OPTIMAL GOVERNMENT DEBT CONTROL: EXPLICIT FORMULA FOR THE OPTIMAL DEBT CEILING

Abel Cadenillas † and Ricardo Huaman ††

Motivated by the recent debt crisis in USA and some European countries, we develop a government debt control model to study the optimal debt ceiling. We consider a government that wants to control optimally its debt-to-GDP ratio. We assume that debt generates a cost for the country, and this cost is an increasing and convex function of the debt ratio. The government can intervene to reduce its debt ratio, but there is a cost generated by this reduction. The goal of the government is to find the optimal control that minimizes the expected total cost. We obtain an explicit solution for the government debt problem, that gives an explicit formula for the optimal debt ceiling, as a function of fundamental economic and financial variables. Moreover, we derive a practical rule for the optimal debt policy in terms of the optimal debt ceiling. We find, among other results, that an increase in the marginal cost of debt interventions, the rate of economic growth or the debt volatility increase the optimal debt ceiling, while the interest rate on debt causes the opposite effect.

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† Department of Mathematical and Statistical Sciences, University of Alberta, Edmonton, Alberta T6G 2G1, Canada. E-mail: abel@ualberta.ca.

†† Department of Mathematical and Statistical Sciences, University of Alberta, Edmonton, Alberta T6G 2G1, Canada