

PhD Workshop
*Macro and Micro Perspectives on Sustainable
Development: Threats and Opportunities*

November 25th, 2015

11.00 a.m - 12.15 p.m.
UNU-Merit, Room 1.23

Eva Barteková, PhD fellow, UNU-Merit

Critical Raw Material Strategies in Different World Regions
joint with René Kemp

The rising imbalance between increased demand for minerals and their tighter supply has resulted in growing concerns about their criticality. This has in turn stimulated both resource-rich and resource-poor countries to take active role in implementing mineral policy strategies. The present paper explains why different world regions responded differently to the global problem of securing stable supply of critical minerals, in particular of rare earths. It first offers an in-depth overview of development trajectories of critical mineral strategies through a historical case study analysis of major stakeholder regions - China, the United States, Europe, Japan and Australia. Next, it offers answers to why they have responded in the way they did: how national interest considerations, resource endowment circumstances, countries' historical experience in tackling supply risk and their respective policy styles influence the development of critical mineral policy choices within a comparative political economy framework. The overall findings show distinctive differences in policy strategies towards critical materials. Whereas Europe opts for a policy dialogue with resource-rich countries, Japan and the US have a more hands-on approach in research and development initiatives. Australia and China instead, strive to promote domestic

mining activities and to protect their resources through resource nationalist policies.

Sheng Zhong, PhD fellow, UNU-Merit

The Dynamics of Vehicle Energy Efficiency: Evidence from Massachusetts Vehicle Census

Using a rich quarterly panel dataset containing about 3.9 million vehicles in Massachusetts over the period 2008q1 - 2011q4, this paper is an attempt to improve the micro level empirical basis and provide some evidence that supports policy making related to sustainable development. It (1) generates aggregate vehicle energy efficiency indicator (state and municipality level) by taking into account vehicle heterogeneity, (2) investigates the crucial factors that affect aggregate vehicle energy efficiency and its growth by paying particular attention to vehicle's entering and exiting, (3) explores the convergence and the Ergodic distribution of aggregate vehicle energy efficiency by employing OLS, nonparametric regression, bootstrapping quantile regression and transition matrix, and (4) checks the socio-economic factors affecting initially existing vehicle's staying or exiting decision.

It confirms the restructuring and reallocation of energy efficient vehicles, improvement and convergence of aggregate vehicle energy efficiency and the crucial role of socio-economic factors in shaping the vehicle's decision and geographical clustering.

Vera Danilina, PhD fellow, Aix-Marseille School of Economics (AMSE)

Eco-Labeling, Trade Integration, and Productivity

Growing ecological concerns give rise to salient discussions of green policy impact within different social sciences domains. This research links international economics and environmental sociology findings studying such relatively new approach to green regulation as voluntary environmental programmes (VEPs), particularly different types of eco-labelling. It develops a theoretical framework based on Melitz (2003) heterogeneous firms' model to highlight the eco-quality influence in autarky and within trade integration facing the following shocks: (1) introduction of VEPs to the market in autarky; (2) opening to international trade in the presence of eco-labelling; and (3) environmental heterogeneity increase within trade integration.

The model shows that voluntary green restrictions lead to substantial productivity effects in the market. Meanwhile, the results in the open economy framework also depend on the relative degree of environmental awareness in trading countries.