

VII. Appendix A

The data source, unless stated otherwise, is the National Income and Product Accounts (NIPA) compiled by the Bureau of Economic Analysis. Nominal values are converted to real values using the implicit price deflator for personal consumption expenditures (Table 1.1.9 line 2). Fiscal variables include federal and state and local governments. To construct a government debt series that is consistent with the NIPA's definition of net lending and net borrowing (Table 3.1 line 39), government consumption and transfers are constructed differently from the definitions commonly used. Data construction is detailed below.

Consumption. C_t is personal consumption expenditure on nondurable goods (Table 1.1.5 line 5) and services (Table 1.1.5 line 6)

Investment. I_t is the sum of personal consumption expenditure on durable goods (Table 1.1.5 line 4) and gross private domestic investment (Table 1.1.5 line 7).

Hours worked. L_t is an index of total weekly hours worked. Let H_t denote the seasonally adjusted index for the average weekly hours, nonfarm business, all persons, (U.S. Department of Labor, PRS85006023), and N_t denote the civilian employment for 16 years and over (U.S. Department of Labor, CE16OV). Then $L_t = \frac{H_t N_t}{100}$.

Consumption tax revenue. $T_t^C = C_t \times \tau_t^C$, where $\tau_t^C = \frac{T_t^C}{C_t - T_t^C}$ and T_t^C is taxes on production and imports (Table 3.1 line 4) less property taxes (Table 3.3 line 8).

Capital and tax revenue. Jones's (2002) definitions are used to construct capital and labor tax revenues (T_t^K and T_t^L).

Government consumption. G_t^C is government consumption expenditure (Table 3.1 line 16) and government net purchases of non-produced assets (Table 3.1 line 37), minus government consumption of fixed capital (Table 3.1 line 38).

Government investment. G_t^I is gross government investment (Table 3.1 line 35).

Transfers. Z_t is the sum of net current transfers, net capital transfers, and subsidies (Table 3.1 line 25), minus the tax residual. Net current transfers are current transfer payments (Table 3.1 line 17) minus current transfer receipts (Table 3.1 line 11). Net capital transfers are defined as capital transfer payments (Table 3.1 line 36) minus capital transfer receipts (Table 3.1 line 32). The tax residual is the sum of current tax receipts (Table 3.1 line 2), contributions for government social insurance (Table 3.1 line 7), income receipts on assets (Table 3.1 line 8), and the current surplus of government enterprises (Table 3.1 line 14), minus total tax revenue (T_t^C , T_t^K , and T_t^L).

Government debt. Following Leeper et al. (2010), B_t is constructed as the sum of net borrowing at t and government debt at $t - 1$ less seigniorage. Net borrowing is the sum of government consumption (G_t^C), government investment (G_t^I), transfers (Z_t), and interest payment (Table 3.1 line 22) less tax revenues (T_t^C , T_t^K , and T_t^L). Seigniorage is the increase

in adjusted monetary base (published by the Federal Reserve Bank of St. Louis) between quarters, where quarterly values are monthly averages.

Finally, all the data described above are scaled by a population index and logarithmic transformation as follows. The observable $X = \ln\left(\frac{x}{p}\right) \times 100$, where p is a population index (civilian noninstitutional population, ages 16 years and over, seasonally adjusted, U.S. Bureau of Labor Statistics, LNS10000000) and x is the quantity before scaling and transformation.

VIII. REFERENCES

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