

THE EFFECTS OF DEMOGRAPHIC CHANGES ON THE FISCAL MULTIPLIERS OF PUBLIC CONSUMPTION AND INVESTMENT PROGRAMMES

Fiscal policy, whether it is implemented through discretionary decisions on expenditure and taxation or in the form of automatic stabilisers, can contribute to stabilising macroeconomic fluctuations. To do this, it should help to sustain economic activity during downturns and restrain public spending during booms. Its effectiveness in achieving these objectives depends above all on how fiscal measures affect household consumption expenditure and firms' investment decisions or, in other words, on the fiscal multiplier of the measure in question. In this respect, not all public spending and revenue programmes affect economic activity in the same way. In particular, public consumption and investment programmes boost the labour income of workers employed in the sectors benefiting from this consumption and investment. By contrast, programmes involving direct transfers to households entail a stimulus to household disposable income. The fiscal multiplier associated with each spending programme depends, therefore, on the marginal propensity to consume and labour supply elasticities of the workers benefitting from the stimulus measures.

Insofar as the marginal propensity to consume and labour supply elasticities vary according to age, as a result of a change in the population age composition, the pass-through of counter-cyclical fiscal measures to consumption and, finally, to the level of aggregate demand and economic activity (for example, the value of the fiscal multipliers) varies according to the weight of younger

population cohorts with respect to older ones. This happens in particular in the case of public consumption and investment programmes which pass through the stimulus measures essentially via changes in the labour income of the workers affected by these programmes.

In a recent Banco de España Working Paper,¹ evidence is found for the United States which shows that the fiscal multipliers associated with higher public consumption and investment have lower multiplier effects in states with older populations. The possible channels behind these empirical findings are analysed using a neo-Keynesian life-cycle model comprising three stages (youth, maturity and retirement). The combined duration of the last two stages is approximately 60 years and individuals accumulate assets by taking optimum decisions on their labour supply and consumption. The model includes standard monetary policy decision-making (represented through a Taylor rule) and a government which finances its expenditure by collecting taxes, issuing debt and earmarking a portion of its resources to finance a pension system with a set benefit ratio.

By extending the same model to a scenario comprising two areas (Spain and the rest of the euro area), calibrated using data that provide the best possible approximation of its findings to actual observations, it is possible to anticipate the extent to which the demographic shift envisaged in coming decades changes the fiscal multiplier

Chart 1
CHANGES IN THE FISCAL MULTIPLIER ASSOCIATED WITH HIGHER PUBLIC SPENDING



SOURCES: European Commission and Banco de España.

¹ H. Basso and O. Rachedi (2018), *The young, the old, and the government: demographics and fiscal multipliers*, Banco de España Working Paper 1837.

THE EFFECTS OF DEMOGRAPHIC CHANGES ON THE FISCAL MULTIPLIERS OF PUBLIC CONSUMPTION AND INVESTMENT PROGRAMMES (cont'd)

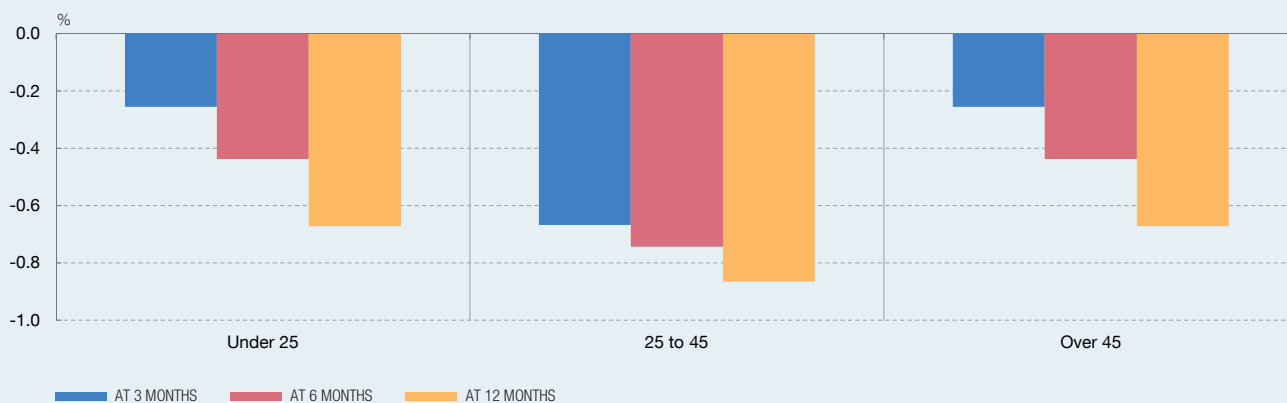
associated with higher public consumption and investment in Spain.² Chart 1 shows the changes in this fiscal multiplier over time. As can be seen, following a period of relatively high fiscal multipliers which coincided with baby boomers reaching working age, the effectiveness of changes in public consumption and investment for stabilising the economy trended downwards. Thus, for example, the value of this fiscal multiplier is estimated to have decreased by 35% from 1985 to 2015 (from 1.2 to 0.78) and is expected to fall a further 21% (from 0.78 to 0.62) from now until 2050.

Nevertheless, the above findings refer to the effects of fiscal policies implemented through changes in public consumption and investment. Consequently, of particular importance for the value of the fiscal multiplier associated with those programmes is knowing in which sectors and occupations the higher demand for labour needed to implement them is concentrated. Another recent paper shows evidence of the demographic profile of workers who benefit after a fiscal stimulus in Spain based on public investment projects at municipal level.³ The findings (see Chart 2) suggest that the fiscal policy effect on the reduction in unemployment is different according to the age of the groups impacted. Thus, for example, the response to this fiscal programme seen in the numbers unemployed in an average municipality during the first

three months would be 2.5 times larger for workers aged between 25 and 45 than for older workers. These differences reflect the greater labour elasticity of certain groups and the fact that the fiscal stimulus has a different effect on different economic sectors that have labour forces with different demographic compositions. And, the lower the marginal propensity to consume of the groups of workers affected by the stimulus measures, the lower the associated fiscal multiplier.

Furthermore, if the fiscal policy stimulus measures were implemented through direct transfers of income to households, the fiscal multipliers might be higher, based on the ages of the households receiving them and on how these transfers were financed. Thus, for example, income transfers from cohorts of intermediate age to younger and older cohorts, which have a greater marginal propensity to consume, would be a greater stimulus to economic activity than the fiscal multipliers shown in Chart 1. Nevertheless, aside from the intergenerational income transfers through the public pension system, which in future will be limited by the reduction in the size of the intermediate-age population, it is complicated to design other mechanisms for intergenerational transfers (based solely on age differences) which might be used for economic stabilisation purposes.

Chart 2
AVERAGE EFFECT OF A FISCAL STIMULUS ON UNEMPLOYMENT, BY AGE GROUP (a)



SOURCE: Banco de España.

a Effect in an average municipality after receiving a €1 million fiscal stimulus.

2 Eurostat’s population projections for the 19 euro area countries were used for this quantitative exercise.
 3 See M. Alloza and C. Sanz (2019), *Jobs multipliers: evidence from a large fiscal stimulus in Spain*, Banco de España Working Paper 1912.