

Prelude to a critique of the Ricardian Equivalence Doctrine

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Abstract

Granger non-causality tests applied to data for a large set of countries indicate that public debt/DGP ratio is not a good “leading indicator” for the tax burden placed on the private sectors. The “rational” private sectors learning from experience have had no reason to trust - and follow in practice - the Ricardian Equivalence Doctrine.

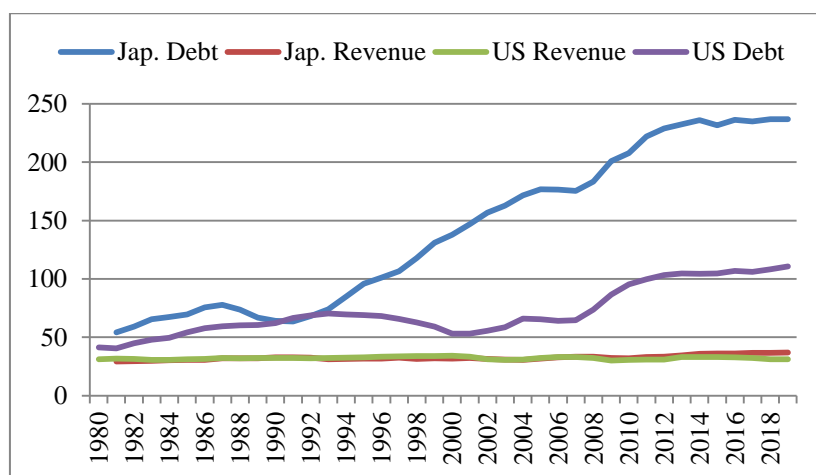
JEL Codes E13, E61, A11

The Ricardian Equivalence Doctrine still haunts the mainstream macroeconomics. The doctrine purports that fiscal deficits must (may?) be offset (more or less immediately) by cuts in spending by the private sector “rationally expecting” higher compensatory taxes to be levied in the future.

But how can the private sector ever come to such a belief? My guess is that the answer is “by learning”. Of course, by learning from experience rather than from the mainstream macro treatises (though of course the latter may have some corrupting educational impact through the opinions held by “well educated” politicians or broadcast by the media).

If the practical experience were to teach the general public that there is no “free lunch” then it should have been true that public debt is inevitably followed, sooner or later, by “penalising” taxation.

Figure 1 Public debt/GDP and public revenue/GDP (%): Japan and USA, 1980/81-2019



Source: AMECO.

Is this the case? Not quite, as is now preliminarily documented. Figure 1 shows the longer-run trajectories of two items: public debt/GDP and public sector revenue/GDP for two countries: the USA and Japan. Data, coming from AMECO, start from 1980 and 1981 respectively. Public sector revenue includes all kinds of taxation levied on the private sector (and some

other minor items such as e.g. privatisation proceeds). Evidently, the revenue/GDP ratios have been essentially constant all along. The tax burden has not risen since the early 1980s. But the public debt/GDP ratios have been very dynamic: public spending in excess of public sector revenue has been a constant feature of the long-term performance of both countries. Clearly, the private sectors sensitive to the reality (and not the doctrines of the long defunct economists) cannot be assumed to be oblivious to the empirical facts such as illustrated by Figure 1.

Perhaps it could be counter-argued that it is an *increase* in public debt that is reflected in the tax burden placed on the private sector. To check the validity of this hypothesis I conducted the Granger non-causality tests whose outcomes are summarised in Table 1.

Table 1 P values for Granger non causality tests for Japan and the USA
(years 1980/81 -2019)

	Japan	USA
Revenue does not Granger cause Debt	0.0894	0.8188
Debt does not Granger cause Revenue	0.1769	0.1453
Revenue does not Granger cause Increase in Debt	0.0387	0.2243
Increase in Debt does not Granger cause Revenue	0.7562	0.2131

Source: Own calculations (via Toda-Yamamoto Procedure) based on AMECO data.

The two first rows in Table 1 contain the P values for the Granger non-causality tests for Debt/GDP and Revenue/GDP ratios (as in Figure 1). The last two rows contain the P values for the Granger non-causality test for *increase* in Debt/GDP and Revenue/GDP ratios. Only one Granger non-causality hypothesis is rejected (at 5% level). This is the hypothesis that Revenue/GDP does not Granger cause increase in public debt/GDP in Japan. It is likely (at 5% significance level) that in Japan the causality runs from Revenue/GDP to Debt/GDP. Non-causality is detected for all other hypothesis. In particular, there is no reason to claim that higher Debt/GDP must be reflected, sooner or later, in the tax burden level.

For a much larger set of countries AMECO supplies the Debt/GDP and Revenue/GDP data starting in 1995. It is possible to conduct the Granger non-causality tests for all these countries (though for a shorter time span).

The resulting P values for the Granger non-causality tests are in Table 2. The marked cells in Table 2 suggest *presence* of Granger causality (with the conventional 5% critical level).

It turns out that Debt/GDP level is likely to “cause” revenue/GDP (or tax burden level) in only a few, largely marginal, countries (Column 2). These include 1) countries running very conservative fiscal policies with very low levels of public debt (Column 3); 2) euro area countries kept fiscally on short leash (Greece, Italy and Portugal).

Increase in Debt/GDP ratio can be similarly claimed to affect the Revenue/GDP (or tax burden level) in a few marginal countries (and in Greece and Italy).

Summing up, the evidence of the public debt/GDP (or a change thereof) being a reliable “leading indicator” for the tax burden placed on the private sector is very weak - actually non-existent in most cases. This fact may not have gone unnoticed. The “rational” private sectors

learning from experience have had no reason to trust – and follow in practice – the Ricardian Equivalence Doctrine.

Table 2 P values for Granger non-causality tests (years 1995-2019)

	Revenue does not Granger cause Debt	Debt does not Granger cause Revenue	Debt/GDP 2020 (%)	Revenue does not Granger cause increase in Debt	Increase in Debt does not Granger cause Revenue
Belgium	0.2872	0.1157	100	0.5468	0.0313
Bulgaria	0.1870	0.0000	21	0.0014	0.0000
Czechia	0.1009	0.0311	31	0.0005	0.5225
Denmark	0.8837	0.7792	33	0.3051	0.5872
Germany	0.2449	0.8675	59	0.5088	0.1148
Estonia	0.3184	0.6311	9	0.2085	0.5432
Ireland	0.0002	0.5754	59	0.0073	0.3117
Greece	0.9847	0.0005	175	0.7171	0.0436
Spain	0.0000	0.9324	97	0.0001	0.7038
France	0.5374	0.7444	99	0.5324	0.2925
Italy	0.5967	0.0000	136	0.8239	0.0393
Cyprus	0.5614	0.1229	94	0.6667	0.1123
Latvia	0.2885	0.8539	36	0.1452	0.8102
Lithuania	0.8592	0.0053	36	0.5728	0.0001
Luxembourg	0.0006	0.3599	20	0.0002	0.9493
Hungary	0.8004	0.1727	68	0.5342	0.2585
Malta	0.0058	0.4557	43	0.0019	0.0186
Netherlands	0.0164	0.7627	49	0.0328	0.7617
Austria	0.8804	0.7142	70	0.2897	0.3379
Poland	0.2278	0.0080	47	0.6487	0.0121
Portugal	0.0183	0.0348	120	0.2503	0.5047
Romania	0.0747	0.9344	35	0.1840	0.8011
Slovenia	0.7452	0.8778	67	0.2018	0.2047
Slovakia	0.0377	0.5964	48	0.0135	0.5277
Finland	0.9348	0.8341	59	0.6820	0.0000
Sweden	0.6499	0.4886	35	0.3734	0.6783
UK	0.6381	0.3307	85	0.7530	0.6645
Iceland	0.2671	0.0882	39	0.2988	0.0262
Norway	0.0829	0.0040	37	0.0152	0.2574
Japan	0.5339	0.6760	237	0.0459	0.3528
US	0.8639	0.3070	111	0.9104	0.1210

Source: Own calculations (via Toda-Yamamoto Procedure) based on AMECO data.

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