Essays on business and financial cycles: prediction and synchronization

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Summary of the doctoral dissertation

Essays On Business and Financial Cycles — Prediction and Synchronization

by

Jameel Ahmed

This thesis consists of four self-contained essays on business and financial cycles. We venture to predict the business and financial cycles, accounting for their persistence, the clustering effects and heteroskedasticity using the dynamic extensions of binary choice models. Particularly, in Chapter 2, we forecast the bear phases on the U.S. stock market. We find that while forecasting these cycles it pays off to account for the stylized facts of the cyclical series. Whereas the prediction of equity market cycles (bears or bulls) might help regulators and policy makers take proactive measures to contain the excesses in the asset prices, it turns out that it is equally valuable for the investors to time the market and engage in active trading and beat the passive buy-and-hold strategies.

Focusing on another financial asset class, in Chapter 3 we consider the cycles in the bilateral exchange rates. Here we study cycles in world’s six major currencies which are considered as either ‘reserve currencies’ or ‘funding currencies’ or ‘investment currencies’. We extract cyclical periods of appreciation and depreciation non-parametrically and try to forecast these episodes one to twenty four months ahead using five risk factors. Broadly, these risk factors include violations of UIP, RPPP, pseudo-parity with equity prices, liquidity pressures and term spread. With these risk factors, exchange rate indeed exhibits cyclical variations as the periods of appreciation follow the periods of depreciation, and vice versa. This implies that the policy makers can utilize these signals to smoothen the currency misalignment and restore its competitiveness. Further, as the carry trade is a major trading activity on the forex market, any adverse movements in the target or funding currencies may erode traders’ cumulative earnings. Therefore, foretasted periods of appreciation and depreciation may also help carry traders avoid possible losses by portfolio re-balancing.

Penultimately, in Chapter 4, we study the bilateral real and financial cycle synchronization within nine eurozone countries. Using the probit framework, we find strong cross-country synchronization in both business cycles and financial cycles. This is reflected by statistically and economically significant marginal effects within the probit framework. Moreover, financial synchronization dominates business cycle synchronization in the
eurozone, especially after the introduction of the single currency: whereas the euro sample coincides with a strong increase in financial synchronization, business cycle synchronization does not change much. For some country pairs, we even find some evidence of “de-coupling” business cycles but the majority of marginal business cycle effects do not change much over time. Controlling for endogeneity does not fundamentally alter our results. Our results suggest that monetary integration has brought more financial integration; but the impact of monetary integration on business cycle synchronization remains limited or even seems to lead to a “de-coupling” of peripheral countries’ business cycles relative to the core countries in a number of cases. The former observation supports the often heard plea for more international macro-prudential regulation whereas the latter observation gives ammunition to those economists that always stressed that the euro zone architecture is unfinished business and that the conditions for an optimum currency area are not fulfilled.

Finally, in Chapter 5, we take up hitherto neglected aspect of conditional heteroskedasticity in binary modeling framework. We build on the observation that the serial dependence and volatility clustering, inter alia, lead to conditional heteroskedasticity in the model disturbances (Engle, 1982) for which we propose an adjustment along the lines of Engle (1982) and Bollerslev (1986). Specifically, we propose a GARCH-type adjustment for the conditional variance of model errors in the short run, while leaving the unconditional variance fixed to unity to achieve identification. The results based on the simulations and empirical applications to predicting the US business and financial cycles confirm the utility of heteroskedastic adjustment. Moreover, we also propose LM type tests for ARCH effects in BCMs. Of the proposed LM tests one based on the expected Information matrix exhibits smaller size distortions and higher power properties.
Bibliography
