Nonfarm Payrolls: Why are they revised and should you care

Key Takeaways:

- NFP is one of the most important macro releases in the world as it moves financial markets and is seen as an indicator of the business cycle turning.
- Recent revisions to the NFP have been particularly large and with President Trump firing the BLS chief there is increased scrutiny of these data and chatter about potential political motivations in their production
- MacroX finds that these large NFP revisions are not random and knowing them earlier could help make better investing and policy decisions
- Crucially we believe that rather than reflecting any incompetence or political leanings these revisions are an inevitable product of the survey sampling methodology used by top agencies worldwide - one which has been quite valuable for generating high quality data but is suffering from declining response rates and models which can not cope with structural breaks

In the first in a series of posts about the US labor market, MacroX deep-dive into the most important labor market release - nonfarm payrolls. We discuss the process the BLS uses to solve the extremely tough problem of calculating the total number of jobs in the US economy and the drawbacks associated with the approach. We believe that thoughtful use of alternative data can help complement the government survey methods - we will share how in future posts.

Nonfarm payrolls - why are they important?

Nonfarm payrolls is the "most important (economic) data release in the world" according to Baumol 2013 and, along with the unemployment rate, one of the most timely labor market indicators released by the Bureau of Labor Statistics (BLS) every month. The change in non farm payrolls indicates the net level of job growth the previous month and is a key indicator of the health of the US economy. Negative payroll surprises generally mean a much weaker economy with implications for policymakers (e.g. the Fed is more likely to lower rates) and large "risk-off" market moves (stocks down, bonds up) and vice versa for positive surprises.

Confidence in official economic statistics is increasingly under strain—both due to declining quality and, more recently, political interference.

The reliability of payroll data has come under increasing focus with this year's large revisions in particular raising eyebrows. MacroX saw this distrust first hand at the recent NABE annual meeting where a fellow panellist remarked that, in his former role as an investor, he thought the government data was politically biased. Little did he realise that a former BLS chief was an audience member and, in the subsequent Q&A, asked him to substantiate his claim with evidence or retract it. Our fellow panellist sheepishly retracted the claim and said that he had no evidence that the BLS was politically motivated.

However, this exchange is indicative of a rise in distrust in the economic data provided by the BLS. President Trump has publicly questioned their integrity on a number of occasions while other

prominent commentators have questioned the ongoing reliability of the data (see here, here and here).

Much of this disquiet has been provoked by the BLS' annual benchmarking exercise revised job growth lower by ~0.8m in 2023 and ~0.9m in 2024. Separately, the July payrolls report saw unusually large downward revisions to May and June—cutting 258k jobs, the biggest adjustment since March 2021. The revisions angered the President, who responded by firing the BLS Commissioner. The move sparked controversy across the economics profession and raised fresh concerns about the independence and credibility of government data.

But is this scepticism justified? In this note, we aim to show:

1. How complicated a process calculating the total number of jobs in a country is
2. NFP Revisions (Final-Initial) have been unusually large in 2025
3. NFP Revisions are not random and knowing them faster can improve decision making
4. NFP Revisions are an inevitable consequence of current BLS methodology

1. How does the BLS calculate the total number of jobs in the economy each month?

Calculating the total number of jobs in the US economy is a difficult problem - the current level of jobs in the US economy is estimated at around ~160m and it would be close to impossible to manually count every single employed person in the country. Statistical agencies in the US attempt to calculate the total number of jobs in the economy using two different surveys - the Current Employment Statistics program (CES) and the Current Population Survey (CPS). The change to nonfarm payrolls - i.e. the growth in jobs so obsessed over by financial markets - is the change to the number of jobs reported by the CES (aka establishment survey).

The CES is a monthly sample survey of business establishments and government agencies (i.e. possible employers) to estimate the level of employment in the country. The BLS draws the sample of firms surveyed from a sampling frame of unemployment insurance tax records and the active CES sample comprises around a third of all nonfarm payroll jobs.

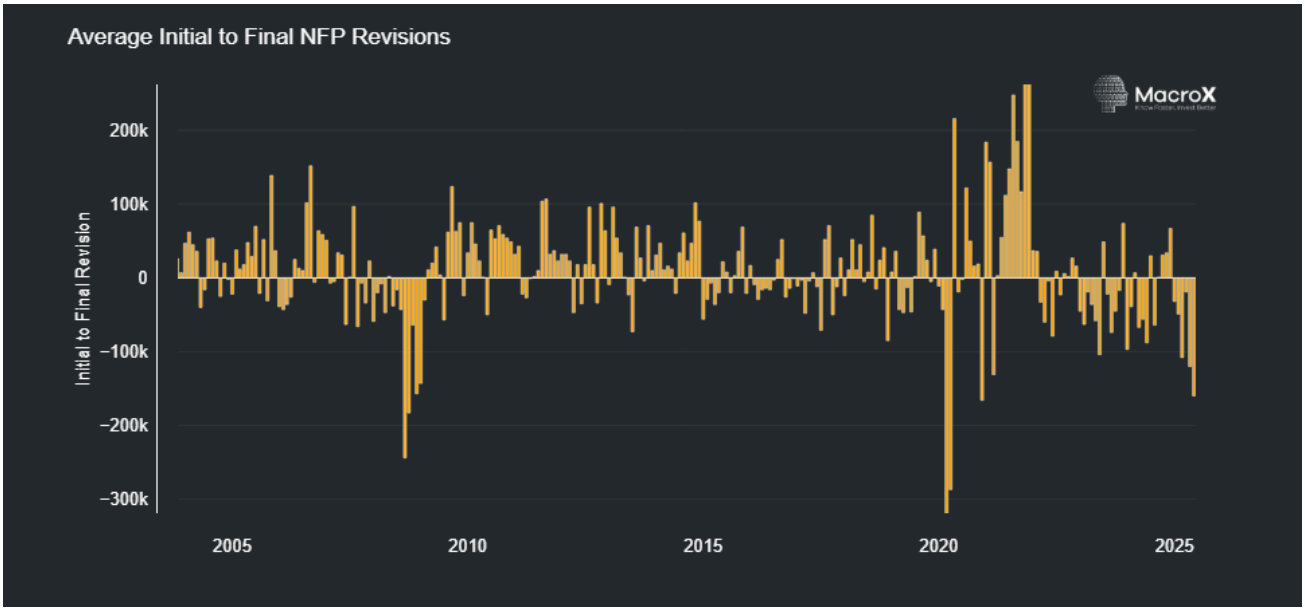

Fig 1: Final-Initial Revisions have been again been unusually negative in 2025

2. NFP Revisions have been unusually large in 2025

So far in 2025, the average absolute revision to payroll growth from the initial to final release is ~81k. This is significantly higher than the revisions we experienced in 2023 (~50k) and 2024 (~48k) and also significantly higher than the pre-covid average of ~50k.

3. NFP Revisions are not random: Knowing them faster can improve investments & policy

The scale of large revisions may not be problematic if they are purely random. In other words, if during downturns revisions are as likely to be positive as negative, the initial release provides an unbiased signal of the true turning point. However, if revisions tend to be systematically negative during bad times—that is, if the initial release understates the depth of downturns—then revisions contain information about the underlying state of the economy. Unfortunately, as the below chart shows, it does seem as if negative revisions cluster around recessionary periods.

Following the seminal "News or Noise" framework of Mankiw and Shapiro (1986), we test whether NFP revisions represent news (the arrival of new information) or noise (the correction of measurement error). Specifically, we test whether the initial or the final payroll estimate is statistically related to the associated revision, using data from 1964 onward.

Table 10: Noise Regressions 1964-

	Entire Sample	1964-2019	1964- (exlcuding 2020)
Intercept	13,590***	18,230	18,040
	(4.43)	(5.41)	(5.15)
Initial Payrolls(t)	**0.01*** **	-0.01	-0.01
	(3.88)	(-0.79)	(-0.70)
Observations	728	662	716
Regression F-stat	**15.02*** **	0.63	0.49

(Monthly) US NFP Revisions(t) ~ Constant +Initial NFP Release(t)

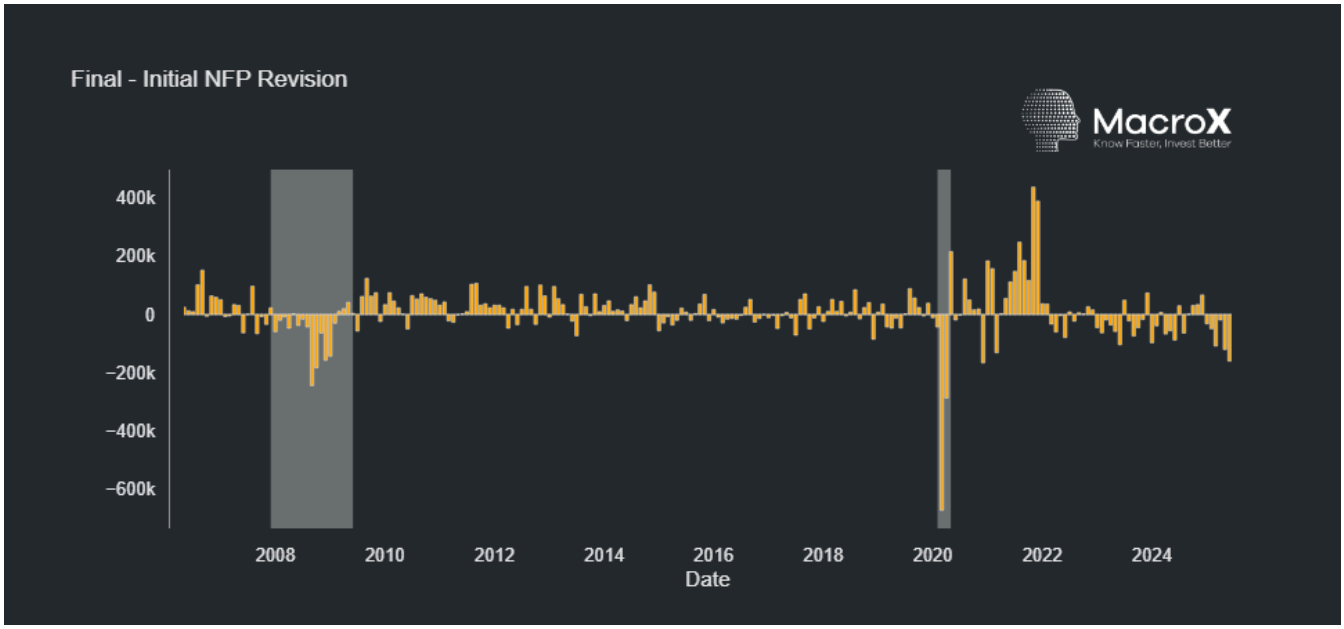

Fig 2: Large negative NFP revisions tend to cluster around recessionary periods

Table 11: News Regressions 1964-

	Entire Sample	1964-2019	1964- (exlcuding 2020)
Intercept	12,110***	524	-2158
	(6.62)	(0.16)	(=0.64)
Final Payrolls(t)	**0.02*** **	**0.12*** **	**0.12*** **
	(6.62)	**(8.99)**	**9.66**
Observations	728	662	716
Regression F-stat	**43.86*** **	**80.79*** **	**93.33*** **

(Monthly) US NFP Revisions(t) $\sim$ Constant +Final NFP Release(t)

The above regressions show that, for the entire sample, both final and initial payrolls are statistically related to revisions i.e. revisions are a mix of "news" and "noise". However, when we exclude 2020 from the sample (2020 being a massive outlier year due to the impact of the pandemic), the initial release is no longer related to the revision but the final release remains significant. Hence, if you exclude 2020, revisions seem to be "news" i.e. they convey information about the actual level of payrolls and are not random.

Therefore, we should care about the level of revisions as they convey information about the state of the economy. Hence knowing revisions faster enables a better understanding of the business cycle which would improve investment and policy decision-making.

4. Why Non-Random NFP revisions are almost impossible to avoid with current sampling methodology.

The current sampling methodology results in revisions due to two main reasons:

1) Final-Initial revisions which reflect the updating of the payroll data due to lagging responses
2) Benchmarking revisions which aim to correct for the incomplete nature of the BLS sample (specifically it can not capture employment from new businesses)

Final - Initial Revisions

The current methodology used by the BLS will inevitably lead to revisions due to a number of issues. Firstly, firms surveyed by the CES report back employment for the pay period that includes the 12th day of each month. Typically around ~66% of respondents reply in time for the initial or first payroll estimate each month. However, by the final release (which is released two months after the initial release), the BLS typically has responses from >90% of respondents - improving the sample size by ~50%. Therefore, the increased response rate has the potential to cause significant revisions between the initial and final release of each payroll print.

A potential reason why the final-initial revisions are not random during recessions is that during downturns, firms facing financial stress may deprioritize responding to BLS surveys. As a result, businesses experiencing job losses are less likely to report promptly and may be missing from the initial payroll estimate. This response bias can cause early payroll figures to be overstated and help explain why downward revisions tend to cluster during recessions.

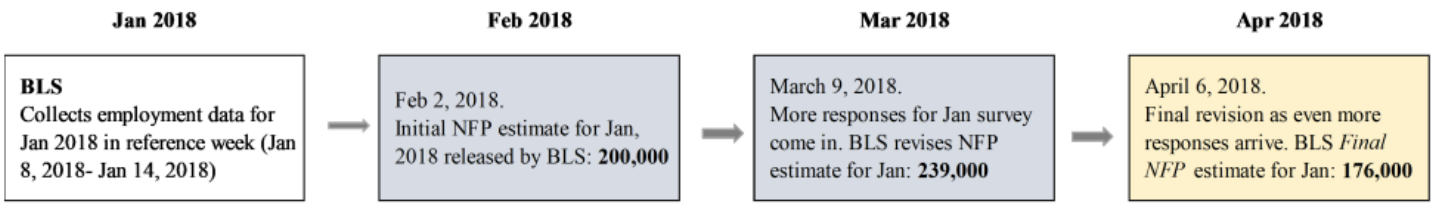

Fig 3: The Payroll release timeline from counting to final release. Source: Jain (2022)

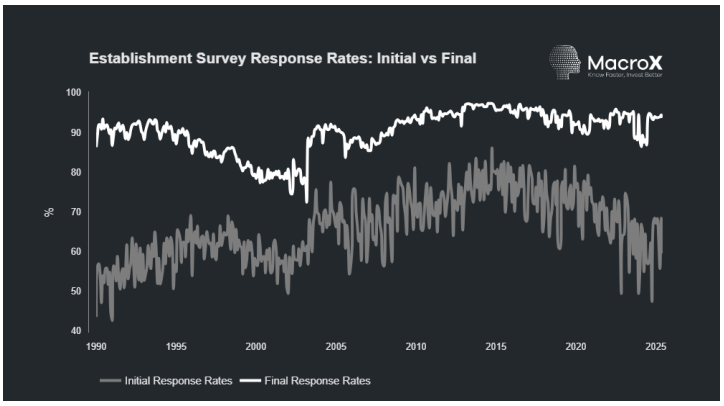

Fig 4: Final CES response rates are far higher than initial - worryingly initial response rates seem also to be on a downward trend

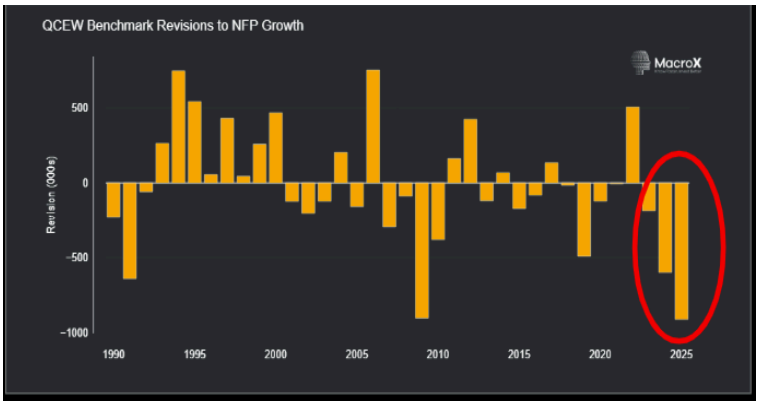

Fig 5: Benchmark revisions have been unusually high post-pandemic

Crucially, initial response rates to the CES seem to be structurally falling which will increase the potential size of revisions going forward. Unfortunately, this fall in response rates is a crisis for statistical agencies across the developed world and not unique to the US. The quality of UK macroeconomic data has been repeatedly questioned by policymakers and dwindling response rates have also forced the Canadian statistics agency to experiment with alternative approaches.

Benchmark Revisions

Furthermore, the jobs numbers are also revised annually by "benchmarking" to the QCEW. These benchmark revisions have risen by ~2x in the 2020s compared to 2010s

This is not a sign of sinister intention by the BLS but reflects the methodology they use to track changes to the employment level from the creation and death of businesses. The BLS has no way of tracking employment by newly opened businesses (as they will not be in the CES sample) and most businesses which close will not update the BLS of this fact until well after the event. In order to account for this, the BLS uses the "birth-death" model which forecasts the number of businesses opening and closing from historical trends. Prior research by the BLS has shown the birth/death model has improved the accuracy of the CES payroll estimates. However, over the past two years, the birth/death adjustment has consistently overestimated the gains to employment from the business formation and closures.

The below chart shows actual job gains/losses from the Business Employment Dynamics survey the BLS produces to track the impact of business closures/openings. The sharply declining trend in job gains from business/deaths can be seen and shows the drawbacks of relying on past historical data to forecast current jobs gains from birth/deaths - structural breaks in the series can cause large issues with any modeling technique.

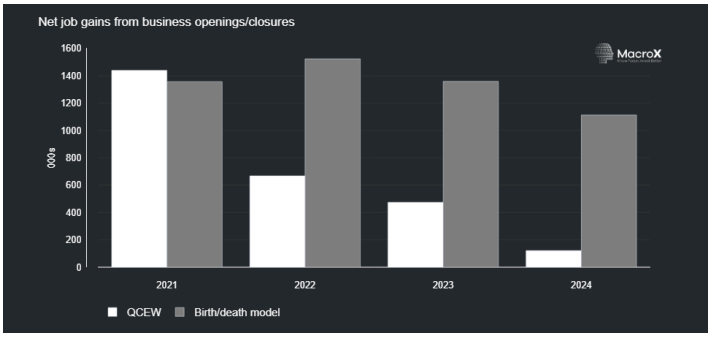

Fig 6: The birth/death model has forecasted job gains from openings and closings of businesses to be relatively stable since 2021 while actual job growth, as shown by the Business Employment Dynamics survey, has declined significantly

What is the reason for this recent overestimation? 2021 and 2022 saw a massive spike in net business formation which has since normalized. The BLS models employment gains from birth/deaths by extrapolating from the previous 5 years of QCEW data and the BLS themselves recognise the accuracy of these forecast rely on "*predictable seasonal patterns*" but that "*sharp trend changes..can result in large forecast errors*". Hence, the surge in net business formation in 2021 and 2022 and its impact on the BLS model is the reason behind the consistent recent overestimation of employment from birth/deaths.

Conclusion

In the note we discussed how the inevitability of sampling leads to the NFP revision issues which afflict not only the BLS but other respected agencies worldwide that are engaged in this challenging task. These fundamental sampling issues are particularly challenging around turning points - exactly when having accurate macroeconomic information would be valuable. In other words the revisions are "new" not "noise" and knowing them earlier can help investors and policy makers.

In the next few posts we will discuss how alternative data can complement these government data especially around turning points.

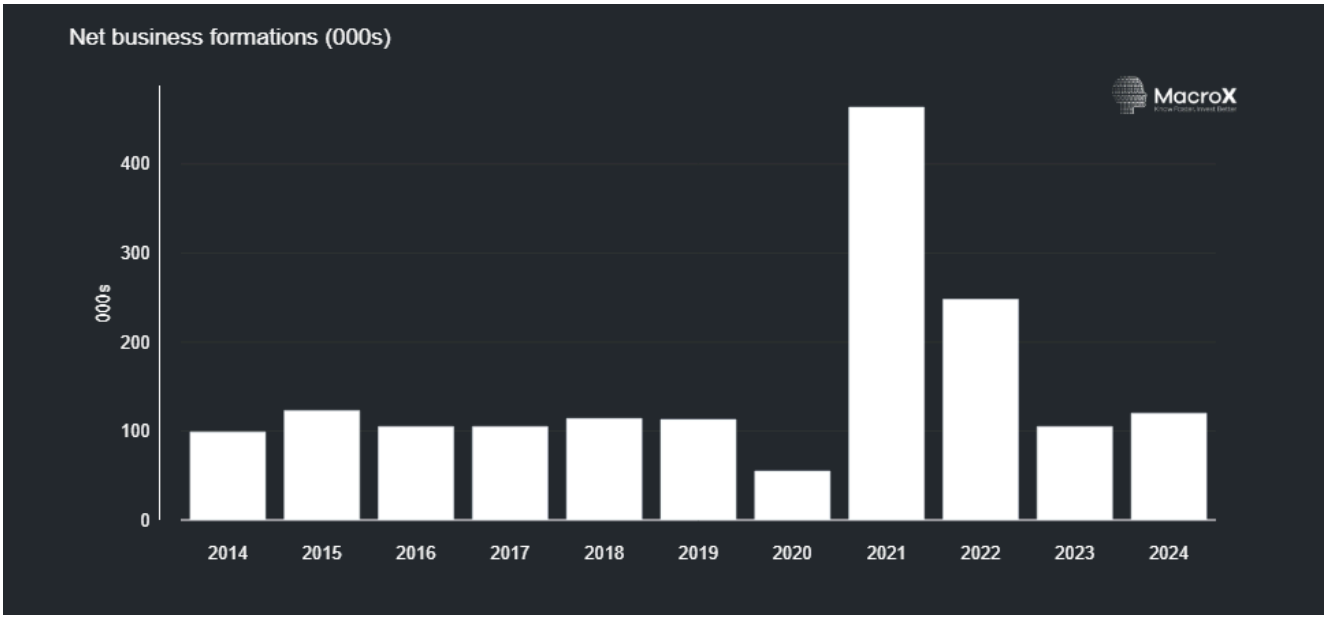

Fig 7: Net business formation surged in 2021 and 2022 but has since normalized - this surge is biasing the BLS' birth/death model upwards. Source: BLS Business Employment Dynamics survey.