1. Please read the recent articles “Modern Macroeconomics in Practice: How Theory is Shaping Policy” by V.V. Chari and Patrick Kehoe and “The Macroeconomist as Scientist and Engineer” by N. Gregory Mankiw, and answer the following questions. Both articles may be downloaded from the Course Outline page of the ECON602 web site.

(a) According to Chari and Kehoe, what must a coherent framework for the design of macroeconomic policy consist of? Briefly explain why?

(b) What is a time inconsistency problem? Explain briefly how such a problem can arise in taxing alternative forms of income? How can the time inconsistency problem be resolved?

(c) What is rule based monetary policy? What is inflation targeting? Why do Chari and Kehoe argue that rule-based policies have become so widespread?

(d) How may intertemporal distortions due to fiscal policy affect economic performance? What evidence do Chari and Kehoe cite to suggest that developed countries are beginning to recognize the importance of such distortions?

(e) According to Mankiw, what were the successes of the Keynesian revolution? What was the neoclassical Keynesian synthesis? What were the impacts on policy?

(f) Summarize briefly the three waves of New Classical macroeconomics that arose in the 1960s, 1970s and 1980s.

(g) How does New Keynesian macroeconomics differ from traditional Keynesian economics?

(h) Explain why Mankiw is more negative regarding the impacts of macroeconomic theory on policy than Chari and Kehoe.

2. Check the version of Excel you are using to see if it already has a HP Filter add in. If not, download the HP Filter add-in for Excel (a link is on the Useful Links page of the 602 web site) and add it to Excel. Go to the CBRT-EDDS databank (http://evds.tcmb.gov.tr/yeni/cbt-uk.html) and download the quarterly seasonally
unadjusted national accounts broken down by expenditure categories for the period 1987:Q1 – 2007:Q3 in both (1) nominal (current YTL) terms and (2) real (chained 1987 YTL) terms. These correspond to data series numbers TR.UR.G**.C and TR.UR.G**.

(a) Detrend the logarithm of real GDP (TP.UR.G48) using (1) a linear trend and (2) a HP filter. Graph the two resulting detrended data series and compare them qualitatively. How do they differ? What does the trend generated by the HP filter suggest about the long-run growth of the Turkish economy?

(b) Construct an aggregate real index, \( I \), of durable consumption (TP.UR.G03), semi-durable consumption (TP.UR.G04) and total business investment in fixed capital (TP.UR.G11).

**Hint**: This is not a simple sum of the four indices. There are two methods to do this.

**Method 1 (Chain Index)**: Let \( C_d \) denote real durable consumption, \( C_s \) denote real semi-durable consumption, and \( I_k \) denote real investment in fixed capital. Then the natural logarithm of \( I \) is given by

\[
\ln(I_t) = \omega_{dt} \ln(C_{dt}) + \omega_{st} \ln(C_{st}) + \omega_{kt} \ln(I_{kt})
\]

where \( \omega_i, i \in \{d,s,k\} \) denotes the share of the total expenditure on these three items which is allocated to item \( i \). That is

\[
\omega_{it} = \frac{V_{it}}{V_{dt} + V_{st} + V_{kt}},
\]

where \( V_i \) is the nominal expenditure on item \( i \). \( V_i \) can be obtained from the series TP.UR.G03.C, TP.UR.G04.C, and TP.UR.G11.C.

**Method 2 (Tornqvist Index)**: Another (approximately similar, though not identical) way to compute the index is to compute the growth of \( I \) as

\[
\frac{\Delta I_t}{I_t} = \omega_{dt} \frac{\Delta C_{dt}}{C_{dt}} + \omega_{st} \frac{\Delta C_{st}}{C_{st}} + \omega_{kt} \frac{\Delta I_{kt}}{I_{kt}}
\]

where \( \Delta I_t = I_{t+1} - I_t \) and \( \omega_i \) could be the share at \( t + 1 \) or \( t \) or the average of the two. To compute \( I \), use the nominal value of the sum of the three series in the first period and apply the growth rate of \( I \) derived above in an iterative fashion.

(c) Use the HP filter to generate detrended series for the logarithms of non-durable consumption and \( I \), and plot the results. How does your graph compare with Figure 3 of the article “The Transformation of Macroeconomic Policy and Research” by Edward C Prescott (on the course outline)?

(d) Compute the standard errors of the HP-filtered series for log real GDP, \( \sigma_Y \), log
non-durable consumption, $\sigma_C$, and the log of $I$, $\sigma_I$. Compute the ratios $\sigma_C/\sigma_Y$ and $\sigma_I/\sigma_Y$. Also compute the log-covariances between non-durable consumption and GDP and between $I$ and GDP.