The Structure of the Defense Industry and the Security Needs of the Country: A Differentiated Products Model

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This paper models the interactions between security levels of two arms producing countries (the USA and Western Europe say) and the defense industry market structure. The defense firms in each arms-producing country produce heterogeneous defence goods and sell them to their own governments and to the "rest of the world". The security level of each of the two arms producing countries depends on its purchase of the defense goods relative to the amounts of the defense goods that are purchased by the rest of the world. Target security levels in the arms-producing countries are exogenous. Decisions in the model are taken in two stages. First, the governments of the two arms producing countries commit themselves, simultaneously and non-cooperatively, to the amounts of defense goods that they will purchase, at the world price, from their own defense firms. Second, the defense firms in the two producer countries determine the prices of their defense goods in order to maximise their profits. The results show, among other things, that (i) the net defense costs of the producer countries are lower when the number of defense firms in each country is small, (ii) an increase in the target security levels in the two arms producing countries results in larger net defence costs in these countries, higher prices and lower exports of the defense goods.