

South African Reserve Bank Special Occasional Bulletin of Economic Notes

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South African Reserve Bank Special Economic Notes are a collection of descriptive and critical economic analyses with recommendations written for internal SARB discussion. They are written by staff members or fellows of the Economic Research Department and, on occasion, by consultants under the auspices of the SARB. They are released publicly on an occasional basis. This series features internal research on how oil price shocks generate second-round effects, with a specific focus on the 2026 oil price shock.

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Waiting for wages: oil price shocks, wage expectations and wage growth in South Africa

Chloë Allison and Phumlani Mavuma

Abstract

- This note examines how exogenous oil price shocks affect wage expectations and realised wage growth in South Africa. A 40% oil price shock leads to an immediate upward revision in wage expectations across firms, financial analysts and trade unions, while realised wage growth responds with a lag.
- Financial analysts display the strongest immediate response, whereas the response of trade unions' one-year-ahead wage expectations exhibits stronger persistence.
- The delayed response of realised wages is consistent with South Africa's collective bargaining structures and multi-year wage agreements, which may slow wage adjustment following shocks.
- The findings suggest that survey-based wage expectations may provide an early signal of emerging second-round wage and inflation pressures before they become visible in realised wage data.

1. Introduction

Oil price shocks can generate more persistent second-round effects and inflation if they influence wage expectations and wage-setting behaviour (Bank of England 2026). Workers may seek compensation for higher prices through wage increases, raising labour costs and reinforcing inflationary pressures. Wage adjustment in South Africa is partly shaped by collective bargaining, bargaining councils and multi-year agreements, which may delay the response of realised wages to shocks (Bhorat, van der Westhuizen and Goga 2009; Magruder 2012; Bassier 2021).

We examine how oil price shocks affect wage growth and the wage expectations of firms, financial analysts and trade unions in South Africa, and whether higher wage expectations are associated with higher wage growth in the future. We find that wage expectations respond more quickly than realised wages. Following a 40% oil price shock, current-year and one-year-ahead wage expectations are revised upwards across all three respondent groups on impact, while realised wage growth responds with a delay of one quarter. One-year-ahead expectations are particularly persistent among trade unions, suggesting that wage expectations may provide an earlier signal of second-round pressures than realised wage data alone. Higher wage expectations are also associated with stronger subsequent realised wage growth.

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2. What evidence is there of pass-through in other countries?

International evidence on the pass-through of oil price shocks to wages is mixed. Using data for European countries, Baba and Lee (2022) find that oil price shocks pass through to wages, core inflation and inflation expectations, although the magnitude of pass-through has declined over time. Importantly, pass-through is state dependent; it is stronger when inflation is already elevated, when monetary policy credibility is weaker and in emerging market economies (Baba and Lee 2022). This suggests that the risk of second-round effects depends on the size of the shock and the prevailing economic and institutional environment.

Firm-level wage-setting behaviour may also shape the extent of pass-through from price shocks to wages. Rõõm and Dabušinskas (2011), using evidence from Estonia, show that wage adjustment is asymmetric in both likelihood and speed of adjustment: employers react more quickly to shocks that threaten profitability, such as declines in turnover, output prices and productivity, than to shocks that improve business conditions. This suggests that second-round effects following oil price shocks may depend not only on inflation expectations and bargaining outcomes, but also on firms' willingness to adjust wages in response to cost pressures.

Similarly, Bloesch, Lee and Weber (2024) argue that cost-of-living shocks have limited pass-through to wages in the United States, as firms set wages mainly in response to worker turnover rather than changes in consumer prices. In their framework, inflation lowers real wages across all jobs simultaneously, leaving workers' outside options largely unchanged and reducing the scope for wage catch-up and wage-price spirals. Consistent with limited second-round effects, Enders and Enders (2017) find no evidence of wage second-round effects after an oil price shock in the euro area: higher inflation from higher oil prices does not transmit to higher wages. Overall, the literature indicates that pass-through to wages is not automatic, but depends on inflation conditions, labour market institutions, worker bargaining power and firms' incentives to adjust wages.

3. How are wages formed in South Africa?

Collective bargaining, trade union representation and negotiated wage agreements play an important role in wage formation in South Africa. Bargaining councils are the primary mechanism for institutionalised wage setting, negotiating wages and conditions of employment across specific industries and occupations (Bhorat, van der Westhuizen and Goga 2009). A key feature of the system is that collective agreements can be extended to non-parties, allowing negotiated wage settlements to influence a broader share of the labour market (Bhorat, van der Westhuizen and Goga 2009; Magruder 2012).

Many wage agreements are negotiated for multiple years, with future wage increases specified in advance or linked to inflation outcomes (Bassier 2021). Consequently, wages may not respond immediately to shocks such as an increase in oil prices, even when those shocks raise inflation and inflation expectations. Instead, the effects of the shock may only be reflected when existing agreements are renegotiated or when inflation-linked wage clauses take effect. This suggests that realised wages may exhibit a delayed response to oil price shocks, while wage expectations can adjust more rapidly. If changes in wage expectations are subsequently reflected in realised wage growth, these expectations may therefore provide an earlier indication of emerging wage pressures.

4. Data and methodology

4.1 Data

We use quarterly data covering the period from 2000Q1 to 2025Q3. Macroeconomic variables are obtained from the South African Reserve Bank (SARB) and Statistics South Africa (Stats SA). Wage expectations are obtained from the Bureau for Economic Research (BER) Inflation Expectations Survey. The analysis focuses on five variables used in the identification stage: Brent crude oil prices, real effective exchange rate, consumer price index (CPI), wage expectations, and salaries and wages per worker. Wage expectations are available for firms, financial analysts and trade unions, allowing the expectations of the different groups of survey respondents to be compared. Both surveyed current-year and one-year-ahead expectations are considered to assess whether oil price shocks influence expectations beyond the immediate period.¹

4.2 Empirical strategy

We adopt a two-stage empirical strategy. In the first stage, we estimate a structural vector autoregression (SVAR) to identify exogenous oil price shocks (Kilian 2009; Francis and Restrepo-Ángel 2018). The identified shock is normalised to represent a 40% increase in the Brent crude oil price.² Details of the identification strategy and variable ordering are reported in Annexure B.

In the second stage, the identified structural oil price shocks are used within Jordà's (2005) local projection framework to estimate the dynamic responses of wages and wage expectations. The oil price shock³ is treated as a temporary innovation occurring at $t = 0$, and the resulting impulse responses trace the evolution of the variables of interest following this single unexpected disturbance over subsequent periods. For each quarter, q , the following specification is estimated:

$$y_{t+q} = \alpha_q + \sum_{i=1}^p \beta_{q,i} X_{t-i} + \delta_q Shock_t + u_{t+q}$$

where $Shock_t$ denotes the structural oil price shock scaled to represent a 40% increase in Brent crude oil prices, X_{t-i} includes lagged macroeconomic controls and $q = 0, \dots, 12$ quarters. The coefficient δ_q measures the response of the outcome variable to the oil price shock at quarter q . Impulse responses are estimated over 12 quarters.

¹ Brent crude oil prices, the real effective exchange rate, CPI, and salaries and wages per worker are expressed as year-on-year log changes. Wage expectations are reported as expected percentage increases and are transformed as the difference between the expectation reported in t and that reported in quarter $t - 4$. Responses of the expectation measures are therefore expressed in percentage points. Further details on the data and variable transformations are provided in Annexure A.

² Although oil price shocks are often presented as one-standard-deviation innovations in the literature, this study normalises the shock to a 40% increase in the Brent crude oil price. This calibration enhances economic interpretability and reflects the magnitude of the 2026 oil price movement.

³ Although the oil price shock is a once-off innovation occurring at $t = 0$, its effect on oil prices persists beyond the initial quarter. Oil prices increase on impact and remain elevated for about three quarters before gradually converging back towards baseline levels (see Annexure B).

Local projections are estimated separately for realised wage growth and wage expectations across the three respondent groups (trade unions, firms and financial analysts).⁴ To examine whether wage expectations contain information about future wage outcomes, we also estimate the response of realised wage growth to innovations in wage expectations.

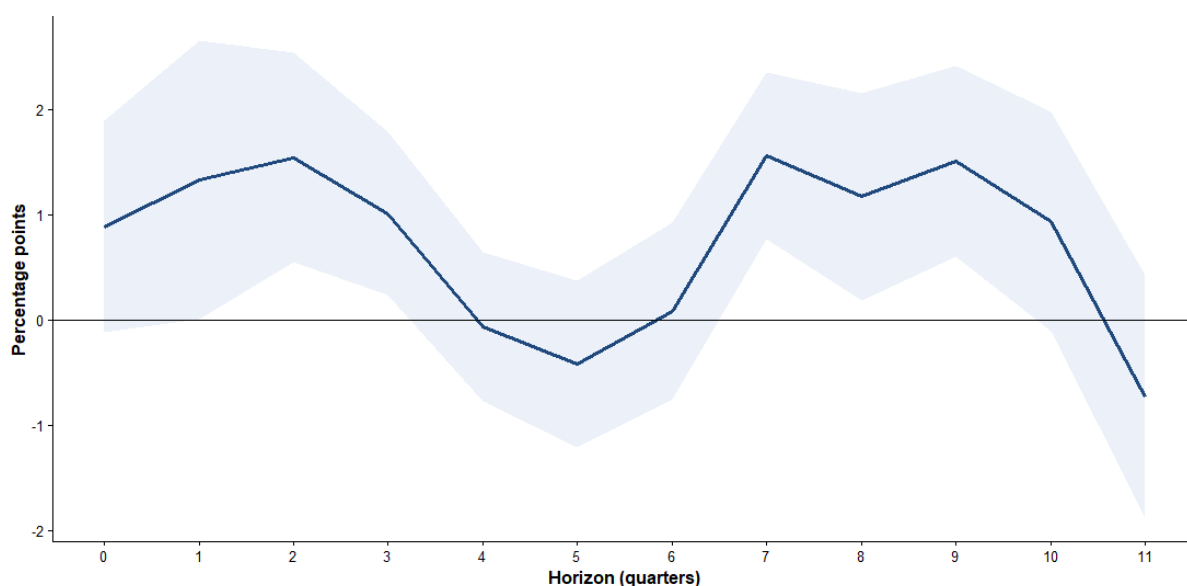
Newey-West heteroskedasticity and autocorrelation consistent (HAC) standard errors are used to construct confidence intervals, ensuring robust statistical inference in the presence of serial correlation and heteroskedasticity.

5. How do oil price shocks affect wages and wage expectations?

Figure 1 shows the response of realised wage growth to a 40% increase in Brent crude oil prices. Wage growth does not respond significantly on impact. Instead, the response emerges with a lag, becoming statistically significant after one quarter and reaching about 1.5 percentage points after two quarters. The response subsequently weakens but re-emerges in later quarters, suggesting that oil price shocks may continue to influence wage-setting outcomes well after the initial shock.

These results suggest that oil price shocks are eventually transmitted to realised wages, but that the pass-through occurs gradually rather than immediately. This delayed response is consistent with the South African institutional setting discussed earlier, where negotiated wage agreements and multi-period wage contracts may limit the short-run adjustment of wages.

Figure 1: Realised wage growth following a 40% oil price shock



Note: The figure reports local projection estimates of the response of wage growth to a 40% oil price shock. Shaded bands represent 95% confidence intervals based on HAC (Newey-West) standard errors.

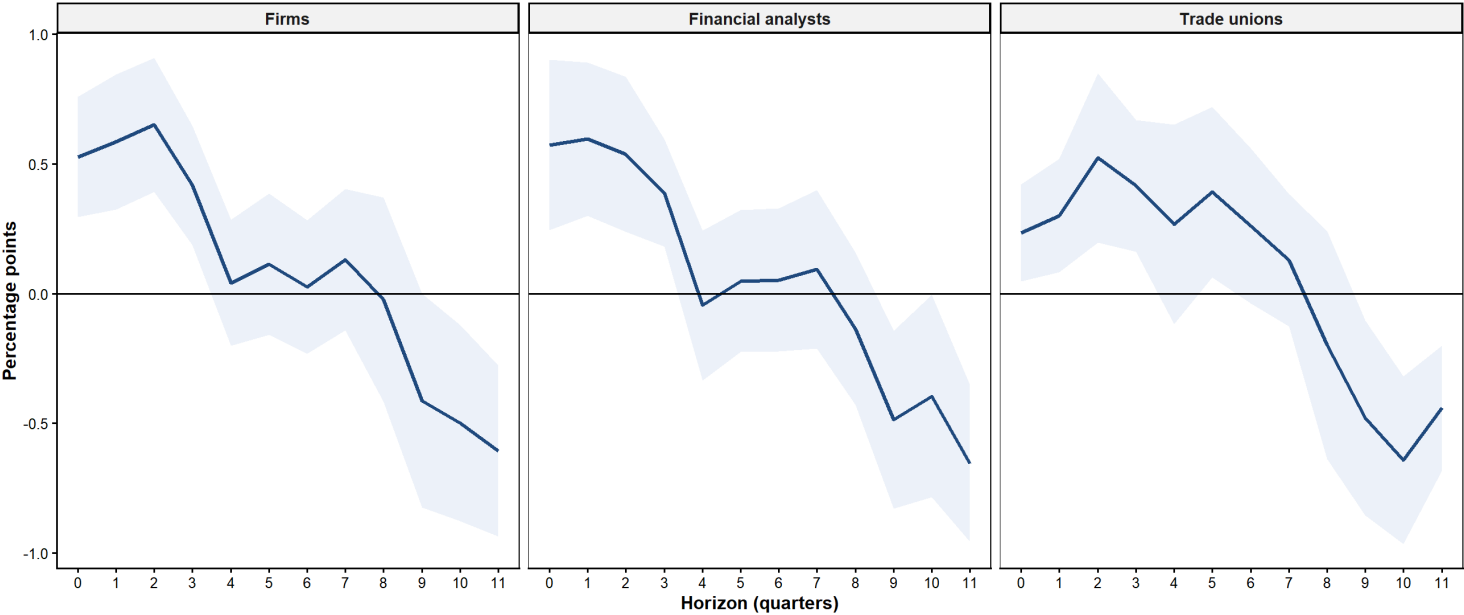
While realised wages may be slow to adjust because of existing wage agreements, wage expectations can be revised immediately following a shock. Figure 2 shows that a temporary 40% oil price shock leads to an immediate and statistically significant upward revision in

⁴ Unlike inflation expectations, which are collected for the current year as well as one-, two- and five-year-ahead horizons, the BER expectations survey reports wage expectations only for the current year and one-year-ahead horizon.

current-year wage expectations across firms, trade unions and financial analysts.⁵ Expectations rise on impact by around 0.53 percentage points for firms, 0.57 percentage points for financial analysts and 0.23 percentage points for trade unions. The response peaks within one to two quarters, reaching about 0.65 percentage points for firms after two quarters, 0.6 percentage points for financial analysts after one quarter and 0.52 percentage points for trade unions after two quarters.

While all three groups revise expectations upwards following the shock, there are differences in the magnitude and persistence of the response. Financial analysts exhibit the strongest immediate reaction, while trade unions adjust more gradually and remain above pre-shock levels for longer. This may reflect differences in the information sets of the three groups, with trade unions placing greater weight on longer-term wage-setting considerations.

Figure 2: Current-year wage expectations following a 40% oil price shock



Note: The figure reports local projection estimates of the response of wage expectations to a 40% oil price shock. Shaded bands represent 95% confidence intervals based on HAC (Newey-West) standard errors.

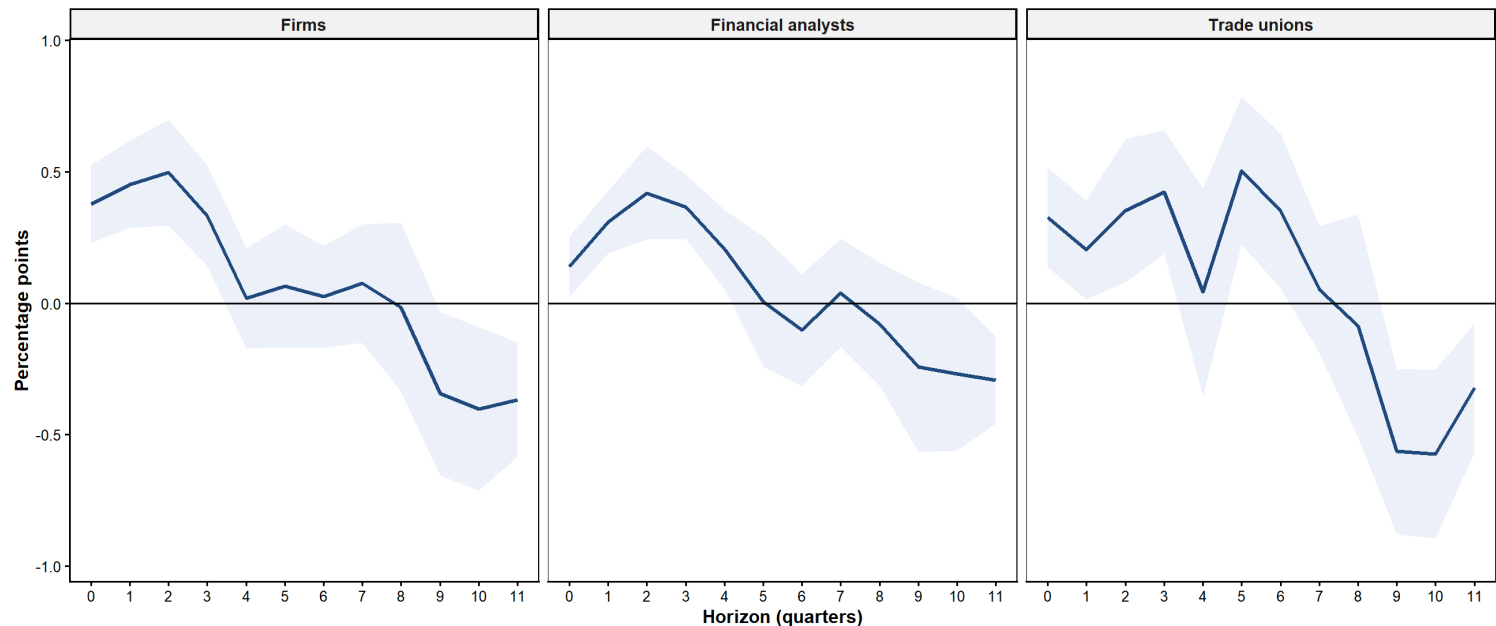
Figure 3 shows that oil price shocks also affect expectations further into the future. One-year-ahead wage expectations increase significantly among all respondent groups following the shock, suggesting that economic agents expect at least part of the wage effects of higher oil prices to persist beyond the immediate period. However, the magnitude of the response is generally smaller than for current-year expectations, indicating that respondents anticipate some moderation in the impact over time, given the duration of the shock.

Firms revise one-year-ahead wage expectations upwards by around 0.38 percentage points on impact, with the response peaking at about 0.5 percentage points after two quarters. Financial analysts exhibit a more gradual adjustment, with a relatively modest impact response of 0.14 percentage points that rises to a peak of 0.42 percentage points after two quarters. Trade unions display the strongest forward-looking response, and this response persists, with

⁵ The wage expectations variables are measured as the difference between the wage expectations reported in the current quarter and the corresponding wage expectations reported in the same quarter of the previous year.

expectations increasing by around 0.33 percentage points on impact and remaining elevated for longer.^{6,7}

Figure 3: One-year-ahead wage expectations following a 40% oil price shock



Note: The figure reports local projection estimates of the response of wage expectations to a 40% oil price shock. Shaded bands represent 95% confidence intervals based on HAC (Newey-West) standard errors.

While the pattern is similar across groups, there are differences in persistence: firms’ and financial analysts’ responses are concentrated in the first three to four quarters following the shock and gradually dissipate thereafter. Trade unions also exhibit positive and statistically significant responses that persist for longer, with responses of about 0.5 and 0.35 percentage points at five and six quarters after the shock, respectively. Although the response is not continuously significant throughout the period analysed, the positive responses observed sometime after the shock could suggest that trade unions incorporate oil price developments into wage expectations over a more extended period than firms or financial analysts, even if the shock is temporary. This is consistent with their role in collective bargaining processes, where negotiated multi-year agreements set wage increases for several years into the future.

Notably, the impulse response of trade unions’ one-year-ahead wage expectations follows a pattern that is qualitatively similar to that of realised wage growth. Both exhibit an initial response to the oil price shock, followed by a period of weakening and a subsequent re-emergence of positive effects that persist for several quarters. Although these results should not be interpreted as proof that union expectations cause subsequent wage outcomes, the similarity in the response profiles suggests that trade union expectations may contain

⁶ The similar responses observed across respondent groups may partly reflect the high correlation between the underlying wage expectations series. Correlation coefficients reported in Annexure C indicate that the three series move closely together over time.

⁷ The main results are robust to alternative specifications that use variables in levels rather than year-on-year growth rates and include inflation expectations as an additional control variable. These results are reported in Annexure D.

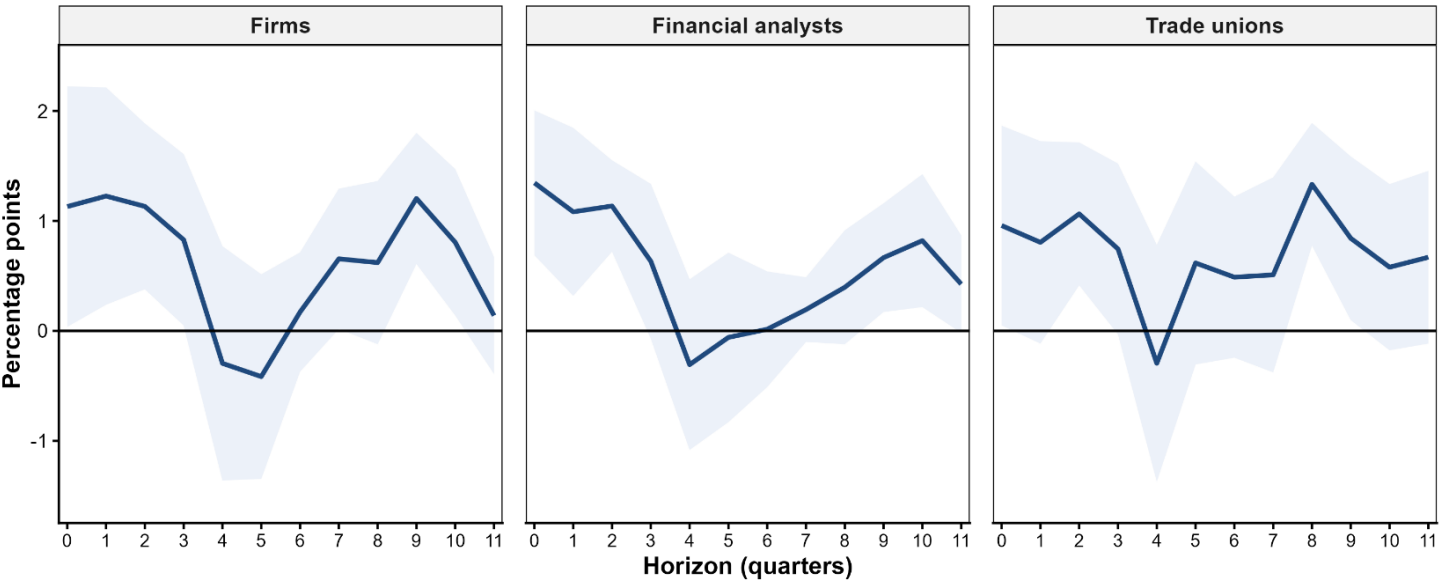
information about wage-setting conditions that are subsequently reflected in realised wage growth.⁸

This persistence is consistent with the institutional features of South Africa’s wage-setting process. Collective bargaining arrangements and multi-year wage agreements may encourage trade unions to form wage expectations over longer periods, making forward-looking expectations more persistent following an oil price shock. While the results do not establish a causal link between bargaining institutions and expectation formation, they suggest that oil price developments may influence unions’ wage-setting considerations beyond the immediate adjustment period.

6. Do wage expectations contain information about future wage growth?

The preceding results show that oil price shocks lead to upward revisions in both current-year and one-year-ahead wage expectations. However, higher wage expectations do not necessarily translate into higher realised wages. We therefore test whether innovations⁹ in wage expectations are associated with subsequent realised wage growth. Evidence of such a relationship would support the use of wage expectations as an early indicator of emerging wage pressures. Figure 4 presents the estimated response of realised wage growth to a 1-percentage-point shock in current-year wage expectations across the three respondent groups.¹⁰

Figure 4: Realised wage growth following current-year wage expectations shocks by respondent group



Note: The figure reports local projection estimates of the response of realised wage growth to a 1-percentage-point shock in wage expectations for each respondent group. Shaded bands represent 90% confidence intervals based on HAC (Newey-West) standard errors.

⁸ Related evidence from Reid and Siklos (2026) shows that the information content of South African inflation expectations varies across respondent groups and forecast horizons, with trade union expectations potentially providing additional information at longer horizons.

⁹ Wage expectation innovations are orthogonal SVAR shocks identified from a system comprising wage expectations, private-sector wage growth, CPI inflation and unemployment, and scaled to a 1-percentage-point increase in wage expectations.

¹⁰ The wage expectations shock keeps wage expectations elevated for 3.5 quarters and the response of realised wage growth is observed over 12 quarters.

A positive shock to wage expectations is associated with higher realised wage growth for all three groups: responses are initially positive, weaken in intermediate periods and re-emerge later. The broadly similar responses across the three groups are consistent with the close co-movement in their wage expectations (see Annexure C). The strongest longer-run response is observed for trade union expectations: wage growth increases by around 1.3 percentage points eight quarters after a wage expectations shock. Given the role of trade unions in collective bargaining and wage negotiations, their expectations may contain useful information about subsequent wage-setting pressures. However, these results should not be interpreted as conclusive proof of a causal relationship between wage expectations and realised wage growth. More broadly, the results indicate that survey-based wage expectations may provide an earlier indication of emerging wage pressures than realised wage data alone.

7. Conclusion and policy implications

The evidence indicates a distinct timing difference in the response of wages and wage expectations to oil price shocks. Realised wage growth responds with a lag, which is consistent with a wage-setting environment where existing agreements and bargaining arrangements limit the immediate adjustment of actual remuneration. Wage expectations, however, respond on impact. The important implication is therefore that realised wage data may understate wage-setting pressures during the period before wages are renegotiated.

There are also differences in the persistence of wage expectation responses across respondent groups. The response of trade union expectations persists longer than the other groups following an oil price shock. In contrast, financial analysts show the strongest immediate response, whereas firms record the highest peak response. This suggests that the different wage expectations may contain useful information about emerging wage pressures before they are fully reflected in realised wage data. This does not imply that expectations mechanically translate into realised wages, as broader economic conditions and sector-specific dynamics determine the impact on wages and headline inflation. Rather, it suggests that some expectation measures may capture wage-setting pressures while they are still embedded in bargaining positions, settlement expectations or future negotiations, before they appear in realised wage outcomes.

Policymakers should monitor realised wage growth as one of several wage-pressure indicators. After a large oil price shock, survey-based wage expectations, wage settlements, inflation outcomes and broader labour market conditions should be assessed together. Attention should be paid to whether wage expectation increases are broad-based across respondent groups or concentrated among groups more closely linked to wage bargaining. This can help distinguish temporary cost-of-living pressures from more persistent wage-setting pressures. Waiting for realised wages alone may mean waiting too long.

Annexures

Annexure A: Variable list

Variable	Source	Transformation
Brent crude oil	SARB	Year-on-year log change
Real effective exchange rate	SARB	Year-on-year log change
Consumer price index	Stats SA	Year-on-year log change
Firms' current-year wage expectations	BER	Year-on-year change
Financial analysts' current-year wage expectations	BER	Year-on-year change
Trade unions' current-year wage expectations	BER	Year-on-year change
Firms' one-year-ahead wage expectations	BER	Year-on-year change
Financial analysts' one-year-ahead wage expectations	BER	Year-on-year change
Trade unions' one-year-ahead wage expectations	BER	Year-on-year change
Total salaries and wages per worker	Stats SA	Year-on-year log change

Annexure B : Identification strategy

To identify exogenous oil price shocks, a five-variable SVAR is estimated, with four lags included in each equation. The matrix A is specified as lower triangular, implying that variables appearing earlier in the ordering contemporaneously affect variables ordered below them, while the reverse effect occurs only with a lag. The ordering is:

$$lyoy_oil \rightarrow lyoy_reer \rightarrow lyoy_cpi \rightarrow yoy_wexp \rightarrow lyoy_salaries_pw$$

This ordering reflects the assumption that global oil prices are exogenous to the South African economy within a quarter. Exchange rate movements may respond contemporaneously to oil price developments, while inflation responds within the quarter to oil prices and exchange rate fluctuations. Wage expectations are allowed to react contemporaneously to all preceding variables, whereas realised wage growth adjusts most slowly and responds contemporaneously to all variables in the system.

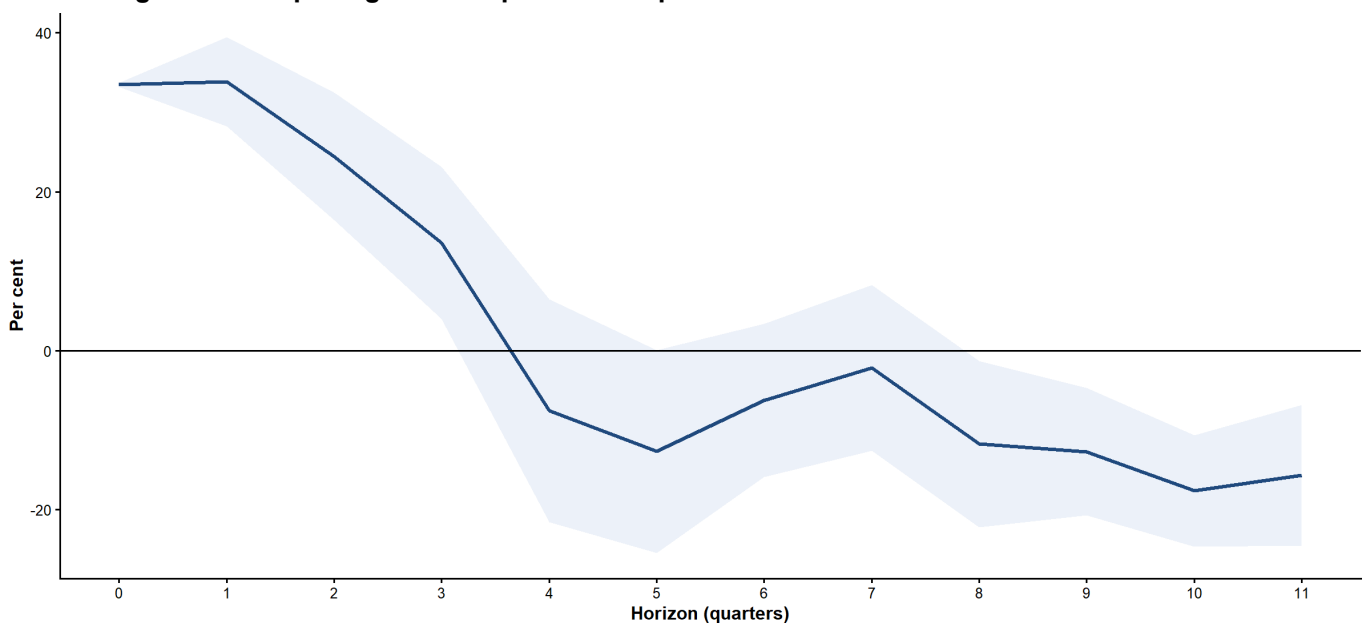
The structural oil price shock is recovered from the estimated SVAR by transforming reduced-form residuals into orthogonal structural innovations. Let ε_t denote the reduced-form residuals from the VAR. Structural shocks are obtained as:

$$e_t = B^{-1}A\varepsilon_t$$

The first element of e_t represents the identified structural oil price shock. To facilitate interpretation, the structural oil price shock is scaled to represent an exogenous 40% increase in the Brent crude oil price. The scaling is based on the contemporaneous impact coefficient obtained from the SVAR impact matrix.

Figure B1 shows the response of oil prices to a 40% oil price shock. Oil prices respond positively on impact and remain elevated for about three quarters before gradually converging back towards baseline levels.

Figure B1: Oil price growth response to oil price shock

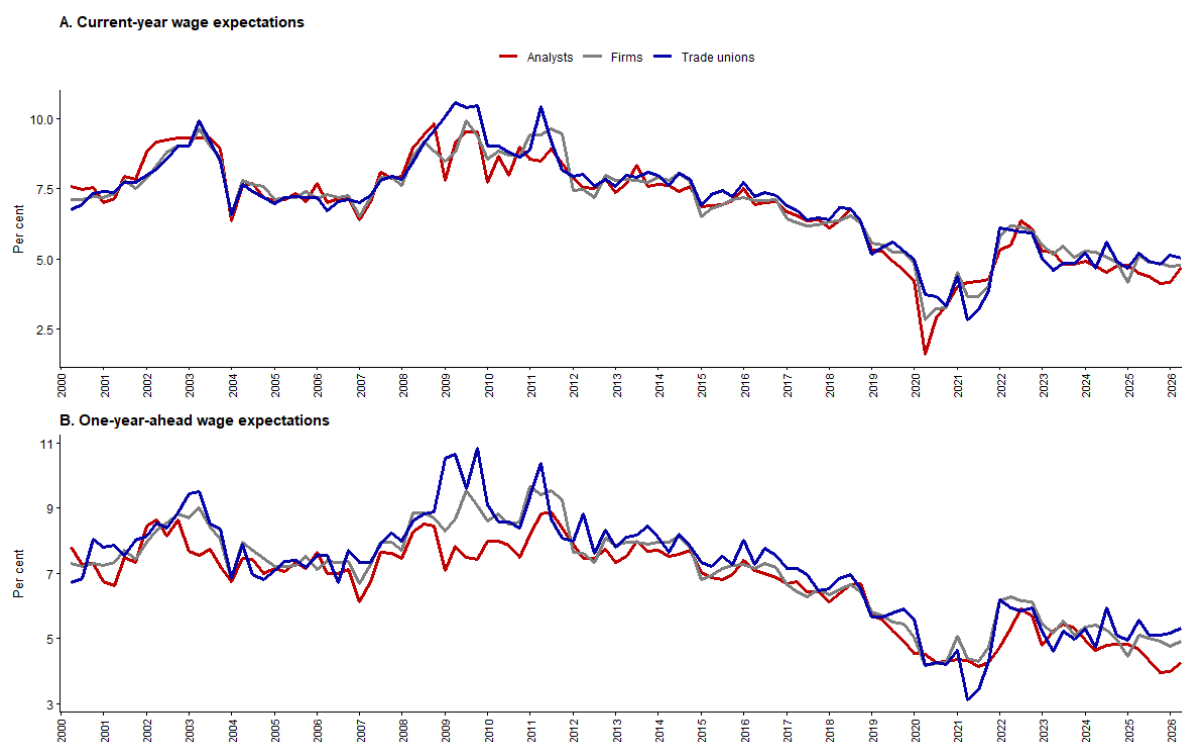


Note: The figure reports local projection estimates of the response of oil prices to an oil price shock. Shaded bands represent 95% confidence intervals based on HAC (Newey-West) standard errors.

Annexure C: Wage expectation correlation

Figure C1 shows that wage expectations across firms, financial analysts and trade unions exhibit substantial co-movement over time. Major turning points are generally shared across respondent groups, suggesting that expectations are influenced by common macroeconomic factors. This co-movement is consistent with the impulse-response results in the main results, where oil price shocks generate broadly similar responses across groups and where differences in estimated effects are generally modest relative to their confidence intervals.

Figure C1: Co-movement in wage expectations by respondent group

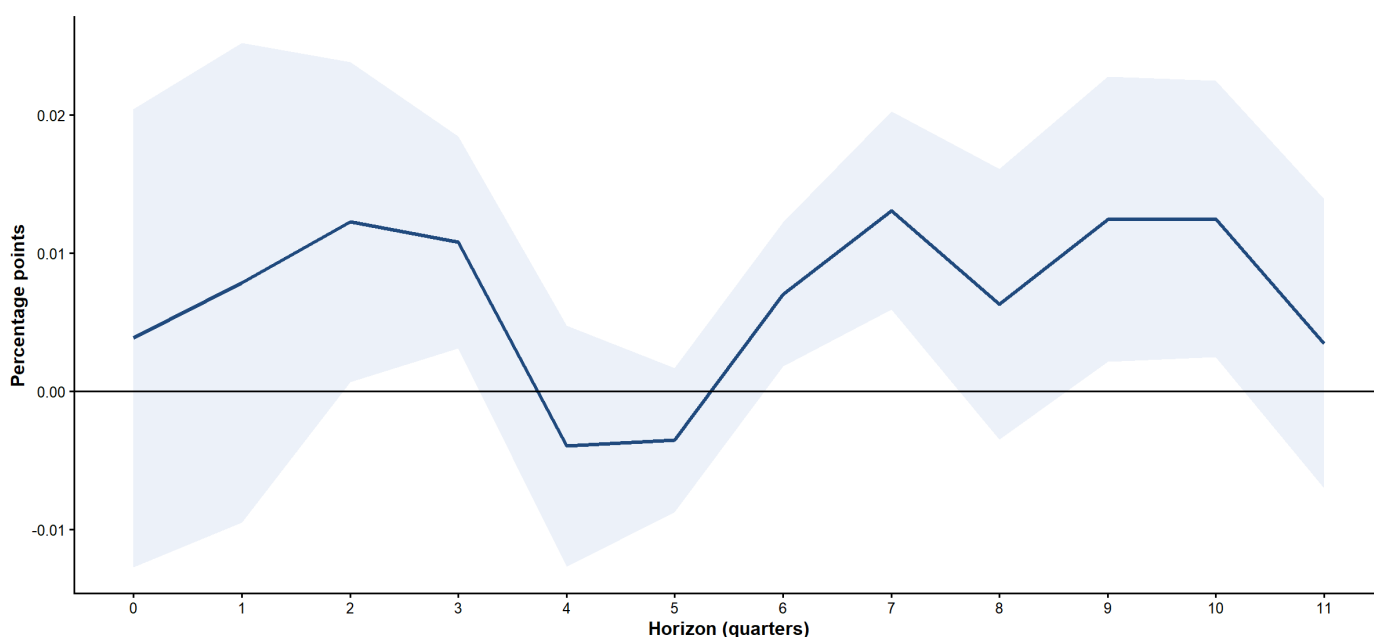


Source: BER.

Annexure D: Robustness

As a robustness check, the baseline specification is re-estimated using the variables in levels rather than year-on-year changes. Specifically, the year-on-year log changes in oil prices, the real effective exchange rate, consumer prices and private-sector wages are replaced with their log-level counterparts, while wage expectations remain in levels as they are already expressed as percentage rates.¹¹ In addition, inflation expectations are included as an extra control variable. The inclusion of inflation expectations is motivated by the possibility that oil price shocks affect wage-setting primarily through changes in expected inflation. Controlling for inflation expectations therefore provides a more stringent test of whether oil price shocks exert an independent influence on realised wages and wage expectations beyond the inflation expectations channel.

Figure D1: Realised wage level response to a 40% oil price shock



Note: The figure reports local projection estimates of the response of realised wages to a 40% oil price shock. Shaded bands represent 95% confidence intervals based on HAC (Newey-West) standard errors.

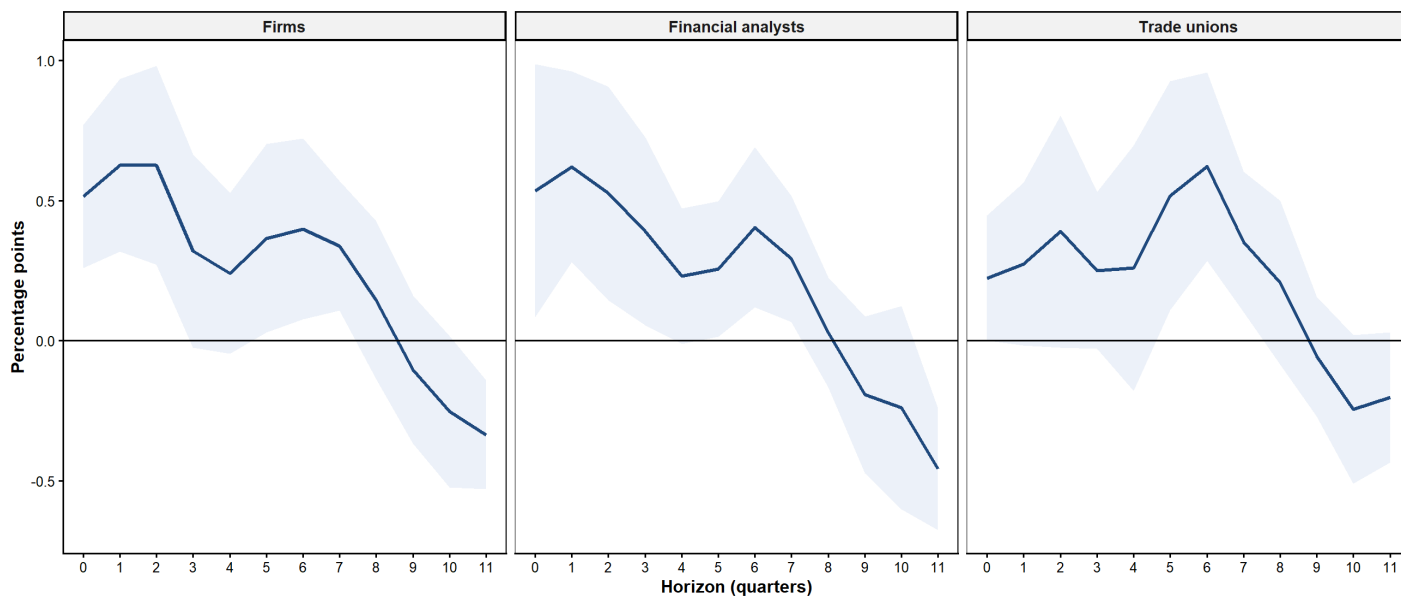
The robustness results are broadly consistent with the baseline findings. Oil price shocks continue to generate positive responses in both realised wages and wage expectations, suggesting that the main conclusions do not depend on the variable transformations used in the baseline specification. Although some responses are weaker and less precisely estimated, the overall pattern remains intact: realised wages respond gradually following the shock (see Figure D1), while wage expectations rise more quickly and remain elevated over subsequent quarters (see Figures D2 and D3).

The results suggest that the relationship between oil price shocks and wage outcomes is not fully accounted for by the inflation expectations measure included in the specification. This strengthens confidence that the positive relationship between oil price shocks, wage

¹¹ This robustness check assesses whether the estimated responses are sensitive to the transformation of the variables, given that the growth-rate specification emphasises short-run changes, whereas the level specification retains information about movements in the underlying levels of the variables.

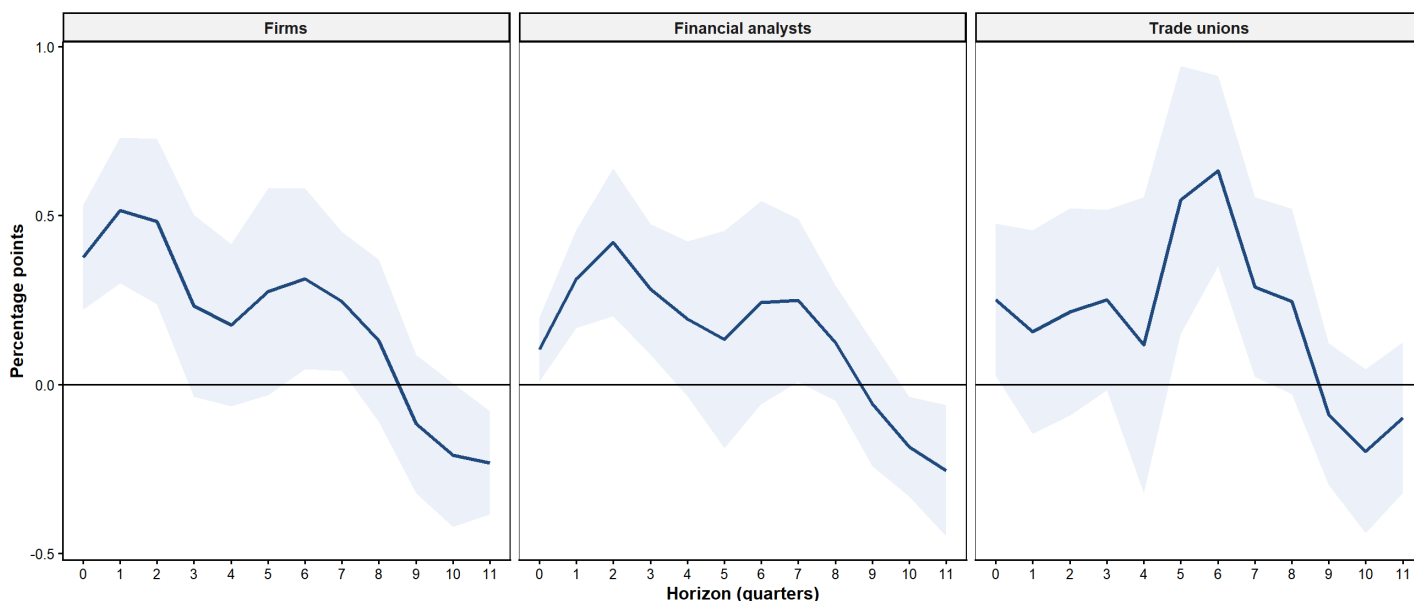
expectations and realised wages is not an artefact of variable construction or the omission of inflation expectations.

Figure D2: Current-year wage expectation level response to 40% oil price shock



Note: The figure reports local projection estimates of the response of wage expectations to a 40% oil price shock. Shaded bands represent 95% confidence intervals based on HAC (Newey-West) standard errors.

Figure D3: One-year-ahead wage expectation level response to 40% oil price shock



Note: The figure reports local projection estimates of the response of wage expectations to a 40% oil price shock. Shaded bands represent 95% confidence intervals based on HAC (Newey-West) standard errors.

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