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Corrigendum to “Common features in UK sectoral output” [Economic Modelling 19 (2002) 91–104]

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Corrigendum to “Common features in UK sectoral output”

[Economic Modelling 19 (2002) 91–104]

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1. Introduction

In the original Harvey and Mills (2002) work (hereafter HM), a typing error was made transferring the common cycle coefficients from the 3SLS output (HM Table 2) to the GAUSS program used to compute the trend-cycle decomposition discussed in Section 2 of HM. This error does not affect the major finding of three common trends and three common cycles among the six UK output sectors considered, nor the estimation of the multivariate model. It does, however, affect the plots of the cyclical and trend components of the sectors (HM Figures 3 and 4 respectively), and the subsequent analysis investigating the correlations between the cyclical components of sectors (HM Table 3), and the relative importance of transitory and permanent shocks for the variation of sectoral output (HM Table 4). This corrigendum provides the corrected tables and figures, and discussion of the new results.

2. Empirical evidence of common features in UK sectoral output

HM find three cointegrating relationships and three common cycles among the six UK output sectors examined. This allows a unique trend-cycle decomposition to be obtained, as discussed in Section 2 of HM. It is at this stage that the programming typing error has effect. The corrected Figure 3 shows the cyclical components for the six sectors obtained, along with their standard deviations, when the error is removed. As before, three sectors have almost identically shaped cycles – MAN, EGW, SRV; it is also clear now, however, that AFF and MQE have very similar shaped cycles, and that these cycles are an almost exact mirror image of the MAN-EGW-SRV common cycle. CON is now the only sector with a distinctly idiosyncratic cycle. Within these groupings, the amplitudes of the cycles vary, as measured by the standard deviations. The corrected Table 3 provides statistics on how the cyclical components of the sectors are correlated, contemporaneously and lagged. AFF and MQE move counter-cyclically to the other four sectors, and are very closely contemporaneously correlated with each other. MAN, EGW and SRV are almost perfectly positively contemporaneously correlated with each other, while CON is negatively correlated to AFF and MQE, and not significantly correlated with the other sectors. These correlation patterns are generally similar for lagged correlations but with smaller correlation coefficients; the exception is the CON sector which is not significantly lag-1 correlated with any other sector. These correlations among the cyclical components confirm the interdependencies

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found in the structural model fitted to the observed sectoral data, and are entirely consistent with the corrected Figure 3.

The corrected Figure 4 shows the trend components superimposed on the sectoral output levels. Again three distinct trends are apparent: AFF and MQE share similar trend paths, as do MAN, EGW and SRV, while CON has an idiosyncratic trend reflecting the individual behaviour of this sector. These results are markedly different from the original incorrect versions in HM, and show much more conformity among the different sectors' trends, as well as highlighting the greater variability that is present in these trend components. In general, the trends and cycles obtained from this decomposition show a much greater degree of interdependence than might be inferred from the plots of the actual output levels and growth rates shown in Figures 1 and 2 of HM, and the corrected results illustrate much more clearly the strong relationships between the different sectors.

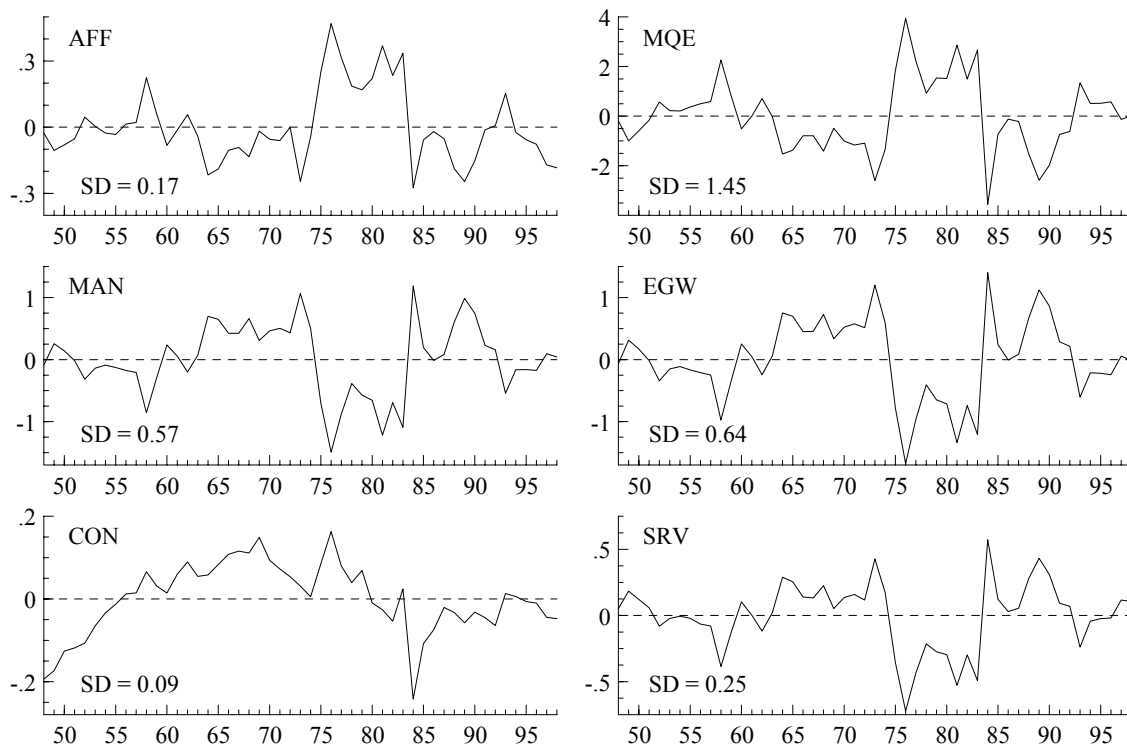
Lastly, the corrected Table 4 presents results for the relative importance of transitory and permanent shocks for the variation of sectoral output. Using the decomposition methods of Engle and Issler (1995), two sets of results for the percentage of the variance attributed to transitory shocks are reported, corresponding to the two possible ways of orthogonalising the innovations. It can be seen from the table, however, that the ordering makes relatively little difference to the results; consequently, we focus on the more conventional ordering of trend innovations preceding cyclical innovations. The percentages are very similar across the six sectors, with transitory shocks accounting for between 31% and 40% of output variation at $h = 1$, declining to between 14% and 25% over the four-year horizon. Permanent shocks, therefore, appear to be the dominant factor for output variation in all of these sectors, with transitory shocks having a limited impact, particularly as the horizon increases.

3. Conclusion

The corrected results presented in this corrigendum provide a much clearer picture of the interdependencies between the six UK output sectors considered by HM, with the output sectors' trend and cycle time paths being in general very closely inter-related, the construction sector excepted. Permanent shocks are now found to explain the majority of the variance of all the sectors' output innovations, increasingly so for longer horizons. Engle and Issler (1995) also find common trends and cycles to be present for the US, highlighting broad consistency across the two economies. In terms of patterns of trend and cyclical behaviour, and the importance of permanent and transitory shocks, however, the similarities between the two countries are mixed, with parallels for some sectors and time periods, and not others.

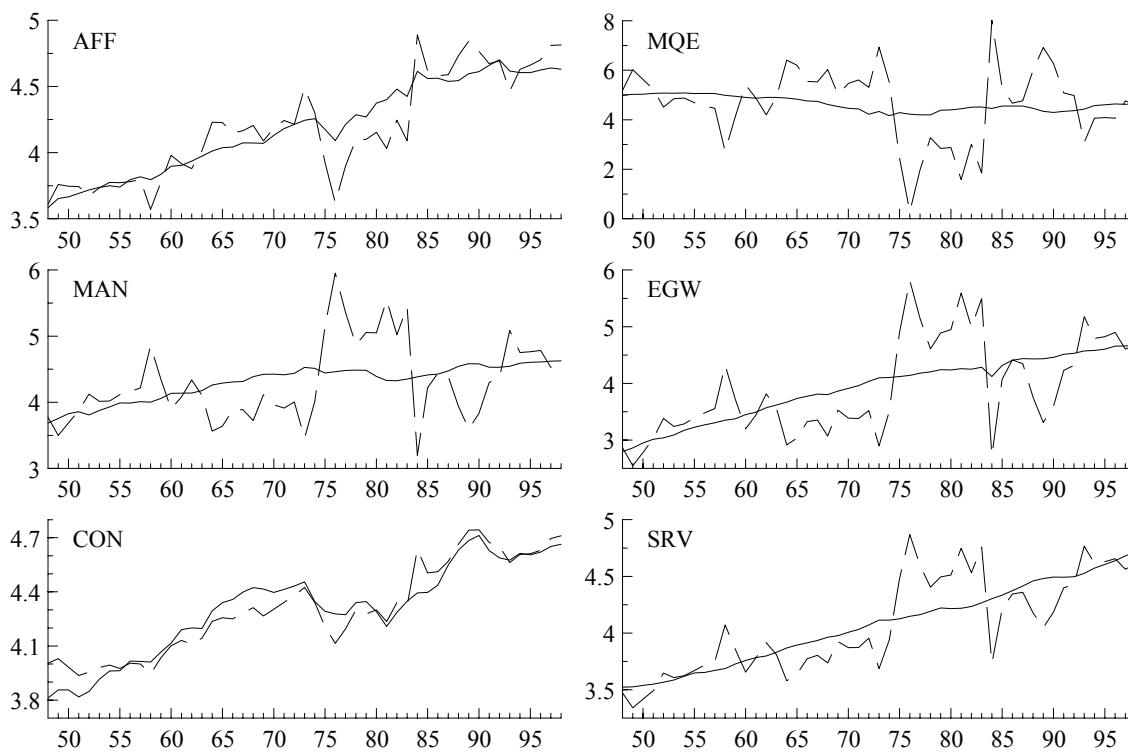
References

- Engle, R.F., Issler, J.V., 1995. Estimating common sectoral cycles. *Journal of Monetary Economics* 35, 83–113.
- Harvey, D.I., Mills, T.C., 2002. Common features in UK sectoral output. *Economic Modelling* 19, 91–104.



Note: SD denotes standard deviation.

Corrected Figure 3. Cyclical components of sectors.



Note: Solid lines denote levels, dashed lines denote trend components.

Corrected Figure 4. Levels and trend components of sectors.

Corrected Table 3. Correlations between cyclical components of sectors.

Panel A. Contemporaneous Correlations						
	AFF_t^c	MQE_t^c	MAN_t^c	EGW_t^c	CON_t^c	
MQE_t^c	0.92 [0.000]					
MAN_t^c	-0.93 [0.000]	-0.99 [0.000]				
EGW_t^c	-0.92 [0.000]	-0.99 [0.000]	1.00 [0.000]			
CON_t^c	-0.30 [0.031]	-0.30 [0.034]	-0.18 [0.202]	-0.20 [0.162]		
SRV_t^c	-0.97 [0.000]	-0.99 [0.000]	0.98 [0.000]	0.98 [0.000]	-0.33 [0.019]	
Panel B. Lag-1 Correlations						
	AFF_t^c	MQE_t^c	MAN_t^c	EGW_t^c	CON_t^c	SRV_t^c
AFF_{t-1}^c		0.53 [0.000]	-0.56 [0.000]	-0.55 [0.000]	0.02 [0.874]	-0.57 [0.000]
MQE_{t-1}^c	0.49 [0.000]		-0.55 [0.000]	-0.54 [0.000]	0.00 [0.995]	-0.52 [0.000]
MAN_{t-1}^c	-0.51 [0.000]	-0.54 [0.000]		0.57 [0.000]	0.09 [0.515]	0.54 [0.000]
EGW_{t-1}^c	-0.50 [0.000]	-0.54 [0.000]	0.57 [0.000]		0.08 [0.579]	0.53 [0.000]
CON_{t-1}^c	0.13 [0.375]	0.05 [0.722]	0.03 [0.843]	0.02 [0.883]		-0.10 [0.490]
SRV_{t-1}^c	-0.54 [0.000]	-0.54 [0.000]	0.56 [0.000]	0.55 [0.000]	-0.03 [0.841]	

Note: Probability values are given in brackets.

Corrected Table 4. Percentage of the variance of sectoral output innovation attributed to transitory shocks.

Horizon	AFF	MQE	MAN	EGW	CON	SRV
$h = 1$	31.5 (39.8)	31.8 (45.2)	35.5 (48.4)	31.0 (44.1)	40.2 (42.0)	34.7 (47.2)
$h = 2$	24.5 (30.4)	26.0 (35.6)	29.4 (39.2)	25.6 (35.4)	25.1 (25.5)	28.5 (37.7)
$h = 3$	20.2 (25.8)	24.8 (36.1)	27.4 (39.0)	24.3 (36.4)	15.9 (16.1)	26.2 (36.7)
$h = 4$	17.5 (24.8)	22.8 (36.6)	24.8 (38.8)	22.5 (37.3)	14.0 (14.2)	24.0 (37.4)

Note: The first entry in each cell corresponds to trend innovations preceding cyclical innovations in the orthogonalisation; the entry in parentheses in each cell corresponds to cyclical innovations preceding trend innovations in the orthogonalisation.