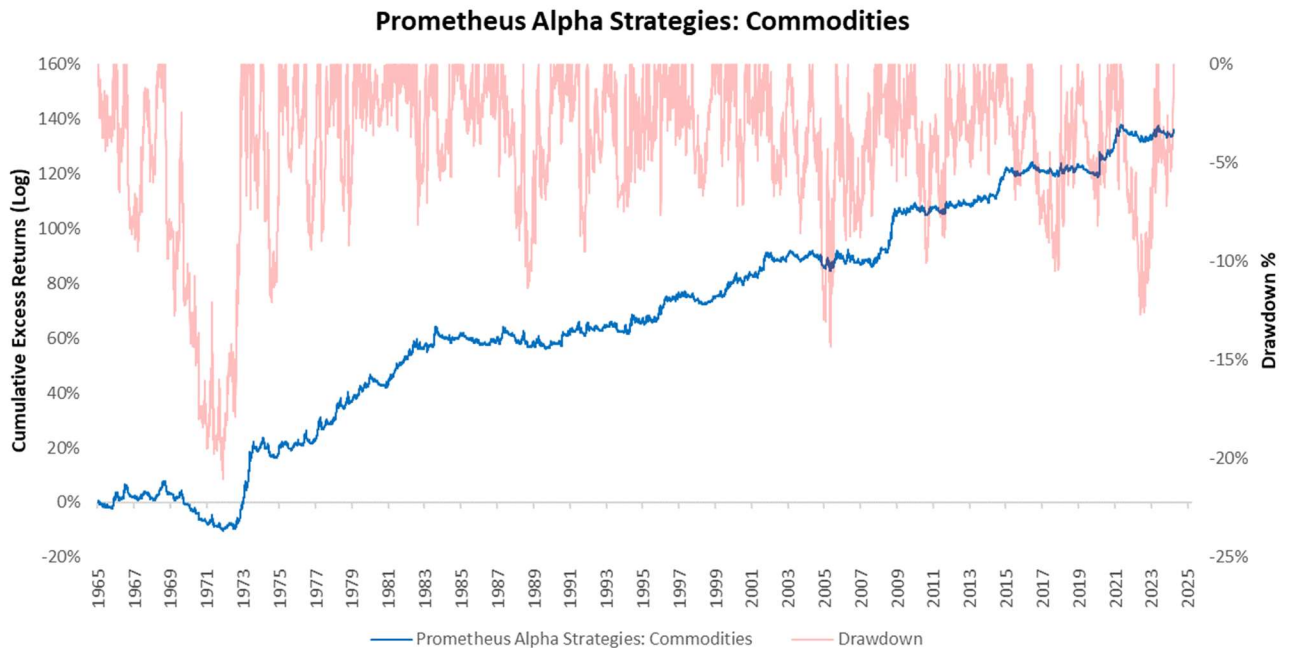


Month In Macro

This note aims to share our research team's internal checkpoint process in evaluating the current state of the economy as it pertains to markets. The pages that follow will have familiar content for those who follow our work, but with the added benefit of connecting the dots across all the economic and financial data our systems use to make portfolio decisions. Our primary takeaways are as follows:

- **Nominal GDP expanded by 0.96 % in December, with real GDP rising by 0.65% and inflation rising by 0.31%.**
- **Manufacturing conditions have reaccelerated at the topline level; however, bottom-line pressures remain in place.**
- **Relative to these conditions, commodities have risen in recent months but remain modestly behind the improvement in topline conditions.**
- **Reflecting these cross-currents, our Alpha Strategies are now modestly long commodities. This signal is best suited to faster-moving players. For asset allocators, we continue to see this environment as non-conducive to commodity exposure.**

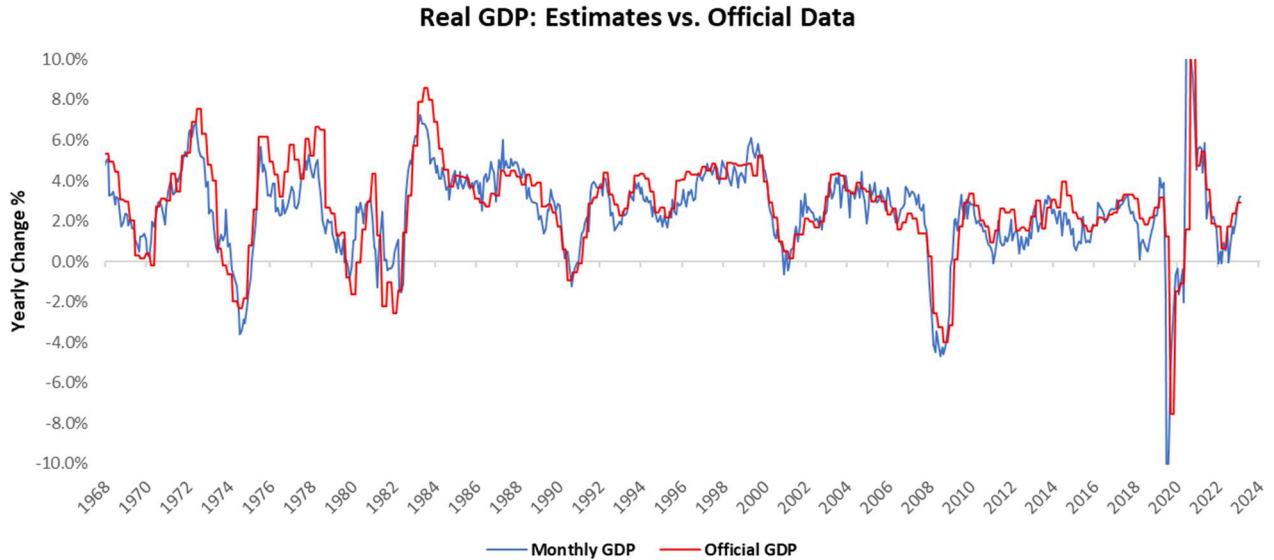
In this edition, we focus on the insights from our Alpha Strategies for Commodities, which see mixed conditions today but pressures emerging on the commodity complex in the future as the business cycle progresses into its late stages. We show our simulated strategy below:



Macro conditions remain consistent with a stable and broad-based expansion. Within this stable dynamic, opportunities to once again short manufacturing-sensitive areas will likely emerge as fundamental pressures persist. However, our systems look for more favorable conditions to express this view. Let's dive in.

GDP: The Expansion Continues

Before we dive deep, we think setting the stage for where we are is essential. For the latest data through January, our systems place Real GDP growth at 3.42% versus one year prior. Below, we show our monthly estimates of Real GDP relative to the official data:

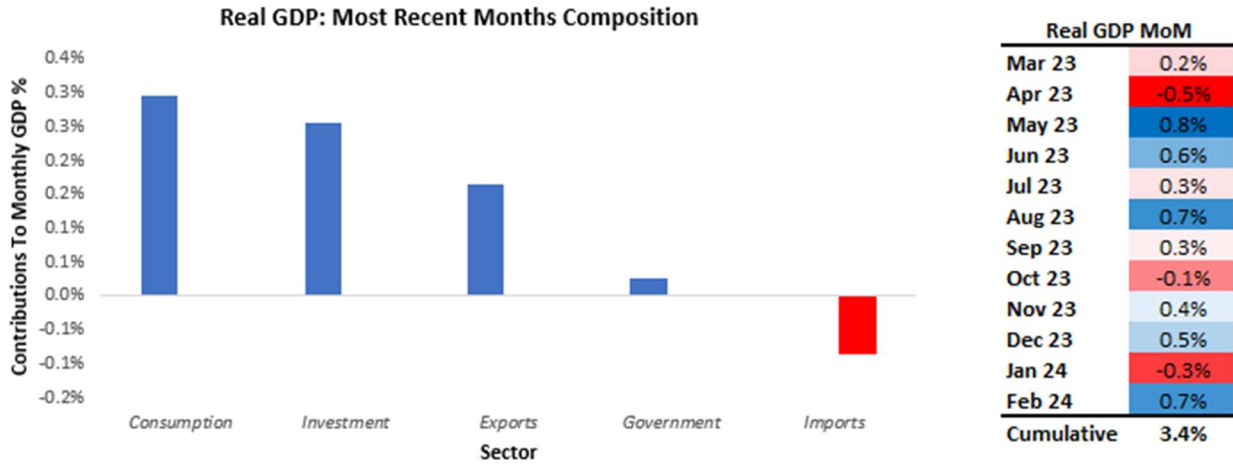


In February, GDP came in at 0.64% versus the prior month. We decompose the most recent months' data into its major divers to better understand this increase. Below, we offer the contribution by sector to monthly GDP in the table:

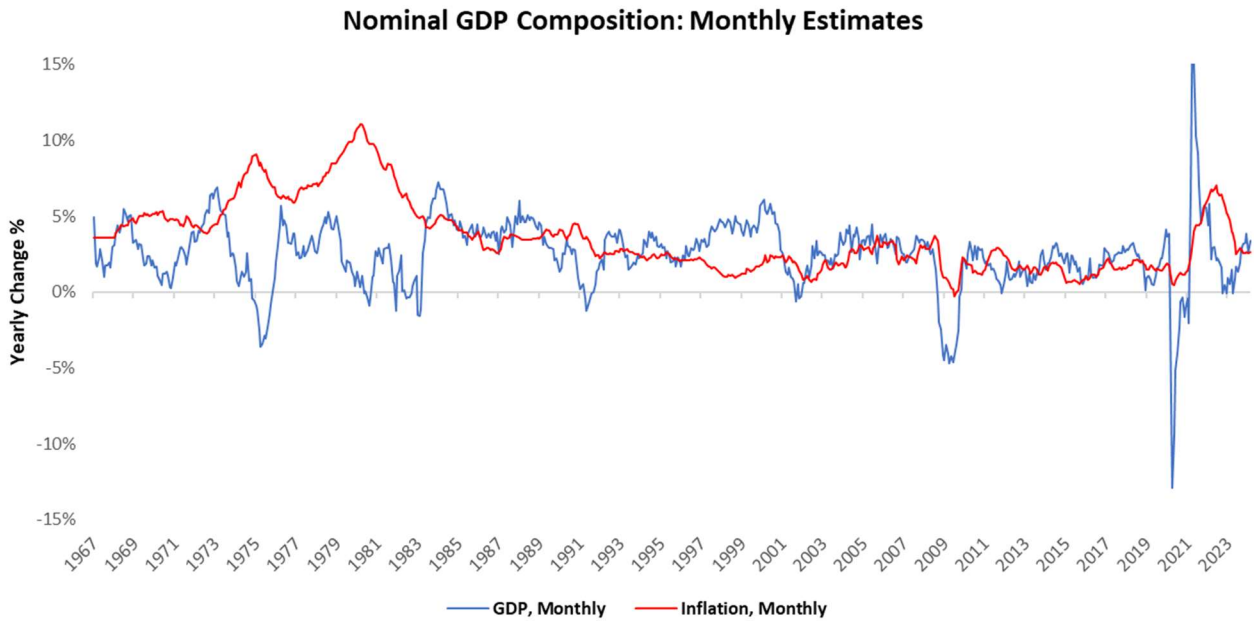
	GDP	C	I	G	X	M
Mar 23	0.2%	-0.1%	-0.1%	0.0%	0.3%	0.2%
Apr 23	-0.5%	0.1%	0.2%	0.0%	-0.6%	-0.3%
May 23	0.8%	0.1%	0.1%	0.0%	0.2%	0.4%
Jun 23	0.6%	0.2%	0.1%	0.0%	0.1%	0.2%
Jul 23	0.3%	0.3%	0.1%	0.1%	0.2%	-0.3%
Aug 23	0.7%	0.0%	0.3%	0.0%	0.1%	0.3%
Sep 23	0.3%	0.3%	0.1%	0.0%	0.3%	-0.4%
Oct 23	-0.1%	0.1%	0.0%	0.0%	-0.1%	-0.1%
Nov 23	0.4%	0.3%	0.0%	0.0%	-0.2%	0.3%
Dec 23	0.5%	0.3%	0.2%	0.0%	0.3%	-0.3%
Jan 24	-0.3%	-0.2%	0.0%	0.0%	0.1%	-0.3%
Feb 24	0.7%	0.3%	0.3%	0.0%	0.2%	-0.1%
Cumulative	3.4%	1.6%	1.1%	0.4%	0.8%	-0.6%

February saw real GDP conditions across the primary engines of domestic activity increase. Additionally, export activity showed significant expansion. These dynamics remain largely inconsistent with a reversal of business cycle conditions.

Below, we show the weighted contributions to the most recent one-month change in real GDP and the recent history of month-on-month GDP. Additionally, we offer the contribution by sector to monthly GDP in the table below:

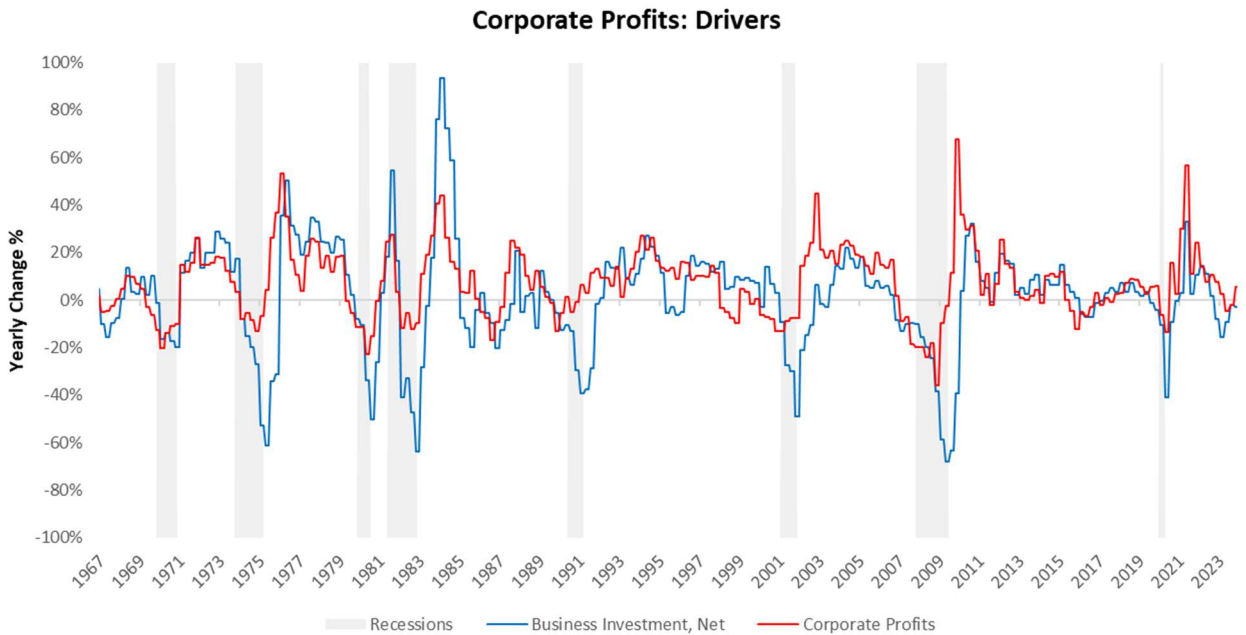


We now add our estimates of economy-wide inflation to this real GDP data to show how our estimates place nominal GDP growth at 6.1 % versus one year prior. We show both real GDP growth and inflation below:

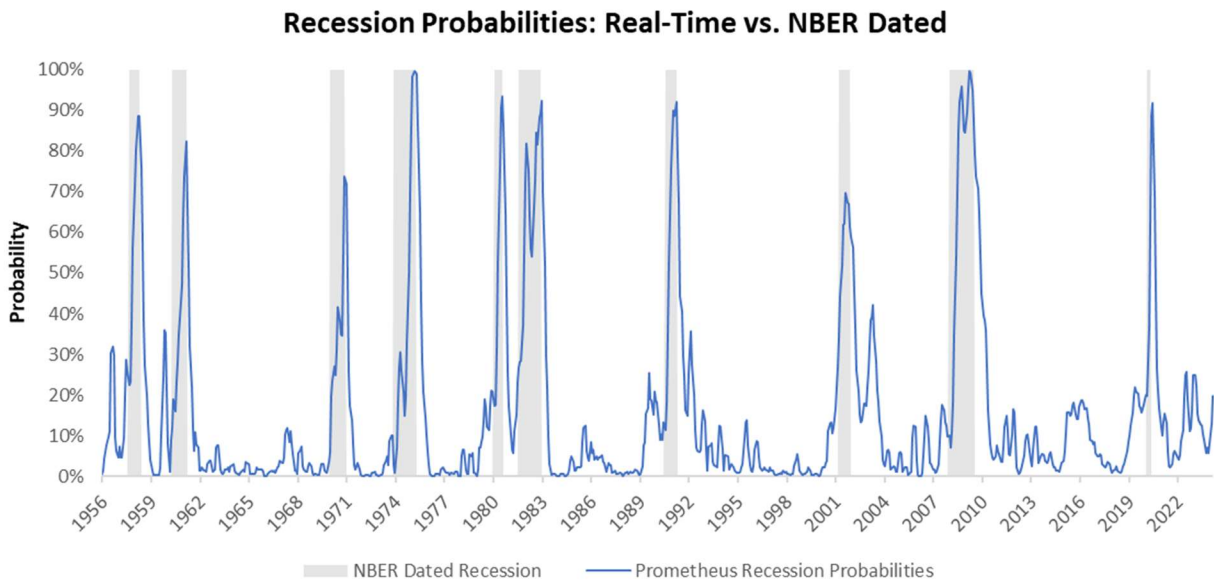


This nominal spending continues to find its way into corporate profits, which supports business conditions and overall employment. A significant part of this reacceleration of conditions has been the improvement in nominal business investment.

Below, we show how the recent improvement in business investment condition, which has flowed through to higher corporate profits:



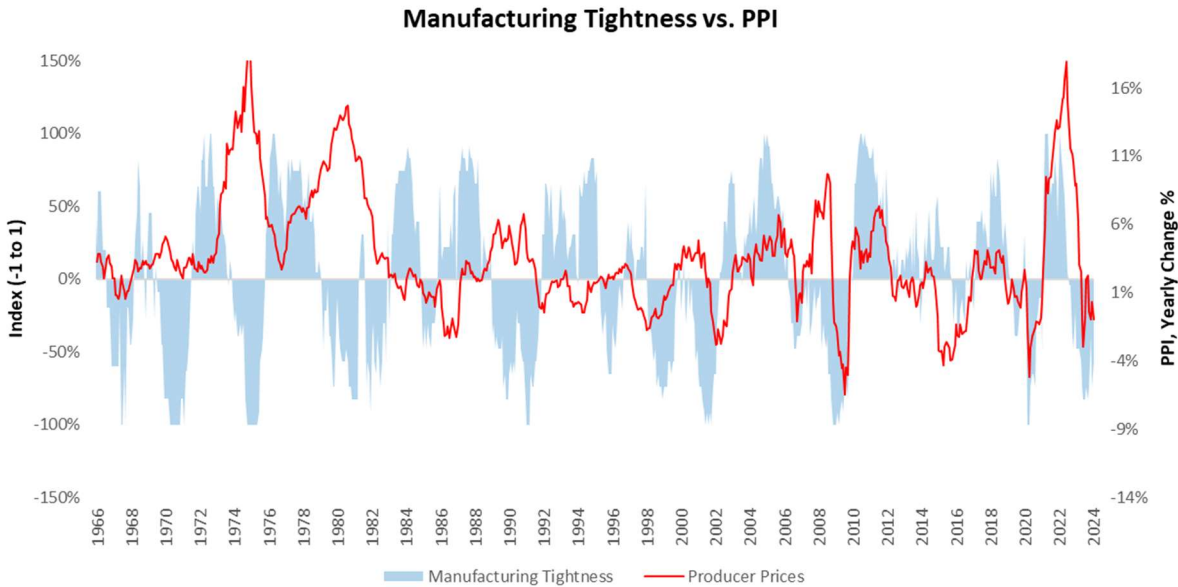
The combination of elevated nominal growth, improved investment, and now improved profit conditions create a backdrop where cyclical conditions look largely stable. This backdrop has continued to keep recessionary pressures low. We show our updated and upgraded recession probability monitor below:



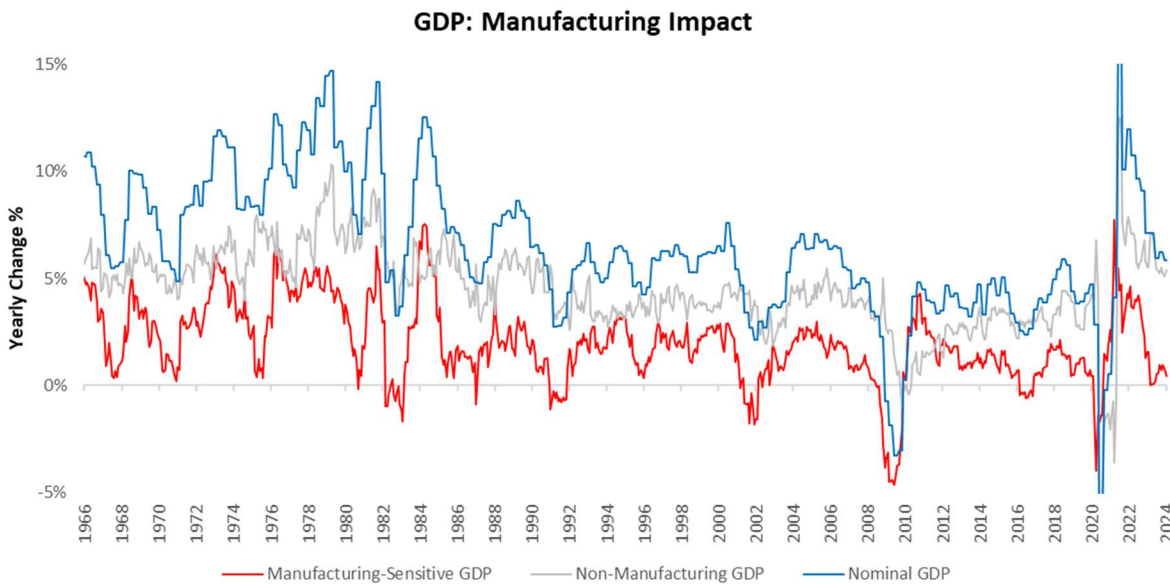
The latest reading of this recession gauge shows recessionary odds now at 20%, coming off a local high of 34% last year. As we can see above, elevated readings of this measure have almost always coincided with NBER-defined recessions. As such, the environment remains well-removed from recession.

Commodities: A Function Of Manufacturing Tightness

At the macro level, commodity prices are a function of production relative to nominal spending. Existing production capacity limits commodity production, while income and debt services burdens limit nominal spending. The combination of these dynamics determines how tight manufacturing conditions are. Commodity prices serve as a release valve for this tightness, i.e., the tighter conditions are, the more pressure there is on commodity prices to rise. Conversely, the looser conditions are, the weaker the pressure on commodity prices. We visualize this dynamic below:



As shown above, manufacturing tightness has served as a strong barometer of future commodity price regimes. To understand these dynamics, need to examine manufacturing conditions across the economy. Below, we visualize how manufacturing activity flows through to GDP growth:



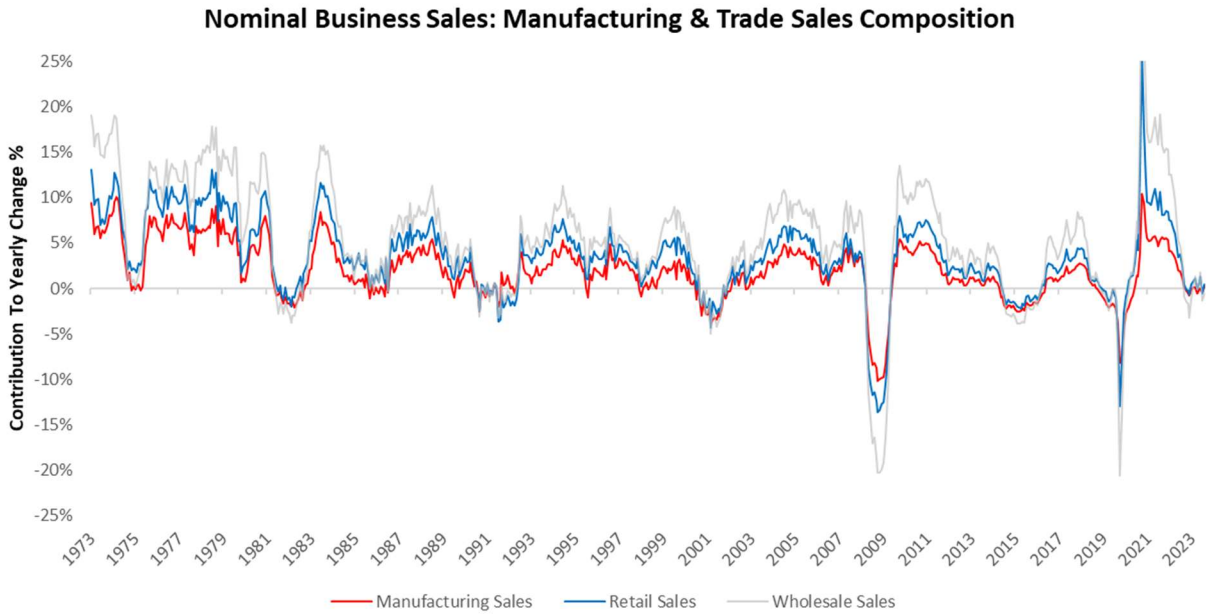
We think there are two crucial takeaways from the above visualization. First, manufacturing is highly cyclical and a key determinant of business cycle conditions in the economy. Second, the current impact of manufacturing on the overall economy remains limited by the strength of non-manufacturing components. Combining these dynamics creates a unique opportunity for active investors seeking diversified bets. Namely, today's environment allows us to bet on manufacturing outcomes in commodity markets without being exposed to broader macro risks that drive equities and bonds. Said differently, commodity markets may fall under weak manufacturing conditions, but equities may remain strong as the rest of the economy remains resilient. In macro, we are always looking for a diversified set of bets to reduce portfolio concentration, and the current dynamic offers a relatively unique opportunity to that end.

To develop an understanding of the factors driving commodity prices, we turn to the goods economy, which is driven by manufacturers, wholesalers, and retailers. The aggregate conditions in these sectors determine the nominal activity that forms the commodity demand. However, not all these sectors are equal in their impact on commodity prices. As we move up the supply chain, we start to see a larger role of services in determining activity, i.e., retailers facing consumers are a blend of goods and services demand. As such, while we think a broad-based understanding of goods demand is essential for a holistic understanding, we place significant weight on conditions at the origin of the supply chain, i.e., with manufacturers.

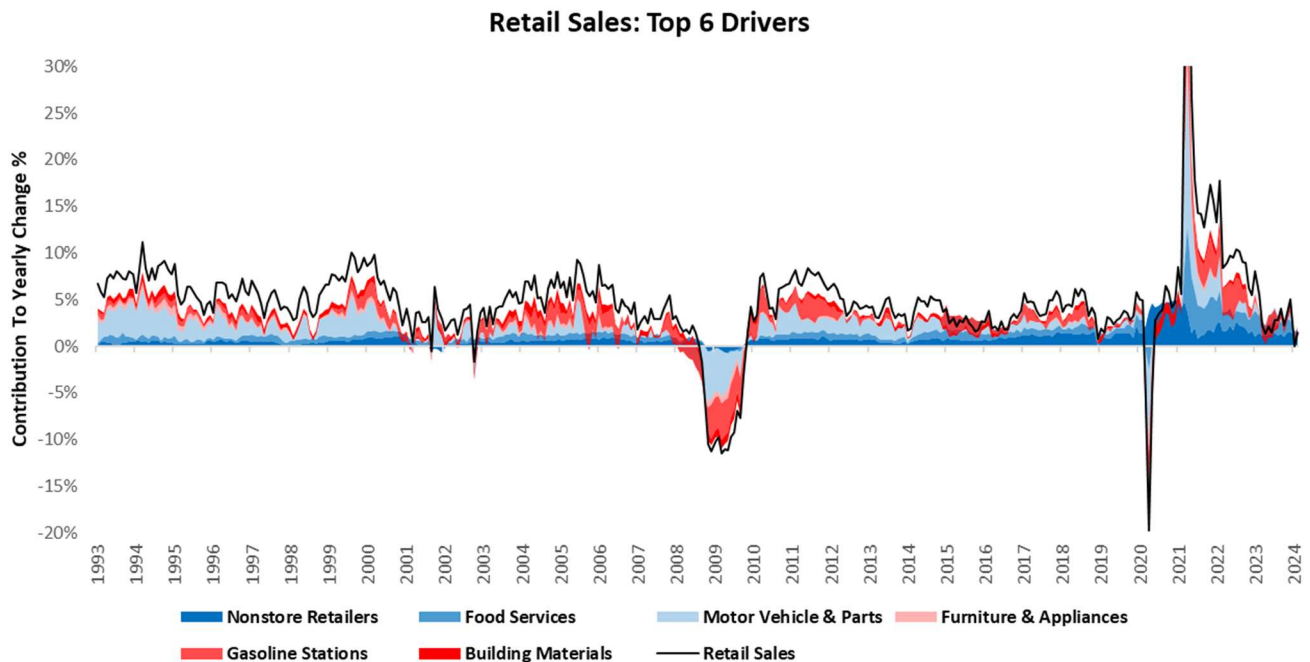
Today, this comprehensive but nuanced understanding of conditions makes us think the goods economy faces significant pressures. This pressure emanates from somewhat muted consumer demand for goods but primarily from increased profit pressures on manufacturing firms. This understanding deviates from recent sequential data coming from the manufacturing sector and commodity price trends. As systematic investors, we think it is important to balance these competing perspectives when generating portfolio views. Therefore, while we see sustained pressures likely ahead for the commodity complex, we also recognize that this is not what near-term conditions confirm. As such, we see significant future opportunities to be short commodities, but the current weight of evidence suggests modest long positions. Our signaling process considers hundreds of variables to come to these views, and the turns can be relatively quick. This long exposure is unlikely to be suitable for slower-moving players, but it is likely to provide a modest signal for faster-moving players. For asset allocators, we continue to see this environment as non-conducive to commodity exposure. The following pages provide the data and analysis driving these views.

Goods Economy: Improvement Within A Downtrend

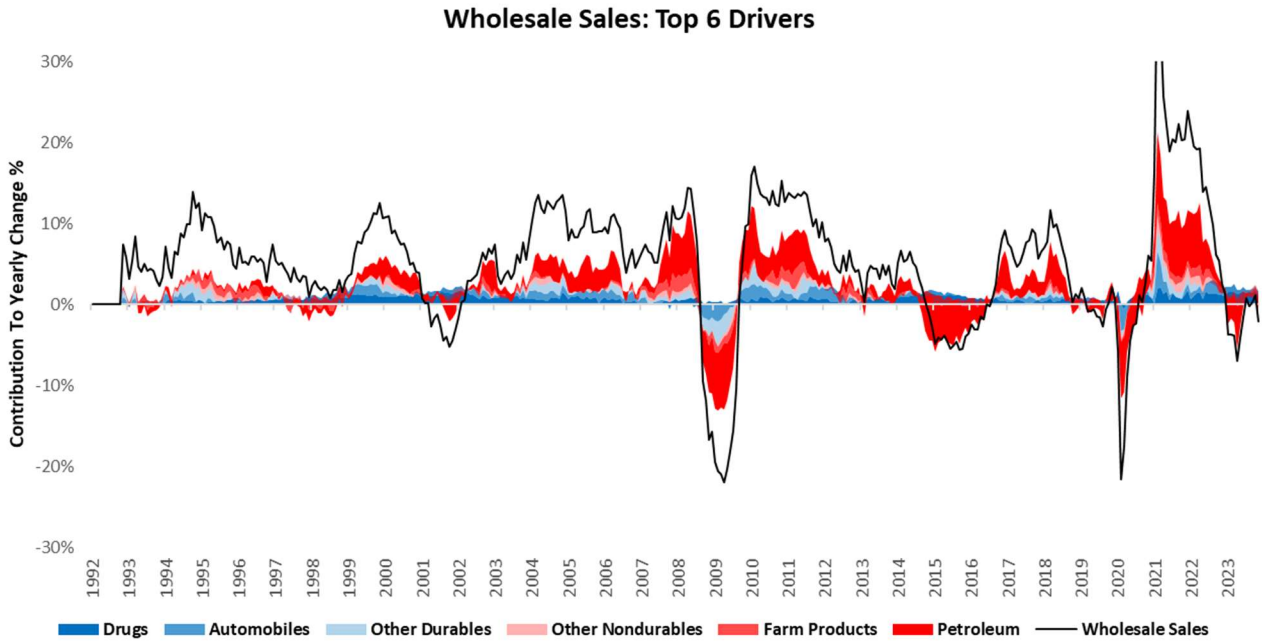
The goods economy has been under persistent and pervasive pressure over the last year. However, recent improvements in business investment conditions have supported the goods sector, driving a sequential improvement in our tracking of conditions. Below, we show nominal business sales across manufacturing, wholesale, and retail:



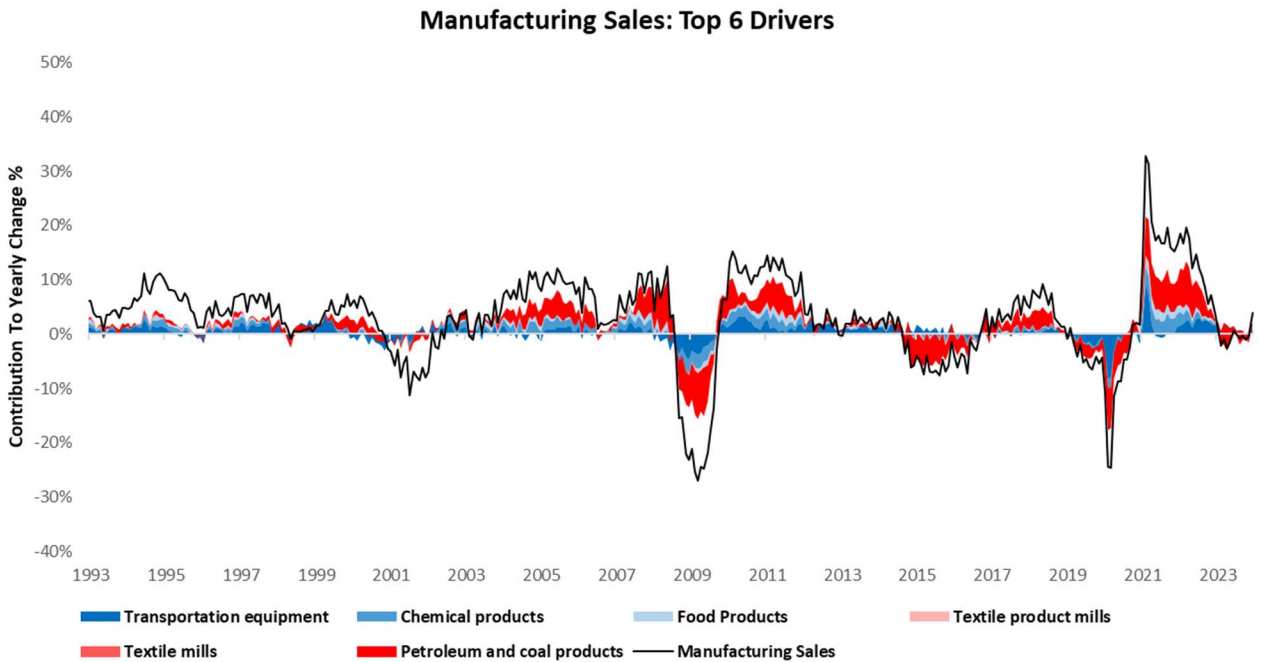
As we can see above, nominal activity remains weak at growth rates that are broadly consistent with the onset of a recession. This weakness has been pervasive. We zoom into each sector for a more granular understanding:



As shown above, non-store retail and food services have been significant drivers of recent retail activity, while goods dominant building material and gasoline sales have been weak. We see further weakness in raw goods demand further up the supply chain for wholesalers:



While we see similar weakness in manufacturing, we have seen manufacturing sales rise on the back of transportation demand:

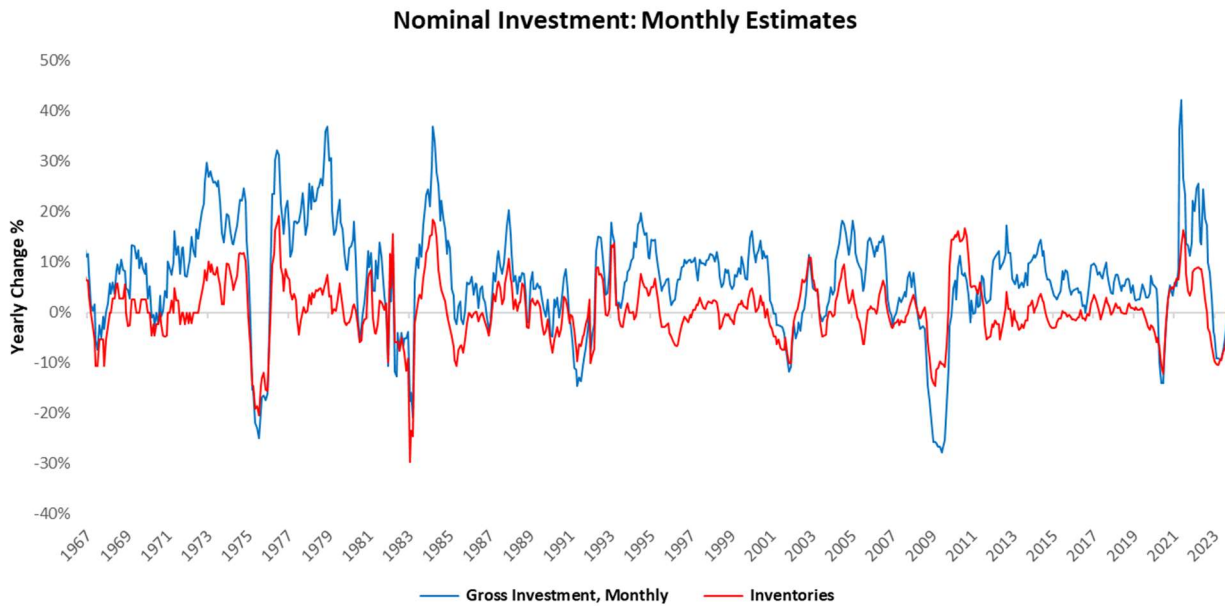


Transportation continues to be impacted by a secular shortage of motor vehicle inventories, a theme we will return to later in this note.

Aggregating these dynamics, this marginal improvement in sales has flowed through to a modest stabilization of inventory growth:

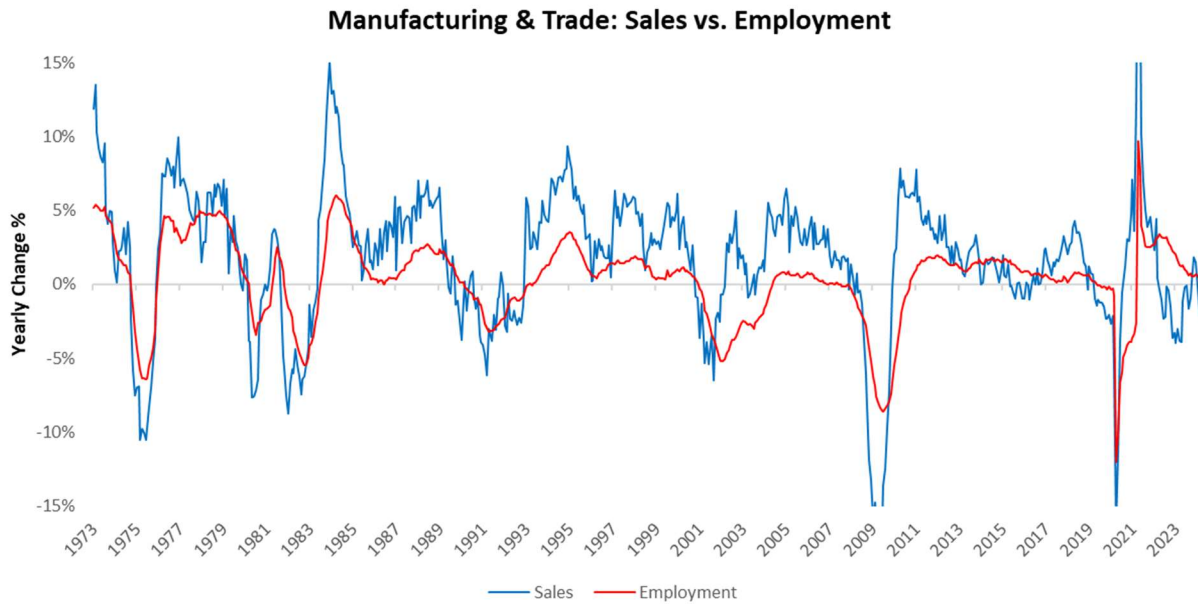


This stabilization of inventory growth has flowed through to gross investment, which captures the flow of inventories:



As we can see above, a large component of the improvement in gross investment conditions has come from the rebuilding of inventory. However, inventory build is a relatively transient factor.

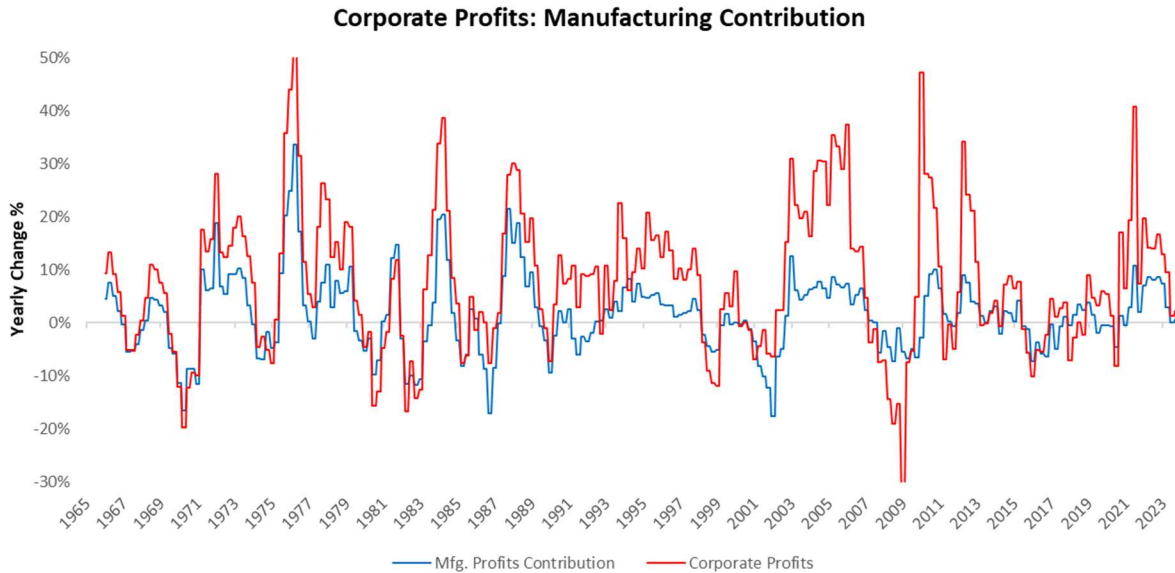
Looking at the more stable drivers of macro conditions, i.e., output and employment, we continue to see pressures on the goods economy:



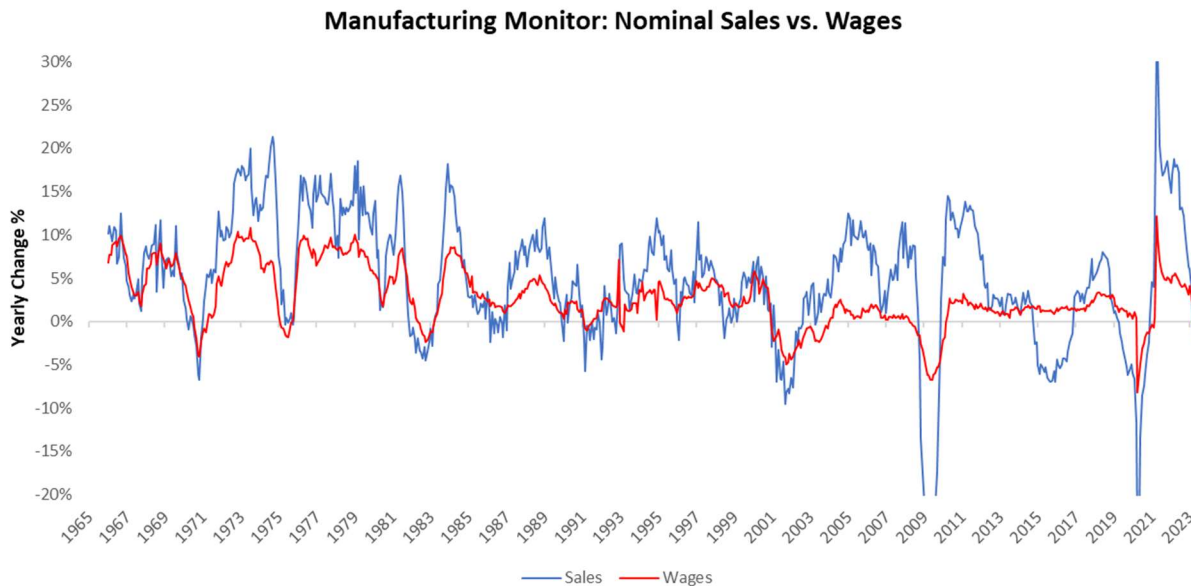
As we can see above, as real sales volumes have declined, the pressures on employment have risen, driving employment growth to slow. These dynamics place significant pressure on nominal activity in the goods economy. We see the primary drivers of these weaknesses emanating from the manufacturing sector. As such, we take a deep dive into the dynamics driving this weakness in our next section.

Manufacturing: Bottom-Line Pressures Persistent

Manufacturing conditions are an integral driver of conditions in the goods economy. We continue to see significant pressure on manufacturing growth emanating from a weak profit environment. These pressures have the potential to expand to the broader economy at extremes. We visualize the ongoing profit pressures coming from manufacturing below:

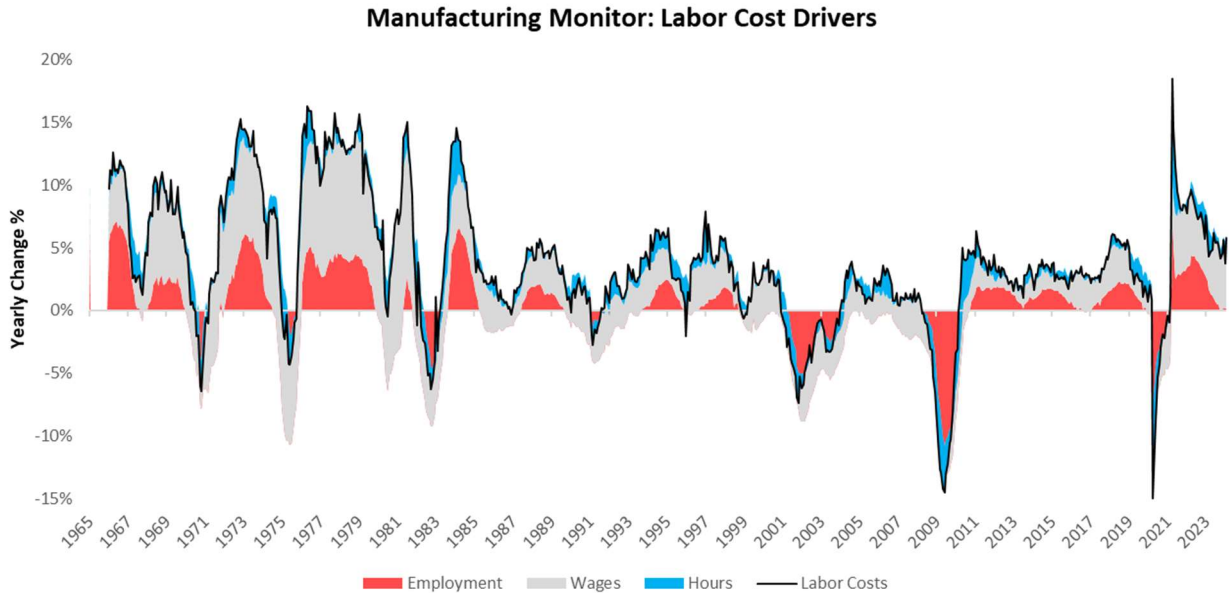


Like any business, profits are a function of the sales generated relative to the costs incurred. At the macro level, the primary driver of these costs tends to be labor costs in the form of wages. Below, we visualize these principal drivers of profitability for manufacturing.

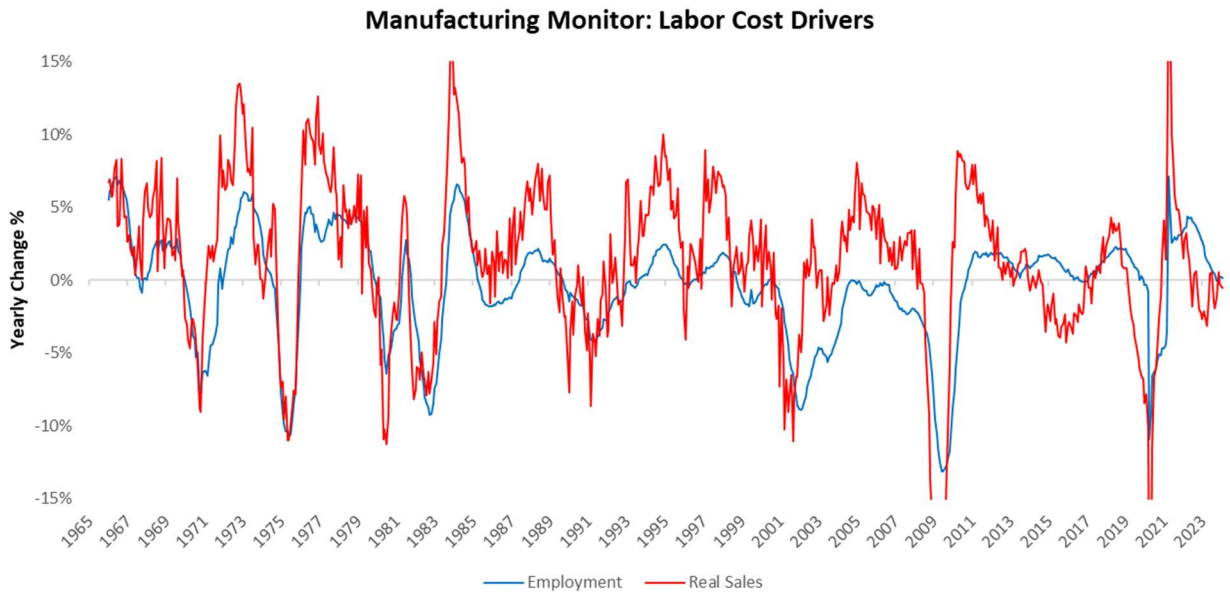


As we can see above, currently, nominal wages in the manufacturing sector are offsetting already weak sales growth, creating a significant drag on profitability.

To better understand the macro drivers of these wage trends, we decompose total labor costs into their constituent drivers- changes in employment, hours worked, and hourly wages. We visualize their contributions to total labor costs below:

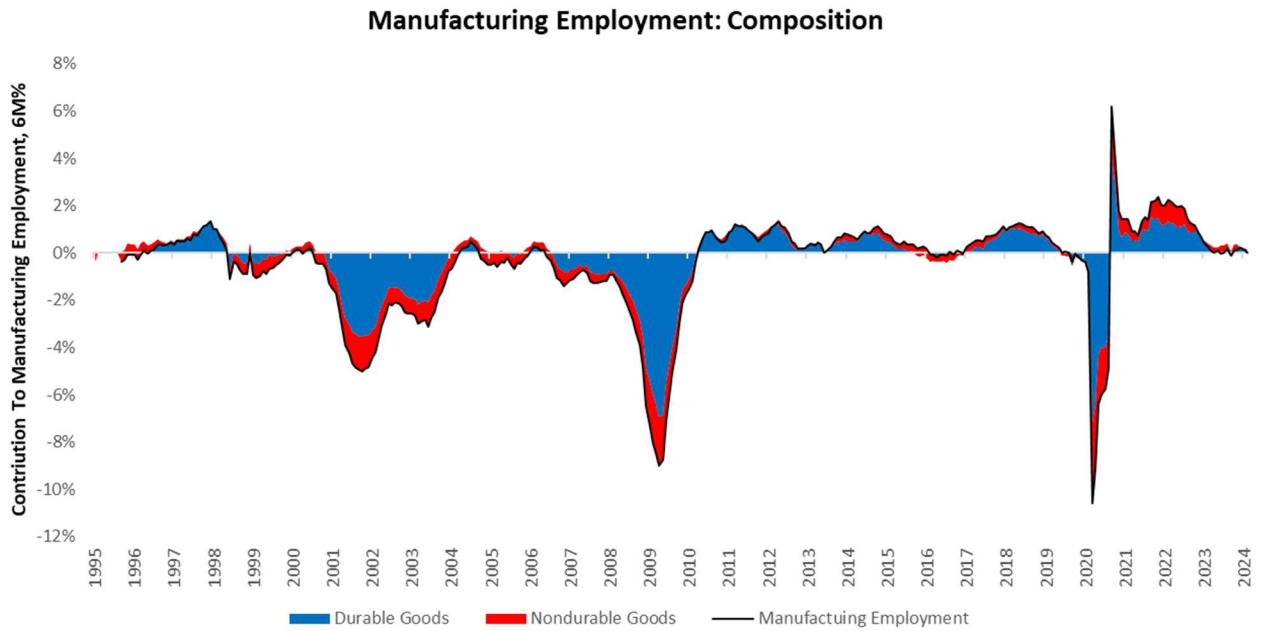


We now zoom in on employment growth to highlight a fundamental condition, i.e., the purpose of employment growth is output growth. As such, output (real sales) and employment generally rise and fall together.

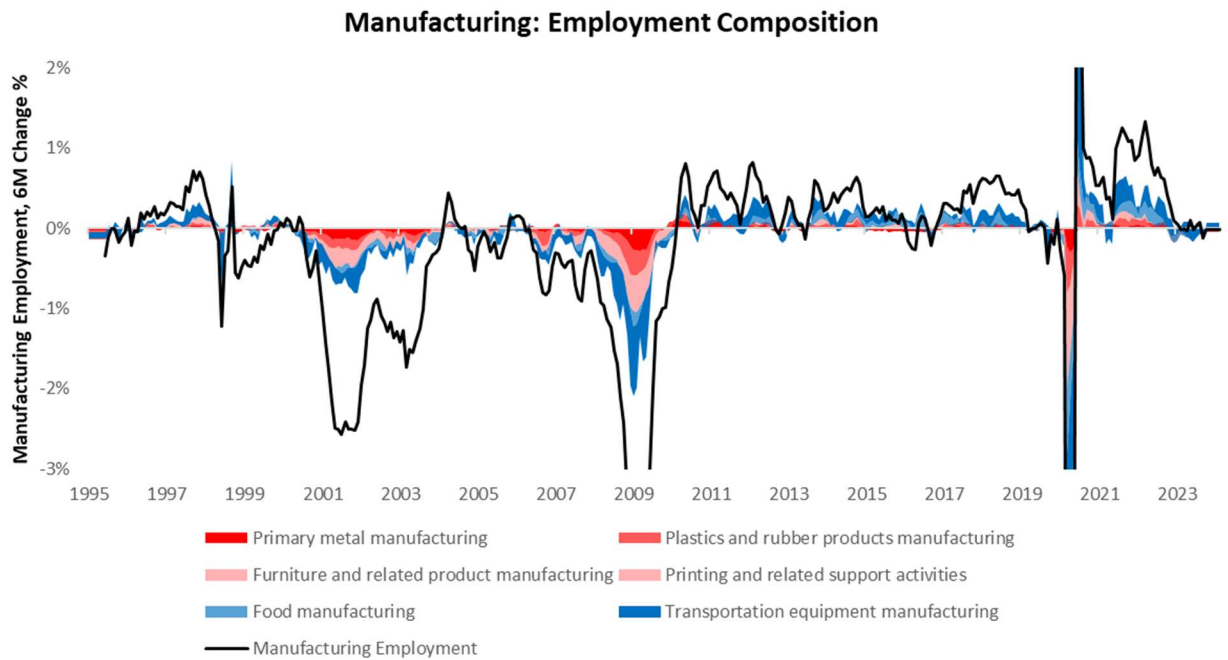


Like the broader economy, the manufacturing sector is seeing significant employment pressures.

We zoom in on employment conditions within manufacturing. We begin by decomposing manufacturing employment in durable and nondurable goods manufacturing growth:

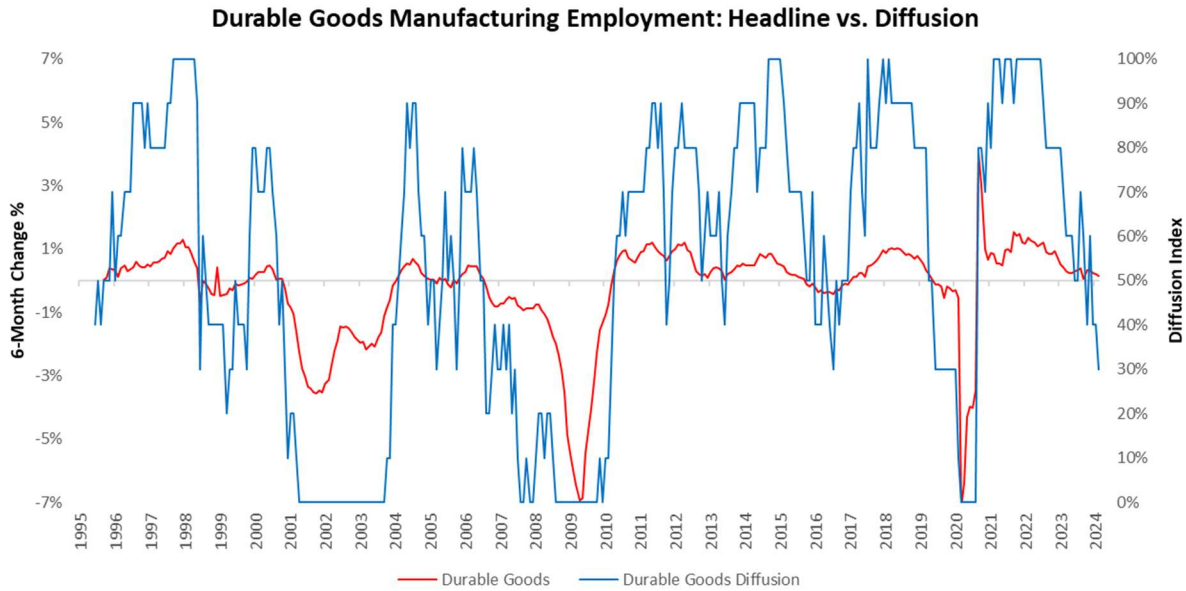


As we can see above, durable goods manufacturing typically drives most of the variance of the sector, though both remain weak. We zoom in further to find the composition of this employment to understand the major drivers of growth:



Manufacturing employment is now in a broad-based slowdown, with most of the variance coming from contracting sectors. Transportation once again remains strong relative to the broader complex.

We zoom in on durable good diffusion to show the breadth of this weakness. As shown below, 70% of durable goods industries are seeing contractionary employment readings.



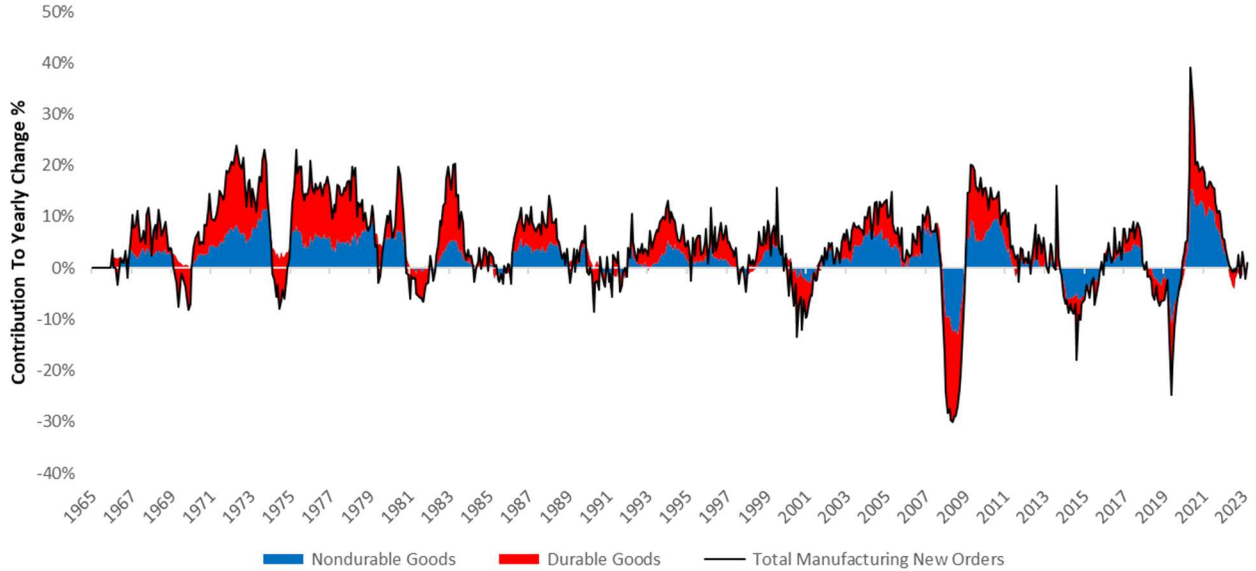
Now that we have examined the wage drivers of manufacturing profits, we turn to underlying measures of demand conditions. Particularly, we look at the growth of new orders and inventories. New orders drive sales, and sustained growth in new orders increases inventories. Excessively large gaps between these two variables are unsustainable and likely to be resolved in favor of new orders. We visualize these dynamics below:



As we can see above, manufacturing orders, much like the broader goods sector, have seen a significant slowdown.

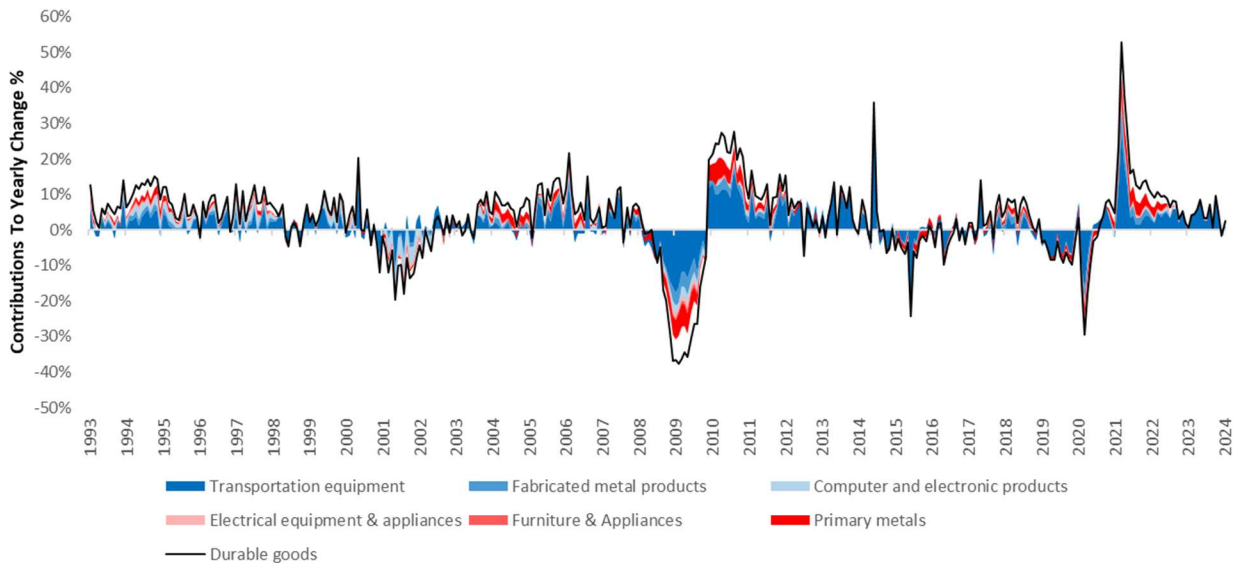
We dig into this order's data for a more nuanced understanding. Over the last year, manufacturing new orders have grown by 0.96% compared to one year prior. Below, we show the contributions coming from durables (1.21%) and nondurables (-0.25%) to these changes in total new orders:

Manufacturing New Orders: Durable & Nondurable Contributions



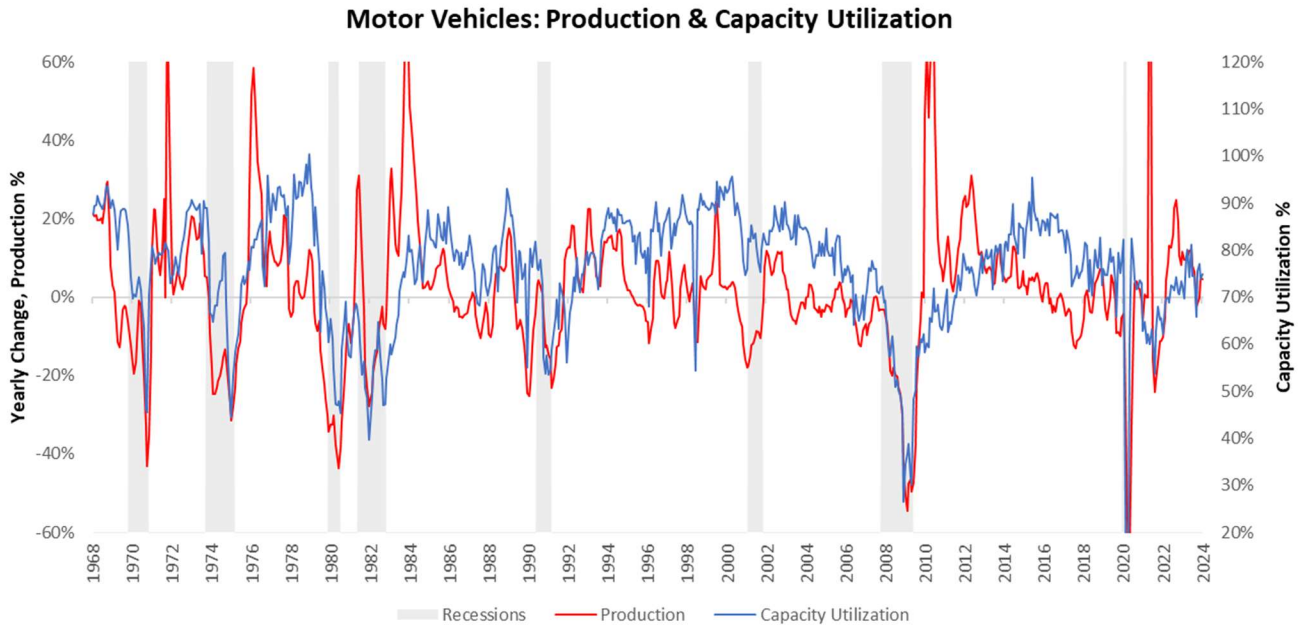
To better understand these changes over the last year, we decompose durable goods orders by industry. Over the last year, Transportation equipment, Fabricated metal products, and Computer and electronic products have been the primary drivers of strength in durable goods orders, as shown in shades of blue below:

Durable Goods New Orders: Composition

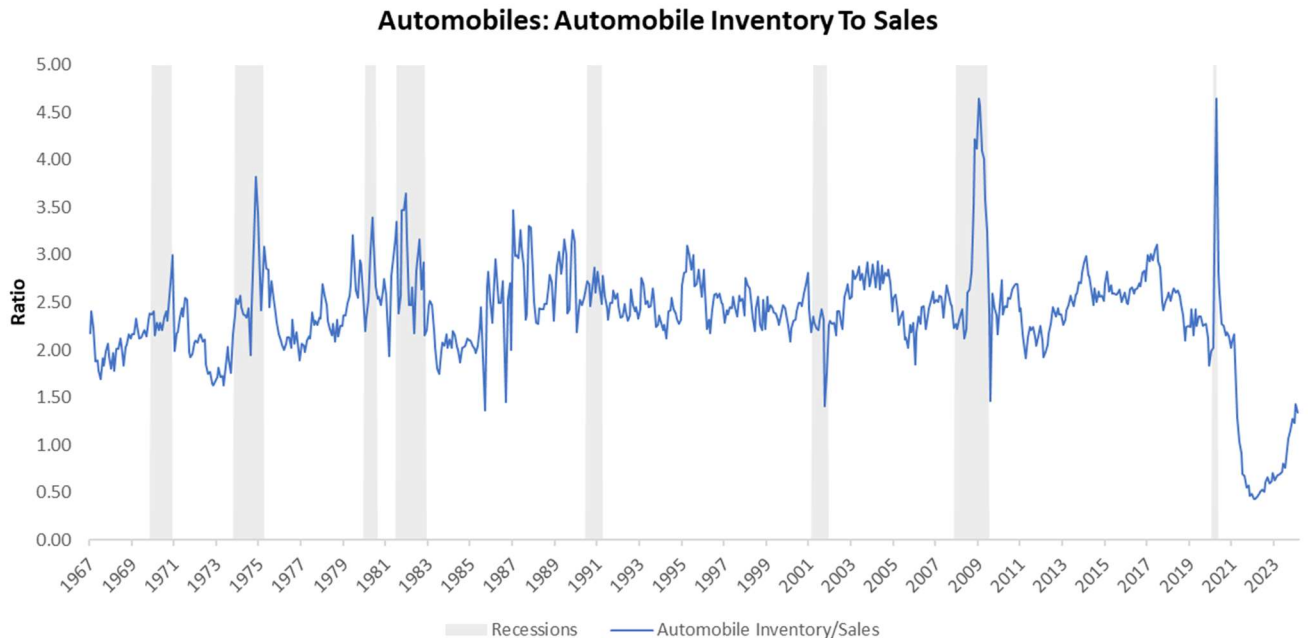


We once again note the strength of transportation in driving durable goods orders.

As we have noted across the goods complex, transportation remains a stronghold. We zoom in on the dynamics driving this strength. We begin by showing how production and capacity utilization have remained strong:

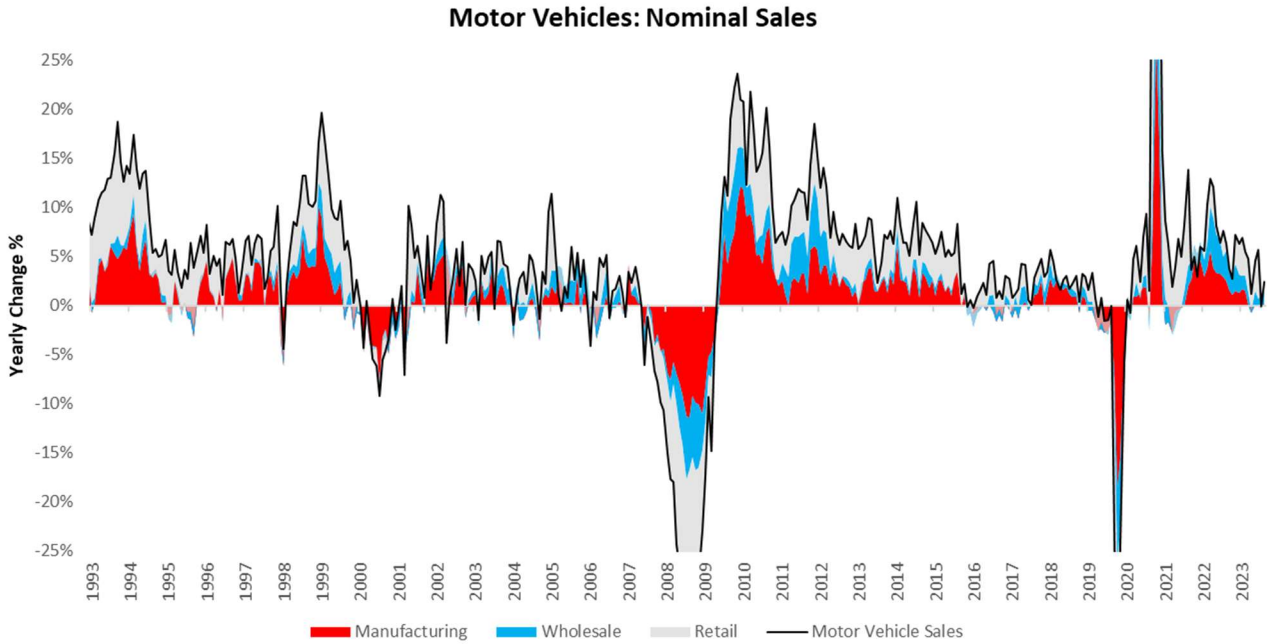


Driving these production conditions is a secular shortage of automobile inventories:

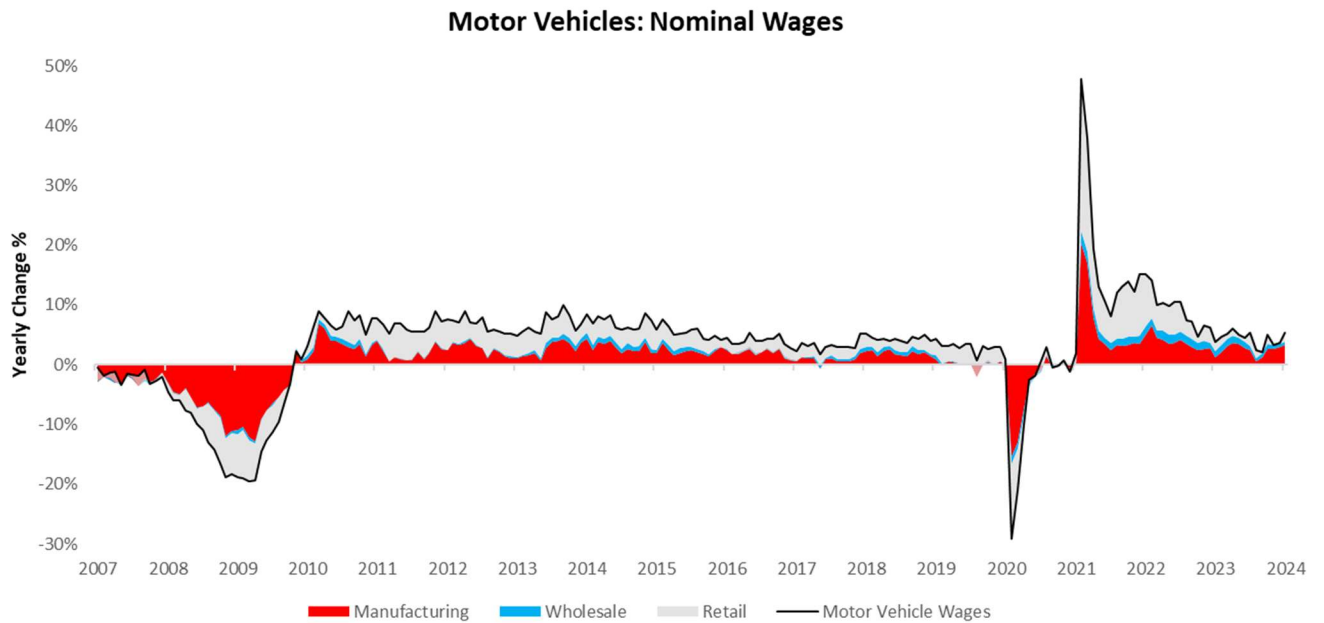


The COVID-19 pandemic caused significant disruption to automobile production, which has created a historical deficit in automobile inventories. As companies seek to rebuild these inventories, we have seen a steady push to expand production.

This demand for production has flowed through to higher nominal sales activity:



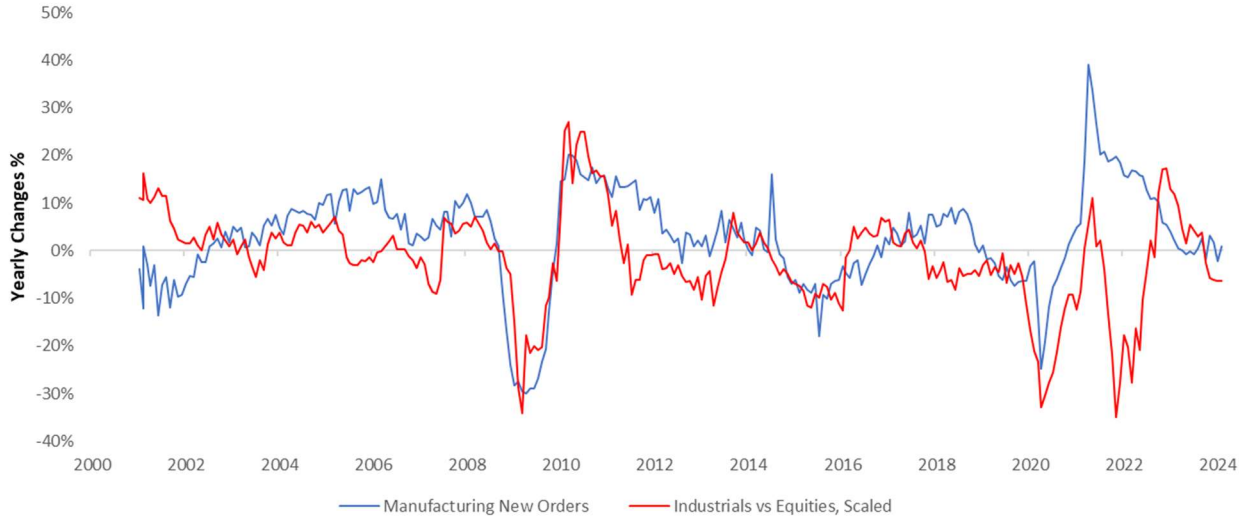
Which continues to support nominal incomes across the goods sector as well:



As such, the demand for motor vehicles is a key area of strength in an otherwise deteriorating manufacturing environment. We estimate that manufacturing growth would be significantly weaker without this ballast.

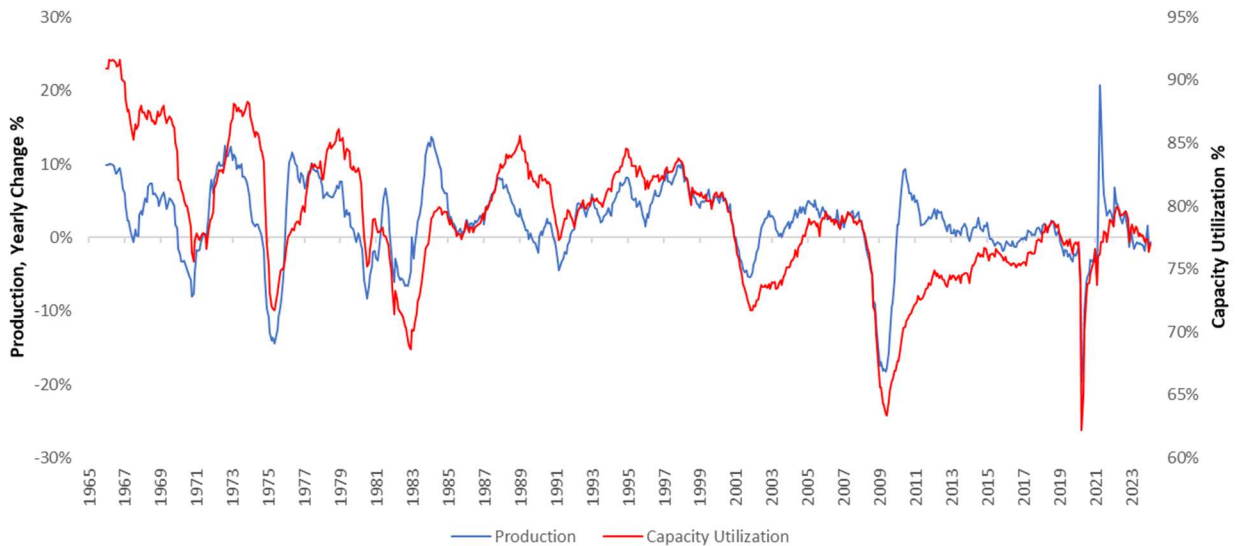
To further contextualize this economic data relative to markets, we show a longer lookback comparing the relative returns of industrial equities versus broad equities to manufacturing new orders. As we can see below, industrial equities have typically shown a modest relationship to manufacturing new orders:

Market Context: Manufacturing Orders Versus Industrial Equities



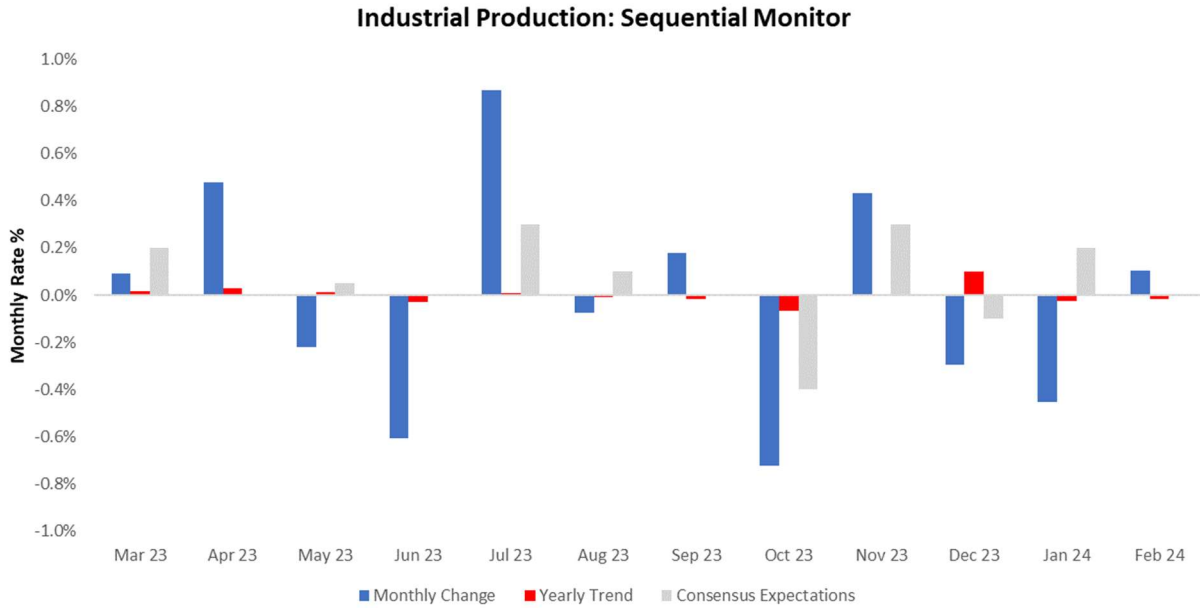
We now turn to production and capacity utilization measures to further understand demand conditions. We visualize the trend in manufacturing production along with the current degree of capacity utilization below:

Manufacturing Monitor: Production vs. Capacity Utilization

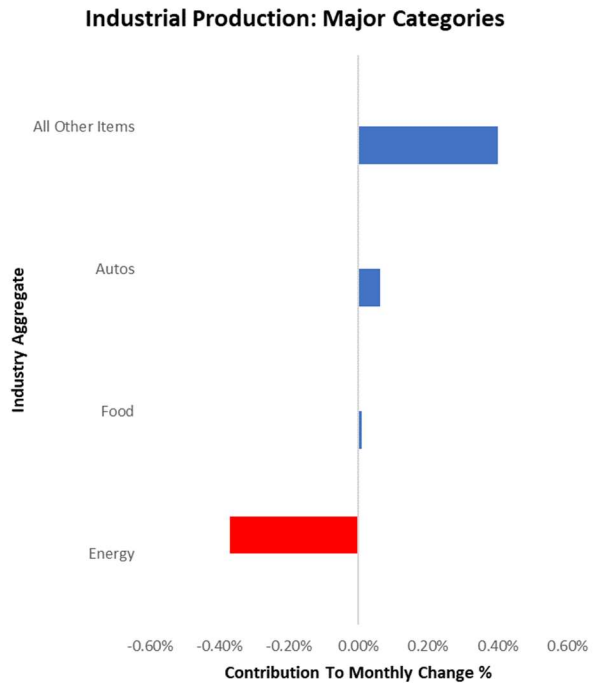
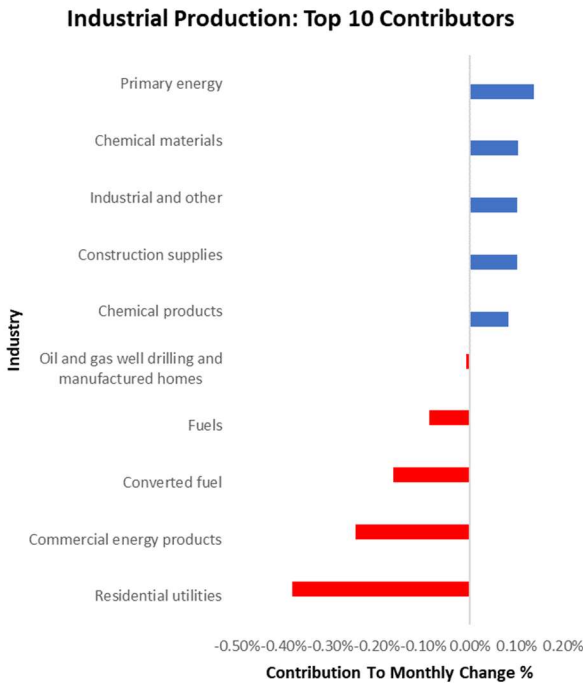


Production is the primary engine for the growth of the manufacturing sector over time. While expanding production is a positive for topline, existing capacity constraints limit the degree of expansion we can see in the manufacturing sector. Strong moves in production without an increase in total productive capacity are typically unsustainable.

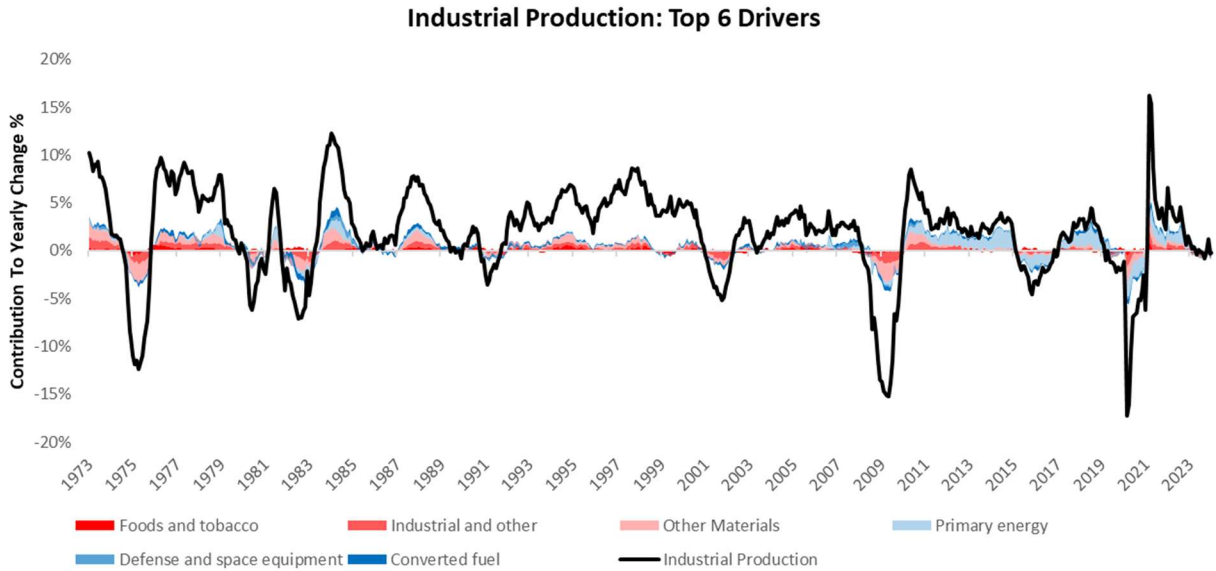
These moves in manufacturing production are a sub-component of the broader industrial production dynamic. The latest data for February shows that industrial production increased by 0.1%. We show the sequential evolution of the data below:



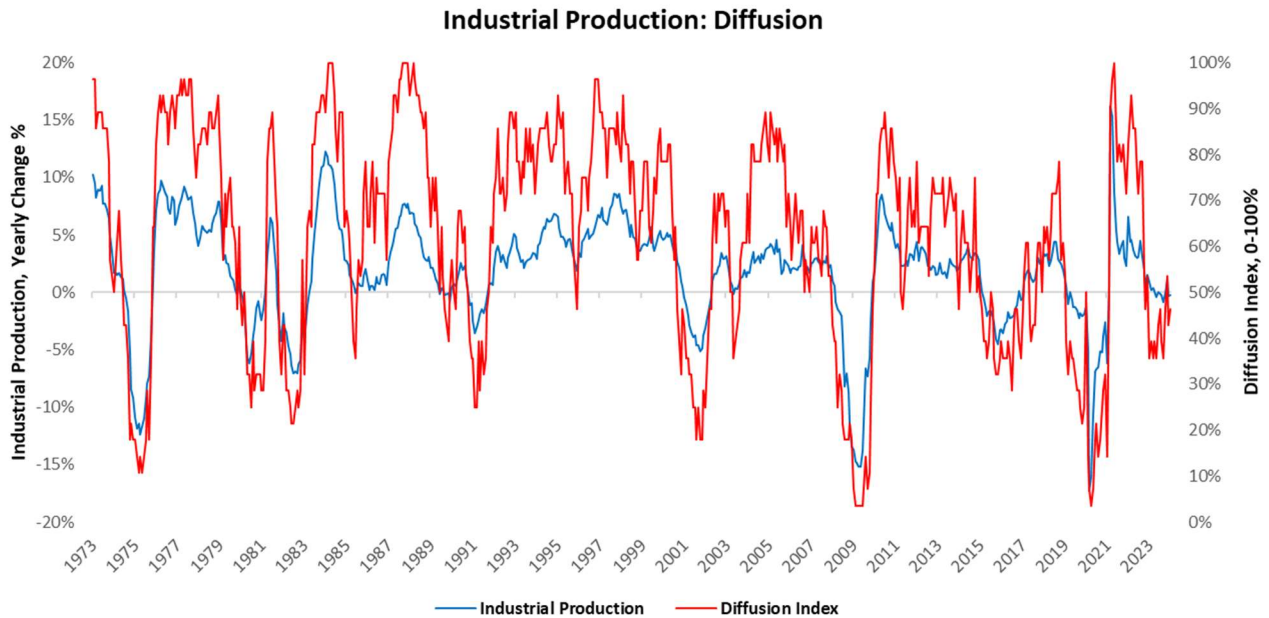
We break this print into its contributions from production coming from Food (0.01%), Energy (-0.37%), Autos (0.06%), and All Other Items (0.4%). Additionally, we also showcase the top 10 contributions by industry. The largest contributor this month was Primary energy, and the largest detractor was Residential utilities:



We zoom out to offer further context on the dynamics of industrial production. Over the last year, industrial production has contracted by -0.23%. Below, we present the top six drivers of industrial production, with the three strongest industries highlighted in blue (Converted fuel, Defense, and space equipment, and Primary energy) and the three weakest industries highlighted in red (Foods and tobacco, Industrial and other, and Other Materials):



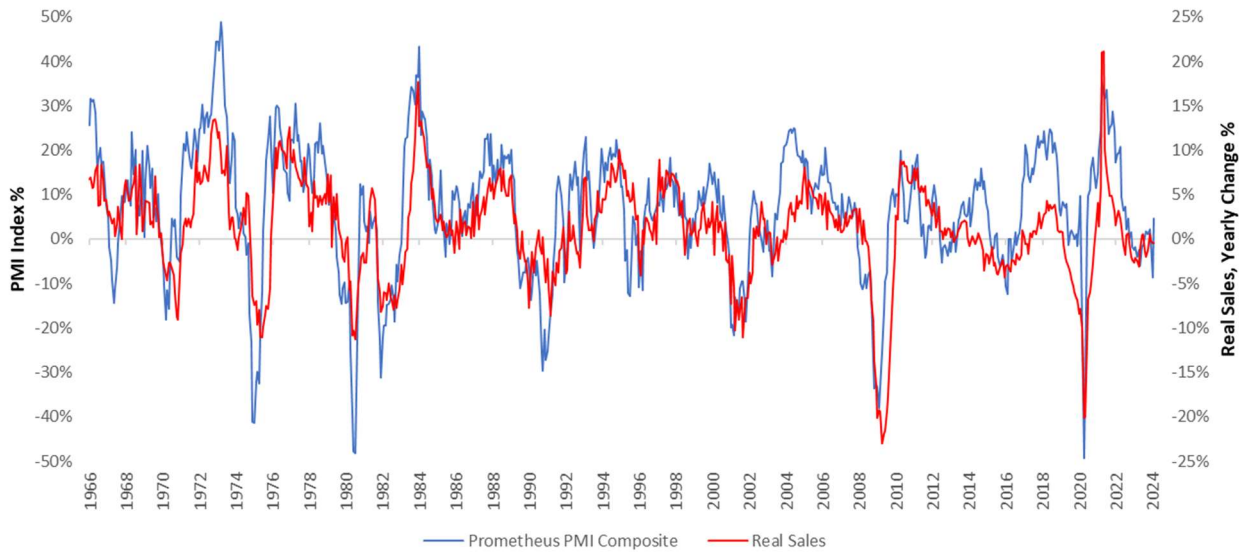
To further assess the health of the current contraction of industrial production, we examine the diffusion of the 28 subsectors we track. We find that 54% of industries are contracting.



This broad-based weakness in production dynamics continues to suggest that the goods sector will continue to weaken.

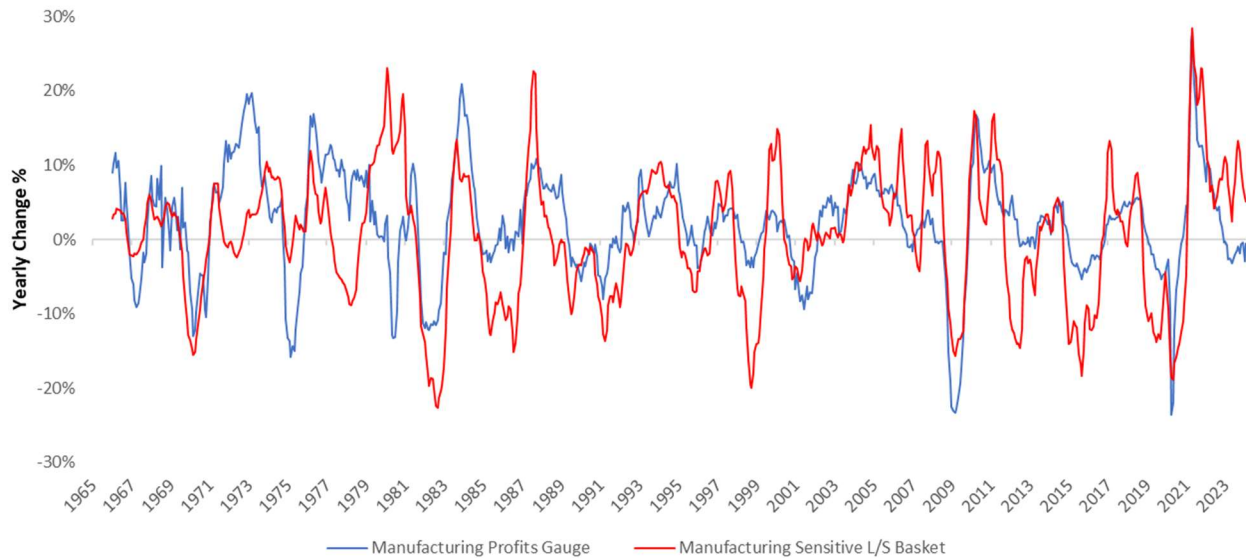
While hard data offers significant insights into the mechanical drivers of manufacturing, survey-based measures (PMIs) can provide insight into where we are in the manufacturing cycle. These PMIs have intrinsic value as purchasing managers sit at the intersection of demand and supply, and their perception of conditions reflects conditions in the manufacturing cycle. Below, we show our PMI composite, which aggregates data across PMI measures, and how our composite offers timely insights into the real manufacturing sales cycle.

Manufacturing Monitor: Surveys vs. Sales

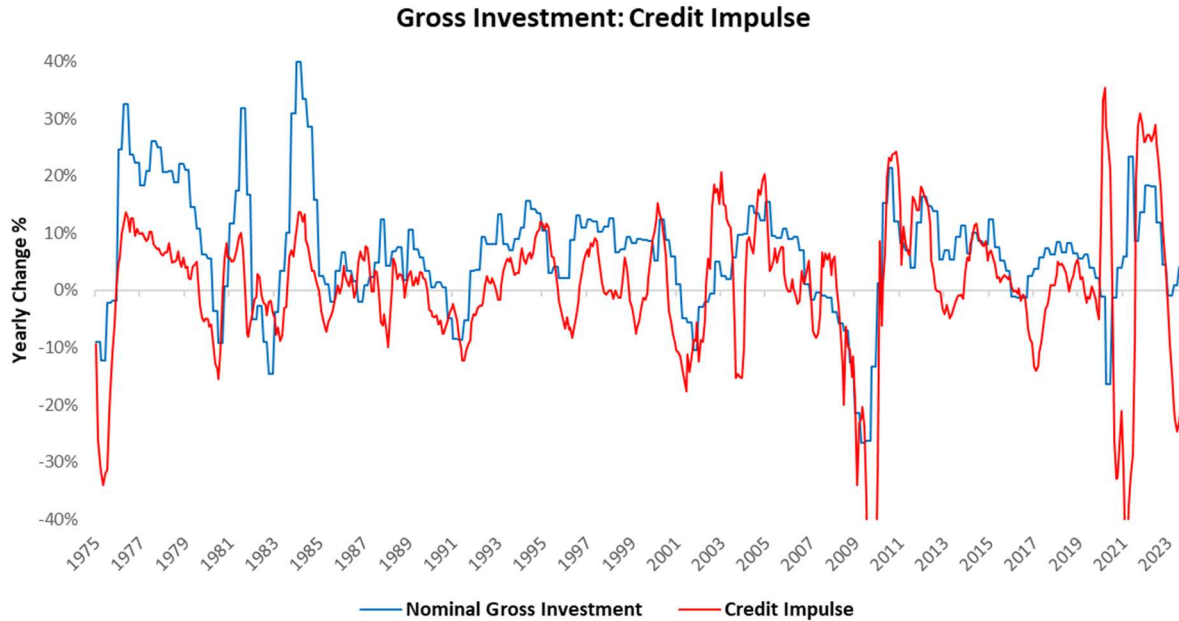


Improvement in PMIs has been reflected in the outperformance of in manufacturing sensitive areas of the equity market:

Manufacturing Monitor: Profit Pressures vs. Long/Short Basket



In addition to these market-based measures, timely measures of the credit flow to the manufacturing sector also suggest continued weakness. We dive into the data driving this assessment. Below, we begin by showing how the credit flow into gross investment remains weak, even though it has improved in the recent past:



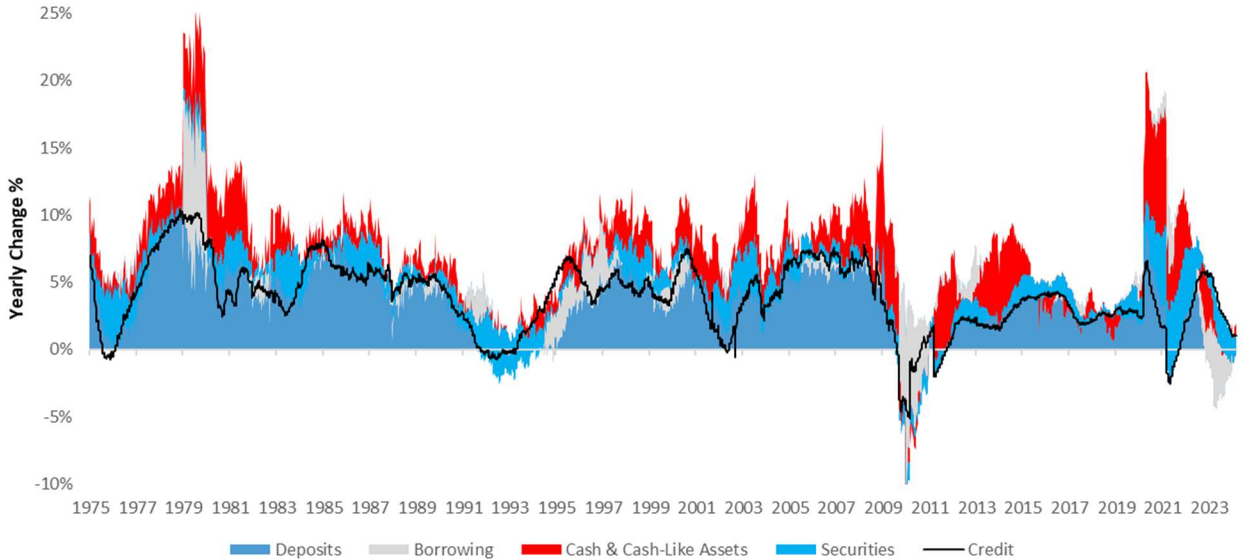
To better understand the supply of credit driving these conditions, we evaluate the current conditions in the commercial banking system, which are the suppliers of credit for the manufacturing sector. We begin by showing the sequential tracking of credit. Banks are the primary source of credit in the economy. Banks expand and contract credit as a function of how many deposits they create relative to the amount of cash they keep. We begin by showing our latest tracking of bank credit outstanding and its major drivers:

Bank Credit: Major Drivers

	Credit	Deposits	Borrowing	Cash	Securities
12/13/2023	9484	17324	3557	6956	5057
12/20/2023	9481	17398	3571	6971	5093
12/27/2023	9469	17421	3661	7035	5112
1/3/2024	9467	17401	3605	7113	5099
1/10/2024	9488	17389	3553	7108	5103
1/17/2024	9503	17440	3609	7271	5098
1/24/2024	9514	17406	3640	7199	5125
1/31/2024	9533	17506	3468	7123	5094
2/7/2024	9518	17452	3594	7262	5088
2/14/2024	9545	17469	3574	7118	5111
2/21/2024	9555	17420	3613	7185	5099
2/28/2024	9571	17436	3597	7139	5108
3/6/2024	9569	17489	3515	7165	5149
1-Qtr Change	84	165	-42	208	92

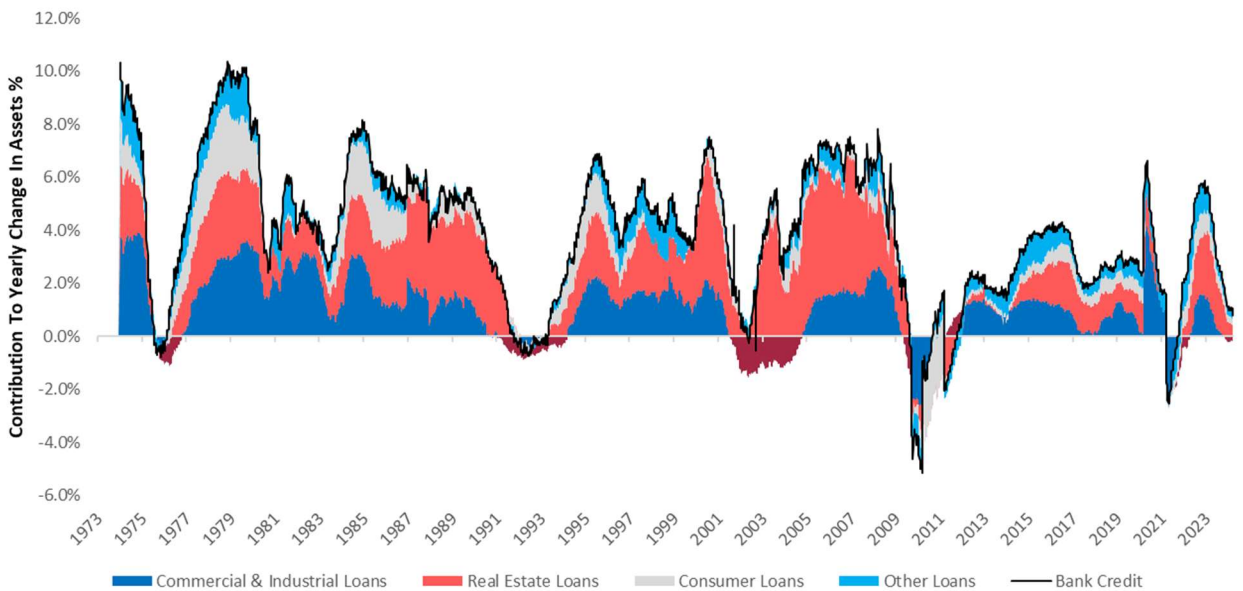
As we can see above, credit has expanded, driving an increase in deposits. To offer further context, we zoom out to show how these drivers have evolved over the last year to impact bank credit growth. Over the last year, bank credit growth has slowed, driven by declining deposits and an increase in cash:

Commercial Banks: Credit Creation



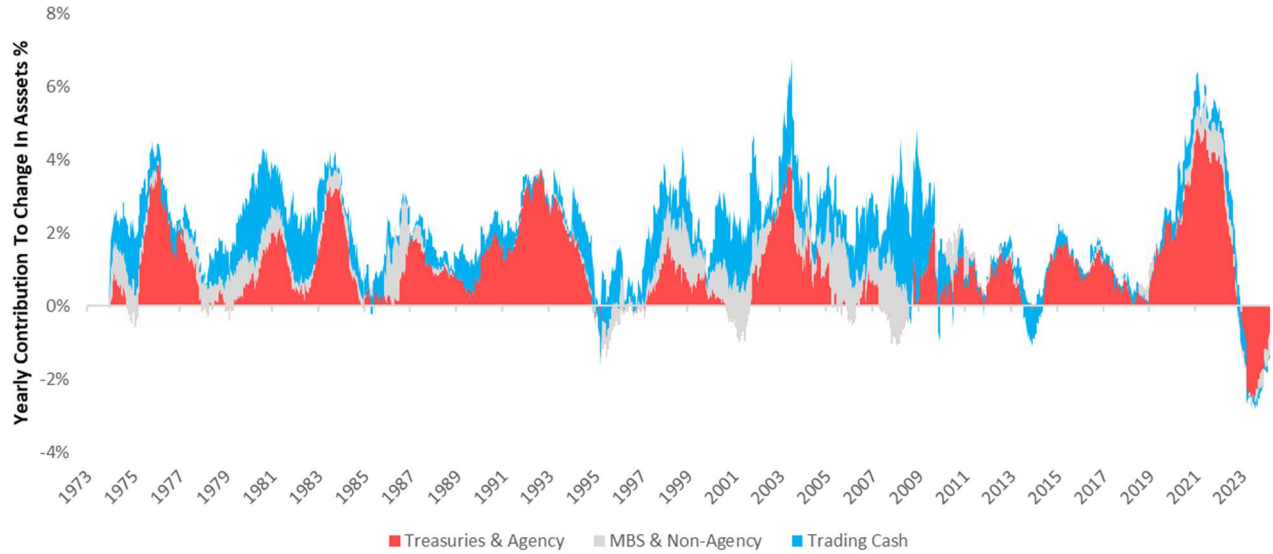
As shown above, credit growth has been in a broad-based slowdown, which is a contractionary pressure on spending. Diving deeper into credit composition, we examine how credit growth is distributed into industrial activity, real estate, and consumption. Over the last year, the modest expansion of bank credit has been driven primarily by real estate loans, while industrial loans are now contracting.

Bank Credit: Composition



While banks predominantly lend to the real economy to generate returns, they also have the option to allocate capital to securities. All else equal, an allocation to securities at the expense of credit expansion is typically detrimental to economic growth conditions. We visualize banks' security investments below:

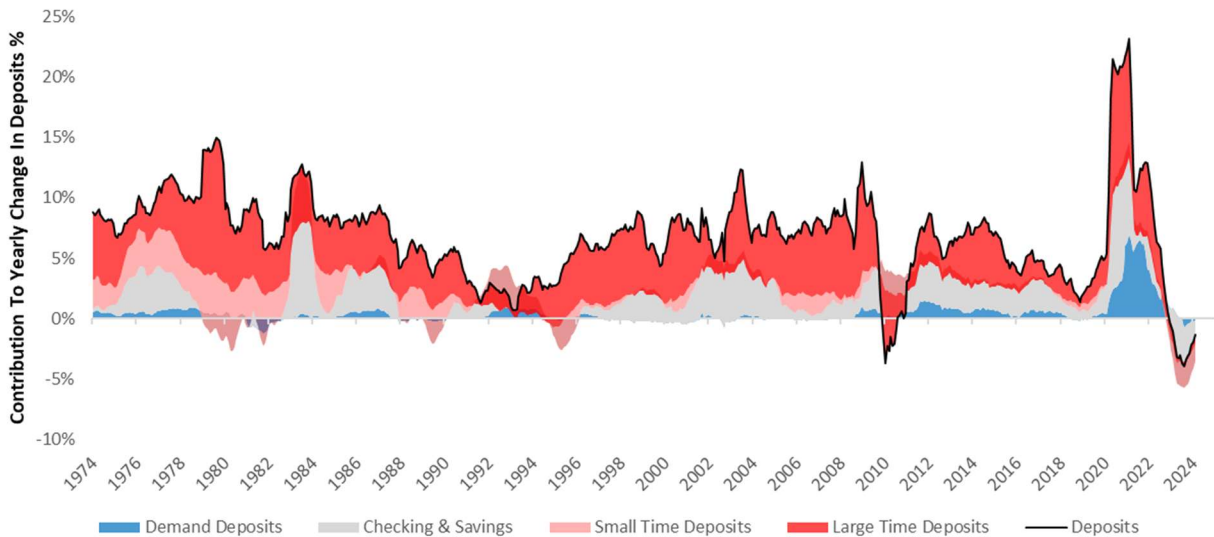
Bank Securities: Composition



As we see above, banks have largely been pulling back on their securities portfolios as fixed-income securities suffer under rising interest rates and an inverted yield curve.

Now that we have examined the primary asset-side shifts that have driven credit growth, we turn to liabilities. Particularly, we zoom in on deposit growth as they are the dominant driver of liability growth. Over the last year, deposits have contracted as we have seen a significant decline in checking & savings deposits. On the other hand, time deposits have shown expansion. Nonetheless, the size of declines in checking and savings deposits has been adequate to generate a drawdown in deposits:

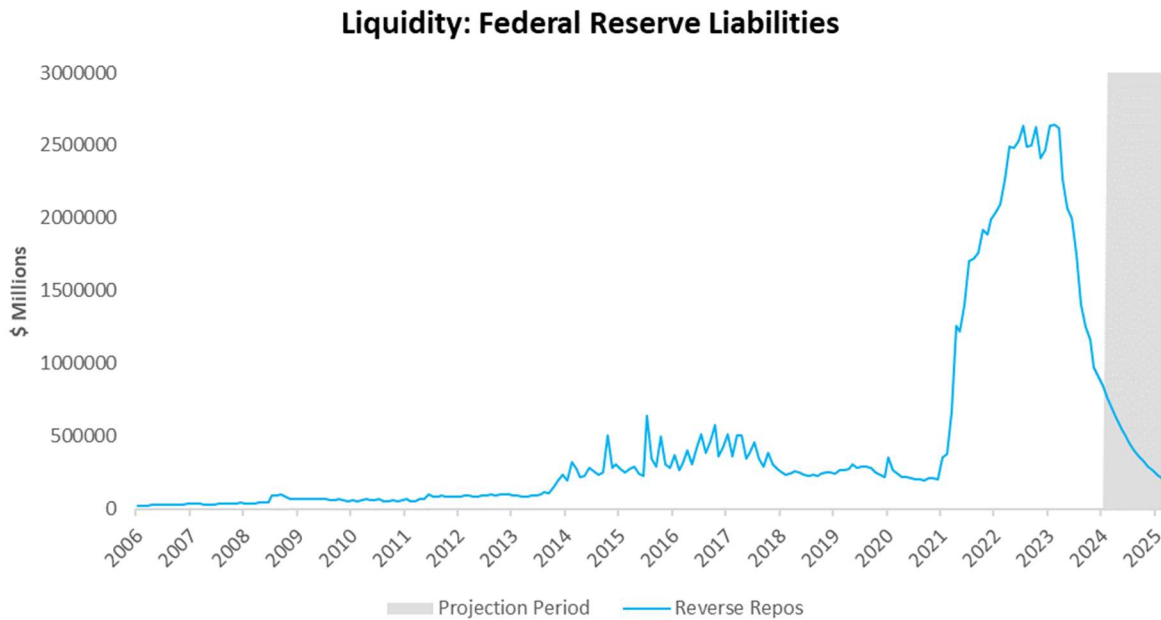
Bank Deposits: Composition



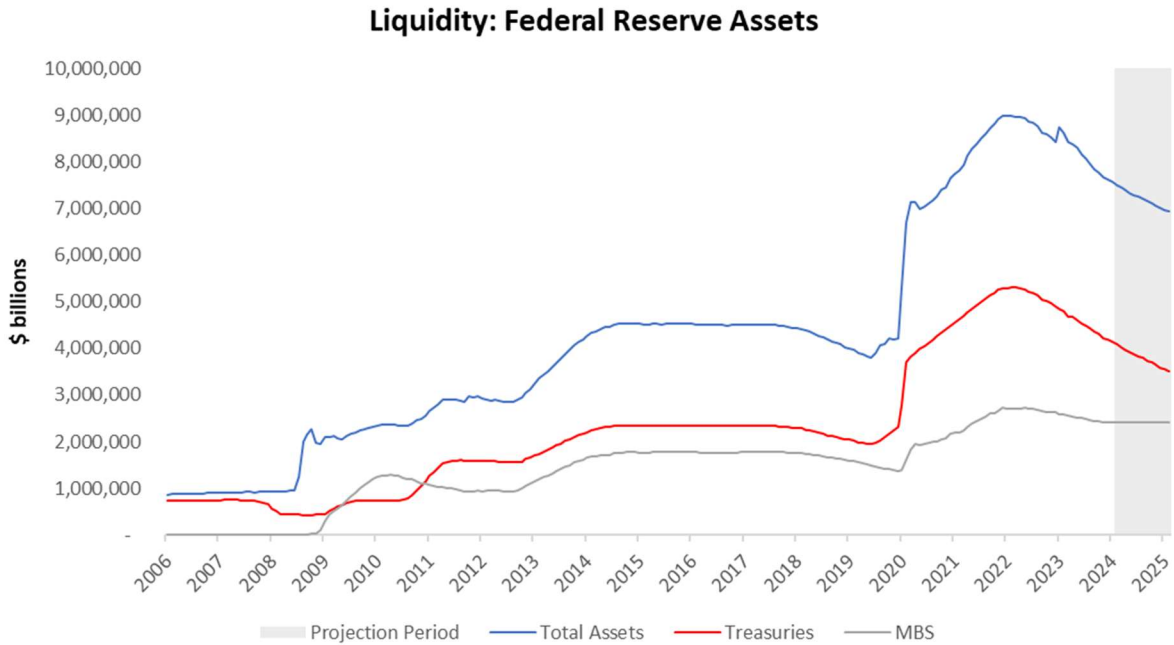
Overall, credit has expanded modestly, even though deposits have declined. This expansion in credit growth has largely been driven by a reduction of banks' securities portfolio and a reallocation to credit. Recall this credit growth has been meager, such that the flow to spending remains contractionary. Importantly, credit growth has also been muted due to an increase in bank cash holdings. We visualize this below:



This expansion in bank cash is largely driven by Federal Reserve balance sheet dynamics. Particularly, this expansion in bank cash has been driven by funds from the Fed's Reverse Repo Facility (RRP), making their way back into the banking system. We visualize this decline the reverse repo facility, along with our projected path for the same:

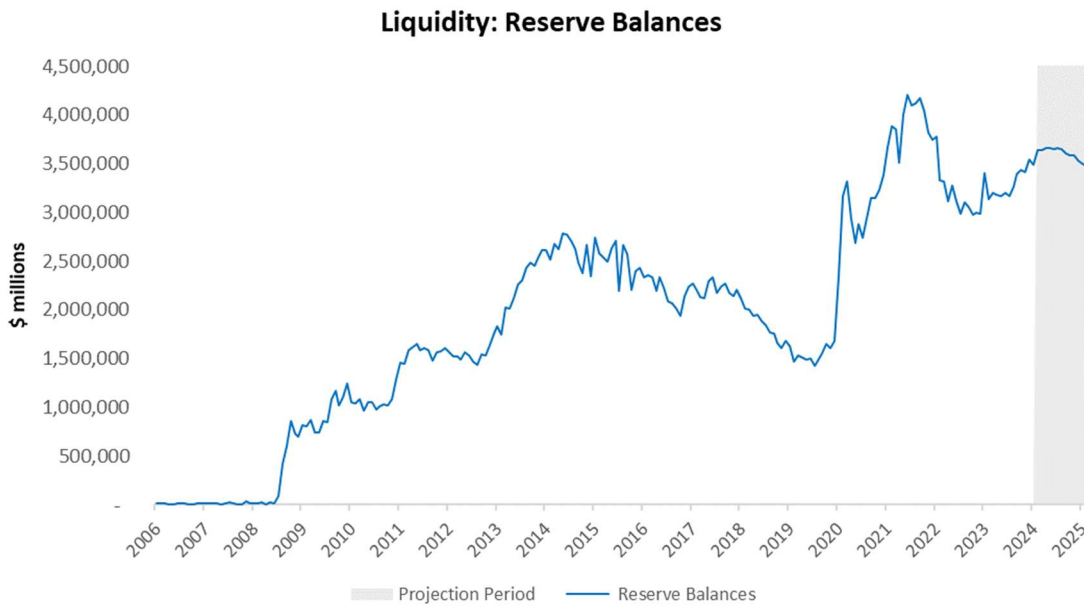


This decline in RRP has largely blunted the impact of quantitative tightening (QT), which continues consistent with the Fed' outlined objectives. Below, we show the path of the Fed's assets, which are impacted by their QT policy:



As we can see above, QT continues to progress as expected.

Netting the impact of these expected drivers, we show our expected path for reserve held at the Federal Reserve:



Above, we show how, on the current path, reserve balances likely top out around Q3 of 2024. This suggests that bank cash will also top out around Q3 of 2024 unless we have further material rebalancing

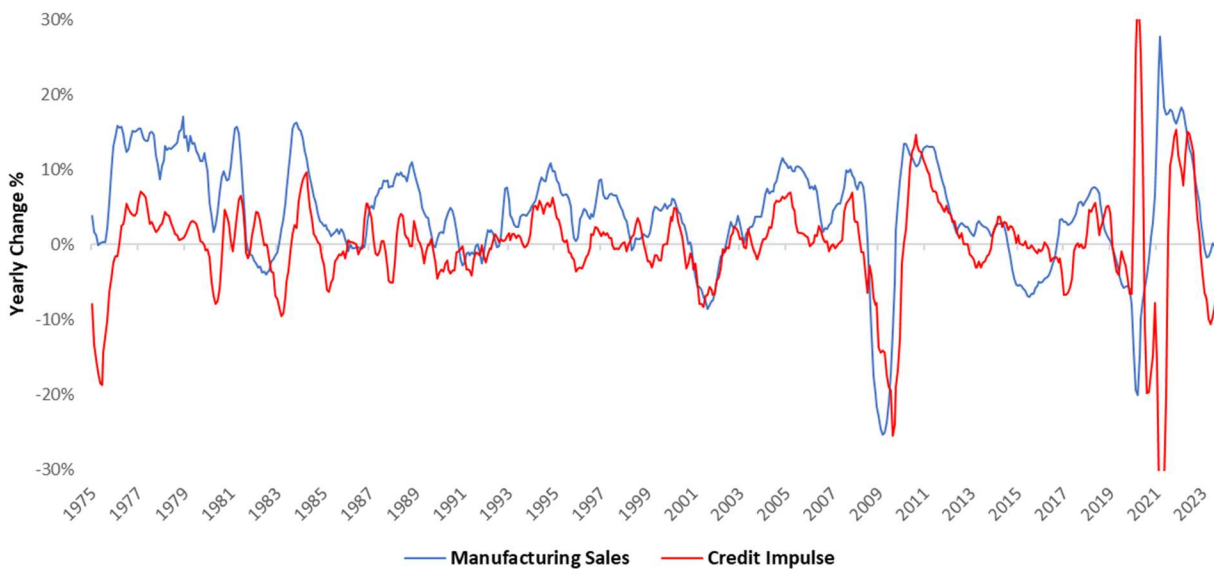
of bank balance sheets. Therefore, it is unlikely that the banking system will suffer adverse liquidity conditions that will warrant a pullback in credit extension over the next few months. Therefore, we expect the credit supply to remain stable. However, credit growth is a function of not just the willingness of lenders to expand their balance sheet but also the capability of borrowers to take on that credit. Currently, manufacturing firms face interest burdens that exceed their current income growth:

Manufacturing: Sales vs. Interest Expense

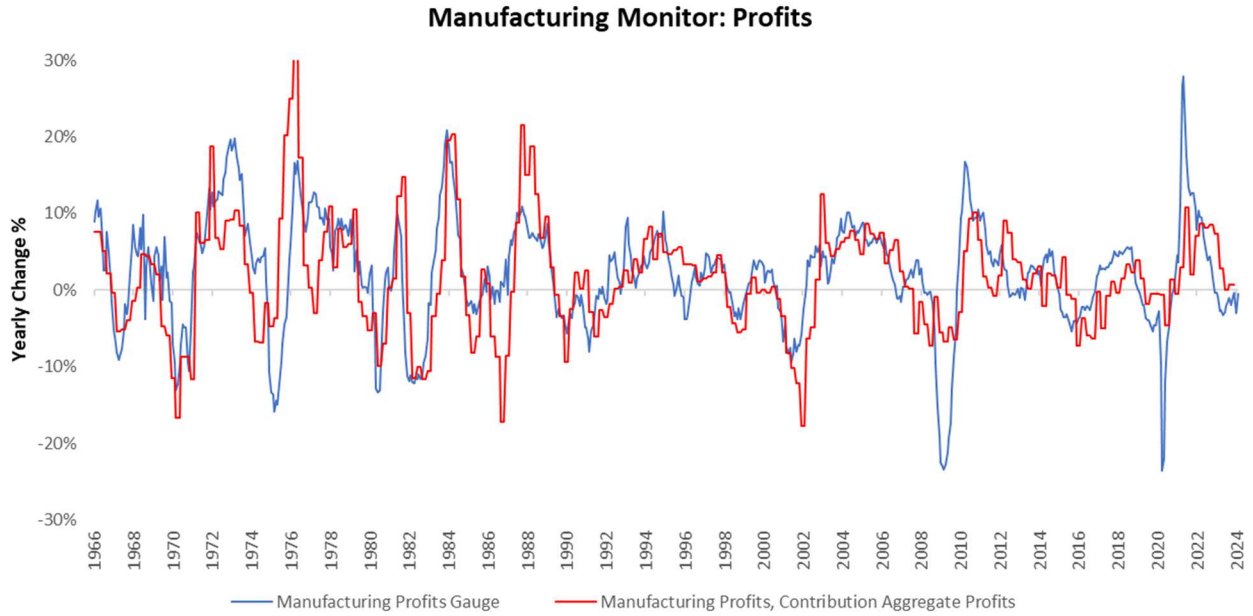


As we can see above, nominal income growth less interest expense, despite its improvements, remains in contractionary territory. This dynamic continues to put downward pressure on manufacturing credit uptake:

Manufacturing: Credit Impulse



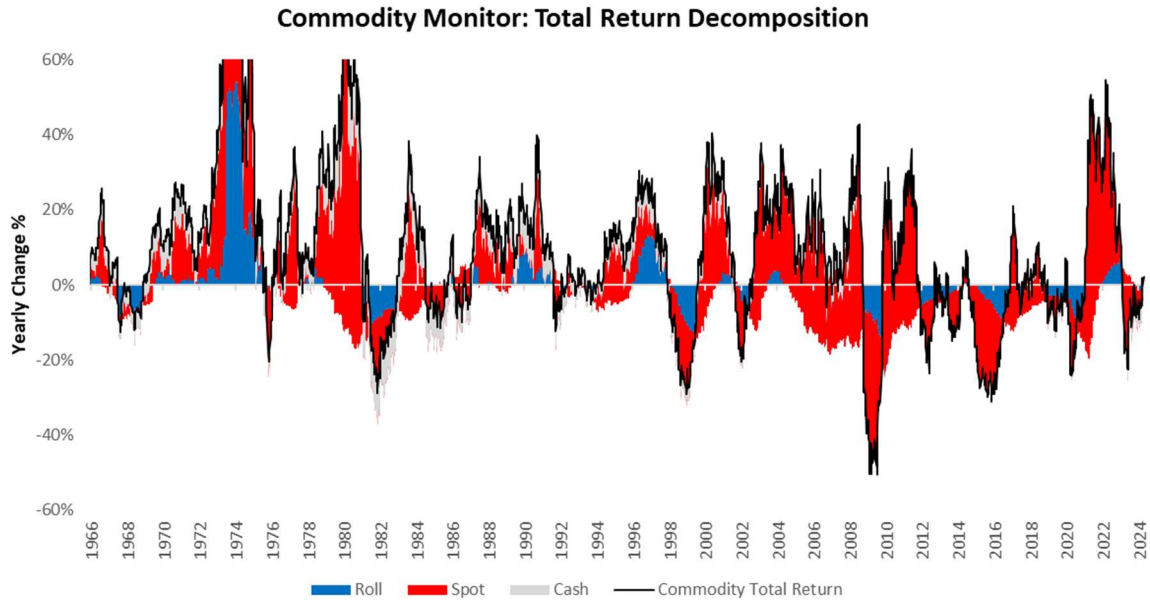
Looking across wage pressures, orders, production, and credit uptake, we continue to see pressures on manufacturing profits. We aggregate these into our estimates for manufacturing profits:



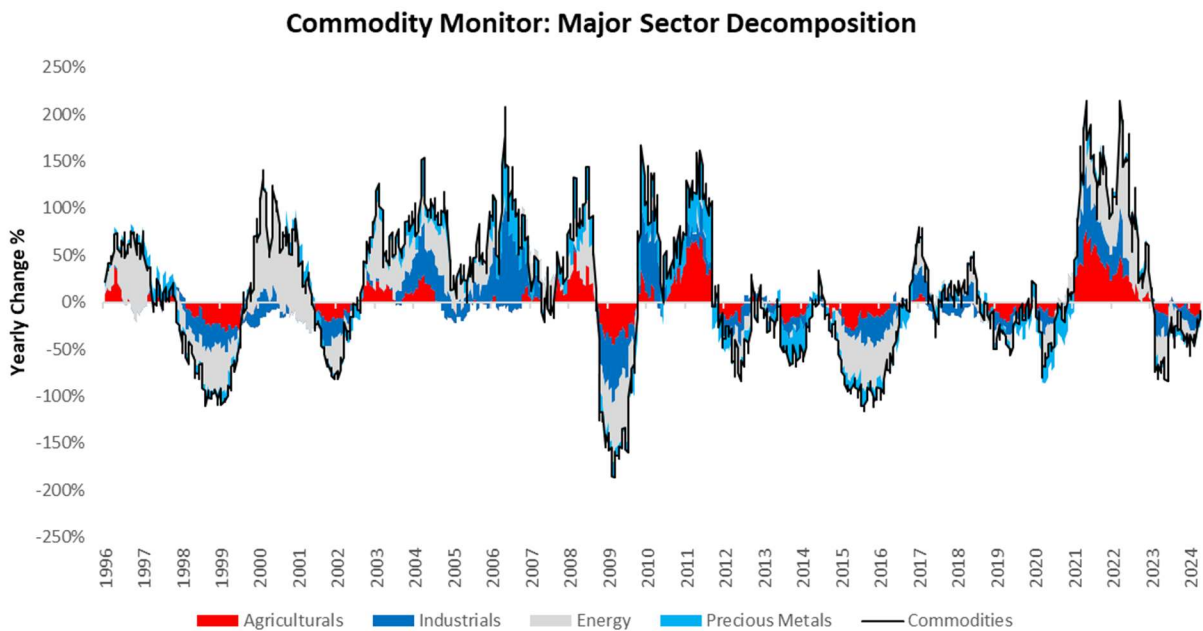
While sequential data has improved, we would need to see these improvements continue consistently to bring manufacturing out of its current profit downturn. Our systematic process requires us to balance our systematic expectations of the pressures with the ongoing impulse of the data. Said differently, we invest based on when macro conditions align with our expectations. This assessment brings us to our market views, which we will share in our next section.

Commodity Markets: Modest Alpha Opportunities

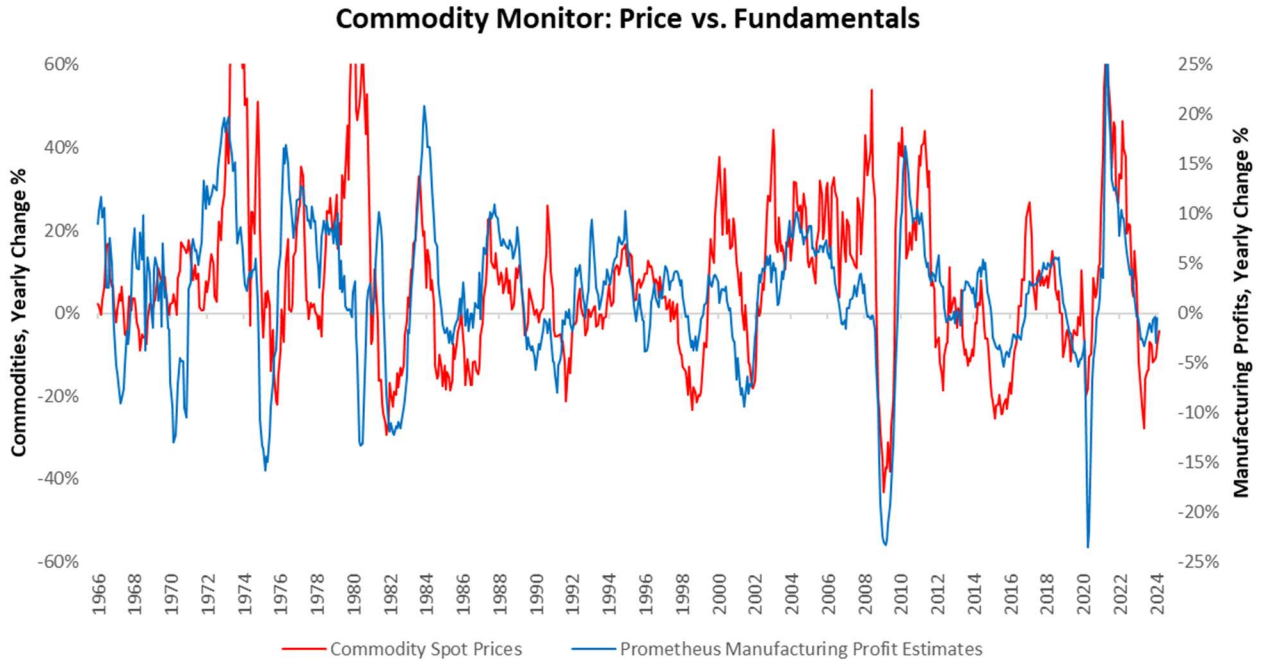
Alpha is a function of the path of macroeconomic conditions relative to what markets have priced in. Commodity markets are currently pricing in an improvement in cyclical conditions, consistent with the latest impulse in macro data but inconsistent with the fundamental profit pressures. We share our monitors driving this assessment. We begin with our total return decomposition:



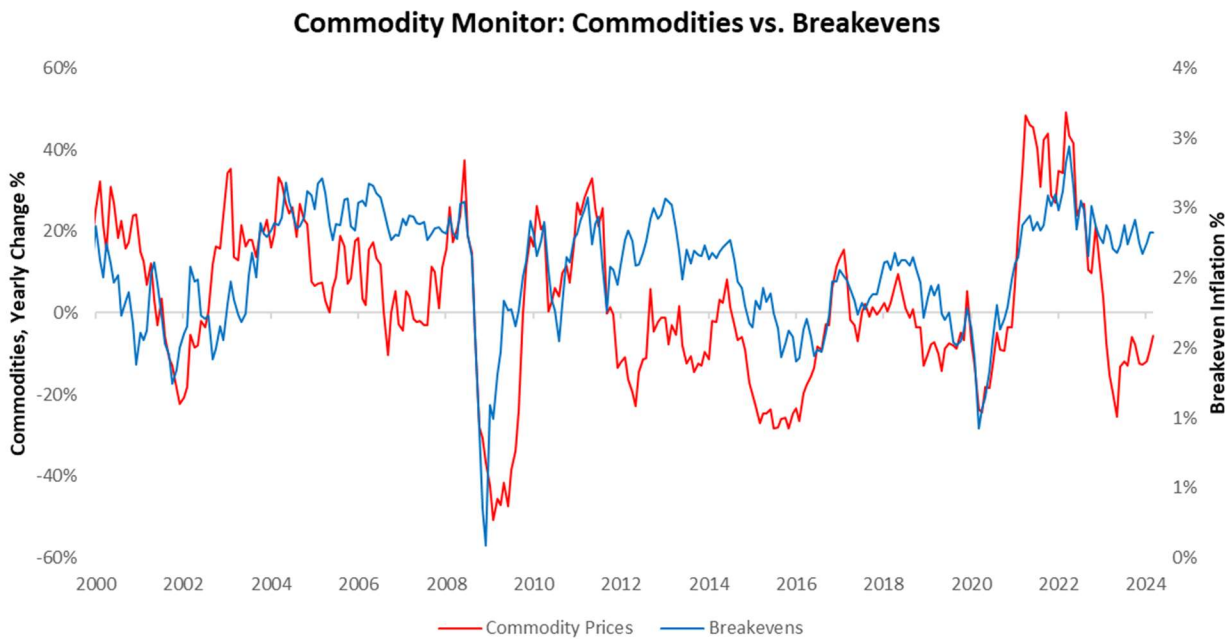
Commodity returns can come from cash rates, spot price moves, or roll yields. Typically, spot price moves dominate, as is the case today. We see commodity markets have staged a rebound over the last six months. We zoom into the sector contributions of this move for further context:



Over the last year, precious metals have been the primary driver of strength amongst the major commodity sectors. Energy and industrials have improved significantly in 2024 but remain in contraction versus one year prior. This modest improvement is consistent with the marginal changes in fundamental macro conditions:

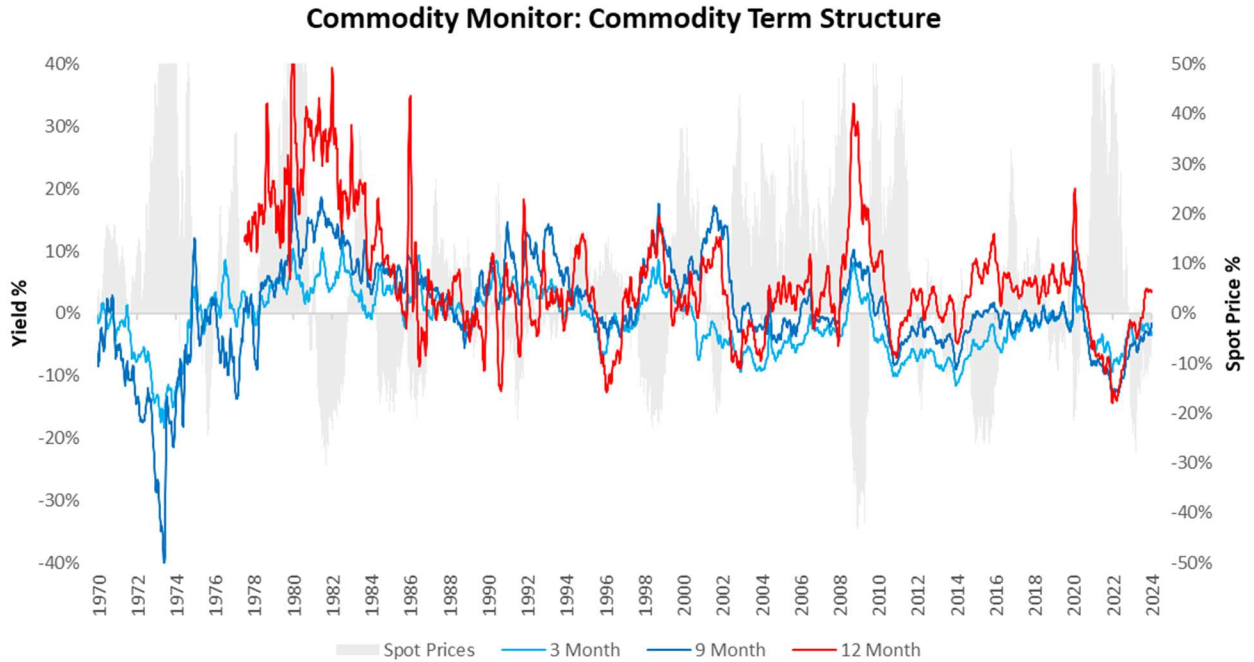


Above, we show how recent marginal improvements in commodity spot prices have been largely consistent with fundamental dynamics. However, these moves have been somewhat inconsistent with long-term measures of inflation:



Commodity prices largely reflect very near-term inflationary dynamics coming from business cycle conditions. Breakevens, on the other hand, reflect longer-term inflation dynamics consistent with long-term nominal GDP expectations. Recently, these two inflation markets have signaled dramatically different outcomes, and we are in the reconciliation process, which is mainly coming from higher commodity prices.

Finally, we turn to the commodity term structure to understand what markets are pricing. Currently, commodity markets are pricing at weaker commodity prices over three and six months while also pricing modestly higher commodity prices over twelve months. We visualize this below:



This dynamic creates an environment where near-term carry conditions are positive (positive roll yields) while dynamics further out the curve are less conducive to carry. Adding this pricing to the recent fundamental backdrop and price dynamics, we see modest potential for tactical long exposures here. However, given our forward-looking fundamental assessment of conditions, we see significant potential for these dynamics to reverse over 2024. We continue to see this as an unfavorable exposure for slower-moving asset allocation.

Conclusions: Tactically Long Commodities, Strategically Neutral

We reiterate our expectations and our views on macro and risk.

- ***Nominal GDP expanded by 0.96 % in December, with real GDP rising by 0.65% and inflation rising by 0.31%.***
- ***Manufacturing conditions have reaccelerated at the topline level; however, bottom-line pressures remain in place.***
- ***Relative to these conditions, commodities have risen in recent months but remain modestly behind the improvement in topline conditions.***
- ***Reflecting these cross-currents, our Alpha Strategies are now modestly long commodities. This signal is best suited to faster-moving players. For asset allocators, we continue to see this environment as non-conducive to commodity exposure.***

We expect evolving pressures in the commodity complex to create opportunities for diversifying alpha. However, recent macro trends have been inconsistent with these expectations. The current data impulse and conditions priced into markets suggest tactical longs are attractive. This long position reflects a fast-moving signaling process and is unsuitable for slower asset allocation. We continue to view commodities as exposed to weakness in the goods economy over a three to six-month investment horizon. As always, we are carefully monitoring the evolution of the data to understand whether the data confirm or deny these expectations. Until next time.

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