South African Reserve Bank
Working Paper Brief
WPB/18/01

Aggregate public-private remuneration patterns in South Africa

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June 2018

South African Reserve Bank

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Aggregate public-private remuneration patterns in South Africa[1]

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Abstract

The rich international literature on public-private remuneration patterns finds that in most cases public sector remuneration follows developments in the private sector. This pattern is also found for South Africa since the introduction of the inflation-targeting framework in 2000. Co-integration tests and analysis confirm that there is a stable, long-run relationship between nominal and real remuneration in the public and private sector. The adjustment to the deviations from this long-run relationship is strong and significant for public-sector remuneration, while private-sector wages neither respond to the deviations from the long-run relationship nor the lagged changes of public-sector remuneration. The causal direction from private- to public-sector remuneration also holds for real earnings. This is confirmed by simple Granger causality tests. If this pattern remains stable, efforts to slow down the speed of the wage-price spiral should not exclude the private sector.

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[1] This Working Paper Brief is based on Andreas Wörgötter & Sihle Nomdebevana, 2018. "Aggregate public-private remuneration patterns in South Africa," Working Papers 8421, South African Reserve Bank. The first author worked on this project during his visiting research fellowship at the Economic Research and Statistics Department of the South African Reserve Bank (SARB). Earlier research assistance by Siobhan Redford and Elmarie Nel is gratefully acknowledged. The views expressed in this Working Paper Brief are not necessarily shared by the SARB. Remaining errors, if any, are the sole responsibility of the authors.
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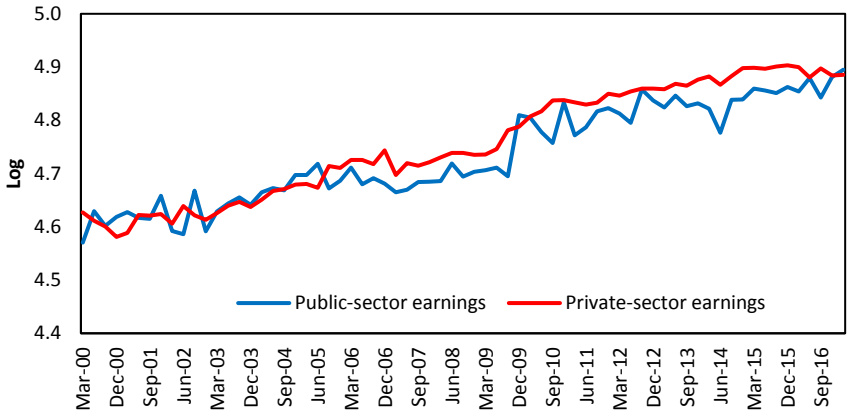
What do we see?

We used seasonally adjusted quarterly average remuneration (earnings) per employee data from the first quarter of 2000 to the first quarter of 2017 for both the public and the private sectors. The choice of the observation period was motivated by the introduction of South Africa's inflation-targeting regime. Real remuneration was calculated by deflation with the deflator of gross value added excluding agriculture, following the methodology applied by Statistics South Africa (Stats SA).

Remuneration data are collected by Stats SA; the seasonal adjustment was carried out by the South African Reserve Bank. The term 'earnings' is used synonymously for 'remuneration'.

Figure 1:
Real public- and private-sector earnings



Sources: SARB and Stats SA

A visual inspection of the data (Figure 1) signals that private-sector earnings progress relatively smoothly, with only some cyclical responses, while public-sector remuneration is much more volatile.

These observations are confirmed by the descriptive statistics in Table 1. The nominal public- and private-sector earnings grow, on average, by 2.0% per quarter (and by 8.1% and 8.2% respectively when annualised). Consumer price inflation amounts to 1.4% per quarter, which is equivalent to an average annual inflation of 5.6%. Average annualised real wage growth is about 2.0% in both sectors if the gross domestic product deflator is used for price adjustment. Average annualised real wage growth would be 0.9% higher if the consumer price index were used for deflation.

Table 1: Descriptive statistics for quarter-on-quarter changes of logs of the consumer price index (DLCPI) and of nominal (LW) and real (LRW) earnings in the public (PU) and private (PR) sectors[a)]

	D(LCPI)	D(LWPU)	D(LWPR)	D(LRWPU)	D(LRWPR)
Mean	0.014075	0.020334	0.020460	0.003963	0.004089
Standard deviation	0.008344	0.033545	0.013121	0.032704	0.014370

a) Because real earnings are deflated with a different price index, the adding-up conditions are not met.

While the average rate of quarterly earnings increases in the public and private sectors is nearly identical (2.03% and 2.05% respectively), development of average remuneration in the public sector is much more volatile than in the private sector. The standard deviation of public-sector remuneration is 3.35% and about 2.5 times as big as the 1.31% standard deviation in the private sector. This feature is preserved for the deflated earnings. In

other words, inflation does not contribute to earnings volatility. The higher volatility of public-sector earnings must therefore have other reasons. Worthwhile to note is also the fact that the ratio between average nominal and average real earnings growth is above 5, which is unusually high, even for an emerging economy.

What do we want to know, and why is it important?

Our Working Paper wanted to find out whether there is a pattern between public and private remuneration in South Africa. It complemented those studies that are mainly concerned with the structural differences between public- and private-sector employment and remuneration (Bosch, 2006).

Remuneration patterns constitute an important linkage between the micro and the macro spheres of the economy. On the micro level, they reflect the incentives and constraints for individual decisions about how many hours to work and which wage to accept. On the macro level, wage dynamics have important consequences for inflation, unemployment, and – through work experience – productivity. Together, this has an impact on the sacrifice ratio or, in other terms, the real costs needed to maintain price stability.

For instance, in a bargaining system with more than one trade union, wage leadership reduces the effective number of independent trade unions and increases the degree of centralization of wage bargaining. Assuming that the leading trade union has some degree of inflation aversion, this could allow the central bank to be more accommodative while simultaneously reducing inflation and unemployment to their lowest socially optimal levels (Coricelli, Cukierman, and Dalmazzo, 2006). Without referring to monetary policy regimes, either completely centralized or completely decentralized bargaining systems are associated with better macroeconomic performance (Calmfors and Driffill, 1988).

The public sector is free from competition concerns on its supply side. The wage bill is constrained by the budget, while the earnings / employment split is influenced by alternative options in the private sector. In general terms, one can assume that private-sector earnings are more driven by market developments than public-sector earnings. The direction of causality therefore either increases (in the case of public-sector earnings following private-sector developments) or decreases (in the case of the private sector following public-sector earnings) the role of market forces.

What have others found?

In most of the member countries of the Organisation for Economic Co-operation and Development, public-sector wages follow the outcomes of private-sector wage negotiations (Lamo, Pérez, and Schuknecht, 2012). However, there are also cases of public-sector leadership and spillover effects.

For Sweden, it is confirmed that the private sector is the wage leader and that the public sector follows (Lindquist and Vilhelmsson, 2006). The country's public-sector wages do not Granger-cause private-sector wages.

For Austria, it is found, with data on collectively bargained wages, that reference norms play a significant role and that external norms seem to matter more than internal norms (Knell and Stiglbauer, 2012). However, in an earlier paper, Pollan (2004) finds that Austrian remuneration outcomes are characterised by high and rising diversity, which is incompatible with a wage-pattern hypothesis.

For the United States, Marshall and Merlo (2004) find that trade unions prefer pattern bargaining over both simultaneous industry-wide bargaining and sequential bargaining with a random pattern. They also point out that pattern bargaining establishes significant entry barriers. This could also be the case for South Africa, if public-sector wages cause private-sector wages to follow and new market entrants cannot afford to hire labour.

For the euro area, it is found that Germany acts as the wage leader (Ramskogler, 2012). This could have encouraged the European Central Bank to run its accommodative monetary policy despite the warning signals from an overheating housing market during the run-up to the most recent global financial crisis.

For post-communist countries, government played a big role in the redistribution of income and wealth through privatization and the restructuring of state-owned enterprises. It is therefore not surprising to find many cases of wage leadership by the public sector (D'Adamo, 2014).

What can econometrics tell us about causality?

In empirical economics, one cannot 'prove' hypotheses. Econometrics applies statistical methods to reject a hypothesis with an error probability, which can be as small as 'possible'. For instance, one speaks about 'a significant influence' if the hypothesis that this influence is zero can be rejected with an error probability of 5%. Choosing 5% as a threshold is a convention which has been shaped by experience.

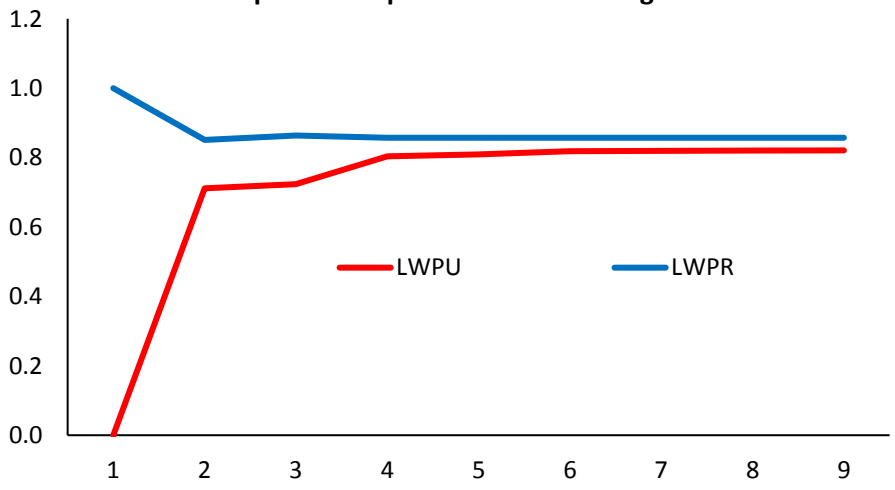
With respect to causality, this means that one tests the hypothesis that the past of variable A has no influence on current values of variable B. One then tries to circumvent this double negation, by saying that variable A causes variable B. Statistical causality analysis follows the *post hoc ergo propter hoc* ('afterwards, therefore because of') principle. It can identify a pattern over time, but it cannot say anything about the underlying driving forces of a relationship.

While causality analysis concerns short-run relations, co-integration analysis looks at the long run. Along a co-integrating relationship, there is no tendency for change. Our empirical analysis was carried out in the form of a vector error correction model, which combined the short-run dynamics and the long-run equilibrium relation between public and private remuneration.

What have we found?

The applied statistical procedures could not reject that public-sector remuneration follows private-sector remuneration. However, the opposite hypothesis, that private-sector remuneration follows public-sector remuneration, was rejected. Both results held true for nominal remuneration and inflation-adjusted real remuneration. The existence of a co-integrating relationship between public and private remuneration, also after inflation adjustment, could therefore not be rejected.

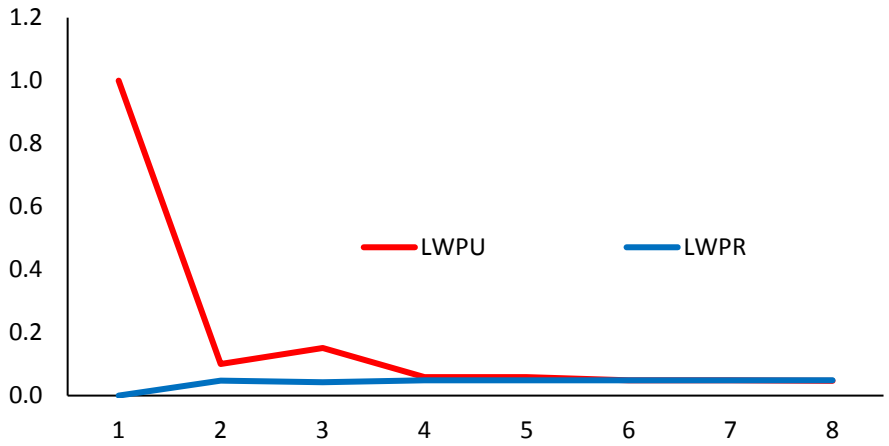
Figure 2: Response on a 1% private sector earnings shock of public and private sector earnings



Figures 2 and 3 show the response of public- and private-sector earnings up to 9 quarters to a 1% shock of private and public sector earnings in period 0.

A little more than 80% of a private-sector earnings shock remains permanent in public- and private-sector earnings after four quarters (Figure 2).

Figure 3: Response on a 1% public sector earnings shock of public and private sector earnings



However, only 5% of a public-sector earnings shock remains permanent in public- and private-sector earnings after four quarters (Figure 3).

The bottom line

In South Africa, the average remuneration per employee in the public sector follows the trend in the private sector. Shocks to private-sector remuneration remain up to 80% permanent in the public and private sectors. On the other hand, shocks in the public sector are temporary and do not spill over to the private sector.

The policy conclusion that can be drawn from these results is that efforts to reduce the speed of the wage-price spiral should not exclude the private sector.

Furthermore, wage restraint in the public sector does not have an 'automatic' consequence for the private sector.

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