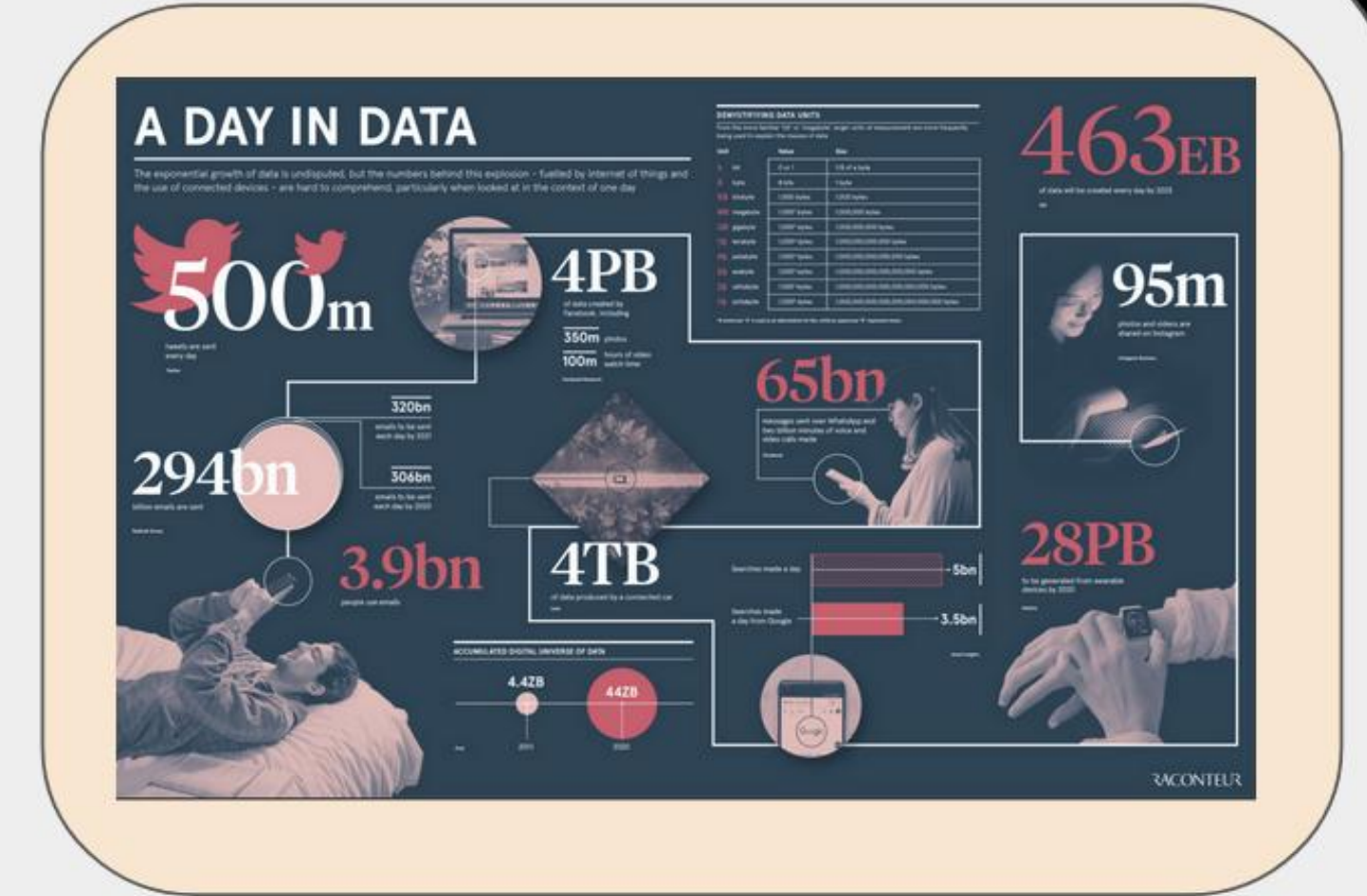
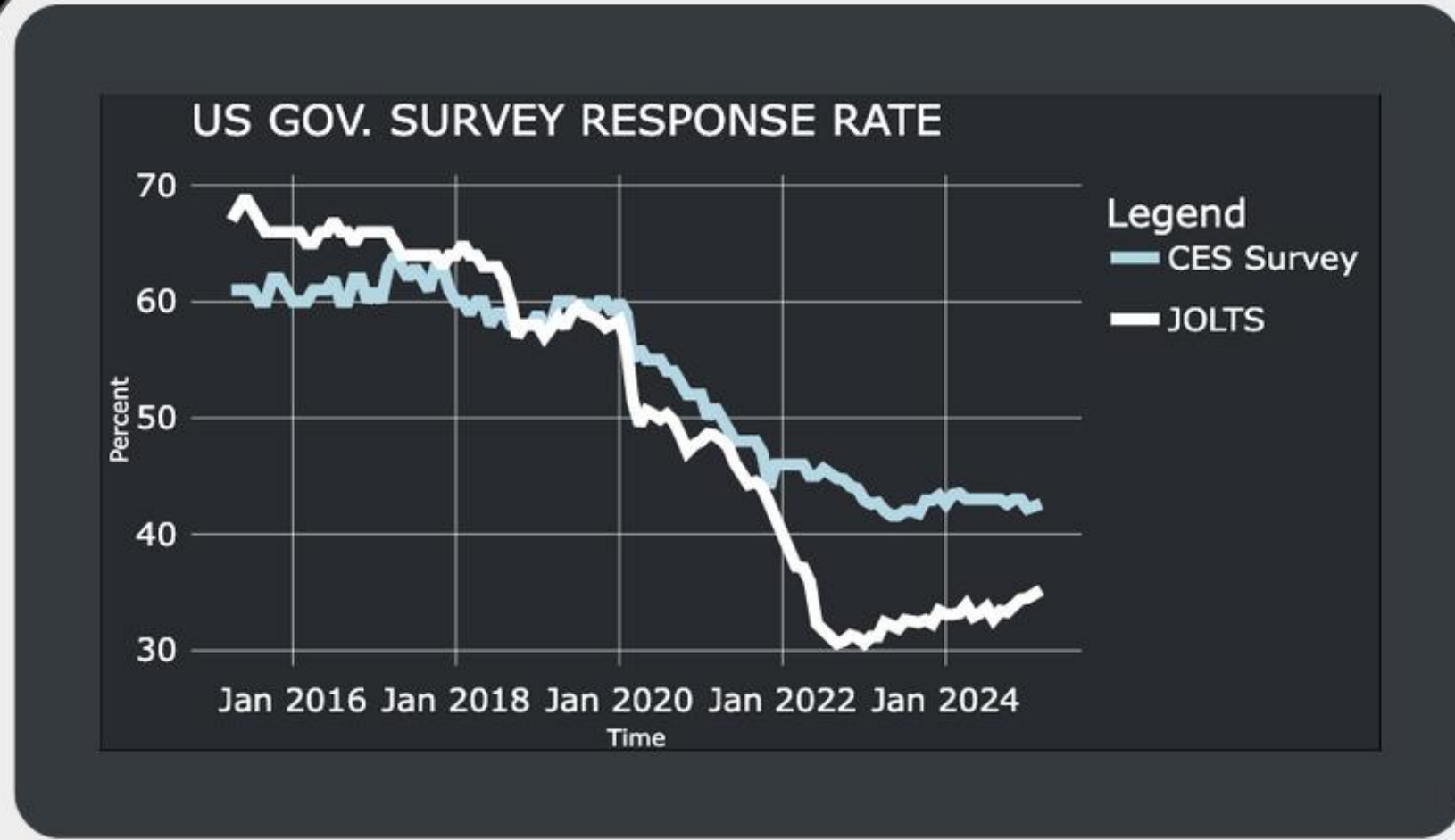


MacroX's philosophy

> MACRO DATA ARE AT A CROSSROAD - WORLDWIDE



THE WALL STREET JOURNAL.

Trump Orders Firing of Bureau of Labor Statistics Chief

The president's move throws the quality of America's statistical apparatus into question

CBC

Statistics Canada could text questions to confront 'alarming' drop in response rates

The deteriorating quality of data was a key theme for chief statistician Wayne Smith when he delivered an address to staff in February, according to a copy of his speaking notes and presentation obtained by The Canadian Press under the Access to Information Act.

FINANCIAL TIMES

UK employment

UK's job figures 'deeply flawed', warn analysts

'Experimental' estimates showing slight rise in unemployment leave Bank of England without key information at critical time for economy

“ It is a substantial problem - and not just for monetary policy”

Andrew Bailey, Bank of England Governor

“ Alternative data can provide a sneak peek of turning points”... and “corroborate official data ”

John O'Trakoun, Richmond Fed

> BUT ALT. DATA HAS ITS FLAWS TOO

DATA DIMENSION	GOVT. DATA	SINGLE ALT. DATA
LOW REVISIONS	✗	✓
FAST	✗	✓
UNBIASED	✓	✗
HISTORY	✓	✗
COST	✓	✗

> MACROX CAREFULLY MAPS MANY ALTERNATIVE DATA TO KEY GOV'T. DATA

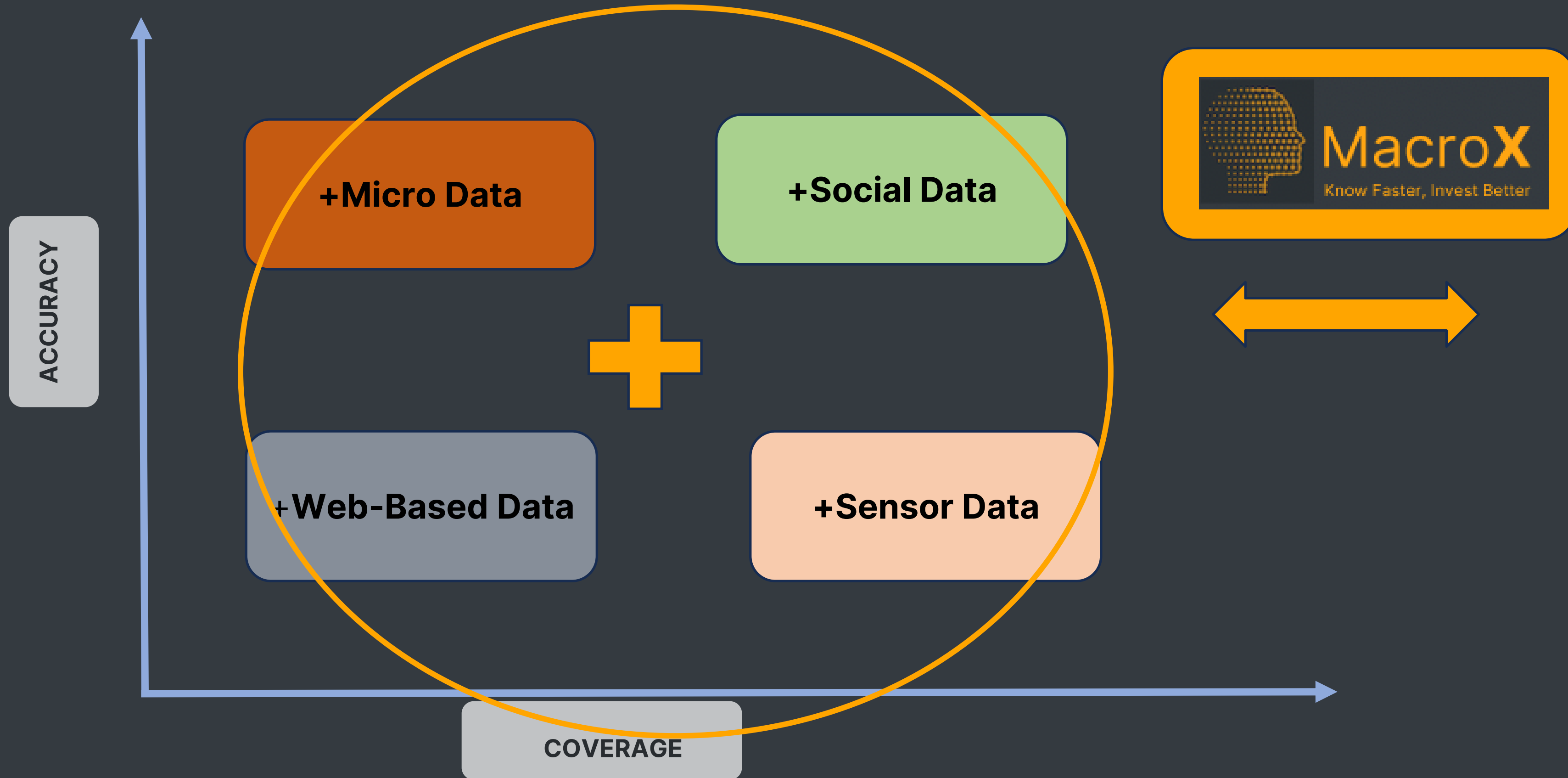


Table 1. Estimated Monthly Sales for Retail and Food Services, by Kind of Business
 (Total sales estimates are shown in millions of dollars and are based on data from the Advance Monthly Retail Trade Survey, Monthly F and administrative records.)

NAICS ¹ code	Kind of Business	Not Adjusted					
		7 Month Total		2025			202
		2025	% Chg. 2024	Jul. ³ (a)	Jun. (p)	May (r)	Jul.
	Retail & food services,						
	total	4,948,491	3.8	744,246	716,470	753,313	713,406
	Total (excl. motor vehicle & parts) ...	3,978,742	3.5	599,623	581,276	608,383	575,432
	Total (excl. gasoline stations)	4,589,556	4.4	688,317	663,001	698,773	655,919
	Total (excl. motor vehicle & parts & gasoline stations)	3,619,807	4.3	543,694	527,807	553,843	517,945
	Retail	4,266,334	3.6	643,681	616,005	647,306	618,432
	GAFO⁴	(*)	(*)	(*)	129,204	137,385	127,872
441	Motor vehicle & parts dealers	969,749	5.0	144,623	135,194	144,930	137,974
4411, 4412	Auto & other motor veh. dealers .	890,093	5.3	132,678	123,574	132,807	126,311
44111	New car dealers	(*)	(*)	(*)	102,115	110,366	105,061
4413	Auto parts, acc. & tire stores.....	(*)	(*)	(*)	11,620	12,123	11,663

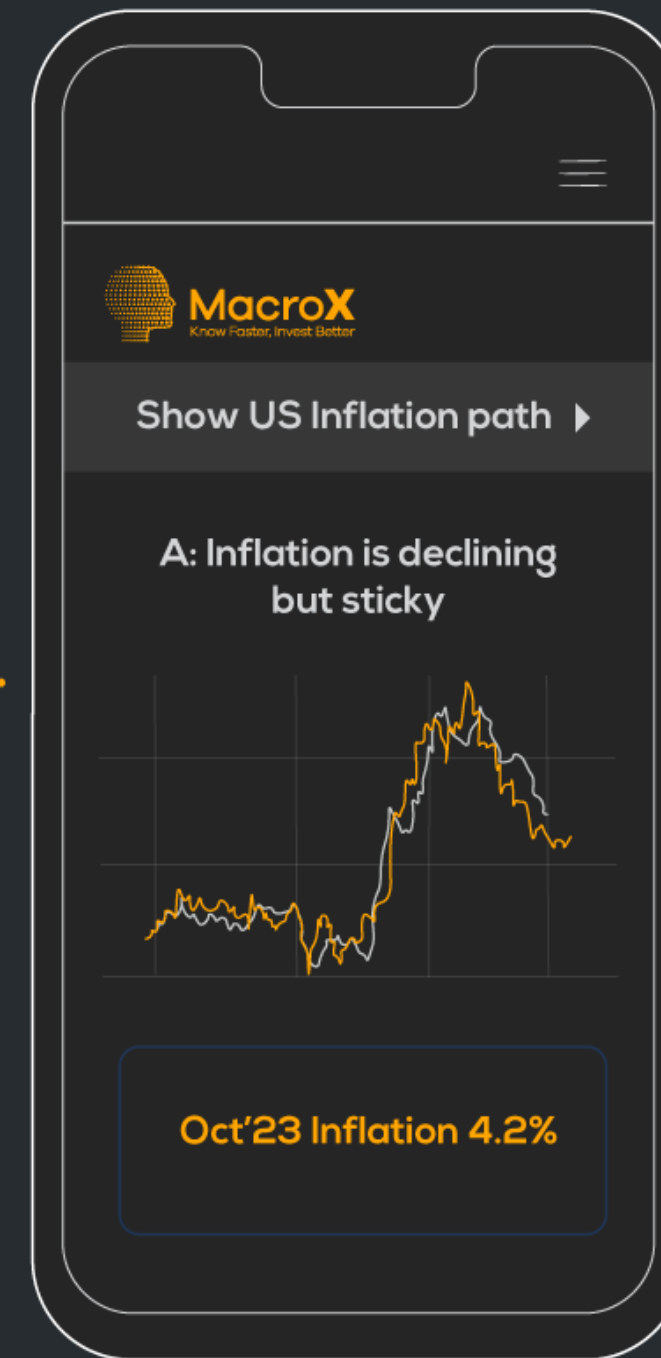
**Key Gov't. Data
(e.g. Retail Sales)**

> MACROX'S MULTIMODAL AI ENGINE

Know Faster



Work Smarter



Invest Better

- ▶ Im Faster growth & inflation
- ▶ Central Bank Stance
- ▶ Risk Management
- ▶ Better Ratings
- ▶ Sector Deep Dive & KPIs
- ▶ AI-backed Global Macro ETF

> POWERS THE NEXT GEN OF MACRO INFORMATION

DATA DIMENSION	GOVT. DATA	SINGLE ALT. DATA	MACROX COMBO ALT. DATA	DETAILS
LOW REVISIONS	✗	✓	✓	<ul style="list-style-type: none"> MacroX Huge Sample Size => Low Revisions
FAST	✗	✓	✓	<ul style="list-style-type: none"> MacroX => 1-3 Months Faster
UNBIASED	✓	✗	✓	<ul style="list-style-type: none"> MacroX Engine combines MANY Alt data & CALIBRATES carefully to government data detail => Low Bias
HISTORY	✓	✗	✓	<ul style="list-style-type: none"> Gov. Data 50Y MacroX 20Y Typical Alt. Data 5-7Y
COST	✓	✗	✓	<ul style="list-style-type: none"> Gov. Data Free; MacroX \$25K Single Alt. Data + Expert ~ \$250K

> EACH SIGNAL HAS A PIPELINE (WE HAVE >1000)

PIPELINE 1



THE INNOVATION GAP

"Scaling domain expertise is the hardest problem"

PIPELINE 1000



The Difficulty

Making a production-level signal from noisy alternative data is a tough problem with many complex steps as illustrated on the left. Most firms struggle to implement even one of these pipelines.

The best firms with access to experts, data, and compute still take ~1 year to put an alternative data signal into production.

Away from the technology, compliance & legal hurdles alone take firms ~ 3 to 4 months/vendor

MacroX is 100X+ faster as we can implement a signal in ~ 0.5 Weeks.

> EACH SIGNAL IS LIKE AN ACADEMIC PAPER - QUITE A FEW ARE PUBLIC

MACHINE LEARNING AND DATA SCIENCES FOR FINANCIAL MARKETS

A Guide to Contemporary Practices



EDITED BY
Agostino Capponi & Charles-Albert Lehalle

Alternative Data and ML for Macro Nowcasting

45 Pages - Posted: 4 Dec 2022

Arun Jain

ManoffStallie, Harvard Business School, Microsoft Corporation - Microsoft Research - Redmond

Date Written: October 25, 2022

Abstract

Worldwide macroeconomic data suffer from three fundamental problems - high dimensionality, a staggered release schedule, and poor data quality. Nowcasts are a popular set of tools that address the first two problems, and the advent of alternative or Big Data offers a chance to address the poor data quality. In this chapter, I provide an overview of nowcasting techniques, discuss the need for an ex-ante hypothesis to guide alternative data selection, and compare typical alternative datasets to traditional data on several quality dimensions such as timeliness and granularity. Finally, I present a case study that establishes that search data can statistically and economically significantly improve US government employment data along the timeliness and accuracy dimensions - a novel result. The case study nowcasts revisions to Non-Farm Payrolls (NFP) three months in advance of the government data, proves these revisions are news and not noise in the framework of Mankiw et al. (1984), controls for Wall Street analyst predictions, and finds that machine learning techniques such as random forest and elastic net provide a substantial improvement over traditional linear regression methods.



Figure 1.1.11: Sample data quality hypotheses for a few commonly used alternative datasets.

Further Reading

The conceptual methodology described in the main text can be supplemented with some additional readings below.

- The conceptual framework is most easily accessed in book chapters *Macro Forecasting Using Alternative Data* (Elsevier, 2019) [19] and *Alternative Data and ML For Macro Nowcasting* (Cambridge University Press, 2023) by Jain [2]
- To understand how individual signals can be made - *The Psychology Of Job Loss*, (ICWSM, 2016) [80] is a good reference. This paper shows how Twitter data can be used to nowcast changes to the unemployment rate.
- An example of leveraging accounting signals to nowcast GDP better than consensus up to a few quarters ahead can be found in "Is Accounting Useful for Forecasting GDP Growth? A Machine Learning Perspective" [21].
- An example on web-scraping of investor forum data can be found in *Echo Chambers in Investment Discussion Boards* (ICWSM, 2017). This paper contains details on scraping Yahoo and iHub data and shows how "echo chambers" are formed, which contain little useful information for prices, but do predict trading volume and volatility.

MacroX outputs

> MACROX'S PRODUCT



MACROX NOWCAST+

Real-Time Growth:

- ✓ 2W+ faster than PMI, 1M+ faster than govt data
- ✓ DM: USA, UK, CAD, AUD, NZD, EU (European Union)
- EM: Mexico, Brazil, China, India

Real-Time Inflation:

- ✓ 1M+ faster than govt data with 3M path forward

1 to 3-months ahead Citi Surprise

- ✓ Significant, market moving and orthogonal information

3-months Ahead Wage growth:

- ✓ Leads govt. Metrics like Atlanta Fed Wage Tracker

Interactive Dashboard

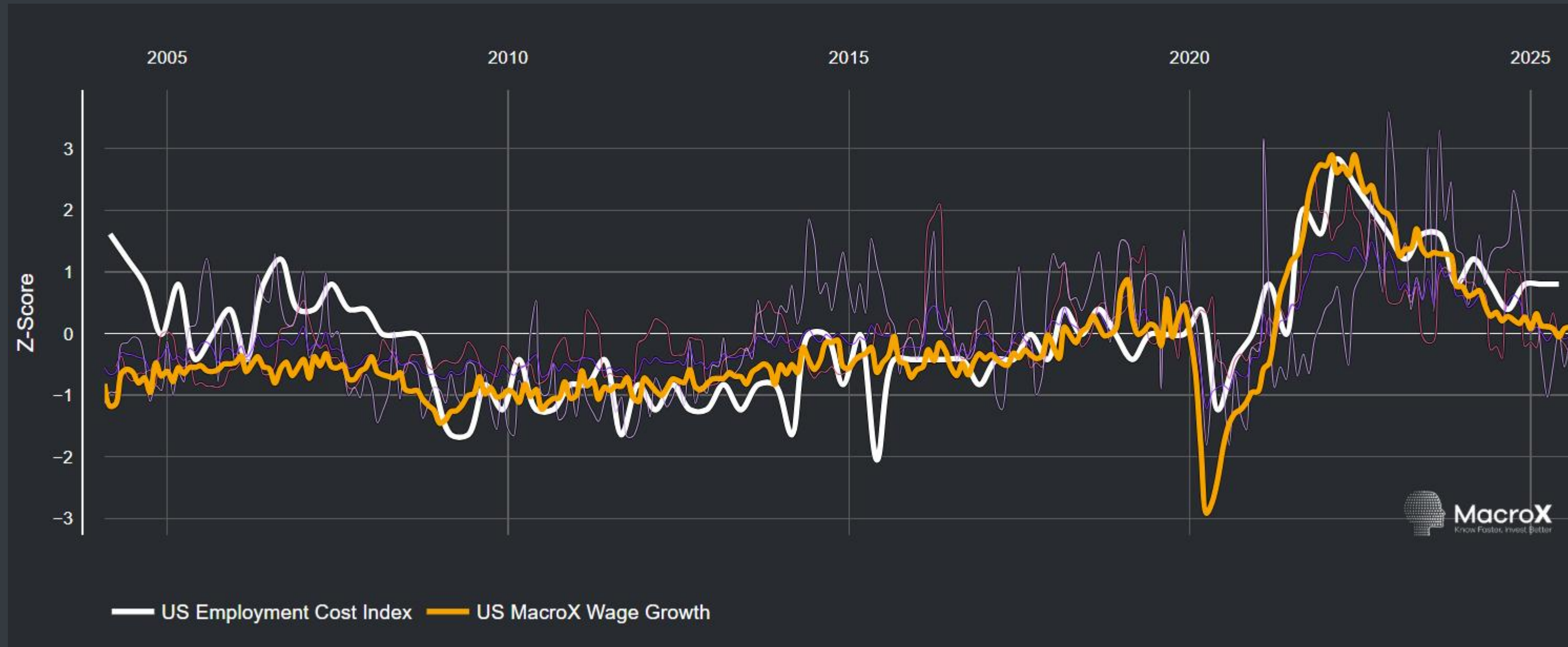
- ✓ Easy graphic comparison

All Signals Downloadable via API

- ✓ History: 2004-today
- ✓ Sub-nowcasts: satellite, corporate, labor, social, sensor, news
- ✓ Point-in-time and revision history available



> MACROX'S PRODUCT: Wage Growth which statistically dominates Indeed



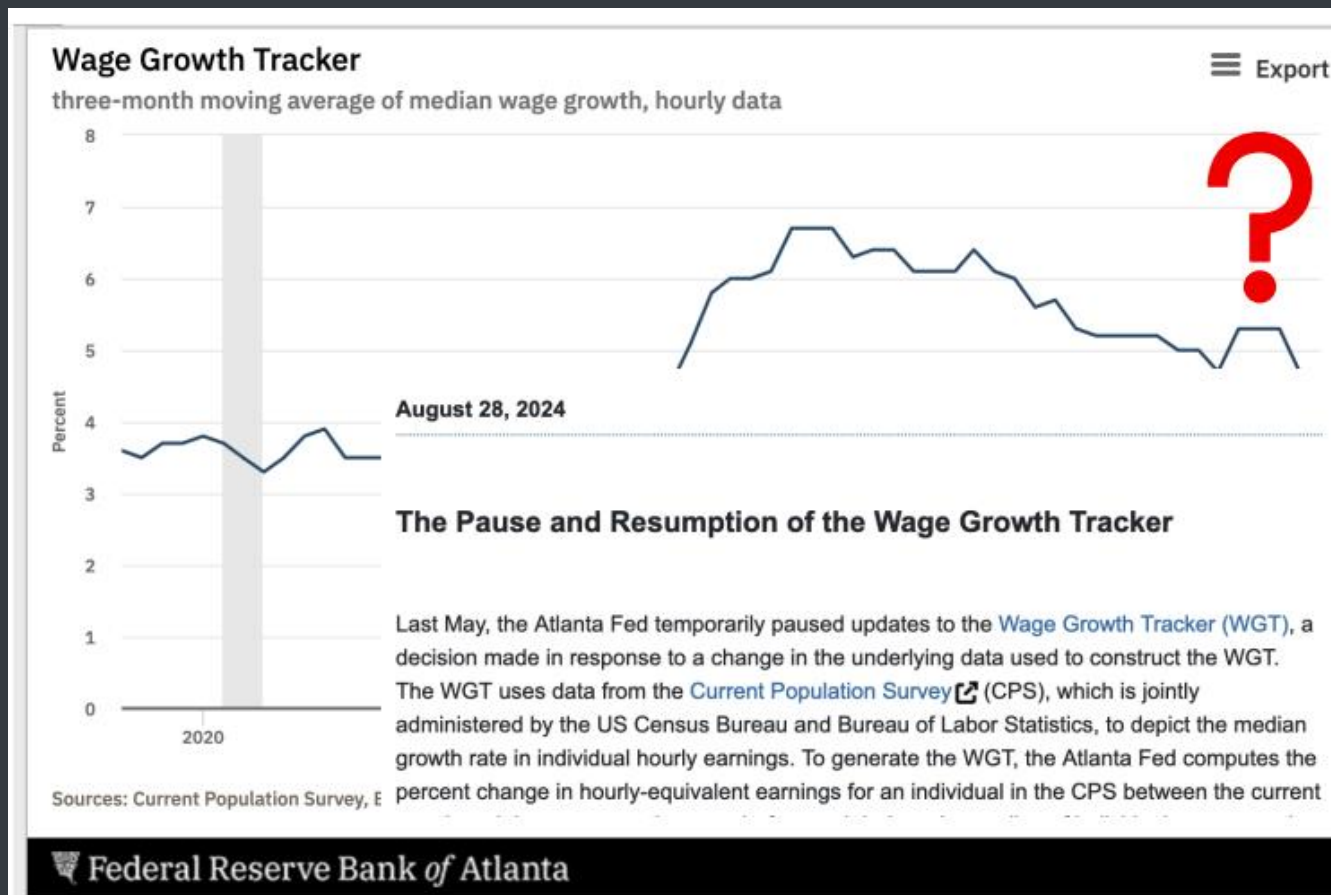
OLS Regression Results

```

=====
Dep. Variable:   Employment_Cost_Index   R-squared:         0.679
Model:          OLS                    Adj. R-squared:    0.649
Method:         Least Squares          F-statistic:       22.25
Date:          Sat, 15 Mar 2025         Prob (F-statistic): 6.51e-06
Time:          01:06:27                Log-Likelihood:    -19.078
No. Observations: 24                  AIC:               44.16
Df Residuals:   21                    BIC:               47.69
Df Model:       2
Covariance Type: nonrobust
=====

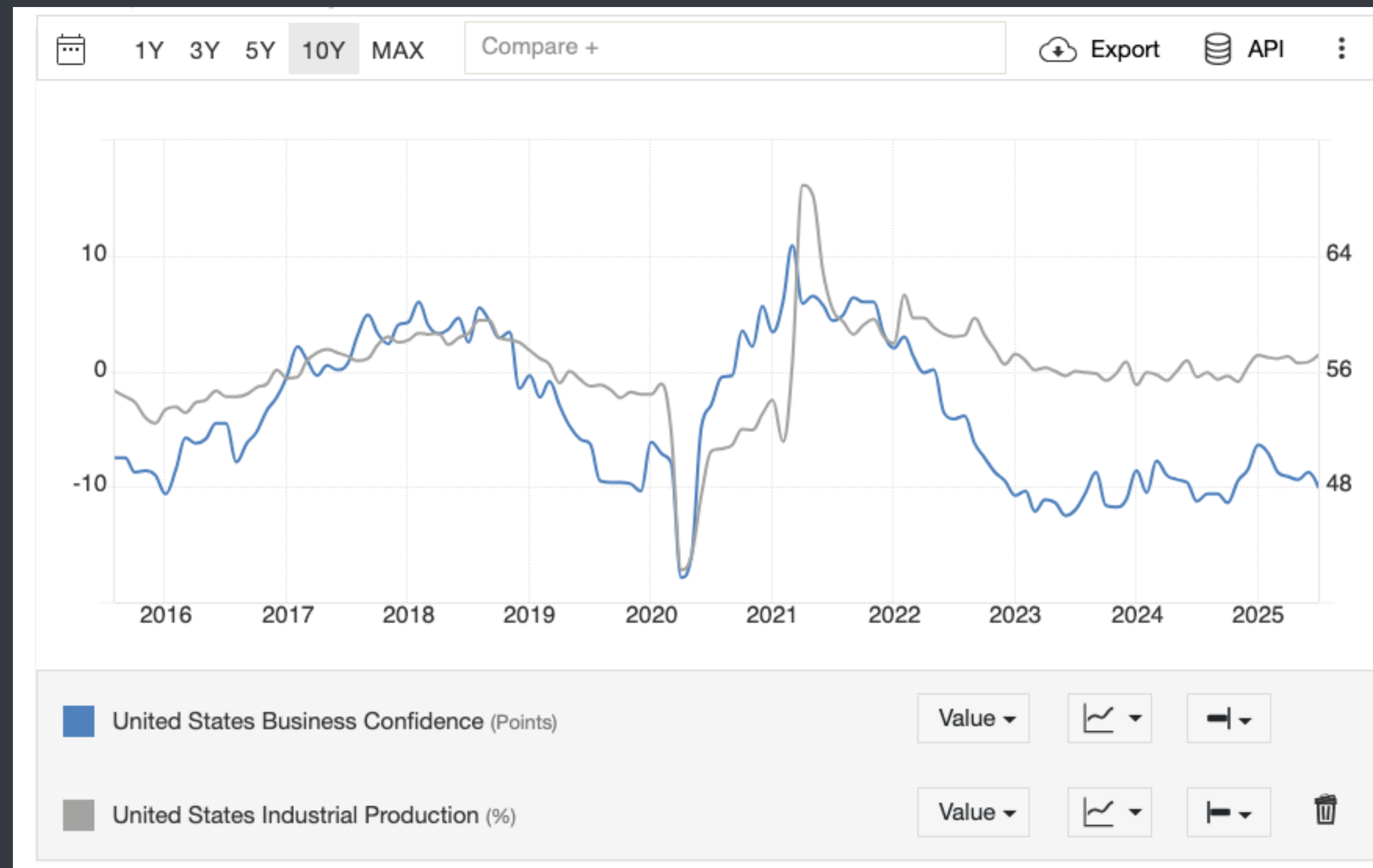
```

	coef	std err	t	P> t	[0.025	0.975]
const	0.0265	0.377	0.070	0.945	-0.757	0.810
MacroX_Wages	0.4245	0.155	2.738	0.012	0.102	0.747
indeed_wages	11.2059	9.107	1.231	0.232	-7.732	30.144

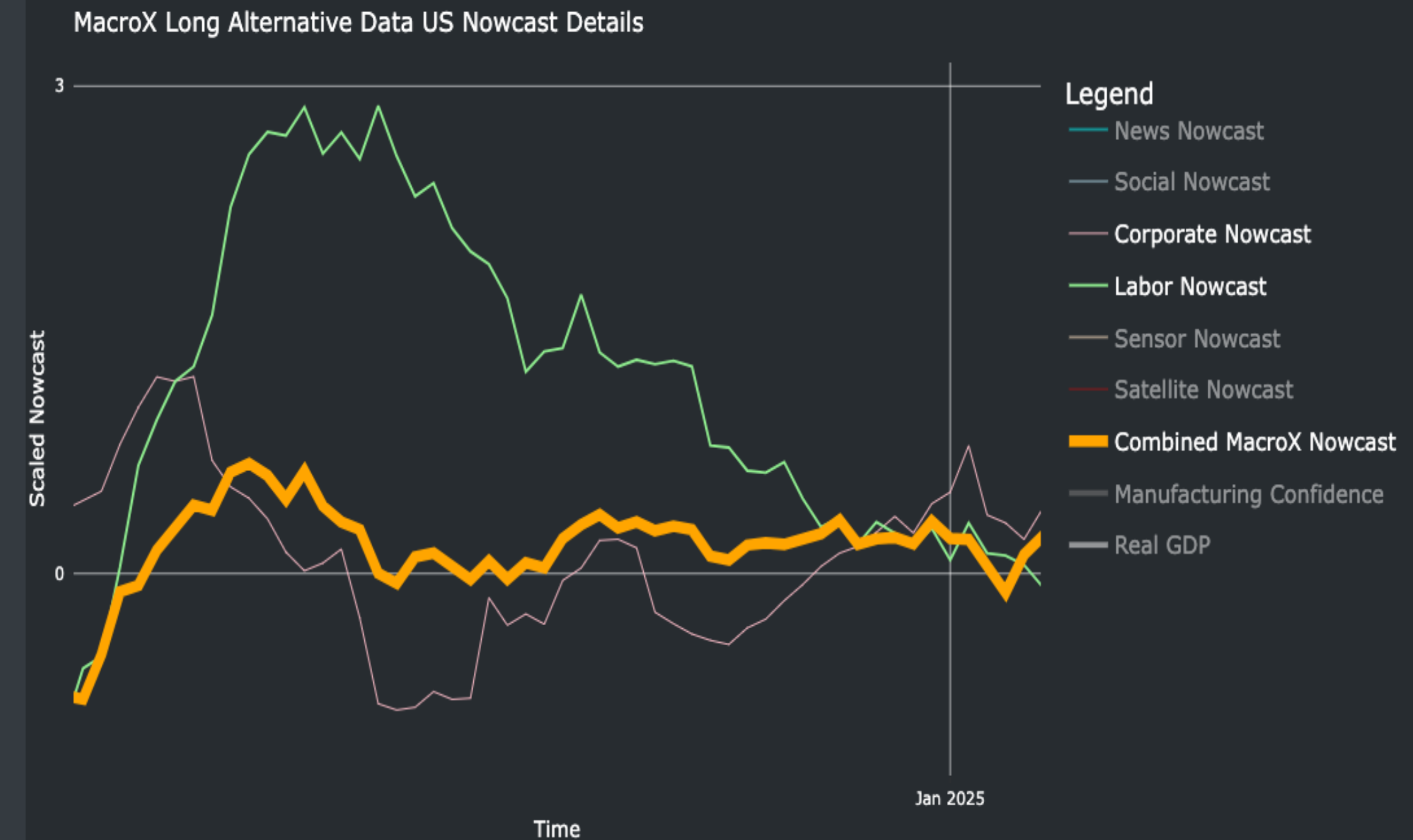


Track Record

Recently, PMI & YC Inversion failed: 2023 was NOT a recession



ISM Manufacturing PMI (blue) seems to have been underestimating the actual Industrial Production (grey) recently



More complete MacroX data shows that Workers (green) were structurally doing better than Corporates (pink) and the overall activity (gold) was OK in 2023 onwards. PMI perhaps overindexes on C-Suite sentiment and hence was not as accurate

Please get in touch!

communications@macroxstudio.com