Effect of the July 2012 VAT reform on tax revenues

José Félix Sanz-Sanz[1] and Desiderio Romero-Jordán[2]

Looking at the positive side of the VAT reform.

The new VAT reform approved on July 13th and effective since September 1st, 2012 is a combination of tax rate increases and modification of the tax base. Spain´s ratio of VAT revenue to GDP is the lowest in the EU-27 and the low effective VAT burden has been cited by the European Commission and the IMF as a reason to raise the amount collected. Assuming that the private sector´s pattern of consumption remains unchanged, it is expected that the total impact of the reform would be annual tax revenues over 6.5 billion euros. In addition, contrary to widespread perception, the approved VAT increase is not particularly regressive in distributive terms.

Introduction

The latest data from Eurostat show Spain's ratio of VAT revenue to GDP to be the lowest in the EU-27. Specifically, in 2010 it stood at 5.5%, slightly below Luxembourg's 6.1%, Italy's 6.2%, Ireland's 6.4% and the United Kingdom's 6.6% and a long way below the level of 7.0% in France, 7.8% in Portugal, 9.2% in Belgium, 9.8% in Sweden and 9.9% in Denmark. Spain's low effective VAT burden has been cited repeatedly by the European Commission (EC) and the International Monetary Fund (IMF) as a reason to raise the amount of VAT collected. Depending on the institution, the tax collection gains produced may either be used to reduce the Spanish government's excessive deficit or to produce a fiscal devaluation by financing a reduction in social charges associated with labour inputs. However, both proposals come up against the difficulty that just over six months ago the government decided to increase marginal income tax rates. Unless the sharp rise in marginal income tax rates is revised first, the scope for the desired increase in the VAT tax burden is somewhat limited. Indeed, VAT revenues fell during the first quarter of 2012 by 7.2%, largely a result of the economic crisis and

The latest data from Eurostat show Spain's ratio of VAT revenue to GDP to be the lowest in the EU-27.

[1] *Universidad Complutense de Madrid.*

[2] *Universidad Rey Juan Carlos.*

the rise in marginal income tax rates announced in December 2011[3].

What, a priori, were the options available to the Spanish government to increase VAT revenues? Apart from curbing fraud, the government basically had two non-exclusive alternatives: (i) raising tax rates and/or (ii) modifying the tax base, i.e. redefining the groups of goods taxed at the super-reduced (4%), reduced (8%) and standard (18%) rates. This latter option could have brought with it a reduction in the number of tax rates: from the three rates today, to two –as in the United Kingdom, Germany, the Netherlands, Slovenia, Slovakia, Latvia, Estonia and Bulgaria– or just one, as is the case in Denmark[4]. In the end, the reform introduced by Decree-Law 20/2012, July 13th 2012, has opted for a combination of both. Thus, the reduced rate has been increased from 8% to 10% (2 percentage points) and the standard rate has risen from 18% to 21% (three percentage points). As Table 1 shows, some goods previously taxed at 8% are now elegible to be taxed at the 21% rate. The reform has left the super-reduced rate unchanged, however. The new structure of rates following the reform is similar to that in Italy, at least as far as the level is concerned.

The purpose of this note is to shed some light on the effects on tax revenues of the VAT increase that will come into effect on September 1st 2012. The calculations given have been produced by the Fundación de las Cajas de Ahorros indirect tax simulator (FUNCASindi), developed by the FUNCAS Tax Studies Department. This tool enables the impact of indirect taxation reforms to be estimated by incorporating their effects into the algorithm by which households' consumption decisions are calculated.

Table 1

Changes in the tax rates introduced by the reform

Super-reduced rate 4%	Reduced rate 10%	Standard rate 21%
Bread, milk, eggs, fresh fruit and vegetables, books, newspapers, medicines for human use, cars for the disabled, prostheses for the disabled.	Meat, fish, processed foods, water, medicines for animal use, public transport, hospitality (bars, restaurants, hotels), glasses and contact lenses.	Other goods. For example, alcoholic drinks, tobacco, clothing and footwear, private transport (cars, motorcycles, etc.), fuel, electricity, etc.
New housing Until December 31st 2012, after when they will be taxed at 10%.	Rehabilitation of homes Until December 31st 2013, after when it will be taxed at 21%.	Tickets for the theatre, circus, cinema and other shows, digital television services, hairdressers, funeral services, flowers and plants, works of art. Before the reform the reduced rate applied.

[3] *The time sequence in which individuals make their economic decisions needs to be borne in mind: before deciding whether to spend or save, they first have to produce their income; thus, a change in the income tax rate inevitably has an impact on the revenues collected in the form of indirect taxes. Specifically, we estimate the elasticity of indirect tax revenues vis-à-vis a changes in disposable income (net of income tax) to be 0.70. Using this elasticity, and taking into account that the increase in marginal income tax rates will reduce households' net income by 1.83% in 2012, the increase in marginal rates passed in December will induce a drop in indirect tax revenues in 2012 of 430 million euros.*

[4] *A recent analysis of the impact of these measures can be found in Sanz and Romero (2012).*

This is due to the fact that changes in relative prices of goods and services consumed modify the composition of the consumer basket. Failure to take economic agents' behaviour into account would skew the results of estimates of the tax-raising impact of this type of reform. Precisely to capture these behaviour changes, FUNCASindi estimates a matrix of price and income elasticities using microdata from the Household Budget Survey for 1998 to 2010. This elasticity matrix was estimated by modelling consumption decisions using the well-known AIDS (Almost Ideal Demand System) model proposed by Deaton and Muellbauer in the eighties. These elasticities have been used to perform the simulation, taking the changes in the fiscal parameters into account. It should be noted that FUNCASindi is primarily a tool for analysing the effects of VAT reform on the household sector. Nevertheless, we made a global estimate of this tax change assuming that private consumption by households accounts for approximately 75% of total transactions subject to VAT.

Section 2 analyses the impact of the reform on tax revenues. Section 3 evaluates the impact of the reform in terms of progressiveness and redistributive capacity.

Overall effect of the reform on tax revenues

Table 2 summarises the expected impact of the July 2012 VAT reform on tax collection. As regards the effect on households, the results show that the VAT reform will increase tax revenues by 14.387%, equivalent to 5,329.8 million euros a year. As mentioned, changes in relative prices of goods change households' consumption decisions, leading them to consume more of certain goods and less of others. For this reason, the reform will have a negative impact on excise duties, from revenues, which will drop by 319.3 million euros a year (-2.243%). Adding the two amounts yields the result that the VAT reform will generate increased tax revenues from household consumption of 5,010.5 million euros a year. To

Table 2

Effects of the VAT reform on tax revenues

	Scenario in 2012	Simulation of the VAT reform passed in July 2012**
Reform		Δ 2 points in rate R + Δ 3 points in rate N
Resulting rate Structure	SR: 4% R : 8% N : 18%	SR : 4% R : 10% N : 21%
Δ annual tax revenues (%)		
VAT -households	-----	14.387%
Excises -households	-----	-2.243%
Δ annual tax revenues (millions of euros)*		
VAT -households	-----	5,329.8
Excises -households	-----	-319.3
	-----	5,010.5
Total for all sectors	-----	6,680.7

(SR): super-reduced, (R): reduced, (N): standard. (*) Assuming VAT and excise revenues produced by households account for 75% of the total. (**) Calculations made taking the revenues at the end of 2011 as the reference.

quantify the overall impact of these figures on tax revenues, we need to add the tax collected from other economic agents, i.e. the public sector, and public and private businesses. Assuming

Assuming that the private sector's patterns of consumption remain unchanged, the total expected impact of the reform would be annual tax revenues of 6,680.7 million euros.

that the latter's pattern of consumption remains unchanged, the total expected impact of the reform would be annual tax revenues of 6,680.7 million euros. As explained in the introduction, these figures have been calculated so as to take into account the fact that the composition of household consumption responds to changes in relative prices of goods and income levels. If it were not for this change in behaviour, the total revenue would be 7,445.6 million euros (5,584.2 million euros from households). In other words, failing to take into account the way household consumption responds to changes in relative prices induced by the VAT increase leads to an overestimation of the tax revenues by 845 million euros, which is probably what has happened to some of the recently published official figures. Additionally, the final tax revenue figures could even be slightly lower, if over the course of the year there are significant changes in the variables affecting consumers' disposable income, such as average salaries, the unemployment rate, savings rates, economic expectations, and, of course, the prevalence of tax fraud.

Impact on households' tax bill according to economic capacity

Table 3 shows the impact of the reform broken down by levels of spending. The calculations refer only to the households sector. Columns (1) and (2) list the average revenues obtained from households in each level of expenditure. Column (3) shows the average impact of the reform in euros per home in the decile concerned. Note that the results are presented in terms of income deciles. The impact of the measures passed on households with greater economic capacity, i.e. the right-hand tail of the distribution, is also examined in more detail. Finally, column (4) quantifies the variation in tax revenues in percentage terms. On average, the reform will generate a total increase in indirect taxes of 356.8 euros per household a year, equivalent to a percentage increase of 10.13%. In terms of economic capacity, the impact of the

The approved tax increase, in conjunction with the way spending in Spain is distributed, is such that the tax increase is approximately proportional. In other words, contrary to the widespread perception, the approved VAT increase is not particularly regressive in distributive terms.

reform on households in the first decile is 94.9 euros per household/year. It can be seen that as we move up the income/expenditure distribution, the tax increase rises to an average of 866.4 euros per household/year in the tenth decile. The table also shows the effects of the reform on the ten last percentiles (households with the greatest economic capacity). Thus, in percentile 91 the increase in taxes is 672.6 euros, whereas in percentile 100 it is almost twice that, at 1370.9 euros. One point worth highlighting is that, in percentage terms, the tax burden increases by between 9.77% in the third decile and 10.60% in the tenth decile. It can therefore be said that the approved tax increase, in conjunction with the way spending in Spain is distributed, is such that the tax increase is approximately proportional. In other words, contrary to the widespread perception, the approved VAT increase is not particularly regressive in distributive terms.

Table 3

Effect on households. Expanded tax-revenue impact by expenditure deciles (VAT + Excise duties)

Decile	Tax revenues Pre-reform scenario Euros household/year (1)	Tax revenues Post-reform scenario Euros household/year (2)	Change in absolute terms Euros household/year(3)	Percentage change (%) (%)(4)
Decile 1	900.4	995.3	94.9	10.54
Decile 2	1,509.8	1,660.7	150.9	9.99
Decile 3	1,991.8	2,186.3	194.5	9.77
Decile 4	2,405.8	2,641.7	235.9	9.81
Decile 5	2,843.7	3,122.3	278.6	9.80
Decile 6	3,343.4	3,671.1	327.7	9.80
Decile 7	3,892.5	4,277.2	384.7	9.88
Decile 8	4,558.0	5,017.2	459.2	10.08
Decile 9	5,603.5	6,179.0	575.5	10.27
Decile 10	8,170.3	9,036.7	866.4	10.60
Percentile 91	6,516.9	7,189.4	672.6	10.32
Percentile 92	6,731.9	7,438.6	706.7	10.50
Percentile 93	6,927.7	7,653.5	725.7	10.48
Percentile 94	7,190.2	7,937.1	747.0	10.39
Percentile 95	7,347.8	8,130.8	783.0	10.66
Percentile 96	7,873.9	8,707.7	833.9	10.59
Percentile 97	8,251.9	9,126.9	875.0	10.60
Percentile 98	8,775.5	9,714.5	938.9	10.70
Percentile 99	9,463.0	10,474.3	1,011.2	10.69
Percentile 100	12,633.7	14,004.6	1,370.8	10.85
Total	3,521.8	3,878.6	356.8	10.13