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Guide to data and files accompanying

"Declining Volatility in the U.S. Automobile Industry."

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Introduction

Data used to calculate the contribution of motor vehicles to GDP variance are available in AggregGDP.xls, which are originally from NIPA Table 1.2.3. The program is AGGREGGDP.TSP.

Table 1

Data and programs for reproducing Table 1 are given by table1rv.tsp and rvaggmvdat.xls (simple file in a form that can be read by TSP), and Ramey_Vine_Aggreg_MV_Data.xls (the complete file which describes the data).

Seasonally-adjusted car and truck sales are available from the Bureau of Economic Analysis (BEA):

http://www.bea.gov/bea/dn/gap_hist.xls.

Seasonally-adjusted production data are available from the Federal Reserve Board:

http://www.federalreserve.gov/releases/g17/table3.htm.

Car inventories are also available on a seasonally-adjusted basis from the BEA (same link as above), though we had to use our own seasonal adjustment method for trucks.

Table 2

Monthly data series for the plant-level production margin variables are contained in 6 Excel spreadsheets --> Chrysler.xls, FordA.xls, FordB.xls, GMA.xls, GMB.xls and GMC.xls. For each plant, the following variables exist:

(1) The total number of regular hours worked
(2) The total number of overtime hours worked
(3) The average linespeed
(4) The average number of shifts working each day
(5) The number of days closed for inventory adjustments
(6) The number of days closed for model changeovers
(7) The number of available workdays each month.

Data were collected at the weekly frequency and were aggregated to a monthly frequency. A month includes all weeks for which Saturday falls in that month, but, in the end, all measures of output are analyzed on an average output-per-available-workday basis (excluding holidays and supply disruptions).

The measurement of average plant-level variance is done in the TSP program TABLE2RV.TSP. It reads the Excel files listed above, and results are contained in the file named TABLE2RV.OUT.

Table 3

Unit sales data as described for use in Table 1. North American imports and exports are also available from the BEA via the link provided above. The program to produce this table is table3rv.tsp.

Figure 1

The data are as described for use in Table 1.

Figure 2

Days' supply is measured as the stock of inventories divided by the flow of sales at an annual rate, multiplied by 307 (the average number of selling days in a year). Car sales and inventories and light-truck sales are available on a seasonally-adjusted basis from the BEA (as noted above). The level of light-truck inventories were seasonally adjusted with X12-ARIMA and are included in the Excel file.

Figure 3

The Matlab program FIGURE3.MAT numerically searches the parameter space for pairs of ρ and α_1/γ_2 for which the ratio of the variance of output to sales is increasing.