

The impact of the economic cycle on Spanish tax revenue

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Calculations show Spain’s income and consumption taxes (VAT and excise duties) to be relatively sensitive to the economic cycle. Thus, it is likely that revenues from these taxes will rise significantly in the immediate future in response to the economic recovery.

The optimal design of a fiscal system requires an understanding of its endogenous tax collection capacity, *i.e.* its revenue-raising power in the absence of discretionary changes. Ever since Musgrave and Thin (1948) popularised the progression of the tax burden as a measure of progressiveness, the notion of revenue elasticity has been the perfect means to quantify a tax’s “automatic” revenue-raising capacity.⁴ As well as providing information about the expected impact of the economic cycle on tax revenue, this built-in response reveals other important structural properties of the tax: its (local) progressiveness, its power as an automatic stabiliser, and the real increase in fiscal burden associated with fiscal drag. Therefore, there is no doubt that the elasticity of tax revenue in response to changes in pre-tax income is an extremely useful concept in relation to a country’s fiscal policy. The attached annex shows the elasticities of tax revenue in the case of income tax and two consumption taxes (VAT + excise duties) in Spain. Details of the modelling and empirical calculation of these elasticities can be found in Sanz *et al.* (2014).

Tax revenue elasticity is a synthetic measure that describes the relative change in the amount of tax collected when there are changes in the tax’s base, or a proxy for it. As mentioned, this metric synthesises, among other things, the automatic sensitivity –*i.e.* in the absence of discretionary measures– of a tax’s revenue to changes in the economic cycle. Based on the calculations obtained for Spain, it can be said that the progressive design of personal income tax makes its collection relatively sensitive to the cycle, with a national weighted average elasticity of 1.48. However, in terms of tax collection, a potential upturn in the economic cycle will not be equally profitable for all the autonomous regions. In fact, the same relative increase in household income will produce a bigger relative increase in tax collection in the poorer regions than the wealthier ones.

Moreover, the calculation of the revenue from consumption taxes in Spain refutes the widely held idea –deeply entrenched in public opinion– that indirect taxation on consumption in Spain is highly regressive. In this case, a clear proportionality

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⁴ This concept is very popular in academic literature. For example, see: Hutton (1980), Hutton and Lambert (1980, 1982(a), 1982(b) and 1983), Creedy and Gemmill (2002, 2004(a), 2004(b) 2006), and Creedy and Sanz (2010).

is found. The unit elasticity of consumption tax revenue confirms that as Spain emerges from the economic crisis, consumption tax revenue will increase with rising household incomes in a proportion of 1:1. Unlike the case of income tax, the impact of an economic recovery on tax revenue from consumption taxes does not show much regional variation, being distributed uniformly across Spain's regions.

Table 1

Estimated automatic increase in tax revenue for 2015 and 2016 in the event of an upturn in the economic cycle
(calculation for national total*)

Expected increase in tax collection (in million euros)	2015	2016
Personal income tax	3,880	4,062
Consumption taxes	2,858	2,972
Total income tax + Consumption taxes	6,739	7,040

Note: (*) Autonomous regions in the common system.
Source: Own elaboration.

These elasticities therefore suggest that it is likely that Spain's revenues from income tax and consumption taxes will rise significantly in the immediate future without any additional discretionary measures being necessary. Specifically, assuming that FUNCAS' estimates for the expected rate of growth in households' nominal disposable income for 2015 and 2016 hold (i.e. 3.3% and 3.5%, respectively), the automatic revenue gains associated solely with the upturn in the economic cycle will be as shown in Table 1. As can be seen, over the course of 2015 and 2016, an automatic increase in collection from the two taxes of more than 13.7 billion euros can be expected.

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Annex

Table A1

Aggregate elasticity of income tax revenue with respect to pre-tax income $\eta_{R,T}$
 (Calculated for autonomous regions and income deciles)

Autonomous Region	Decile										Regional total
	1	2	3	4	5	6	7	8	9	10	
Andalusia	-	-	6.4053	3.4655	2.4611	2.0011	1.7892	1.6159	1.4975	1.3497	1.5598
Aragon	-	12.3469	3.9844	2.4001	1.8395	1.6797	1.6390	1.4779	1.4897	1.3118	1.4938
Asturias	-	10.2263	3.9925	2.3855	1.8509	1.7466	1.6641	1.4864	1.5040	1.3269	1.5170
Balearic Islands	-	9.0183	3.8793	2.5583	2.0167	1.7189	1.6959	1.5114	1.5102	1.2803	1.4795
Canary Islands	-	27.7352	5.1391	3.1126	2.3091	1.8769	1.7397	1.5745	1.4724	1.3320	1.5335
Cantabria	-	10.9478	3.8733	2.5502	1.9382	1.7426	1.6841	1.5087	1.4916	1.3098	1.5090
Castile and Leon	-	18.2407	4.9894	2.8715	2.0925	1.7551	1.7028	1.5389	1.4740	1.3523	1.5413
Castile-La Mancha	-	219.0799	6.0887	3.3113	2.3664	1.9430	1.7431	1.6074	1.4640	1.3587	1.5608
Catalonia	-	6.5032	3.0916	2.0902	1.7448	1.7032	1.5643	1.4177	1.5349	1.2579	1.4438
Community of Valencia	-	28.3627	5.5550	3.0916	2.2222	1.8749	1.7239	1.5818	1.4757	1.3101	1.5134
Extremadura	-	-	15.5104	4.8638	3.1363	2.3606	1.9466	1.7458	1.4797	1.3905	1.6076
Galicia	-	-	6.4156	3.4978	2.4026	1.9301	1.7333	1.6349	1.4618	1.3453	1.5456
Madrid	-	4.7391	2.5674	1.9107	1.6941	1.6334	1.4720	1.4727	1.4861	1.2091	1.3850
Murcia	-	187.8676	5.6507	3.3410	2.3796	2.0061	1.8200	1.6528	1.5209	1.3480	1.5671
La Rioja	-	13.2076	4.0488	2.5031	1.9068	1.6944	1.6795	1.5075	1.4757	1.2819	1.4746
Ceuta and Melilla	-	3.8043	2.3782	2.0159	1.7877	1.6496	1.4699	1.5460	1.5470	1.2842	1.4860
National Total	-	12.9959	4.3017	2.6747	2.0194	1.7350	1.6946	1.4911	1.5099	1.2828	1.4788

Source: Own elaboration.

Table A2

Aggregate elasticity of consumption tax revenue with respect to pre-tax income $\eta_{R_C^Y}$
(Calculated for autonomous regions and income deciles)

Autonomous Region	Decile										Regional total
	1	2	3	4	5	6	7	8	9	10	
Andalusia	1.1376	1.1389	1.0304	0.9926	0.9972	1.0101	1.0110	1.0111	1.0143	1.0152	1.0151
Aragon	1.1170	1.0765	0.9719	0.9800	1.0082	1.0096	0.9942	1.0169	0.9963	1.0193	1.0088
Asturias	1.1310	1.0830	0.9768	0.9903	1.0168	1.0126	1.0014	1.0240	0.9933	1.0183	1.0115
Balearic Islands	1.1259	1.0730	0.9830	0.9784	0.9944	1.0161	0.9990	1.0119	0.9865	1.0105	1.0043
Canary Islands	1.1273	1.1056	0.9858	0.9695	0.9795	1.0040	0.9986	1.0028	1.0041	1.0004	1.0015
Cantabria	1.1322	1.0812	0.9887	0.9856	1.0105	1.0128	0.9990	1.0198	1.0055	1.0121	1.0104
Castile and Leon	1.1305	1.1046	0.9954	0.9849	0.9992	1.0235	1.0105	1.0225	1.0116	1.0121	1.0140
Castile-La Mancha	1.1331	1.1291	1.0149	0.9936	0.9957	1.0096	1.0117	1.0074	1.0187	1.0115	1.0133
Catalonia	1.1193	1.0313	0.9695	0.9889	1.0087	0.9914	1.0029	1.0206	0.9600	1.0169	1.0017
Community of Valencia	1.1364	1.1186	1.0037	0.9813	0.9931	1.0069	1.0037	1.0067	1.0029	1.0162	1.0095
Extremadura	1.1479	1.1463	1.0988	1.0173	1.0055	1.0062	1.0219	1.0171	1.0308	1.0186	1.0245
Galicia	1.1276	1.1299	1.0210	0.9799	0.9969	1.0134	1.0177	1.0103	1.0202	1.0074	1.0132
Madrid	1.1158	0.9979	0.9720	0.9970	1.0051	0.9939	1.0114	0.9912	0.9661	1.0272	1.0036
Murcia	1.1410	1.1399	1.0217	0.9982	1.0071	1.0148	1.0100	1.0074	1.0097	1.0100	1.0141
La Rioja	1.1349	1.0886	0.9928	0.9929	1.0094	1.0261	0.9986	1.0177	1.0058	1.0472	1.0252
Ceuta and Melilla	1.1181	1.0215	0.9991	1.0012	0.9928	0.9883	1.0121	0.9781	0.9504	1.0089	0.9932
National Total (Common Tax System Territory)	1.1302	1.0941	0.9930	0.9833	1.0019	1.0159	0.9960	1.0177	0.9873	1.0174	1.0087

Source: Own elaboration.

Table A3

Aggregate elasticity of total tax revenue with respect to pre-tax income $\eta_{r,y}$
(Calculated for autonomous regions and income deciles)

Autonomous Region	Decile										Regional total
	1	2	3	4	5	6	7	8	9	10	
Andalusia	1.1376	1.1388	1.9939	1.9582	1.7388	1.5888	1.5105	1.4347	1.3760	1.2906	1.4084
Aragon	1.1170	1.7005	2.3240	1.8354	1.5674	1.4880	1.4760	1.3755	1.3977	1.2691	1.3912
Asturias	1.1307	1.5980	2.1529	1.7520	1.5292	1.5011	1.4706	1.3670	1.3943	1.2763	1.3922
Balearic Islands	1.1259	1.6990	2.1265	1.8330	1.6285	1.4868	1.4879	1.3879	1.4022	1.2436	1.3744
Canary Islands	1.1272	1.3326	2.1058	1.9418	1.7182	1.5362	1.4891	1.4111	1.3592	1.2781	1.3945
Cantabria	1.1314	1.6104	2.0496	1.7948	1.5764	1.5016	1.4816	1.3834	1.3835	1.2667	1.3893
Castile and Leon	1.1305	1.4339	2.2601	1.9514	1.6693	1.5108	1.5012	1.4092	1.3784	1.3004	1.4161
Castile-La Mancha	1.1327	1.1602	2.1711	2.0190	1.7539	1.5940	1.5117	1.4480	1.3623	1.3026	1.4219
Catalonia	1.1189	2.0820	2.0752	1.6848	1.5131	1.5094	1.4300	1.3343	1.4374	1.2279	1.3596
Community of Valencia	1.1361	1.2737	2.1835	1.9752	1.7006	1.5605	1.5018	1.4324	1.3748	1.2656	1.3935
Extremadura	1.1479	1.1463	1.5305	2.0557	1.8814	1.7159	1.5616	1.5002	1.3589	1.3218	1.4336
Galicia	1.1276	1.1299	2.0925	2.0578	1.7521	1.5751	1.4919	1.4562	1.3593	1.2912	1.4088
Madrid	1.1154	2.1194	1.8506	1.5829	1.4854	1.4676	1.3669	1.3790	1.3980	1.1871	1.3161
Murcia	1.1402	1.1786	1.9886	1.9007	1.7035	1.5877	1.5301	1.4607	1.3965	1.2924	1.4162
La Rioja	1.1349	1.5696	2.1744	1.8222	1.5821	1.4765	1.4984	1.3894	1.3822	1.2404	1.3685
Ceuta and Melilla	1.1181	1.8475	1.7050	1.5956	1.5005	1.4634	1.3571	1.4117	1.4292	1.2447	1.3742
National Total (Common Tax System Territory)	1.1299	1.4987	2.1323	1.8607	1.6205	1.4947	1.4958	1.3751	1.4046	1.2452	1.3738

Source: Own elaboration.