# SHORT-TERM EMPLOYMENT DYNAMICS IN TÜRKİYE: POTENTIAL LIMITATIONS OF THE HOUSEHOLD LABOUR FORCE SURVEY

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**Summary**

Back in 2021 the Turkish Statistical Institute increased the sample size of the Household Labour Force Survey so as to provide independent monthly estimates of the labour market. This research brief analyzes the effects of passing from 3 month moving average stats to monthly ones in terms of the HLFS capacity to assess short-term labour market dynamics. It does so by comparing official monthly figures on formal employment from the Social Security Institute and from the HLFS, both seasonally adjusted and without adjustment. The results show that the shift to monthly stats has worsened an already weak link regarding employment growth between the HLFS and SGK figures. Moreover, it shows that seasonally adjusted figures, especially after the 2021 change, should be avoided to understand the short-term evolution of employment due to the limited information carried.

## Introduction

In January 2021, the Turkish Statistical Institute (TÜİK) implemented significant changes to the Household Labour Force Survey (HLFS) to enhance the quality and comparability of Turkey's labor market statistics including a better alignment with International Standards. More specifically the revisions were driven by the need to comply with updated definitions and concepts from the International Labour Organization (ILO) and the European Union's statistical agency (Eurostat). This alignment ensured that Turkey's labor statistics are

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internationally comparable and adhere to globally recognized methodologies including recommendations coming from the 19th International Conference of Labour Statisticians (ICLS). As part of the above-mentioned changes TÜİK also transitioned to monthly reporting. Prior to 2021, TÜİK reported labor force statistics using rolling three-month averages, which smoothed short-term fluctuations but did not allow for short-term labour market analysis regarding month-to- month variations. Starting in January 2021, TÜİK began publishing independent monthly estimates, providing a more granular view of labor market dynamics. This shift, in principle, was intended to allow for more timely and responsive policy-making and analysis.

## 1. Aim and data sources

Bu This research brief analyzes, precisely, the extent to which the transition to independent monthly estimates has improved the ability to use HLFS stats for short-term policy making. It does so with formal employment,[1] one of the few indicators present in the HLFS for which a counterpart from administrative sources exists and is publicly available. Given the way the HLFS defines formal employment, it makes sense to compare it with the figures offered by the Social Security Institute (SGK) regarding active contributors.[2] The figures obtained from SGK include all workers, public and private sector employees as well as self-employed workers. The same goes for the HLFS figure on formal employment, including all types of statuses in employment conditional on being registered in the SGK. Both time series should, therefore, be identical, yet they are not. The HLFS captures higher frequency labour market activity by measuring employment during the reference[3] week whereas SGK offers a lower frequency measure capturing every person who have spent at least a day registered during the respective month. As a result, SGK employment figures will always be higher than their

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[1] Formality is defined as a job where a worker is registered in the Social Security Institute because of the job, and not because of a family member.

[2] Namely thoseunder 4a (private sector employees), 4b (self-employed) and 4c (civil servants). These three categories were unified in 2006, they were previously known as SSK, Bag-Kur and Emekli Sandigi respectively

[3] Usuualy the week prior to the interview.

HFLS counterparts (see Figure 1).

Figure 1: Formal employment, monthly series
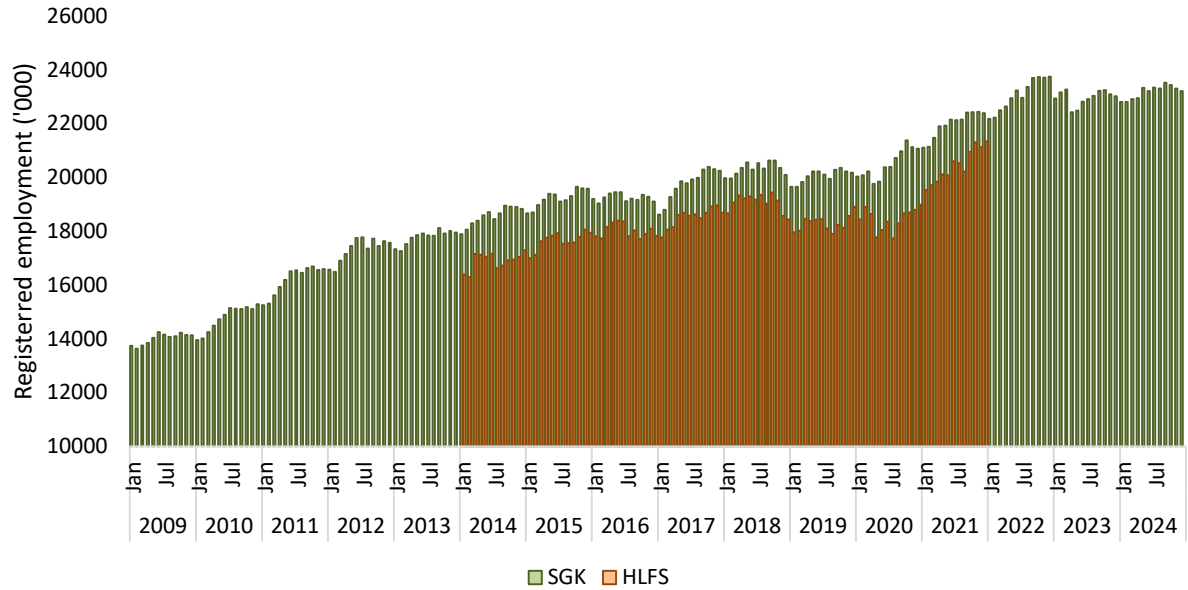


*Source:* Social Security Institute and Turkish Statistical Institute. *Notes:* The figure shows monthly values on total registered employment in Turkiye.

Although SGK employment figures are higher than those reported by the HLFS there is a common pattern; they seem to co-move, with perhaps, the period of COVID-19 where the gap between the series opening up. The anti-COVID19 legislation enacted in early 2020 is probably behind the separation of these two series; since dismissals were banned SGK figures did not decrease much. The same should have been measured by TÜİK as in theory people that were expected to return to work were considered to be employed, however it seems like TÜİK may have interpreted certain labour situations in a slightly different way. Since we do not have the answers to the exact set of questions asked to determine whether a person is employed or the questionnaire implementation instructions it is hard to interpret the separation of these two-time series any further.

## 2. Analysis

Based on the above figure there is little doubt about HLFS's ability to adequately

measure formal employment long-term trends and those of other labour market stats for the matter being. The question is whether we can trust TÜİK figures to assess short-term labour market dynamics. Three measures are used to assess suitability. First of all, the correlation between some HLFS's variables and SGK employment levels. It should be noted that all mentioned series have a strong trend and are integrated,[4] meaning that correlations among the levels would always be high even if no actual relationship is present. First differences are taken for the correlation coefficients shown in Table 1.

From Table 1 it can be seen that correlations in levels are indeed very high due to the mentioned trend issue. As for the variables where first differences are taken, correlations between first differences in raw data (non-seasonally adjusted data) are sensibly higher than those carried by the seasonally adjusted[5] counterparts. This is expected as series adjusted for seasonality are intended to detect long- term trends. More importantly for the matter at hand is the fact that the correlations seem to decrease after the change in methodology in early 2021. For instance, the correlation between the HLFS measure of formal employment (unadjusted) went down from 0.61 to 0.38. That, independent monthly reporting may have done more harm than good in terms of understanding short-term dynamics.

Table 1: Correlation with SGK employment.

| HLFS variable | Levels | First differences | | |
|---|---|---|---|---|
| | Full period | Full period | Pre 2021 | Post 2021 |
| Employment | 0.97 | 0.56 | 0.64 | 0.38 |
| Employment (adjusted) | 0.97 | 0.24 | 0.30 | 0.12 |
| Formal employment | 0.93 | 0.60 | 0.61 | 0.38 |
| Formal employment (adjusted) | 0.90 | 0.15 | 0.15 | 0.03 |

Note: The table shows correlations between certain HLFS variables and SGK employment. Adjusted refers to seasonal adjustments.

It is hard to assess correlation coefficients, though. What is a high enough

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[4] Dickey-Fuller tests suggest all of them are integrated or order

[5] Seasonally adjusted employment is directly retrieved from TUIK. The seasonal adjustment of formal employment is carried out by myself using linear regression with month dummies to facilitate the comparison. It should be noted that TUIK uses a more advanced method to extract seasonality.

correlation anyway? A more down to earth, policy-making sensible assessment could be carried out by counting how often the HLFS's change formal employment mimicked the sign of the change in SGK employment -which is formal by definition. This is shown in Table 2, where the success rate is compared with two dumb strategies; first, a coin toss acting as the no information benchmark, ie if the HLFS data is close to this benchmark it means the HLFS is nothing but a sophisticated form of white noise. Second, a more informed yet simplistic strategy that bets formal employment always goes up. The assessment of the always up strategy is done by extracting the share of months that SGK registered employment increased between the 2014-2021 period (0.6), ie it is a long-term strategy that just uses with intelligence the demographics of the country.

Table 2: Success rate identifying SGK sign changes.

| HLFS variable | Pre 2021 | Post 2021 |
|---|---|---|
| Formal employment | 72 | 67 |
| Formal employment (adjusted) | 57 | 50 |
| Always up | 60 | 60 |
| Coin toss | 50 | 50 |

Note: The table shows the share of successes guessing the sign of the SGK monthly employment growth (positive, increase or negative, decrease) of HLFS formal employment series, seasonally adjusted formal employment, a dumb strategy that always claims employment increases and a coin toss strategy, ie half of the time claims to have increased and the other half to have decreased.

The results of Table 2 show that seasonally adjusted data is barely better than tossing a coin and worse than smart but simplistic strategies like the always goes up one. Still, the HLFS's formal employment series seems to carry relevant information, yet apparently, it is both, insufficient (one third of wrong guesses, remember anyone could get half of them right tossing a coin) and decreasing in quality after the 2021 change in methodology. This decrease in quality can also be observed with a more quantitative measures like differences in formal employment growth rates. Monthly growth rates for SGK employment went from -3.6 per cent to 2.7 per cent in the 2009-2024 period. How well did the HLFS capture these short-term movements?

Tablo 2: SGK verisinin yön değişikliklerini tespit etmede başarı oranları.

| HİA değişkeni | 2021 Öncesi | 2021 Sonrası |
|---|---|---|
| Kayıtlı istihdam | 72 | 67 |
| Kayıtlı istihdam (düzeltilmiş) | 57 | 50 |
| Düzenli artış | 60 | 60 |
| Yazı-tura | 50 | 50 |

**Not:** Tabloda, SGK aylık istihdam büyümesinin yönünün (pozitif, artış veya negatif, azalış), HİA verisiyle hesaplanan resmi istihdam ve düzeltilmemiş resmi istihdam verisi, istihdamın her zaman arttığını iddia eden strateji ve zamanın yarısında arttığını, diğer yarısında azaldığını iddia eden yazı tura stratejisi tarafından tahmin edilmesindeki başarı oranları gösterilmektedir.

The statistic developed is the mean absolute growth rate error which is defined as

$$Error = \frac{1}{T}\sum_{t=1} |\hat{g}_t - g_t|$$

where

$$g_t = \frac{E_t - E_{t-1}}{E_{t-1}} \text{ and } \hat{g}_t = \frac{\hat{E}_t - \hat{E}_{t-1}}{\hat{E}_{t-1}}$$

are, respectively, the growth rate of a given HLFS statistic (or other measure utilized for the same purpose) and the growth rate of SGK employment. The measured errors are shown in Table 3 for formal employment, seasonally adjusted formal employment and a simplistic strategy that constantly claims zero growth. The formal employment series of the HLFS made, on average, 1.07 percentage points of error per month before the 2021 methodological change and increased to 1.26 after the change. This is another example showcasing a loss in predictive power of the HLFS even though the intention was to strengthen knowledge regarding short-term labor market dynamics. More shockingly, though, a simplistic strategy predicting no growth during the 2014-2021 period would have outperformed TÜİK's estimates.

Table 3: Mean absolute growth rate error with respect to SGK.

| HLFS variable | Pre 2021 | Post 2021 |
|---|---|---|
| *Formal employment* | 1.067 | 1.259 |
| *Formal employment (adjusted)* | 1.312 | 1.638 |
| *Zero growth* | 0.864 | |

*Note:* The table shows the mean absolute growth rate error by comparing the distance between a number of formal employment growth rates and that of the SGK registered employment. Absolute values are taken so as not to compensate positive and negative differences. The mean monthly error is then calculated and reported. A dumb strategy is included for comparison, an over simplistic no growth strategy.

## 3 Conclusions

This brief has shown that the transition to monthly reporting by TÜİK, while intended to enhance responsiveness and granularity in labour market statistics, may have in fact weakened the short-term informational content of the HLFS regarding formal employment, and, perhaps, other statistics as well. All three evaluation methods — correlation of monthly growth rates, success rate in capturing the correct direction of change, and mean absolute growth rate error— point to a deterioration in performance after the 2021 methodology update.

The findings suggest that users of the HLFS should be cautious when drawing conclusions from monthly or seasonally adjusted data. While the HLFS remains an essential tool for understanding long- term labour market trends and for disaggregated socioeconomic analysis, its monthly signals should not be over-interpreted. In contrast, administrative data such as that from SGK offers a more reliable reference for short-term dynamics and could be leveraged further in policy and research.

Future improvements in labour market statistics in Türkiye may require not only better survey design or sampling, but also a tighter integration of administrative records and household survey data. Until then, researchers and policymakers should be aware of the limits of the current HLFS for month-to-month labour market assessment.