SEBE Department Seminar

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Regulating Greenhouse Gas Emissions by an Inter-Temporal Policy Mix: An Experimental Investigation

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Incentive-based policies, such as emissions taxes and emissions permit trading schemes, are increasingly used to regulate greenhouse gas (GHG) emissions in many jurisdictions around the world. Taxes impose a fixed price on emissions, whereas under tradable permit schemes prices emerge in the secondary permit market. The delayed price discovery under tradable permit schemes creates uncertainty about the future cost of compliance that liable emitters will face. To mitigate this uncertainty, some jurisdictions, including Australia, have designed policies to regulate GHG emissions that commence with an emissions tax that is in force for several years, subsequently transforming into a tradable permit scheme. This paper examines the effects that this type of staged transition – from no regulation to a regulation by an emissions tax, to a regulation by tradable permits – has on several criteria of interest: optimality of abatement investment, overall regulation efficiency, and permit prices. The effects of the regulation that employs an inter-temporal mix of policy instruments are compared to the effects observable under regulation using a single policy instrument: a tax only, and a tradable permit only regulation. Economics experiments in a laboratory were used to study economic behavior under these three types of regulation.

Prior to assuming his position at Gettysburg College, Dr. Baltaduonis was an IFREE Visiting Post-doctoral Fellow in the Interdisciplinary Center for Economic Science at George Mason University and later at the Economics Science Institute at Chapman University. He holds a Ph.D. from the University of Connecticut.

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