

# ENDOGENOUS WEALTH AND ENVIRONMENT BASED ON THE SOLOW MODEL WITH GENDER DIVISION OF LABOR AND LEISURE

WEI-BIN ZHANG<sup>1</sup>

Ritsumeikan Asia Pacific University, Japan  
E-mail: wbz1@apu.ac.jp

## Abstract

This study builds a model of economic growth with capital accumulation, environmental change and gender time distribution between work and home production/leisure. The paper integrates the growth mechanism in the Solow growth theory and the environmental dynamics in environmental economics in a compact framework (Solow, 1956; Ploude, 1972). The integration is made by applying an alternative approach proposed by Zhang (1993). The model describes a dynamic interdependence among physical accumulation, environmental change and gender division of labor and leisure under perfect competition with environmental taxes on production, wealth income, wage income and consumption. We also simulate the model to show the dynamic paths of the system. We conduct comparative dynamic analyses with regard to woman's human capital, the population, and environmental tax on consumption.

**Keywords:** economic growth; environmental change; environmental policies; pollution through consumption and production; gender division of work and leisure.

**JEL Classification:** O41; Q56.

---

<sup>1</sup> **Contact address:**

Prof. Wei-Bin Zhang

Ritsumeikan Asia Pacific University

1-1. Jumonjibaru, Beppu-Shi, Oita-ken, 874-8577 Japan

(Home Tel: 0977-73-9787; Office Tel: 0977-78-1020; Fax: 0977-78-1123;

E-mail: wbz1@apu.ac.jp)