

**THE INCENTIVE EFFECTS OF MARGINAL TAX RATES:
EVIDENCE FROM THE INTERWAR ERA**

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GUIDE TO ONLINE MATERIALS

I. SUPPLEMENTAL FILES

There are two supplemental files:

1. A Narrative Analysis of Interwar Tax Changes November 2012.pdf. (Christina D. Romer and David H. Romer, “A Narrative Analysis of Interwar Tax Changes,” University of California, Berkeley, November 2012.) This is the companion background paper that is referred to in the paper. It describes the nature, motivation, and size of each interwar tax change.

2. Romer&RomerInterwarAppendixOnDataAndComputations.pdf. This is the online appendix referred to in the paper. It describes the data available in the *Statistics of Income*, and our procedures for calculating taxable income exclusive of capital gains and losses, marginal rates on non-capital-gains income, and policy-induced changes in marginal rates.

II. DATA AND PROGRAMS

We recommend reading Section I.B of the paper and the online appendix before reading these notes.

The programs were run in RATS. The program files are plain text files that can be opened with any word processor. The “.DED” files are RATS data banks containing the data in the form they are accessed by RATS.

As described in Section I.B of the paper and in the online appendix, we calculate the data on taxable income, marginal rates, and so on in a series of steps. This description of our data and programs is therefore divided into four parts: original data and basic manipulations (performed in Excel); more complicated data manipulations (performed in RATS; this is where the data by percentile group are constructed); time-series/cross-section analysis (performed in RATS); time-series analysis (performed in RATS).

A. ORIGINAL DATA AND BASIC MANIPULATIONS

1. Almost all the original data come from the *Statistics of Income*, published annually by the U.S. Bureau of Internal Revenue (the precursor to the Internal Revenue Service). They are available at <http://www.irs.gov/uac/SOI-Tax-Stats-Archive>.

These data are in three files:

a. The most income important data are in **SOI Data used in RATS.xlsx**. The sheet “READ ME” provides explanations, and the sheet “FOR RATS” has the end result of the data manipulations. The resulting data are also in the RATS data bank **SOI.DED**.

b. Data used to compute income by type (capital income excluding capital gains, entrepreneurial income, labor income, and overall gross income) are in the file **Income by type.xlsx**. The sheet “READ ME” provides explanations, and the sheet “FOR RATS” has the end result of the data manipulations. The resulting data are also in the RATS data bank **INCOMEBYTYPE.DED**.

c. Data on marginal tax rates at different levels of income are in **TaxTables.xls**. The sheet “SOI” has the basic numbers (taken directly from the *Statistics of Income*); the sheet “TaxRates” has some simple manipulations; and the sheet “DataForRATS” arranges the data in a more useful form. Note that the issues of retroactive changes and of the special complications caused by the 1940 “defense tax” (see the online appendix on data and computations, Sections D and E) are addressed in RATS programs described below, not in this file. The resulting data are also in the RATS data bank **TAXTABLES.DED**.

2. The series that are used in Sections II and III of the paper (the time-series/cross-section analysis) that are not from the *Statistics of Income* are the number of tax units; real GDP, nominal GDP, and the implicit price deflator for GDP; the real return on the stock market; and total federal revenues (all annual). (The data for nominal GDP and total federal revenues are used only in calculating some summary statistics, such as the revenue effects of various tax actions as a share of GDP and the share of overall revenue coming from income taxes on the wealthy.) The data sources and manipulations, as well as the resulting series, are in **MACRO.xls**. The resulting data are also in the RATS data bank **MACRO.DED**.

3. The monthly indicators of investment and entrepreneurial activity used in Section IV of the paper (the time-series analysis) are described in the paper. The original data and basic manipulations are in **monthlydata.xls**. The resulting data are also in the RATS data bank **MONTHLY.DED**.

B. MORE COMPLICATED DATA MANIPULATIONS

The relevant files are:

PARETO_ML.RAT. Estimates Pareto parameter to fit top of income distribution, by year. Described in the online appendix on data and computations, Section F.

PARETO.DED. RATS data bank containing the estimated Pareto parameter by year. Created by PARETO_ML.RAT.

INTERPOL.RAT. This program finds, for each year:

- Net incomes that represent the cutoffs between the taxpayers in different percentile groups (for example, the net income that is the dividing line between the top 0.005% and the next 0.005%).
- Total ordinary taxable incomes of taxpayers in each percentile group.
- The change in log real ordinary taxable incomes of the taxpayers in those groups.
- Share of total income tax paid by each percentile group.
- Incomes of the taxpayers in each percentile group of various types: labor,

- entrepreneurial, capital, total gross (all excluding capital gains); also deductions.
- The change in log real income of the various types for each percentile group.
- The change in log real income of the top 10 percentile groups combined.

CUTOFFS.DED. RATS data bank containing the series created by INTERPOL.RAT (other than the shares of the total income tax paid by the different percentile groups, which are reported in Figure 4 of the paper but not used in the subsequent analysis).

INTERPOL_BOUNDS.RAT. This program computes bounds on how far the Pareto interpolation of ordinary taxable incomes could be off. It is the basis for n. 3 in the paper.

MRATES.RAT. Finds log after-tax shares of the top income percentile groups, and the information needed to find the policy-induced and overall changes in the log after-tax share by percentile group. Also finds log after-tax shares for the various types of income: labor, entrepreneurial, capital.

To allow us to find overall and policy-induced changes, the series are computed three ways:

- Using rates actually paid in year t.
- Using rates that would have paid given incomes in year t and the tax code in year t+1.
- Using rates that would have paid given incomes in year t and the tax code in year t-1 (the reason for finding this is that in some years, people might have expected to face those rates in year t).

The program also finds these log after-tax share series aggregated over the 10 percentile groups that we consider, and the policy-induced changes in the aggregated log after-tax share.

TSCS.DED. RATS data bank containing the data constructed by INTERPOL.RAT and MRATES.RAT that are used in the time-series/cross-section analysis. Also contains the data on real GDP growth and the real return on the stock market (used in robustness checks in the time-series/cross-section analysis).

AGG_MRATE.DED. RATS data bank containing the log after-tax share series aggregated over the top 10 percentile groups created by MRATES.RAT, annual (used by PURE_TIME_SERIES.RAT).

MONTHLY.DED. RATS data bank containing the monthly data used in the time-series analysis. These are the monthly indicators of investment and entrepreneurial activity described above, and the series created by MRATES.RAT of policy-induced changes in the log after-tax share of the top 10 percentile groups aggregated, converted from annual to monthly based on the timing of legislation and when changes went into effect. The conversion from annual to monthly is done in monthlydata.xlsx.

C. PROGRAMS FOR THE ANALYSIS IN SECTIONS II AND III (THE TIME-SERIES/CROSS-SECTION ANALYSIS)

The relevant files are:

TSCS.RAT. Performs the core time-series/cross-section analysis and many of the extensions and robustness checks.

TSCS_STABILTY.RAT. Analyzes the stability of our estimates over time and investigates the

reasons for the differences between our findings and Goolsbee's. (See Section III.B of the paper.)

FOOTNOTE7. There is one robustness issue that involved a considerable amount of analysis (see n. 7 in the paper). We have gathered the relevant files for this analysis in a separate folder, "FOOTNOTE7." The file **README_FOOTNOTE7.pdf** explains the issue and the files.

D. PROGRAMS FOR THE ANALYSIS IN SECTION IV (THE TIME-SERIES ANALYSIS)

The relevant files are:

PURE_TIME_SERIES.RAT. The time-series equivalent using annual data of the baseline time-series/cross-section analysis in Section III of the paper of the effects of changes in marginal rates on income. See the subsection of Section IV.A of the paper on "The Time-Series Relationship between Marginal Tax Rates and Taxable Income."

INVESTVAR.RAT, INVESTVAR_DEPDUM.RAT, INVESTVAR_IP_EXOG.RAT, INVESTVAR_IP_ENDOG.RAT. These programs estimate the VARs. INVESTVAR.RAT contains the basic VARs; INVESTVAR_DEPDUM.RAT adds a dummy variable for 1929:9 and after; INVESTVAR_IP_EXOG.RAT adds industrial production (treated as exogenous); INVESTVAR_IP_ENDOG.RAT adds industrial production (treated as endogenous).