployment Rate. Historically, it has continued to improve until the beginning of a recession, and then steadily deteriorates. While it is a useful signal to indicate that you are in a recession, it gives little/no advanced warning.

The most recent Payrolls report indicates solid expansion.

Non-Farm Payrolls
Current Cycle

Historical Average



Note: Indexed at 100 on 12/31/2020 and at recession onset in historical average
Source: BLS, NBER, Haver, Factset, Credit Suisse

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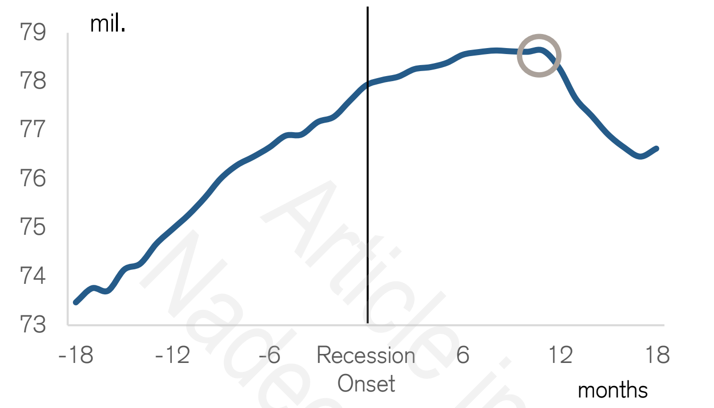
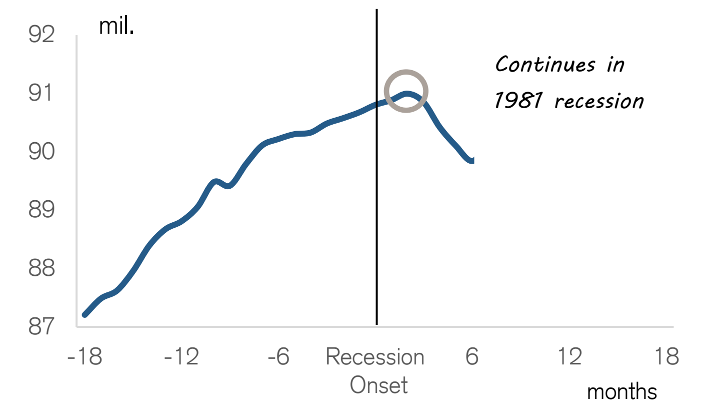
Employment
Non-Farm Payrolls: Detail

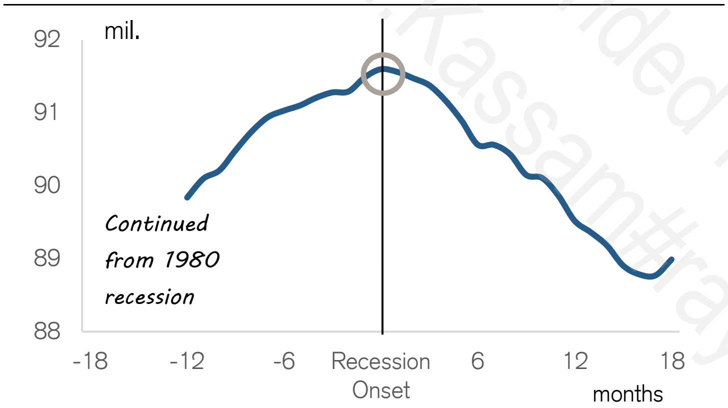
1973 Recession



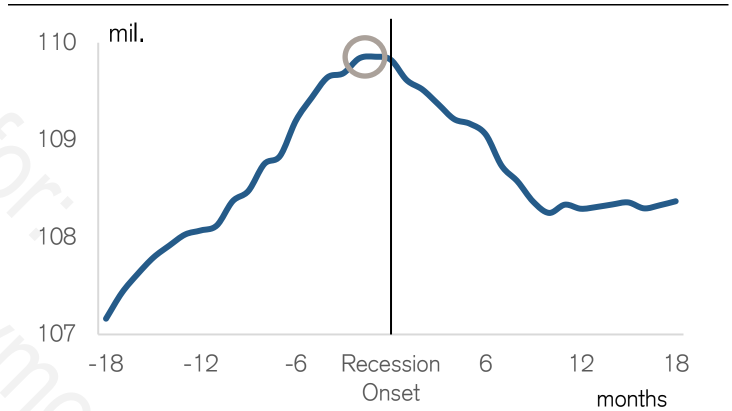
1980 Recession



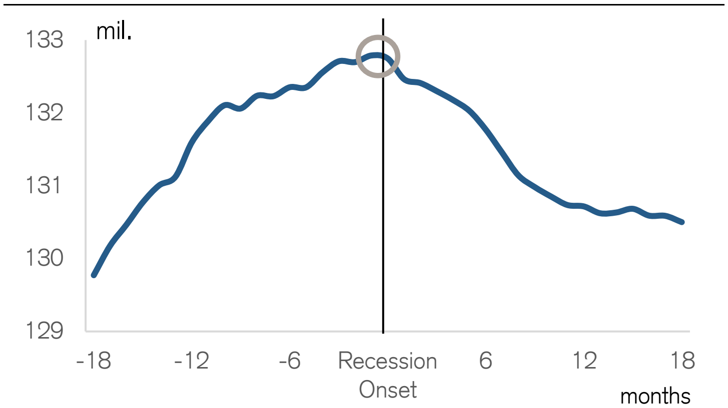
1981 Recession



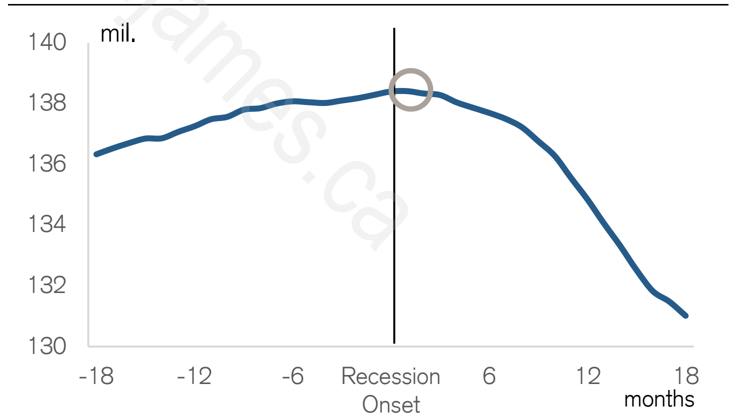
1990 Recession



2001 Recession



2007 Recession



Source: BLS, NBER, Haver, Factset, Credit Suisse

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Employment
Initial Jobless Claims: Summary

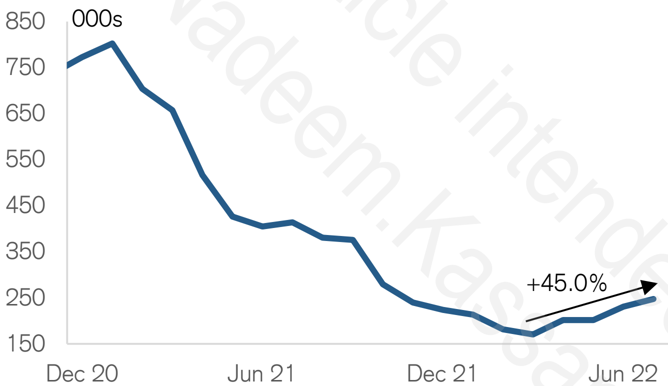
Different than both the Unemployment Rate and Non-Farm Payrolls, Weekly Jobless Claims begin to deteriorate well in advance of a recession (14 months on average), providing an early warning.

On average, Claims increase 26% prior to a recession and rise an additional 57% in a recession.

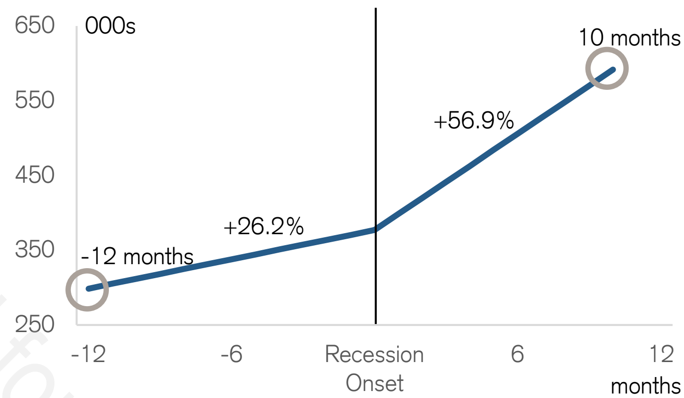
Claims have deteriorated on numerous occasions that did not materialize into a recession.

In the current cycle, Claims have increased by 45% since March 2022, from extremely depressed levels.

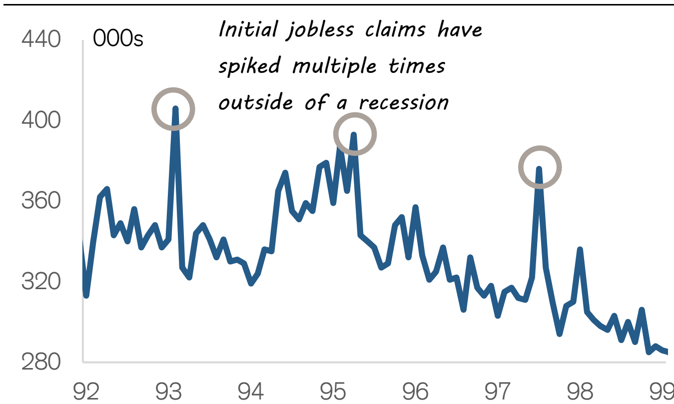
Initial Jobless Claims
Current Cycle



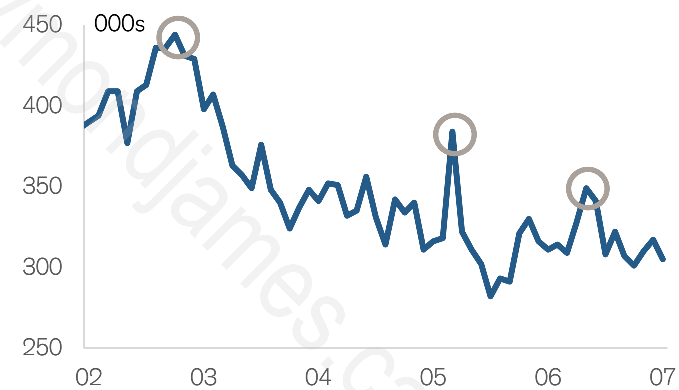
Historical Average



Initial Jobless Claims
1992-1999



2002-2007



Source: BLS, NBER, Haver, Factset, Credit Suisse

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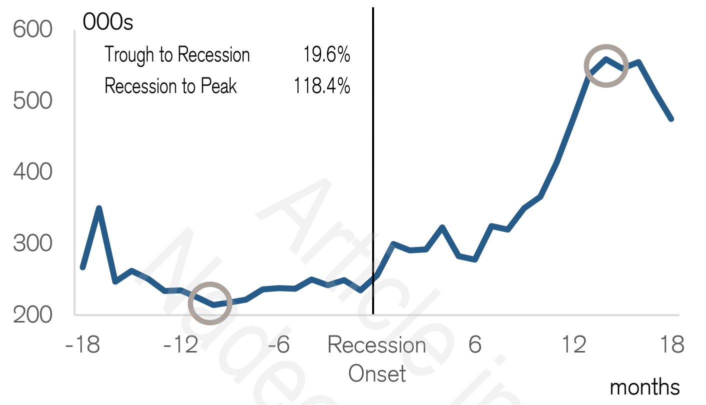
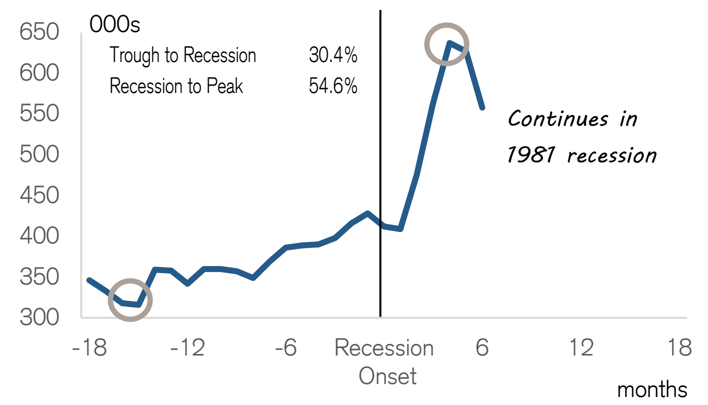
Employment
Initial Jobless Claims: Detail

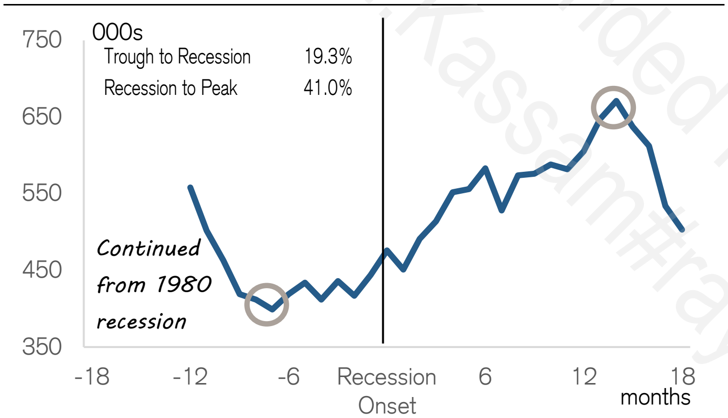
1973 Recession



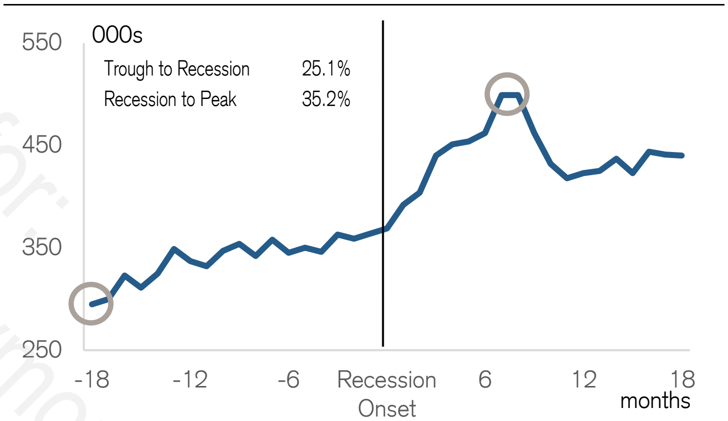
1980 Recession



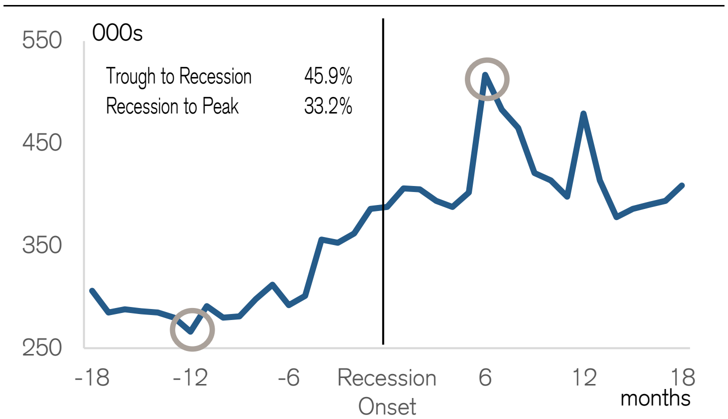
1981 Recession



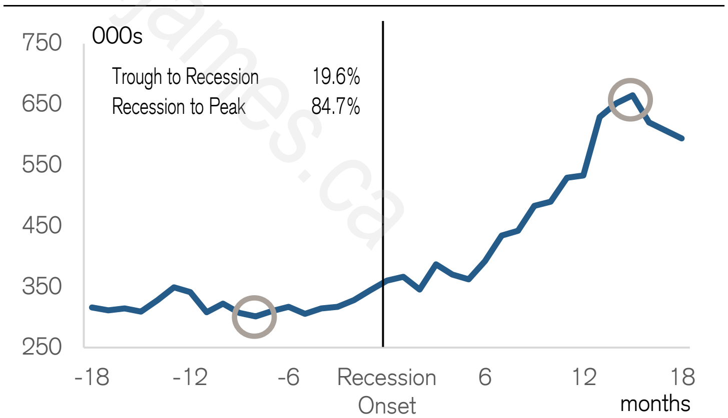
1990 Recession



2001 Recession



2007 Recession



Source: BLS, NBER, Haver, Factset, Credit Suisse

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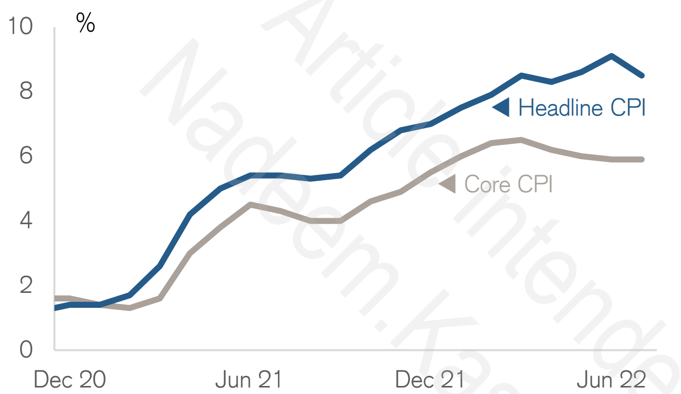
Inflation
CPI: Summary

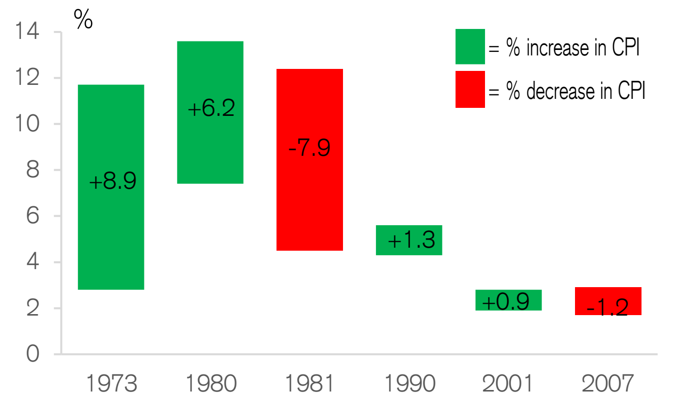
CPI increased meaningfully throughout the 1973 and 1980 recessions (Headline: +9.6% and +7.1%, Core: +8.9% and +6.2%), with -9.4% and -7.9% declines during the 1981 contraction.

The increase in CPI in the current period (Headline: +7.1, Core: +4.3) is most similar to the 1973 and 1980 periods.

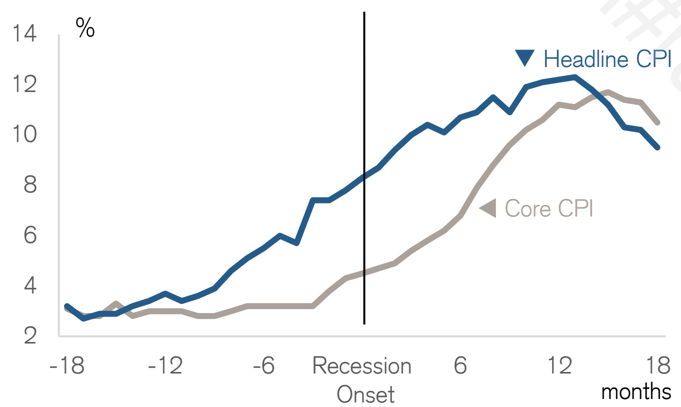
CPI
Current Cycle



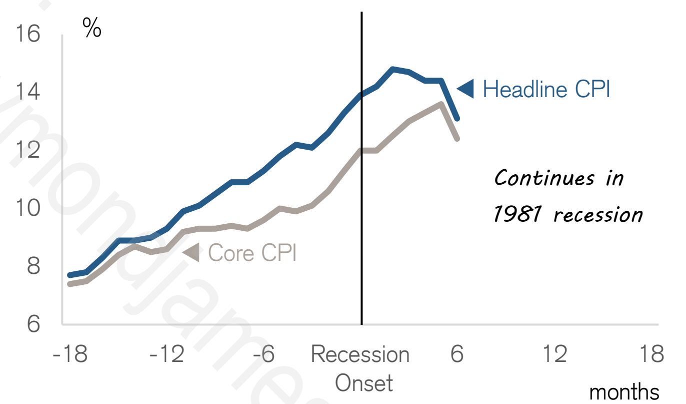
Core CPI: Change between Peak to Trough



CPI
1973 Recession



1980 Recession



Source: BLS, NBER, Haver, Factset, Credit Suisse

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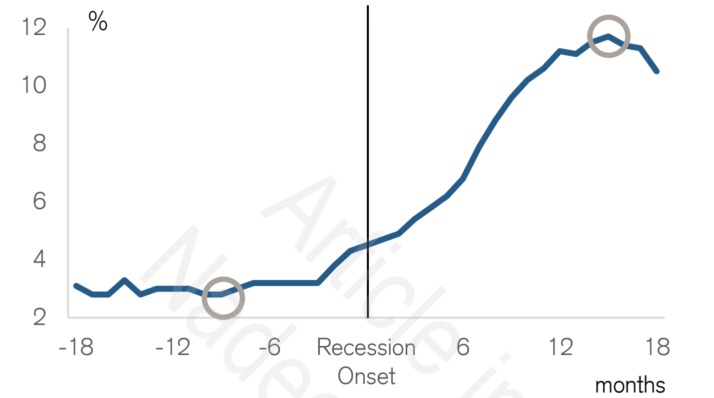
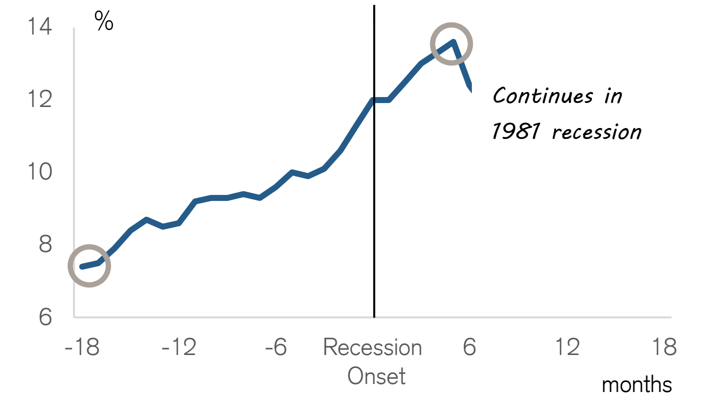
Inflation
Core CPI: Detail

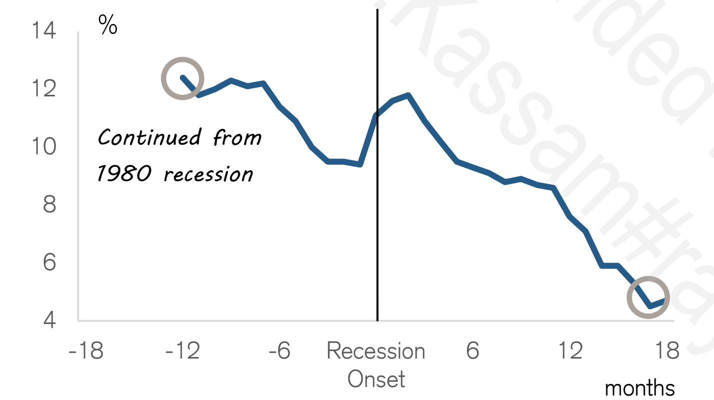
1973 Recession



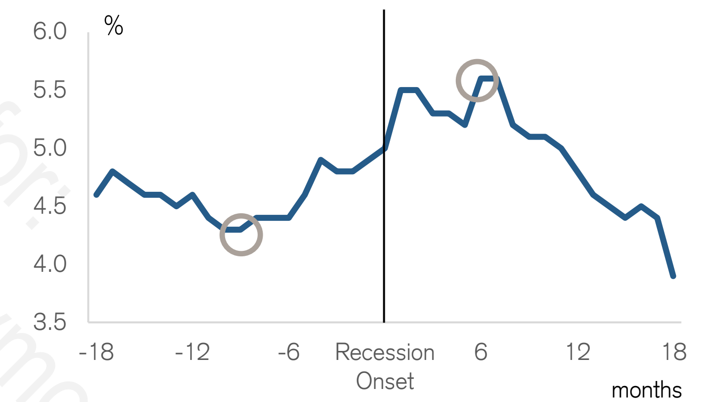
1980 Recession



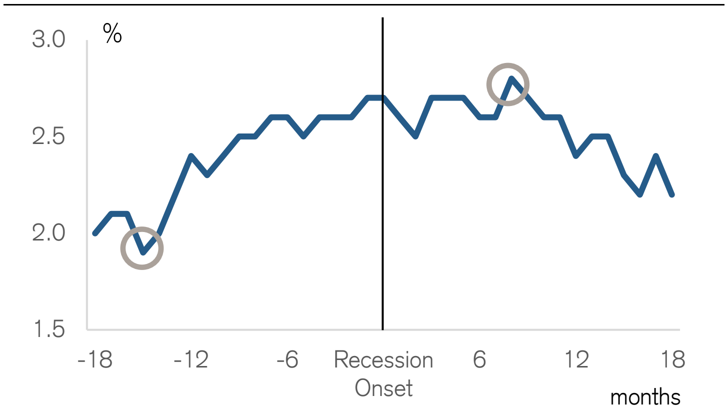
1981 Recession



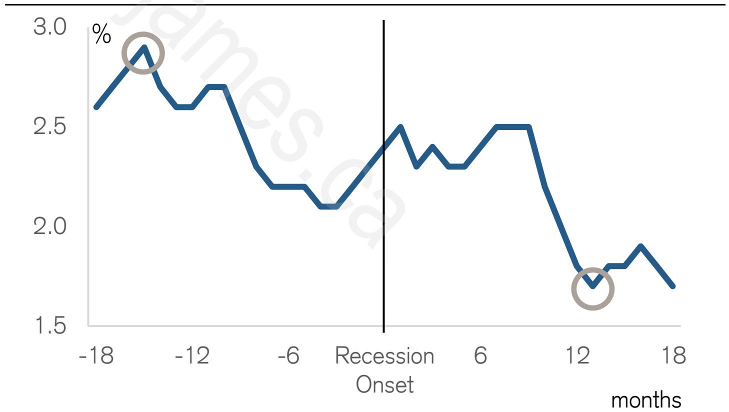
1990 Recession



2001 Recession



2007 Recession



Source: BLS, NBER, Haver, Factset, Credit Suisse

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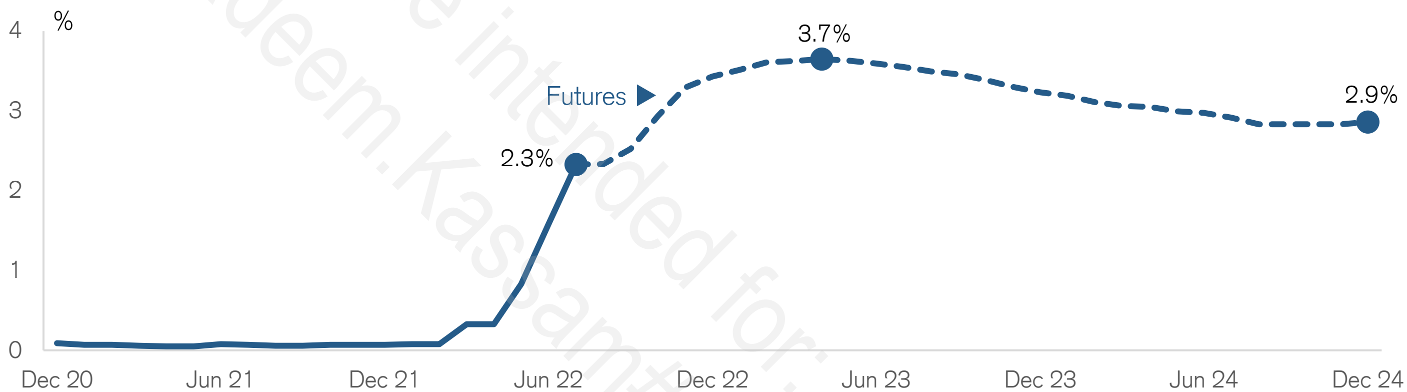
Interest Rates
Federal Funds Effective Rate: Summary

In earlier recessionary periods (1973, 1980, 1981 and 1990), Fed Funds were extremely volatile. For example, in the 1973 recession, the Funds rate increased +6.5% in 14 months, decreased -2.4% in 7, increased +4.4% in 4, and decreased -9.4% in 6.

By contrast, in the 2001 and 2007 recessions, with inflation contained, Fed policy was focused exclusively on maintaining growth, leading to a relatively smooth decline in the Funds rate (-5% in each contraction).

Futures indicate that Fed Funds will peak at 3.7% in April, before falling to 2.9%. Relative to history, these projected rate increases are quite modest.

Federal Funds Effective Rate
Current Cycle with Futures

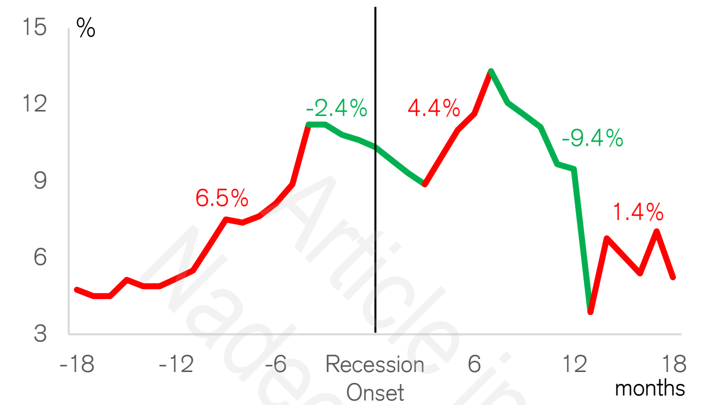


Source: Federal Reserve, NBER, Haver, The BLOOMBERG PROFESSIONAL™ service, Factset, Credit Suisse

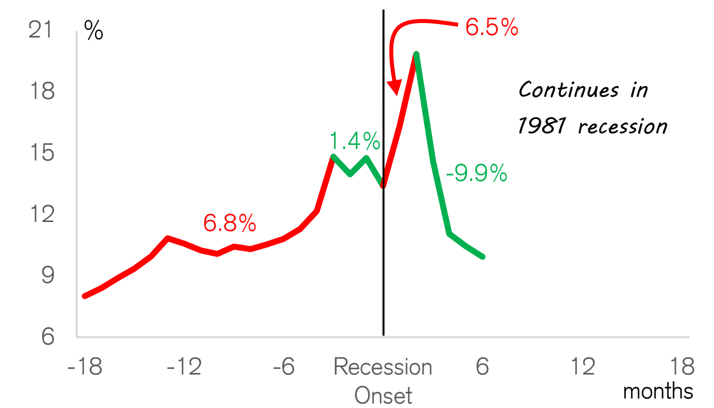
Article intended for: Nadeem.Kassam@raymondjames.ca

Interest Rates
Federal Funds Effective Rate: Detail

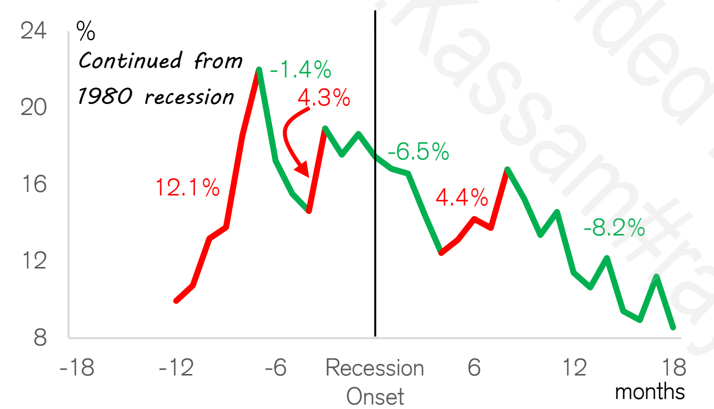
1973 Recession



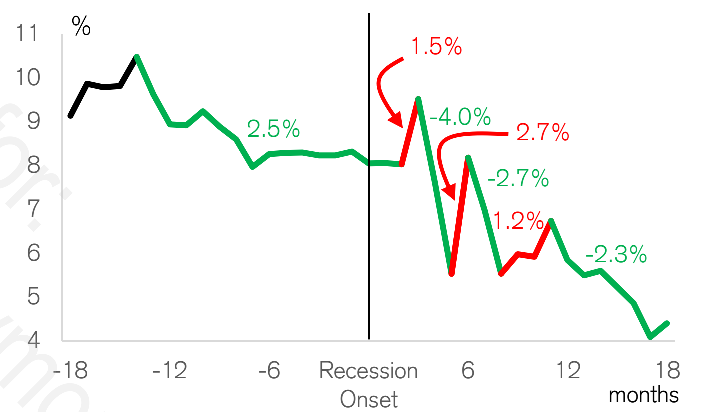
1980 Recession



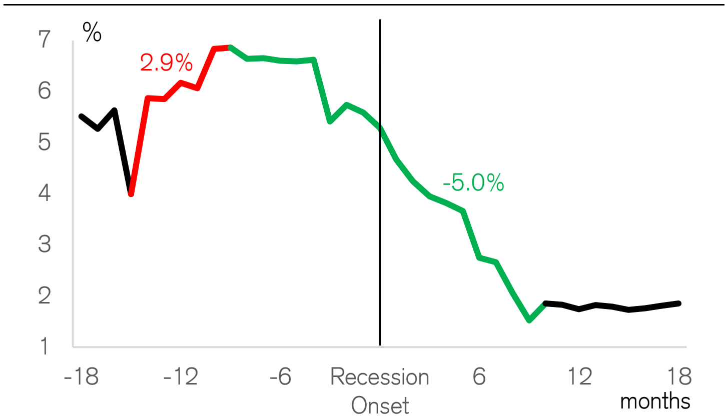
1981 Recession



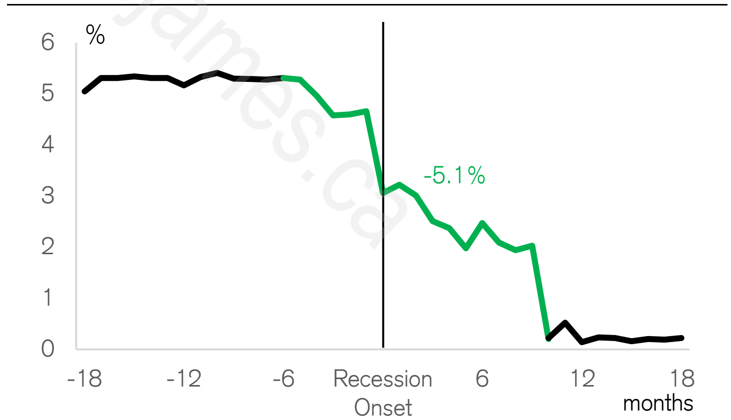
1990 Recession



2001 Recession



2007 Recession



Source: Federal Reserve, NBER, Haver, Factset, Credit Suisse

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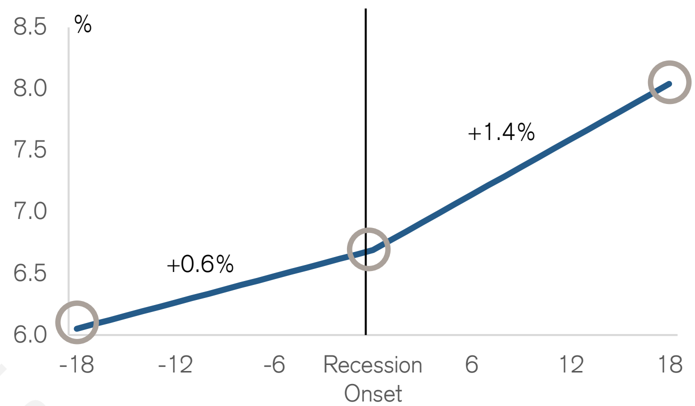
Interest Rates
10-Year Yield: Summary

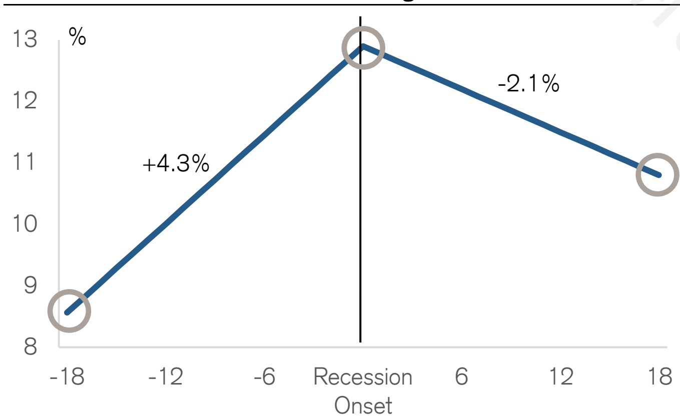
Historically, Treasury yield trends most often continue throughout a recession. For example, in 1973, yields rose both before and after the onset of the recession. In the most recent 3 recessions (1990, 2001 and 2007), with inflation under control, yields steadily fell. This pattern did not play out in the 1980 and 1981 recessions, when yields rose going into the contraction and fell afterwards.

10-Year Yield
Current Cycle

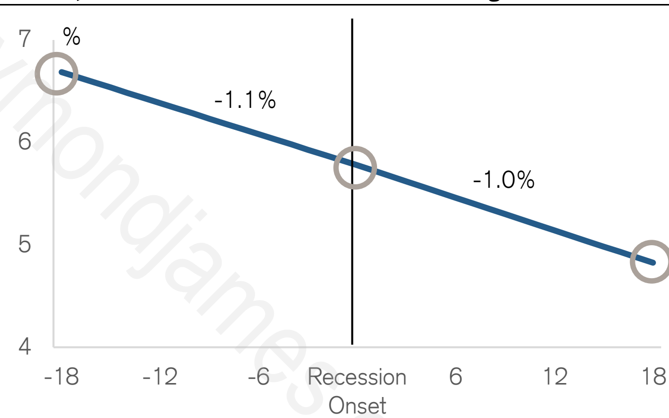
1973 Recession



10-Year Yield
1980 and 1981 Recessions Average



1990, 2001 and 2007 Recessions Average



Source: Federal Reserve, NBER, Haver, Factset, Credit Suisse

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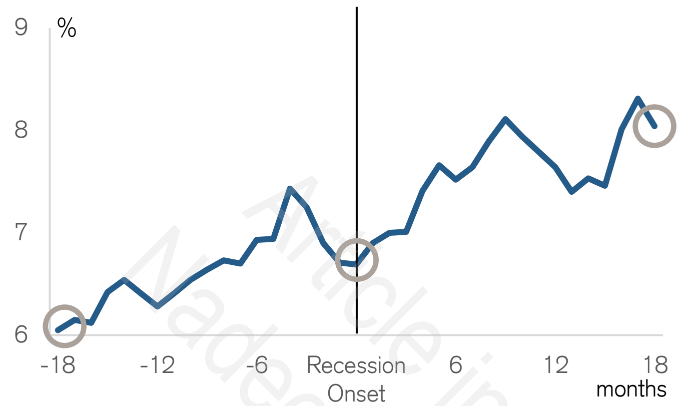
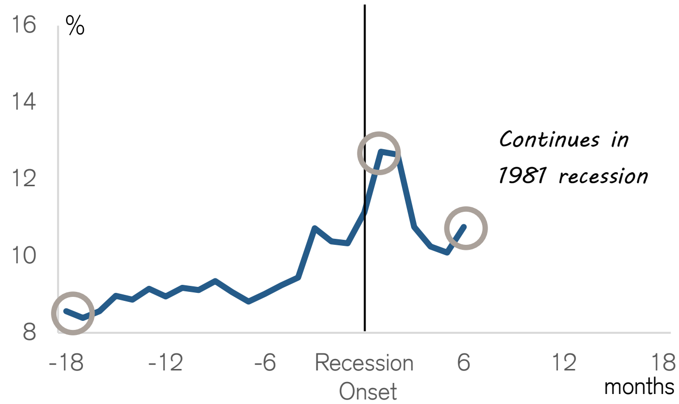
Interest Rates
10-Year Yield: Detail

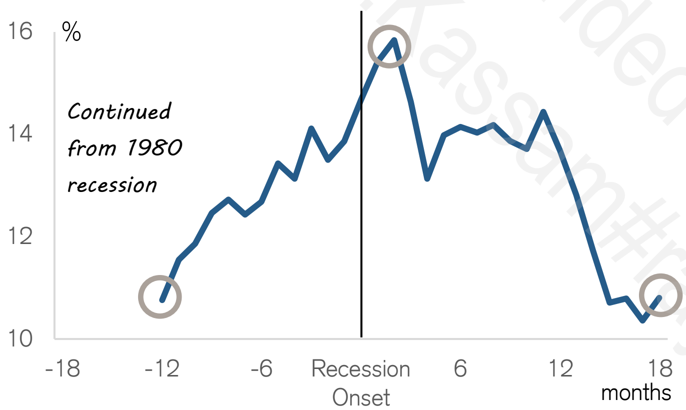
1973 Recession



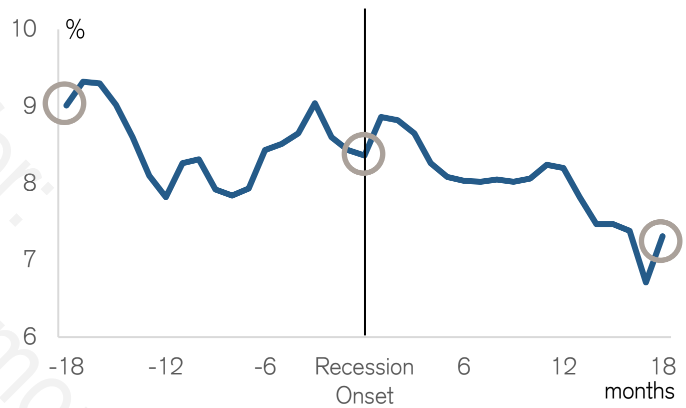
1980 Recession



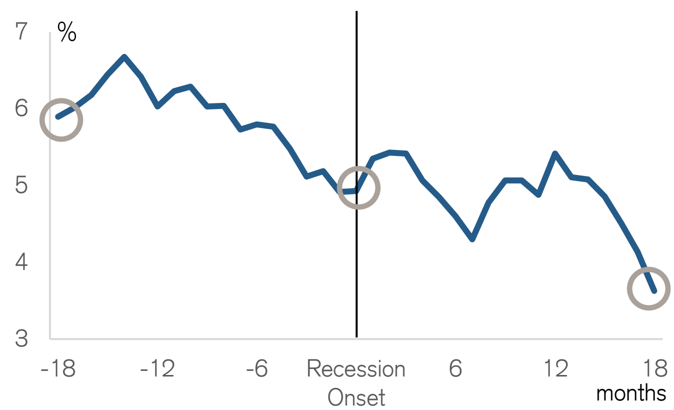
1981 Recession



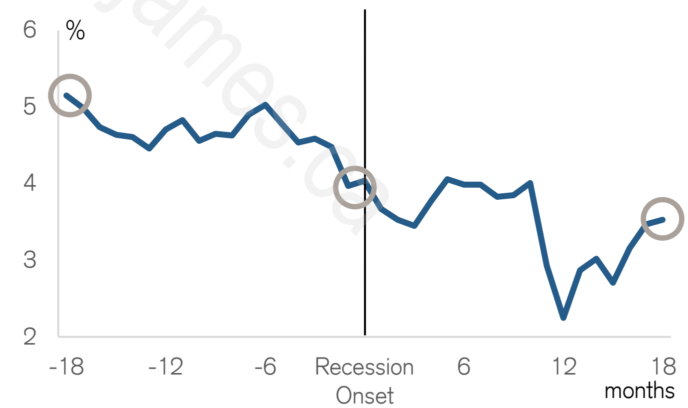
1990 Recession



2001 Recession



2007 Recession



Source: Federal Reserve, NBER, Haver, Factset, Credit Suisse

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Interest Rates
Yield Curve (3 Mo-10 Yr): Summary

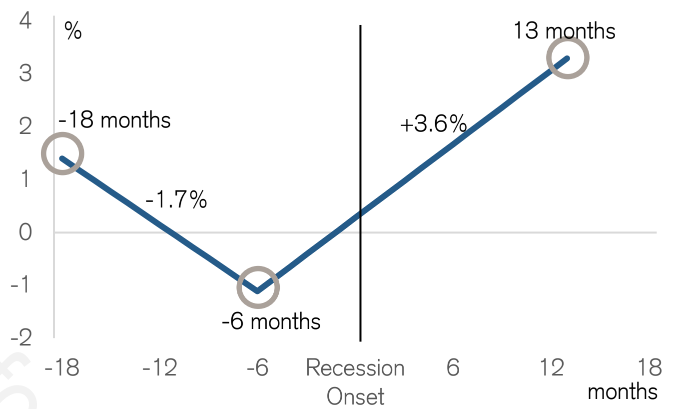
The yield curve (3 mo–10 yr) turned negative before each of the past 6 recessions, troughing at –111 bps 6 months before the recession's onset.

While the 2 yr-10 yr spread is inverted, the 3 mo-10 yr is not. Futures indicate that the curve will be -7 bps inverted by the end of August and -61 bps by year end.

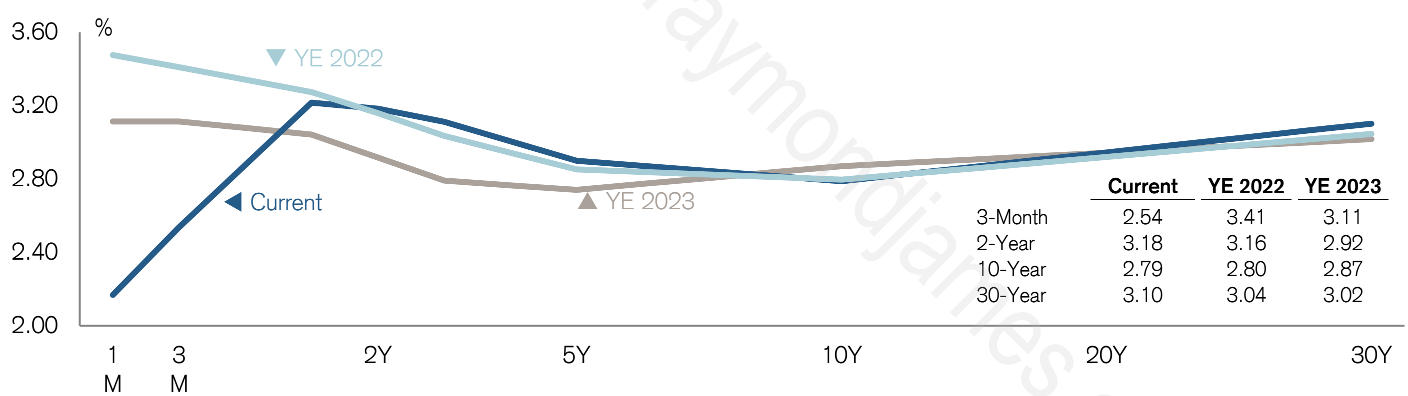
3 Mo—10 Year Yield Curve

Current Cycle

Historical Average



Current and Future Yield Curves



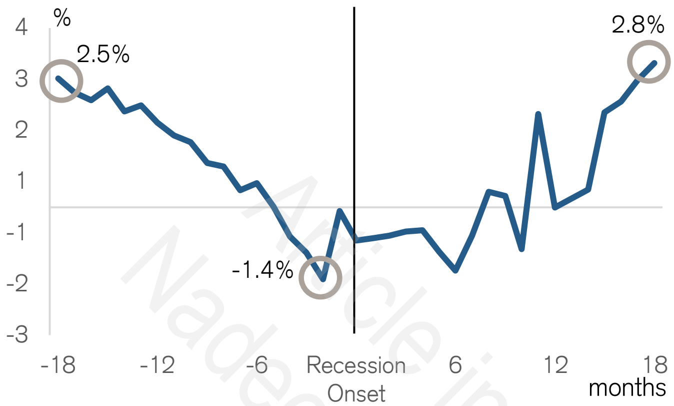
	Current	YE 2022	YE 2023
3-Month	2.54	3.41	3.11
2-Year	3.18	3.16	2.92
10-Year	2.79	2.80	2.87
30-Year	3.10	3.04	3.02

Source: Federal Reserve, NBER, Haver, The BLOOMBERG PROFESSIONAL™ service, Factset, Credit Suisse

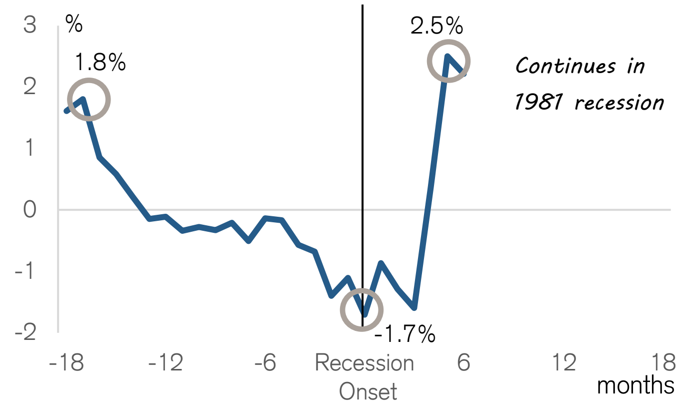
Article intended for: Nadeem.Kassam#raymondjames.ca

Interest Rates
Yield Curve (3 Mo-10 Yr): Detail

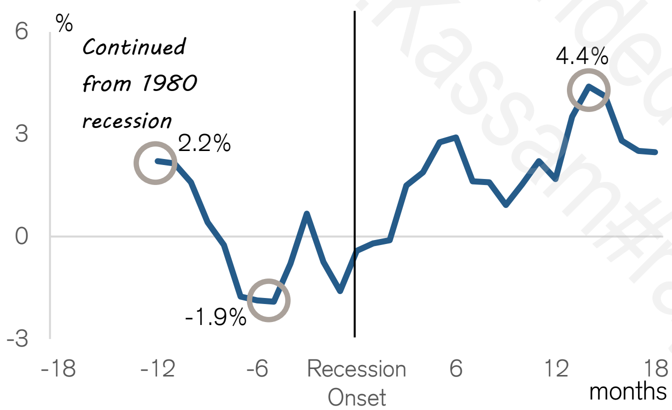
1973 Recession



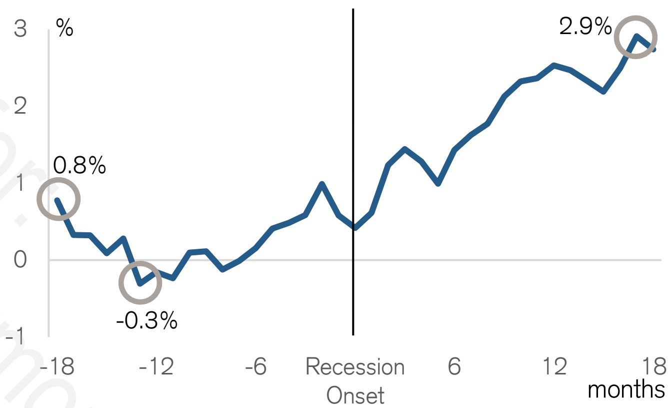
1980 Recession



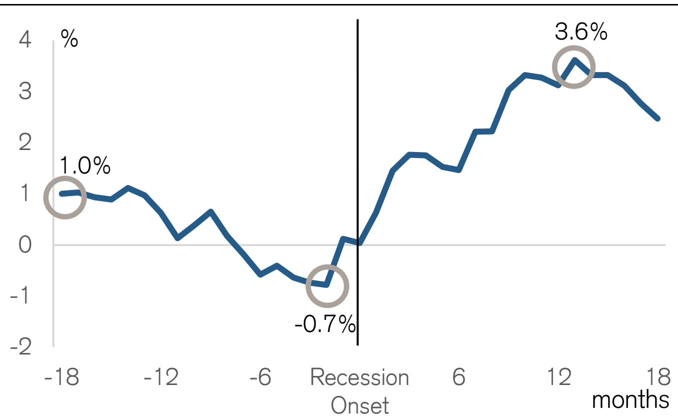
1981 Recession



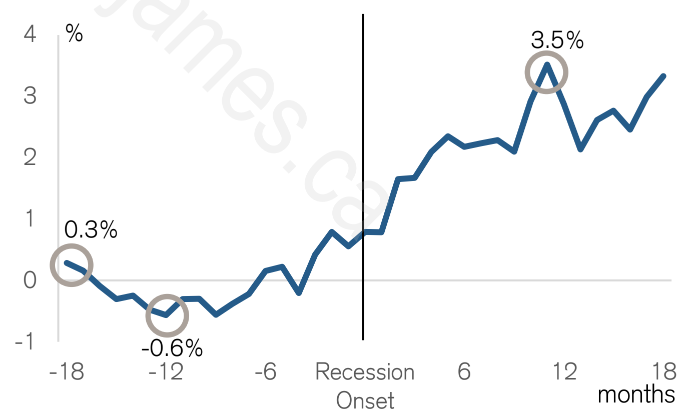
1990 Recession



2001 Recession



2007 Recession



Source: Federal Reserve, NBER, Haver, Factset, Credit Suisse

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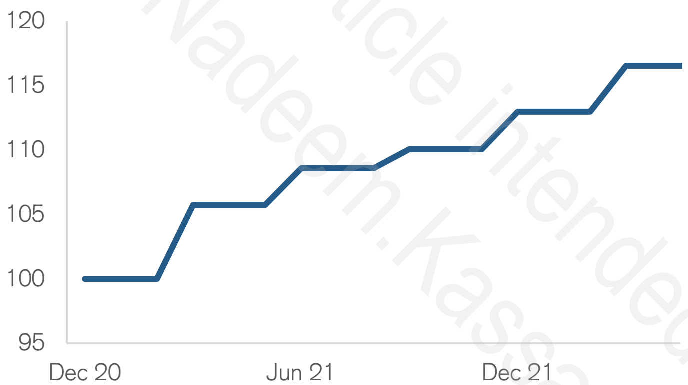
Earnings and Multiples
S&P 500 LTM EPS: Summary

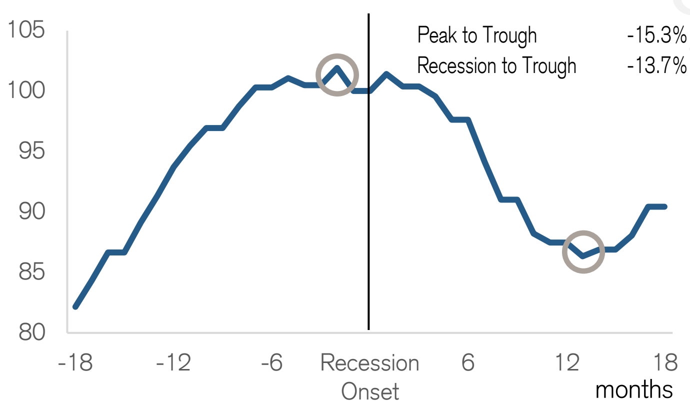
The pattern of earnings differs meaningfully between high inflationary periods (1973, 1980 and 1981) and more recent periods (1990, 2001 and 2007). In the former, earnings peaked near the recession's onset, while later periods saw earnings peak more than 1 year prior to the recession's onset.

In the 3 inflationary periods, earnings declined only -15.3% from peak to trough. By contrast, earnings fell -44.7% in low inflation periods.

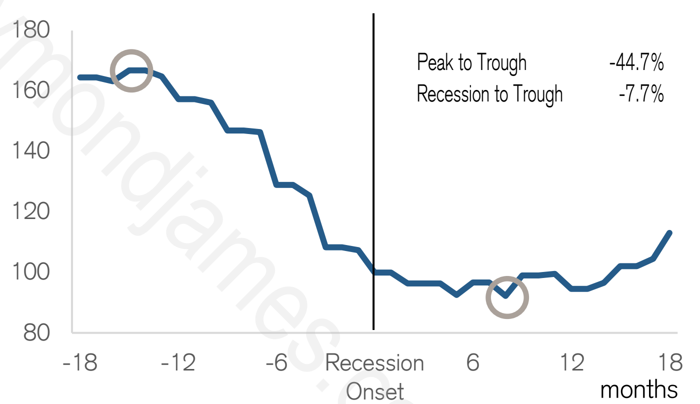
LTM EPS (Indexed)
Current Cycle



LTM EPS (Indexed)
High Inflation Recessions (1973, 1980 and 1981) Average



More Recent Recessions (1990, 2001 and 2007) Average



Source: Standard & Poor's, NBER, Haver, Factset, Credit Suisse

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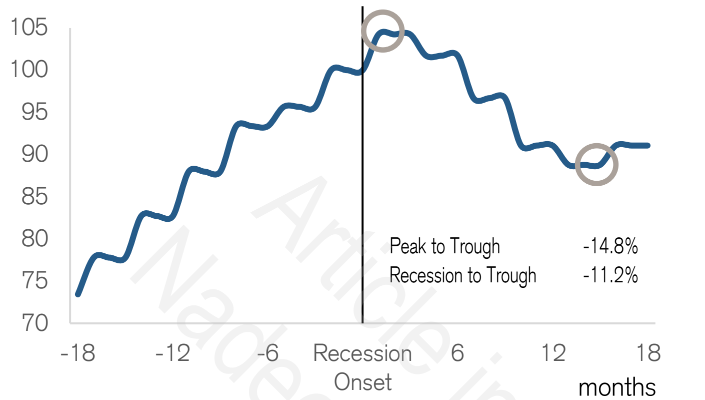
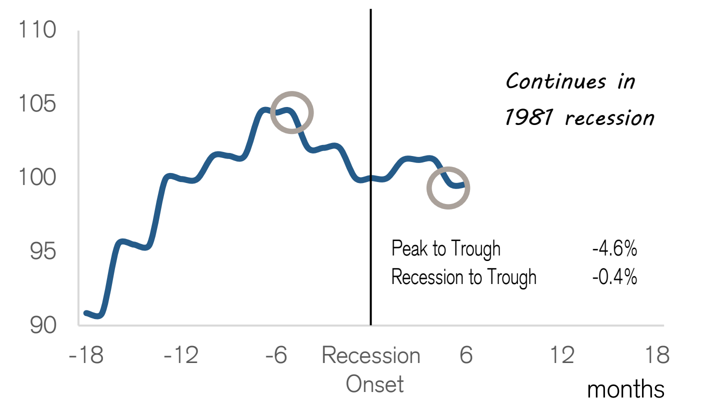
Earnings and Multiples
S&P 500 LTM EPS: Detail

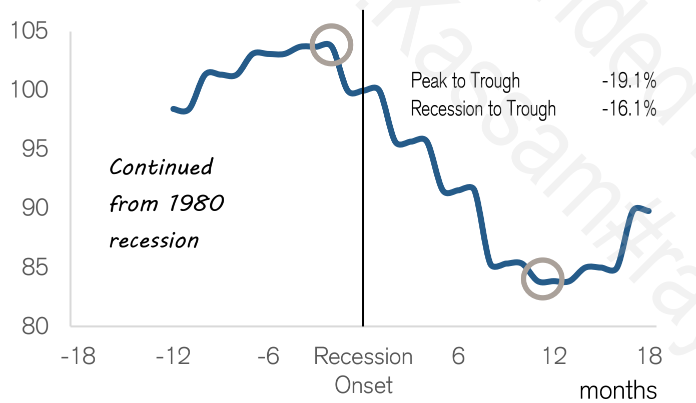
1973 Recession



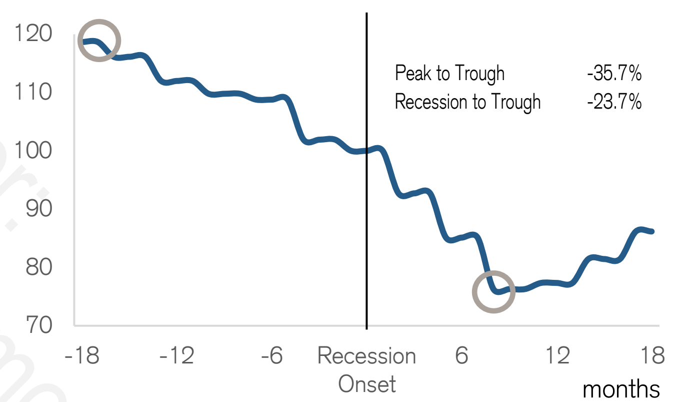
1980 Recession



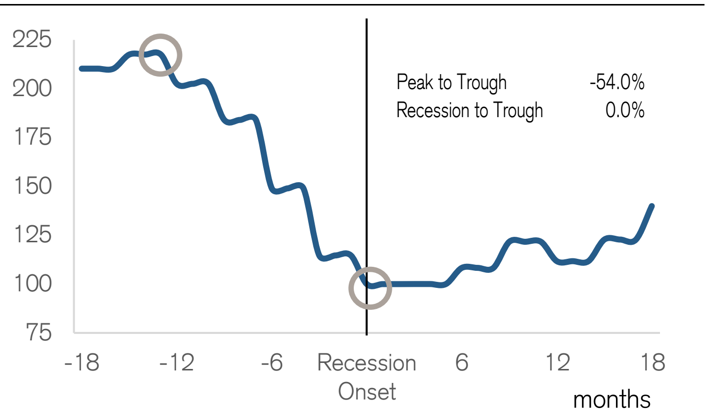
1981 Recession



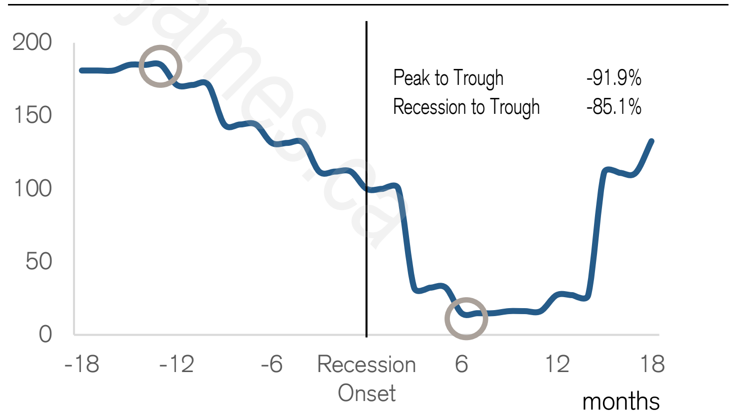
1990 Recession



2001 Recession



2007 Recession



Note: Indexed at 100 at recession onset
Source: Standard & Poor's, NBER, Haver, Factset, Credit Suisse

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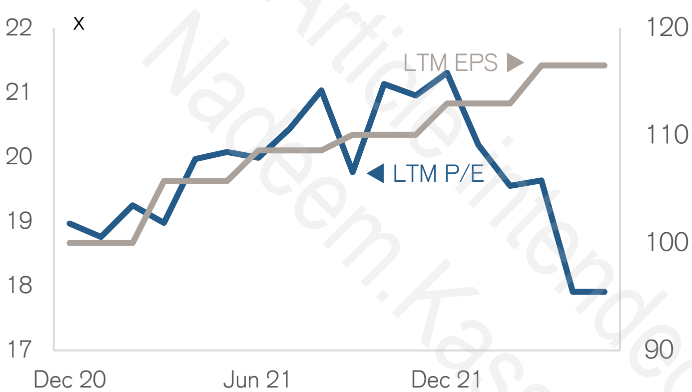
Earnings and Multiples
S&P 500 LTM P/E: Summary

Historically, P/E multiples move in the opposite direction of EPS around recessions.

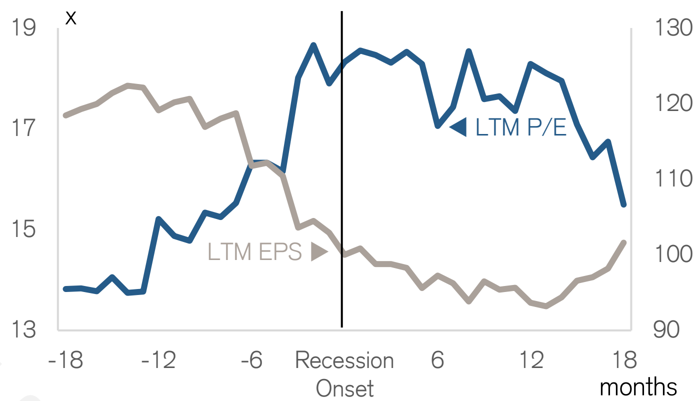
In the current environment, valuations have collapsed while EPS has continued to progress. This is inconsistent with past recessionary environments.

LTM P/E vs. EPS

Current Cycle



Historical Average



Source: Standard & Poor's, NBER, Haver, Factset, Credit Suisse

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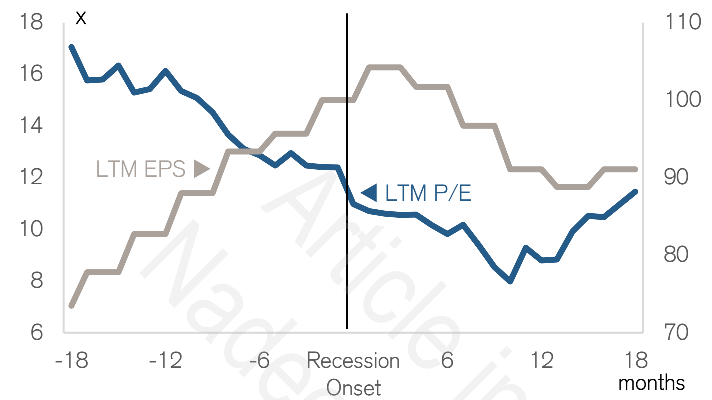
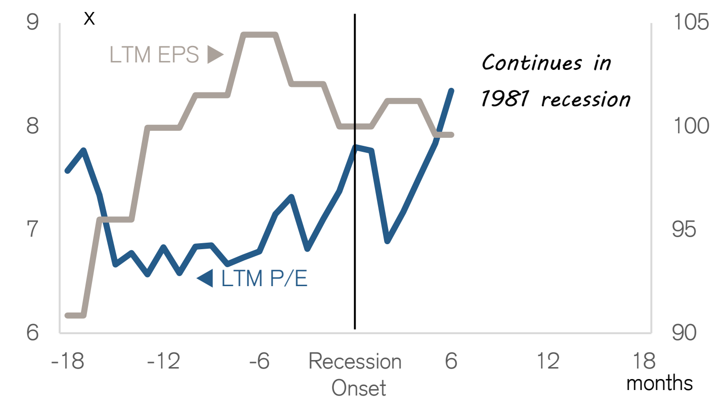
Earnings and Multiples
S&P 500 LTM P/E: Detail

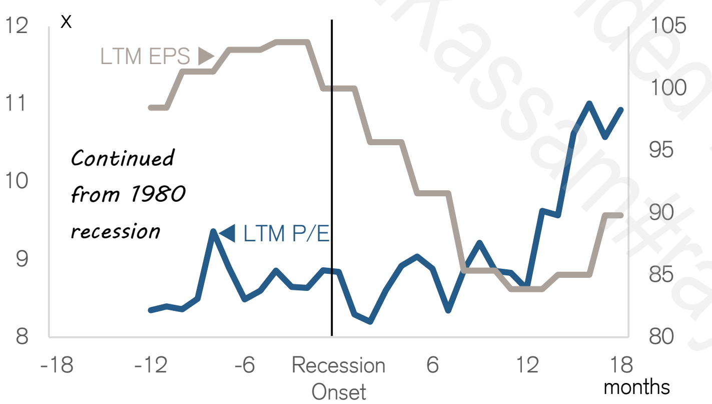
1973 Recession



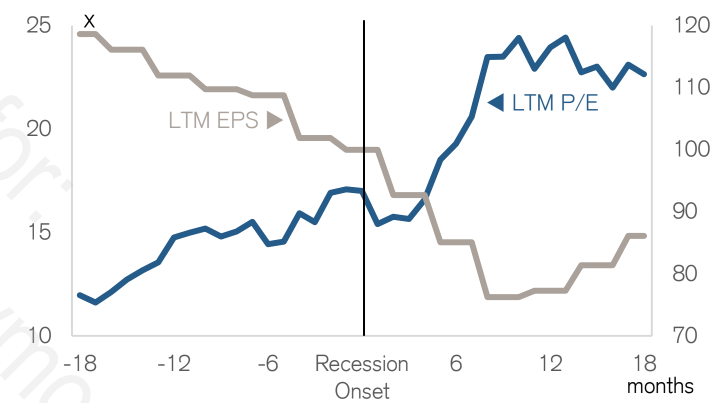
1980 Recession



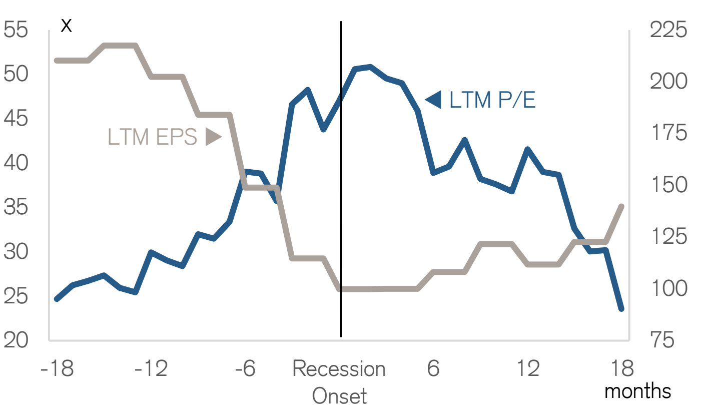
1981 Recession



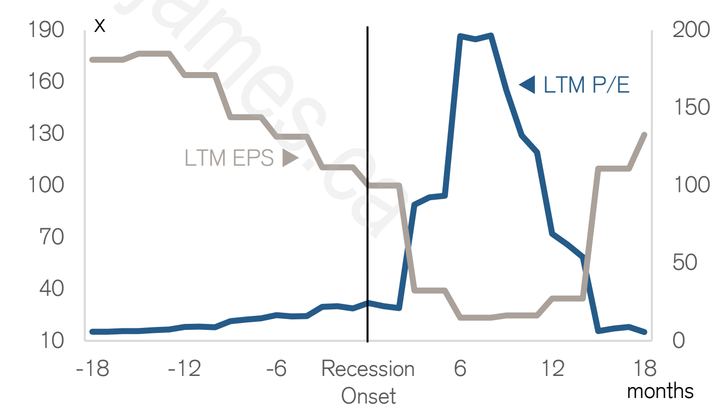
1990 Recession



2001 Recession



2007 Recession



Source: Standard & Poor's, NBER, Haver, Factset, Credit Suisse

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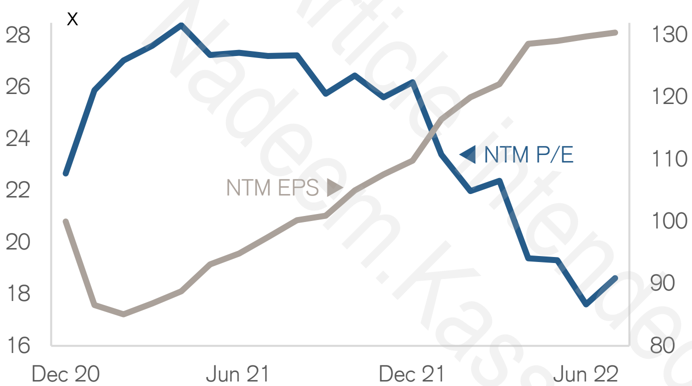
Earnings and Multiples
S&P 500 NTM EPS & P/E

Forward earnings estimates were not available until the 1990s. For this reason, we exclude the 1973, 1980, 1981 and 1990 recessions from this analysis.

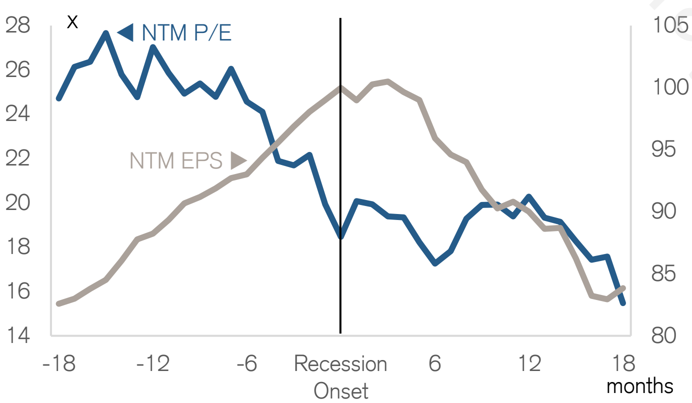
Similar to trailing (LTM) EPS and P/Es, forward (NTM) earnings and valuations tend move in the opposite direction.

This trend is quite pronounced in the current period. Recently, forward estimates have improved while valuations have contracted.

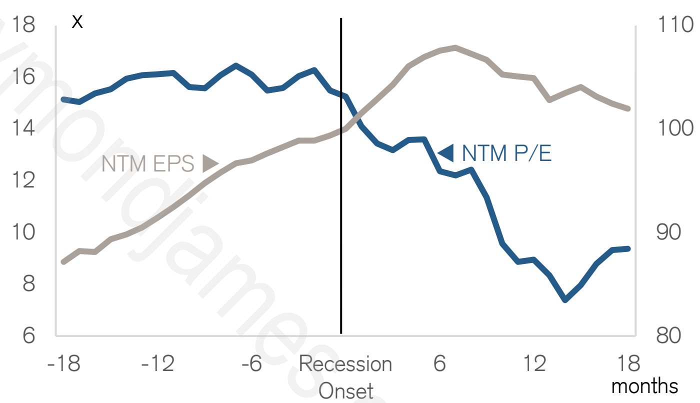
NTM EPS (Indexed) vs. NTM P/E
Current Cycle



NTM EPS (Indexed) vs. NTM P/E
2001 Recession



2007 Recession



Note: EPS is indexed at 100 at recession onset
Source: Standard & Poor's, NBER, Haver, Factset, Credit Suisse

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Appendix
NBER Methodology

The National Bureau's Business Cycle Dating Committee maintains a chronology of the US business cycle. The chronology identifies the dates of peaks and troughs that frame economic recession or expansion. The period from a peak to a trough is a recession and the period from a trough to a peak is an expansion. According to the chronology, the most recent peak occurred in March 2001, ending a record-long expansion that began in 1991. The most recent trough occurred in November 2001, inaugurating an expansion.

A recession is a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real GDP, real income, employment, industrial production, and wholesale-retail sales. A recession begins just after the economy reaches a peak of activity and ends as the economy reaches its trough. Between trough and peak, the economy is in an expansion. Expansion is the normal state of the economy; most recessions are brief and they have been rare in recent decades.

In choosing the dates of business-cycle turning points, we follow standard procedures to assure continuity in the chronology. Because a recession influences the economy broadly and is not confined to one sector, we emphasize economy-wide measures of economic activity. We view real GDP as the single best measure of aggregate economic activity. In determining whether a recession has occurred and in identifying the approximate dates of the peak and the trough, we therefore place considerable weight on the estimates of real GDP issued by the Bureau of Economic Analysis (BEA) of the US Department of Commerce. The traditional role of the committee is to maintain a monthly chronology, however, and the BEA's real GDP estimates are only available quarterly. For this reason, we refer to a variety of monthly indicators to determine the months of peaks and troughs.

The committee places particular emphasis on two monthly measures of activity across the entire economy: (1) personal income less transfer payments, in real terms and (2) employment. In addition, we refer to two indicators with coverage primarily of manufacturing and goods: (3) industrial production and (4) the volume of sales of the manufacturing and wholesale-retail sectors adjusted for price changes. We also look at monthly estimates of real GDP such as those prepared by Macroeconomic Advisers (see http://www.macroadvisers.com). Although these indicators are the most important measures considered by the NBER in developing its business cycle chronology, there is no fixed rule about which other measures contribute information to the process.

The committee's approach to determining the dates of turning points is retrospective. We wait until sufficient data are available to avoid the need for major revisions. In particular, in determining the date of a peak in activity, and thus the onset of recession, we wait until we are confident that, even in the event that activity begins to rise again immediately, it has declined enough to meet the criterion of depth. As a result, we tend to wait to identify a peak until many months after it occurs.

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Appendix: Recessions with NBER Announcement Dates

Recession Start Date	NBER Announcement	Delay (Months)	Recession End Date	NBER Announcement	Delay (Months)
Jan-80	Jun-80	5	Jul-80	Jul-81	12
Jul-81	Jan-82	6	Nov-82	Jul-83	8
Jul-90	Apr-91	9	Mar-91	Dec-92	21
Mar-01	Nov-01	8	Nov-01	Jul-03	20
Dec-07	Dec-08	12	Jun-09	Sep-10	15
Feb-20	Jun-20	4	Apr-20	Jul-21	15
	Average	**7**		**Average**	**15**

Source: NBER, Credit Suisse

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Disclosure Appendix

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Outperform (O) : The stock's total return is expected to outperform the relevant benchmark* over the next 12 months.

Neutral (N) : The stock's total return is expected to be in line with the relevant benchmark* over the next 12 months.

Underperform (U) : The stock's total return is expected to underperform the relevant benchmark* over the next 12 months.

**Relevant benchmark by region: As of 10th December 2012, Japanese ratings are based on a stock's total return relative to the analyst's coverage universe which consists of all companies covered by the analyst within the relevant sector, with Outperforms representing the most attractive, Neutrals the less attractive, and Underperforms the least attractive investment opportunities. As of 2nd October 2012, U.S. and Canadian as well as European (excluding Turkey) ratings are based on a stock's total return relative to the analyst's coverage universe which consists of all companies covered by the analyst within the relevant sector, with Outperforms representing the most attractive, Neutrals the less attractive, and Underperforms the least attractive investment opportunities. For Latin America, Turkey and Asia (excluding Japan and Australia), stock ratings are based on a stock's total return relative to the average total return of the relevant country or regional benchmark (India - S&P BSE Sensex Index); for China A share the relevant index is the Shanghai Shenzhen CSI 300 (CSI300); prior to 2nd October 2012 U.S. and Canadian ratings were based on (1) a stock's absolute total return potential to its current share price and (2) the relative attractiveness of a stock's total return potential within an analyst's coverage universe. For Australian and New Zealand stocks, the expected total return (ETR) calculation includes 12-month rolling dividend yield. An Outperform rating is assigned where an ETR is greater than or equal to 7.5%; Underperform where an ETR less than or equal to 5%. A Neutral may be assigned where the ETR is between -5% and 15%. The overlapping rating range allows analysts to assign a rating that puts ETR in the context of associated risks. Prior to 18 May 2015, ETR ranges for Outperform and Underperform ratings did not overlap with Neutral thresholds between 15% and 7.5%, which was in operation from 7 July 2011.*

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This research report is authored by:

Credit Suisse Securities (USA) LLC...............Manish Bangard, CFA ; Jonathan Golub, CFA ; Patrick Palfrey ; Madeleine Zhou

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