Tiivistelmä – Referat – Abstract

This thesis investigates the persistence of unemployment shocks in the Eurozone, and whether gender differences in labour market behaviour affects the results of a unit root test. The research addresses the question, whether active economic policy is fundamentally effective at steering the economy, or do the self-adjusting properties of the economy dominate.

The theoretical framework is the dichotomy of Natural Rate of Unemployment (NRU) and hysteresis theory. The history and implications of these two alternative narratives are discussed before presenting the Non-Accelerating Inflation rate of Unemployment (NAIRU) as an empirical tool for evaluating the level and relevance of the NRU.

The analysis uses quarterly data, on seasonally adjusted unemployment rates, acquired from the OECD public database. After an initial investigation of the descriptive statistics, an autoregressive (AR) time series model is estimated for each country and gender. Then an Augmented Dickey Fuller (ADF) statistic is calculated, for testing the null of unity as a solution for the characteristic equation of the estimated model. A failure to reject the null implies that a highly persistent random walk model sufficiently characterises the unemployment dynamics of the country that generated the data.

The individual statistics are combined using two different panel unit root tests (IPS, MW). The panel statistics are calculated for each gender separately, as well as with the aggregate data in order to determine a possible diversion in the dynamics. Both of the tests share the null hypothesis that there is no reason for any country to reject the unit root model, against the alternative that, for at least some countries, a mean reverting model would be more appropriate.

A remarkable difference between genders is revealed by the ADF statistics. None of the models result in critical statistic values at the .05 significance level when only male unemployment series are evaluated. Only data on the Netherlands produces a significant statistic value at .1 significance level. However, four countries (Belgium, France, Netherlands, Finland) exhibit mean reverting behaviour when only female unemployment rate series are investigated. The aggregates series, with both male and female unemployment rates included, provide significant statistics for two countries (Belgium, France).

The two panel statistics estimated offer divergent insight. The IPS-test fails to reject the null hypothesis for male unemployment but does reject it at .05 significance level, for both female and aggregate data. This result strongly suggests that the behaviour of women is more relevant in the mean reverting tendency. The MW-test, however, strongly rejects the null hypothesis at all usual confidence levels, which suggests that for some countries the unit root model would not be appropriate.

While the results of the econometric tests are rather inconclusive, they do reveal something about the unemployment dynamics in the Eurozone. Firstly, most countries fail to reject the possibility of unit root persistence, for male, female and aggregate data. This means that the overall persistence of unemployment is indeed very high. Secondly, the gender differences in labour market behaviour are highly relevant.

To conclude anything about the underlying causes for the observed differences would require substantial new research, but these results allow for speculation based on known characteristics of gender specific labour market behaviour. For instance, women tend to be marginally less attached to labour force, resulting in exit, when faced with unemployment. This can be explained by the child-rearing responsibility falling heavier on women, as well as with a wider set of cultural conventions.

The policy implications of the findings presented in this thesis are also twofold. First, the apparent persistence of unemployment shocks in general supports the view that, active fiscal and monetary policy can be used to order to bring the economy back to its optimal level. Automatic fiscal stabilizers alone have been ineffective to reduce business cycle variation to an extent that would be sufficient to show in the test procedure as null rejecting statistics. The second implication is the undeniable relevance of gender differences in labour market dynamics. Before drawing any further conclusions on the relevant mechanics from which these observed differences arise, it would be necessary to investigate the covariates of the countries where the phenomenon is the most apparent.

Avainsanat – Nyckelord – Keywords