

# SNB Economic Note

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## A timely measure of wage growth on the basis of payment system data

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*We use anonymised transaction data from the Swiss Interbank Clearing (SIC) payment system to construct a measure of wage growth in Switzerland. The resulting measure aligns well with other wage statistics available over the past few years. Compared with other sources, our measure has the important advantage of being available almost in real time. Our measure thus offers a timely picture of wage growth, which is valuable information for the conduct of monetary policy.*

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The primary goal of the Swiss National Bank (SNB) is to ensure price stability while taking due account of economic developments. Prices and wages are closely linked. On the one hand, an increase in consumer price inflation may lead to upwards pressure on wages, as employees want to preserve their purchasing power. On the other hand, an increase in wages means higher labour input costs for firms, which may lead to upwards pressure on prices. When conducting monetary policy, timely information on the development of prices and wages is crucial.

While data on Swiss consumer prices are published on a monthly basis, most wage statistics for Switzerland, such as the Swiss Wage Index, are published at relatively low frequencies and with considerable time lags. These wage data are also typically revised in later releases. Other sources are based on surveys of wage expectations but not on actual payouts.

In this Economic Note, we present a new monthly wage growth measure built from actual wage payments, which is available almost in real time. The measure is based on data from the Swiss Interbank Clearing (SIC) system, which consists of millions of anonymised transactions, including wage payments, per day.

While high-frequency data, including payment data, are increasingly used to provide timely information on economic activity (for Switzerland, see Eckert et al., 2020; Wegmüller et al., 2023; and Felber and Beyeler, 2023), the construction of a timely wage growth measure on the basis of payment system data is novel. Alternative measures of wage growth at a higher frequency have been developed in other countries. One example is the monthly wage growth tracker constructed by the Federal Reserve Bank of Atlanta, which is based on population surveys (Robertson, 2023). For the euro area, the European Central Bank has built a forward-looking wage tracker on the basis of collective bargaining agreements (Górnicka and Koester, 2024).

Our approach offers an informative and timely measure of wage growth on the basis of a large sample of actual wage payments that are not revised. However, our measure has certain caveats. Since we focus on wage transactions between ongoing employer–employee relations, our measure of wage growth does not capture wage adjustments when employees change employers. Moreover, our measure controls neither for changes in the level of employment (hours worked) nor for job rotation within the same company. Finally, we have no information on how well different socioeconomic groups are represented in our sample.

### **Data: Wage transactions from the SIC payment system**

In Switzerland, the large majority of digital payments, stemming from both financial and real activities, are transmitted via the SIC system. The SIC system settles payment transactions between participants, particularly banks, continuously and individually (real-time gross settlement) and is used for both interbank and customer payments, with the latter including wage payments.<sup>1</sup> The system is operated by SIX Interbank Clearing Ltd. (SIC Ltd.) on behalf of the SNB.

The corresponding transaction data are anonymised by SIC Ltd. in such a way that no conclusions can be drawn on any individual payer or payee involved in customer transactions.<sup>2</sup> The data are characterised by timeliness—updated with a delay of just one business day—and the absence of revisions. Moreover, each transaction has several attributes, including the optional attribute “payment purpose”, which has been available since 2018.<sup>3</sup> If the payment purpose states that the payment is a wage payment, then we flag the transaction as a wage transaction and use it to construct our wage growth measure.

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<sup>1</sup> Interbank payments are conducted on account of the financial institutions themselves, while customer payments are payments that banks conduct on behalf and on account of their customers. Real-time gross settlement systems are different from deferred net settlement systems that settle net balances of incoming and outgoing payments at predefined intervals.

<sup>2</sup> The data comprise hashed identifiers of the sender and recipient accounts, which allows the SNB to analyse the evolution of payment flows between accounts over time while ensuring anonymity.

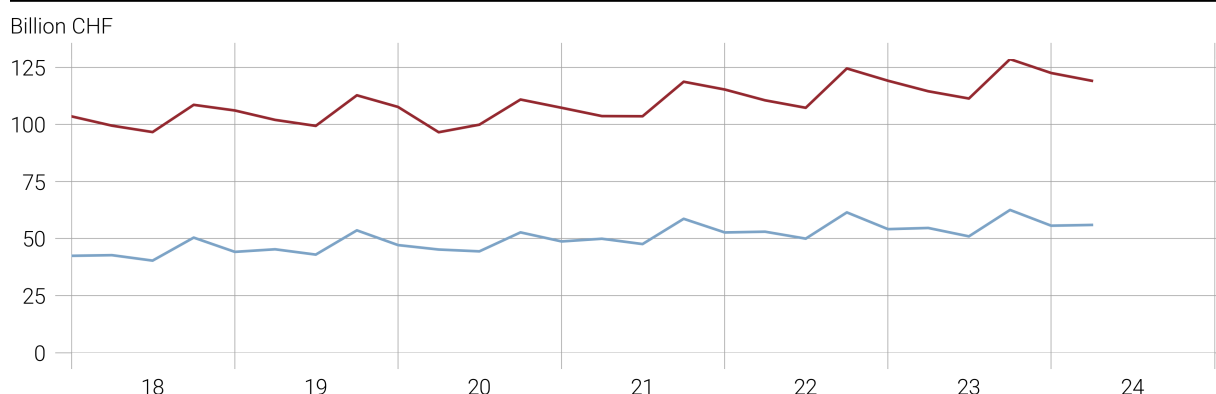
<sup>3</sup> The standard for payment messages in the SIC system is ISO 20022, which was implemented in 2018. Within this international industry standard, some of the transaction attributes are mandatory, while others may be completed voluntarily by the paying participant. For more information, see the SNB report «[The Swiss Interbank Clearing \(SIC\) payment system – report on the SIC system and disclosure report 2023](#)».

Our wage growth measure is based on approximately 42 million wage payments per year that stem from approximately 5 million employer–employee relations in an average year, i.e., wage relations between sender and recipient accounts. The average amount of monthly payouts across wage relations is CHF 4,900.

To validate our data, we compare the total value of wage-flagged payments to the total compensation of employees according to the national accounts provided by the State Secretariat for Economic Affairs (SECO) and the Swiss Federal Statistical Office (SFSO). As Chart 1 shows, the seasonal patterns of the two series are similar. Furthermore, wage-flagged payments capture approximately 50% of the gross wages of all employees in the country. This difference can be explained by the following three factors: i) some wage relations remain unidentified due to missing labels, as the payment purpose is an optional attribute; ii) the national accounts data cover gross wages, whereas the SIC payment data report the effective amount of money transferred to employees (net wages); and iii) so-called ‘on-us’ or ‘in-house’ payments between payer and payees that are clients of the same bank are not settled via the SIC system and are thus not captured by the SIC data.<sup>4</sup>

**CHART 1: TOTAL QUARTERLY VALUE OF WAGE PAYMENTS**

Wage-flagged payments (blue) versus compensation of employees according to national accounts (red)



Source(s): SECO, SFSO, SNB

## Resulting monthly wage growth measure

Our monthly wage growth measure is the median year-on-year growth rate across all wage relations identified. As the payout frequency may be higher than the monthly frequency, we first sum the wage payments per month for each wage relation. We discard all short-lived relations that do not allow us to compute year-on-year growth rates. The use of year-on-year growth rates eliminates the most eminent seasonal patterns, such as higher monthly payouts

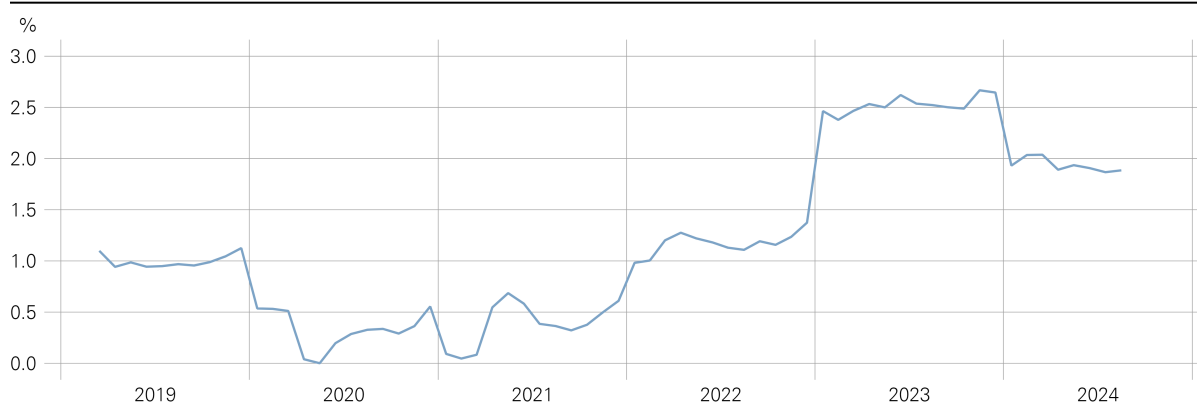
<sup>4</sup> The SNB survey on ‘[customer payments at banks](#)’ suggests that in terms of value, approximately 40% of all payments are ‘on-us’ payments.

due to thirteenth-month salaries. Similar to Robertson (2023), we use the median instead of the mean since the median is not sensitive to extreme observations.

Our measure reveals how wage growth has varied over the past few years. Chart 2 shows the monthly wage growth measure over the available sample period. In 2019, median wage growth was close to 1%. During the pandemic in 2020 and 2021, wage dynamics slowed according to our measure; median wage growth fluctuated between 0% and 0.6%. During these two years, the volatility of wage growth was actually much higher than in the remaining sample period, potentially due to containment measures and the increased use of short-time work.<sup>5</sup> In 2022, wage dynamics picked up and wage growth increased accordingly to slightly above 1%. In 2023, wage growth increased markedly to reach a peak at 2.5%. This increase may reflect the significant postpandemic rise in consumer price inflation in 2022 and a tight labour market, both of which led to the demand for upwards wage adjustments. In January 2024, wage growth slowed to 1.9% and has remained fairly stable since then (as of August 2024).

**CHART 2: MONTHLY WAGE GROWTH MEASURE**

Year-on-year growth rate, median across wage relations



Source(s): SNB

Our wage growth measure aligns well with existing measures. In Chart 3, the solid blue line shows the yearly average of our monthly wage growth measure. Our measure is broadly in line with the other measures in nonpandemic years and particularly in the past two years. In 2020 and 2021, our measure was somewhat lower in value, with only the Swiss Wage Index pointing to even weaker wage dynamics in 2021.<sup>6</sup>

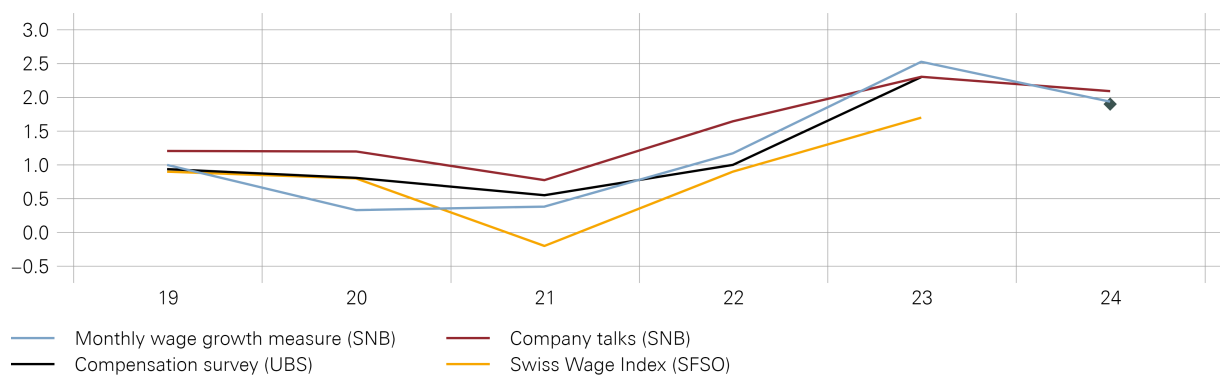
<sup>5</sup> In Switzerland, employers can apply for short-time work via unemployment insurance to temporarily cover a proportion of their salary costs in case they face temporary economic difficulties. In general, compensation for short-time work covers 80% of employees' regular wages. However, firms may decide to continue paying out their full wages.

<sup>6</sup> The Swiss Wage Index is an annual wage growth measure and is published in April of the following year. The SFSO also publishes an estimate for the current year at the end of each quarter, but these estimates are subject to revisions. Chart 3 shows the annual wage growth measure. The UBS compensation survey is conducted once per year in the fall and asks about the effective wage increase in the current year and the expected wage increase in the coming year. The SNB company talks are conducted each quarter and ask about wage developments in the current year and the coming year.

To conclude, our measure of wage growth has the advantage of being based on hard data that are not revised and are available in almost real time. This measure thus offers a timely measure of wage developments, providing valuable information for the conduct of monetary policy.

**CHART 3: COMPARISON TO EXISTING WAGE GROWTH MEASURES**

Year-on-year growth rates, annualised



Note: Solid lines denote realizations, diamonds denote expectations.

Source(s): SFSO, SNB, UBS

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