**Determinants of top personal income tax rates in 19 OECD countries, 1981–2018**

Supplementary file 1

**Table A1. Descriptive statistics**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | N | Mean | Std. dev. | Min | Max |
|  |  |  |  |  |  |
| *Country-year level[[1]](#footnote-1)* |  |  |  |  |  |
|  |  |  |  |  |  |
| PIT rate | 692 | 52.25 | 9.32 | 33.00 | 85.00 |
| CIT rate | 692 | 36.04 | 9.81 | 12.50 | 61.80 |
| Dividend tax rate | 664 | 31.61 | 17.34 | -0.01 | 86.70 |
| Combined CIT+PIT rate on dividends | 664 | 54.56 | 13.89 | 25.00 | 93.70 |
| Relevance of top PIT bracket | 692 | 0.01 | 0.01 | 0.00 | 0.04 |
| Budget balance | 692 | -2.72 | 4.77 | -32.07 | 18.63 |
| Demographic burden | 692 | 23.09 | 5.07 | 13.07 | 47.77 |
| Unemployed | 692 | 7.95 | 3.97 | 2.00 | 27.50 |
| Elderly | 692 | 15.14 | 2.66 | 9.59 | 22.44 |
| Population \* 1000 | 692 | 37881.41 | 62148.90 | 3164.83 | 325220.00 |
| Pro-poor public expenditure | 692 | 0.17 | 0.06 | 0.03 | 0.30 |
| GDP growth | 692 | 2.29 | 2.47 | -9.13 | 25.16 |
| GDP per capita | 692 | 38618.84 | 13796.39 | 12598.91 | 91565.73 |
| Crisis | 692 | 0.10 | 0.29 | 0.00 | 1.00 |
| Δ government debt | 676 | 1.30 | 6.10 | -32.97 | 55.09 |
| Interest rate on government bonds | 692 | 7.05 | 4.49 | 0.09 | 29.03 |
| Trade openness | 692 | 70.19 | 34.21 | 16.60 | 226.04 |
| Corporatism | 692 | 0.03 | 3.37 | -5.38 | 7.37 |
| Redistribution | 690 | 17.80 | 3.34 | 11.00 | 25.00 |
| Left government[[2]](#footnote-2) | 692 | 36.29 | 38.99 | 0.00 | 100.00 |
| Consensus democracy | 692 | -0.11 | 1.08 | -2.48 | 2.34 |
|  |  |  |  |  |  |
| *Government level* |  |  |  |  |  |
|  |  |  |  |  |  |
| PIT rate, year 1 | 226 | 52.54 | 9.97 | 33.00 | 85.00 |
| CIT rate, year 1 | 226 | 35.90 | 10.10 | 12.50 | 61.50 |
| Dividend tax rate, year 1 | 219 | 32.28 | 18.41 | -0.01 | 86.70 |
| Combined CIT+PIT rate on dividends, year 1 | 219 | 54.92 | 14.59 | 25.00 | 93.70 |
| Relevance of top PIT bracket, year 1 | 226 | 0.01 | 0.01 | 0.00 | 0.04 |
| Budget balance, year 1 | 226 | -2.96 | 4.70 | -16.21 | 15.06 |
| Demographic burden, year 1 | 226 | 23.17 | 5.12 | 13.07 | 47.77 |
| Unemployed, year 1 | 226 | 8.04 | 4.03 | 2.00 | 27.50 |
| Elderly, year 1 | 226 | 15.13 | 2.70 | 9.86 | 22.18 |
| Population \* 1000, year 1 | 226 | 35294.95 | 57710.42 | 3164.83 | 325219.90 |
| Pro-poor public expenditure, year 1 | 226 | 0.18 | 0.07 | 0.04 | 0.30 |
| GDP growth, year 1 | 226 | 2.17 | 2.42 | -7.30 | 10.90 |
| GDP per capita, year 1 | 226 | 38692.97 | 13479.86 | 12598.92 | 88444.88 |
| Crisis (dummy) | 226 | 0.17 | 0.38 | 0.00 | 1.00 |
| Δ government debt | 226 | 2.81 | 12.56 | -37.51 | 46.02 |
| Interest rate on government bonds, year 1 | 226 | 7.33 | 4.81 | 0.32 | 29.03 |
| Trade openness, year 1 | 226 | 69.57 | 34.48 | 16.60 | 226.04 |
| Corporatism, year 1 | 226 | 0.11 | 3.37 | -5.38 | 6.52 |
| Redistribution, year 1 | 226 | 17.75 | 3.28 | 11.00 | 24.70 |
| Left government | 226 | 36.31 | 41.14 | 0.00 | 100.00 |
| Christian democratic government | 224 | 12.49 | 24.45 | 0.00 | 100.00 |
| Consensus democracy, year 1 | 226 | 0.00 | 1.10 | -2.36 | 2.25 |
| Days of cabinet duration | 226 | 1038.54 | 404.83 | 368.00 | 1885.00 |
|  |  |  |  |  |  |

**Table A2. Additional variables**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Baseline specification (1) | (15) | (16) | (17) | (18) | (19) | (20) | (21) | (22) |
|  |  |  |  |  |  |  |  |  |  |
| *Tax system variables* |  |  |  |  |  |  |  |  |  |
| PIT-CIT rate differential | -0.1464\*\* | -0.1391\*\* | -0.1436\*\* | -0.1487\*\* | -0.1468\*\* | -0.1462\*\* | -0.1549\*\* | -0.1483\*\* | -0.1297\* |
|  | (0.0675) | (0.0656) | (0.0669) | (0.0687) | (0.0684) | (0.0673) | (0.0776) | (0.0701) | (0.0684) |
| Δ CIT rate | 0.3410\*\*\* | 0.3295\*\*\* | 0.3453\*\*\* | 0.3425\*\*\* | 0.3379\*\*\* | 0.3401\*\*\* | 0.3483\*\*\* | 0.3419\*\*\* | 0.3394\*\*\* |
|  | (0.0956) | (0.0906) | (0.0955) | (0.0962) | (0.0965) | (0.0963) | (0.1053) | (0.0958) | (0.0965) |
| Relevance of top PIT bracket | 78.9686 | 88.6381 | 80.3952 | 75.7450 | 80.3547 | 92.4955 | 88.4570 | 77.1611 | 93.1476 |
|  | (77.9249) | (78.1579) | (78.0523) | (81.1239) | (78.3042) | (89.0974) | (84.7463) | (82.6051) | (78.4265) |
| PIT rate start value | -1.5097\*\*\* | -1.5922\*\*\* | -1.4332\*\* | -1.5123\*\*\* | -1.4772\*\*\* | -1.4948\*\*\* | -1.7181\*\* | -1.5087\*\*\* | -1.4759\*\*\* |
|  | (0.5563) | (0.5586) | (0.5641) | (0.5570) | (0.5525) | (0.5608) | (0.6988) | (0.5573) | (0.5612) |
|  |  |  |  |  |  |  |  |  |  |
| *Socio-economic variables* |  |  |  |  |  |  |  |  |  |
| Budget balance | -0.1255 | -0.1409 | -0.1294 | -0.1177 | -0.1143 | -0.1209 | -0.1521 | -0.1226 | -0.1379 |
|  | (0.0952) | (0.0995) | (0.0969) | (0.0965) | (0.0949) | (0.0936) | (0.1031) | (0.0987) | (0.1000) |
| Demographic burden | 0.1314 | 0.1410 | 0.1332 | 0.1337 | 0.1372 | 0.1246 | 0.1057 |  |  |
|  | (0.0902) | (0.0913) | (0.0909) | (0.0926) | (0.0916) | (0.0933) | (0.0983) |  |  |
| Ln population | -0.0814 | -0.0457 | -0.1781 | -0.0483 | -0.0970 | -0.1554 | -0.0572 | -0.0590 | 0.0091 |
|  | (0.5255) | (0.5197) | (0.5597) | (0.5167) | (0.5363) | (0.5164) | (0.6067) | (0.5250) | (0.5234) |
| GDP growth | -0.1872 | -0.1899 | -0.2114 | -0.1936 | -0.1848 | -0.1862 | -0.1724 | -0.1870 | -0.1491 |
|  | (0.1574) | (0.1585) | (0.1611) | (0.1585) | (0.1602) | (0.1579) | (0.1717) | (0.1578) | (0.1988) |
| Ln GDP per capita | 4.1859\* | 4.3327\* | 3.7162\* | 4.1454\* | 4.1132\* | 4.6590\* | 4.0270 | 4.1556\* | 3.2075 |
|  | (2.2464) | (2.2720) | (1.9752) | (2.2176) | (2.1896) | (2.3635) | (2.4517) | (2.2840) | (2.0485) |
|  |  |  |  |  |  |  |  |  |  |
| *Political and institutional variables* |  |  |  |  |  |  |  |  |  |
| Corporatism | 0.1723 | 0.1863 | 0.1380 | 0.1740 | 0.1566 | 0.1423 | 0.2890 | 0.1860 | 0.1584 |
|  | (0.1576) | (0.1623) | (0.1688) | (0.1575) | (0.1580) | (0.1577) | (0.1891) | (0.1867) | (0.1910) |
| Redistribution | 0.2784\*\* | 0.2749\*\* | 0.2509\* | 0.2695\*\* | 0.2661\*\* | 0.3144\*\* | 0.2995\* | 0.2840\* | 0.2569\* |
|  | (0.1348) | (0.1336) | (0.1362) | (0.1307) | (0.1326) | (0.1316) | (0.1530) | (0.1461) | (0.1436) |
| Left government | -0.0019 | -0.0008 | -0.0011 | -0.0016 |  | -0.0021 | -0.0066 | -0.0019 | -0.0018 |
|  | (0.0071) | (0.0072) | (0.0073) | (0.0073) |  | (0.0071) | (0.0084) | (0.0071) | (0.0072) |
| Consensus democracy | -0.0656 | -0.0589 | -0.0159 | -0.0746 | -0.0820 | -0.1217 | -0.0736 | -0.0677 | -0.0030 |
|  | (0.3156) | (0.3209) | (0.3168) | (0.3182) | (0.3326) | (0.3341) | (0.3631) | (0.3146) | (0.3174) |
| Cabinet duration | -0.1856 | -0.1440 | -0.2929 | -0.1897 | -0.2454 | -0.2132 | -0.5684 | -0.1979 | -0.1481 |
|  | (0.5938) | (0.5985) | (0.5989) | (0.5965) | (0.6263) | (0.5979) | (0.7300) | (0.6092) | (0.6071) |
|  |  |  |  |  |  |  |  |  |  |
| *Additional variables* |  |  |  |  |  |  |  |  |  |
| Crisis |  | -1.0200 |  |  |  |  |  |  |  |
|  |  | (1.2056) |  |  |  |  |  |  |  |
| Crisis \* Δ government debt |  | 0.0394 |  |  |  |  |  |  |  |
|  |  | (0.0504) |  |  |  |  |  |  |  |
| Interest rate on government bonds |  |  | -0.1195 |  |  |  |  |  |  |
|  |  |  | (0.1520) |  |  |  |  |  |  |
| Trade openness |  |  |  | 0.0034 |  |  |  |  |  |
|  |  |  |  | (0.0086) |  |  |  |  |  |
| Christian democratic government |  |  |  |  | 0.0091 |  |  |  |  |
|  |  |  |  |  | (0.0104) |  |  |  |  |
| Pro-poor public expenditure |  |  |  |  |  | -4.6786 |  |  |  |
|  |  |  |  |  |  | (8.2550) |  |  |  |
| Ethnic fractionalisation |  |  |  |  |  |  | 1.3790 |  |  |
|  |  |  |  |  |  |  | (1.6696) |  |  |
| Elderly |  |  |  |  |  |  |  | 0.1073 | 0.1433 |
|  |  |  |  |  |  |  |  | (0.1856) | (0.1940) |
| Unemployment |  |  |  |  |  |  |  | 0.1383 |  |
|  |  |  |  |  |  |  |  | (0.0977) |  |
| Δ unemployment |  |  |  |  |  |  |  |  | 0.1947 |
|  |  |  |  |  |  |  |  |  | (0.3458) |
|  |  |  |  |  |  |  |  |  |  |
| Constant | -48.8231\*\* | -51.1636\*\* | -41.1703\* | -48.3286\* | -51.4806\*\* | -52.5732\*\* | -44.1869 | -47.9553\* | -38.3101\* |
|  | (24.1430) | (25.3326) | (21.3255) | (25.1774) | (23.3675) | (24.8690) | (27.5245) | (25.6781) | (23.1111) |
|  |  |  |  |  |  |  |  |  |  |
| Period dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Country dummies | No | No | No | No | No | No | No | No | No |
| Observations | 226 | 226 | 226 | 226 | 224 | 226 | 186 | 226 | 226 |
| Adjusted r-squared | 0.3852 | 0.3828 | 0.3856 | 0.3824 | 0.3861 | 0.3836 | 0.4006 | 0.3822 | 0.3759 |

Eicker–Huber–White standard errors in parentheses.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table A3. Alternative model specifications**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Baseline specification (1) | (23) | (24) | (25) | (26) | (27) | (28) | (29) | (30) | (31) |
|  |  |  |  |  |  |  |  |  |  |  |
| *Tax system variables* |  |  |  |  |  |  |  |  |  |  |
| PIT-CIT rate differential | -0.1464\*\* | -0.0875\* | -0.0997\*\* | -0.4868\* | -0.1464\* | -0.2060\*\*\* | -0.1756\*\* | -0.1472\*\* | -0.0558\* | -0.0610\*\* |
|  | (0.0675) | (0.0496) | (0.0488) | (0.2532) | (0.0731) | (0.0791) | (0.0819) | (0.0689) | (0.0289) | (0.0282) |
| Δ CIT rate | 0.3410\*\*\* | 0.3296\*\*\* | 0.4950\*\*\* | 0.4803\*\*\* | 0.3410\*\*\* | 0.3604\*\*\* | 0.3202\*\*\* | 0.3367\*\*\* | 0.3012\*\*\* | 0.4442\*\*\* |
|  | (0.0956) | (0.1007) | (0.1294) | (0.1656) | (0.1047) | (0.0994) | (0.1024) | (0.0946) | (0.0767) | (0.0875) |
| Δ CIT rate \* PIT-CIT rate differential |  |  | -0.0143 |  |  |  |  |  |  | -0.0124\* |
|  |  |  | (0.0092) |  |  |  |  |  |  | (0.0064) |
| Relevance of top PIT bracket | 78.9686 | 127.5540\*\* | 124.9626\*\* | 35.0757 | 78.9686 | 154.4987 | 67.6873 | 81.4062 | -0.1935 | -0.7158 |
|  | (77.9249) | (56.7910) | (57.5380) | (69.4140) | (51.4180) | (108.7424) | (78.6943) | (78.8965) | (20.7377) | (20.5915) |
| PIT rate start value | -1.5097\*\*\* | -0.5527 | -0.5881 | -0.0108 | -1.5097\*\*\* | -1.9238\*\*\* | -1.6336\*\*\* | -1.5036\*\*\* | -0.7417\*\*\* | -0.7469\*\*\* |
|  | (0.5563) | (0.4144) | (0.4202) | (0.1889) | (0.5145) | (0.6939) | (0.6016) | (0.5593) | (0.1940) | (0.1940) |
|  |  |  |  |  |  |  |  |  |  |  |
| *Socio-economic variables* |  |  |  |  |  |  |  |  |  |  |
| Budget balance | -0.1255 |  |  | -0.2321\* | -0.1255 | 0.0057 | -0.1831\* | -0.1514 | -0.0595 | -0.0627 |
|  | (0.0952) |  |  | (0.1232) | (0.0817) | (0.1184) | (0.1043) | (0.0998) | (0.0403) | (0.0401) |
| Demographic burden | 0.1314 |  |  | 0.2354\*\* | 0.1314\* | 0.2135 | -0.0437 | 0.1342 | 0.0666\* | 0.0717\* |
|  | (0.0902) |  |  | (0.1079) | (0.0672) | (0.1433) | (0.1179) | (0.0897) | (0.0400) | (0.0396) |
| Ln population | -0.0814 |  |  | -1.1072 | -0.0814 | 4.0168 | 0.1692 | -0.1523 | -0.1613 | -0.1773 |
|  | (0.5255) |  |  | (0.8450) | (0.4113) | (10.8544) | (0.5698) | (0.5468) | (0.1847) | (0.1820) |
| GDP growth | -0.1872 |  |  | -0.1430 | -0.1872 | -0.3590\*\* | -0.0376 | -0.2782 | -0.0775 | -0.0819 |
|  | (0.1574) |  |  | (0.1548) | (0.1626) | (0.1670) | (0.1434) | (0.1975) | (0.0631) | (0.0623) |
| Ln GDP per capita | 4.1859\* |  |  | 8.0542\*\* | 4.1859\*\*\* | 10.6124\*\* | 5.0341\*\* | 4.4792\*\* | 1.7969\* | 1.8941\* |
|  | (2.2464) |  |  | (3.1516) | (1.4166) | (5.1129) | (1.9849) | (2.2473) | (1.0178) | (1.0140) |
|  |  |  |  |  |  |  |  |  |  |  |
| *Political and institutional variables* |  |  |  |  |  |  |  |  |  |  |
| Corporatism | 0.1723 |  |  | 0.0988 | 0.1723 | -0.2795 | 0.2278 | 0.1503 | 0.0857 | 0.0817 |
|  | (0.1576) |  |  | (0.1645) | (0.1643) | (0.3523) | (0.1514) | (0.1641) | (0.0612) | (0.0613) |
| Redistribution | 0.2784\*\* |  |  | 0.5217\*\*\* | 0.2784\*\* | 0.1722 | 0.4615\*\*\* | 0.2831\*\* | 0.1277\*\* | 0.1242\*\* |
|  | (0.1348) |  |  | (0.1772) | (0.1027) | (0.3841) | (0.1755) | (0.1384) | (0.0499) | (0.0494) |
| Left government | -0.0019 |  |  | -0.0058 | -0.0019 | 0.0026 | -0.0106 | -0.0015 | -0.0018 | -0.0009 |
|  | (0.0071) |  |  | (0.0076) | (0.0071) | (0.0074) | (0.0069) | (0.0071) | (0.0028) | (0.0027) |
| Consensus democracy | -0.0656 |  |  | -0.3589 | -0.0656 | -0.7336 | 0.1068 | -0.0728 | -0.0700 | -0.0657 |
|  | (0.3156) |  |  | (0.4145) | (0.2740) | (0.6417) | (0.3310) | (0.3139) | (0.1271) | (0.1247) |
| Cabinet duration | -0.1856 | -0.6529 | -0.7383 | 0.3355 | -0.1856 | -0.0785 | -0.4321 | -0.0773 |  |  |
|  | (0.5938) | (0.6338) | (0.6301) | (0.6610) | (0.5661) | (0.7085) | (0.6083) | (0.6157) |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| Constant | -48.8231\*\* | -1.7942 | 6.3238 | -82.0980\*\* | -48.8231\*\*\* | -160.3007\* | -61.9272\*\*\* | -52.2111\*\* | -21.0693\*\* | -21.8159\*\* |
|  | (24.1430) | (4.6904) | (4.2142) | (35.3941) | (16.2739) | (94.8895) | (22.3289) | (23.9548) | (10.4230) | (10.4430) |
|  |  |  |  |  |  |  |  |  |  |  |
| Period dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Country dummies | No | No | No | No | No | Yes | No | No | No | No |
| Observations | 226 | 226 | 226 | 219 | 226 | 226 | 196 | 226 | 671 | 671 |
| Adjusted r-squared | 0.3852 | 0.3425 | 0.3506 | 0.2660 | 0.3852 | 0.4088 | 0.3523 | 0.3938 | 0.2292 | 0.2372 |

Models 23–25 and 27–31: Eicker–Huber–White standard errors in parentheses. Model 26: country-clustered standard errors in parentheses.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

1. This table shows the country-year data used for models 30 and 31, i.e., observations between 1981 and 2017 where the value of the consensus democracy index is available. [↑](#footnote-ref-1)
2. Data on the strength of Christian democratic parties are not available at the country-year level. [↑](#footnote-ref-2)