Raising VAT: Is the cure worse than the illness?

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From July 2010, Spain's value-added tax (VAT) goes from 16 percent to 18 percent. It is unclear whether this measure will lower public debt as the government hopes.

At 11.2 percent of GDP, Spain's deficit is almost four times the limit set by the European Union. Consequently, the Spanish government has announced a plan for restructuring public accounts by 2013.

One of the key measures is the controversial increase of value-added tax (VAT). From July, the general rate becomes 18 percent and the reduced rate goes up one percentage point to 8 percent, while the minimum remains at 4 percent. In theory, these new values are supposed to boost public revenue, and bring Spain in line with the great European powers: currently, the general rate is 19.6 percent in France and 19 percent in Germany.

However, it is not quite so simple in practice. The increase will send shockwaves throughout Spain, which remains among Europe's most beleaguered economies.

Javier Díaz-Giménez (IESE), Juan Carlos Conesa (Universitat Autònoma de Barcelona), Julián Díaz-Saavedra (University of Granada) and Josep Pijoan-Mas (CEMFI) study this increase of VAT in Spain and predict some undesirable side effects. Spaniards, they say, will cut back

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their consumption, so much so, that the final revenues, including personal income taxes, will see relatively little improvement.

Overall impact

The authors' prediction is based on two theoretical models. The first consists of:

- A representative household, which decides how much to consume and how much to save. It earns a salary, receives interest on its savings and transfers from the state, and pays taxes on consumption and on earned income and capital yields.
- A company that hires workers and produces a single good, and which could focus on either consumption or investment.
- A government that taxes consumption along with earned income and capital yields. It uses these resources to finance a public consumer good as well as transfers. The public accounts are balanced with a fixed tax.

From there, the authors compare two scenarios that replicate the main aggregates and macroeconomic ratios for Spain in 2008. In the first scenario, there are no legislative changes and the tax rates remain unchanged. In the second, a 2-percentage-point increase on consumption tax was announced in 2009, to go into effect in 2010.

The repercussions are self-evident: increasing consumption tax reduces economic activity. The real GDP measured at factor cost, without taking into account indirect taxes, falls 0.66 percent in the year of the announcement and 0.85 percent as of 2010.

The explanation, according to the authors, is that the rate increases ultimately drive up the price of consumption and lower the value of working hours. In other words, following the increase, an hour's pay buys fewer goods. Households respond to that change by trading formally paid working hours, which end up falling 1 percent, for time allocated to activities without formal remuneration. Additionally, the representative household reduces its savings by up to 0.8 percent in 2016.

Consumption also decreases by 1.1 percent due to the increased prices. The simulation of the rate increase predicts a slight upturn in 2009, the year of the announcement. This is because the household moves up its consumer spending, since it will be more expensive in the subsequent periods.

Ultimately, all of these changes will be reflected in government revenues. While the rate on consumption has increased considerably (12.5 percent), income does not rise proportionally

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and remains at 10.5 percent. What's worse, the total revenue ended up rising a mere 1.7 percent, because the additional revenue from consumption tax is partly offset by the reduced revenues from taxes on earned income and capital yields.

Weaker means worse off

Meanwhile, the rate increases will have disparate consequences. To determine who will be the most affected, the authors present a second, more complex model. The representative household is substituted for a group of diverse households that allow for a more detailed replication of the specifics of the Spanish population.

- The households have a maximum life span of 100 years. In each period, some die, due to their age, while others are born.
- They have three levels of education: primary, secondary and university.
- Their productivity and, consequently, their salaries both depend on their education and on a "luck" factor (stochastic shock) that determines their earned income for each period.
- At the ages of 60 and 64, they decide whether or not to retire. Retirement pensions are calculated based on the specifics of the Spanish model.
- The households' remaining decisions - consumption, savings, paid and unpaid time - are the same as in the previous model. The taxes are also identical. The only change involving income is that, after retirement, the salary is replaced by a pension.
- The households can become accidentally disabled even while still of working age. In this case, they collect a disability pension for the rest of their lives.

With these premises, in each period the model includes a distribution of households distinguished according to their age, education, employment situation and wealth. The authors, meanwhile, maintain a single representative company, identical to that of the previous model. The government only changes in that it now manages a social security system that is highly similar to the Spanish system.

The first thing made clear by the second model is that the consumption tax-rate increases have a greater relative effect on the older population. The tax burden increases by age: those under 41 pay just 0.3 percent more in taxes, whereas for those over 61 the bump is 5.2 percent. Comparing workers with pensioners, the difference becomes larger. For the working population, the new rates represent an increase of 1 percent of the tax burden, on average, whereas for retirees and disabled people, the increase is about eight times greater.

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A similar pattern is repeated when comparing households with high and low incomes. The more disadvantaged come out on the losing end, since consumption constitutes a higher proportion of their total tax burden. How ever poor a person may be, he or she is still required to spend a minimum in order to survive.

At the opposite end of the spectrum, a person who is 1,000 times richer than his or her neighbor does not spend 1,000 times more. So, with regard to their vast income, the consumption tax for the wealthy works out to be proportionally cheaper than for the poor. This is why indirect taxes, such as VAT, are called "regressive" taxes: in proportion to their income, those earning the least pay the most.

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