

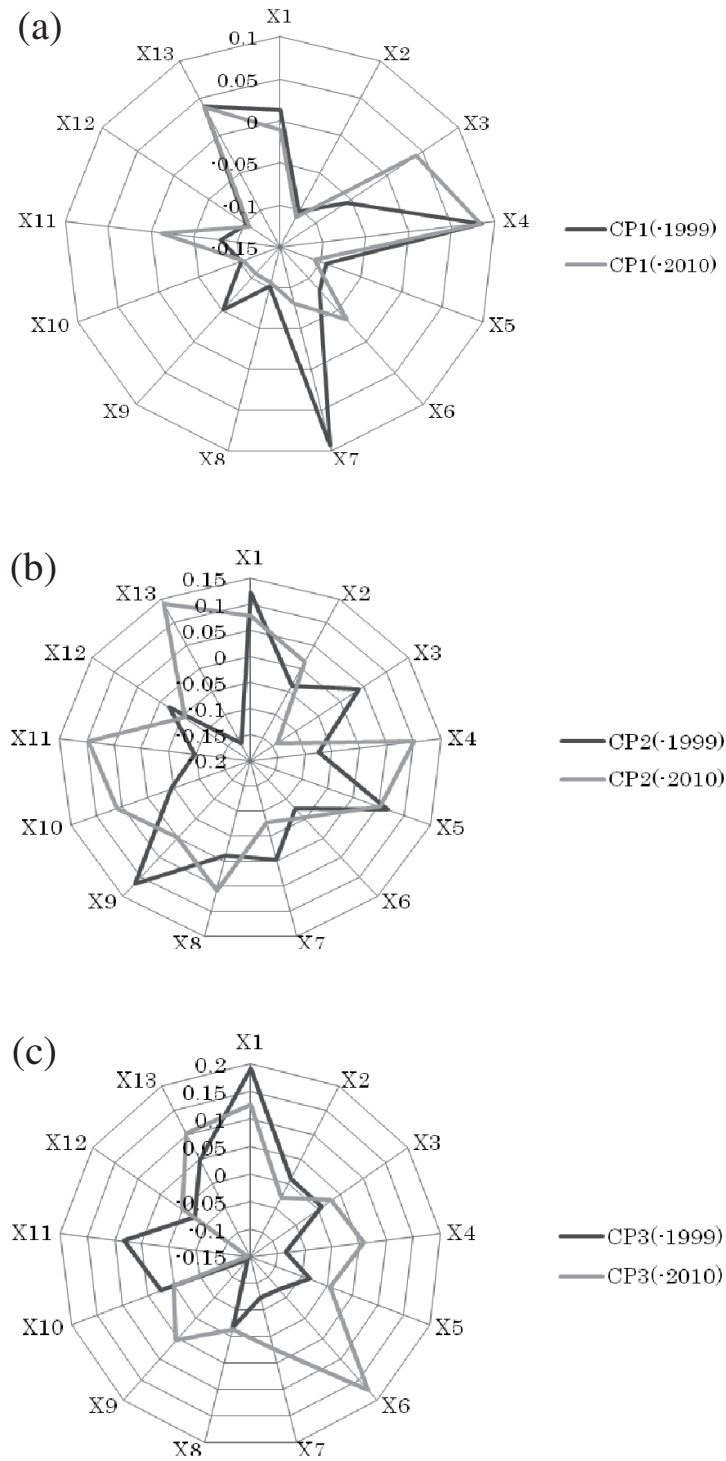


Fig. 2. Temporal changes in the principal components: $PC1$ (a), $PC2$ (b), and $PC3$ (c).

tervals with maximum correlation are given in Yoshimori *et al.* (1999b).

2) We employ multiple regression analysis (Green, 2000) for exchange rate with economic variables listed in Table 1. The exchange rate and fundamentals were standardized in this analysis. First, we try to get the coefficient of determination for M_0 variables. Secondly, we eliminate the next economic variable that had the smallest t -value. Thirdly, the coefficient of determination is derived for $M_0 - 1$ variables. M_0 is initially set to be 13.

3) The procedure stated in 2) is iterated, until M_0 goes to 3.

As a result of the variable selection method stated above, the exchange rate is expressed by the money supply in Japan and the wholesale price in the US. Furthermore, we observed the multicollinearity that often occurred in the multiple regression; it was necessary to orthogonize those variables through principal component analysis. We then employed principal component analysis as the method of parsimony.