

## **East Asia Industrialization and Agriculture: Must It be a Prisoner's Dilemma Game?\***

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## Abstract

This paper examines the role of land reform in the process of industrialization for East Asian countries. Starting from a prisoner's dilemma game framework between the government and farmers, we show that (i) land reform could suitably modify the payoffs to both the government and farmers in such a way that they not only differ from those in the prisoner's dilemma, but they could change the nature of the game completely, and as a result, a cooperative equilibrium can be reached even in a static setting. (ii) But, because of the physical constraint on the amount limit of land, land reform alone may not necessarily sustain a long-run cooperative outcome between government and farmers. Other elements, such as the government's investment in agriculture *R & D* and better-educated farmers, are required to engage both players in an ongoing cooperative strategy. Only these key elements can possibly mold and sustain the proper payoffs and create additional gateway for the economy to avoid the trap of a prisoner's dilemma game.

## 東亞的工業化與農業： 政府與農民間的兩難賽局？

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### 摘 要

本文首先探討東亞各國在工業化的過程中，土地改革所扮演的角色。從政府與農民間可能為互相不合作的兩難賽局出發，我們證明土地改革可能扭轉賽局的內涵而避免兩者互相不合作的困境，即政府不會一味的放棄農業部門來追求工業化，而農民也會接受政府農業改良的推廣措施。我們進一步證明由於土地有限的天然限制，除非進一步的研究發展與提高農民教育水準，土地改革本身並不足以支撐政府與農民間的長期合作關係。