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Econometric evaluation of extreme weather and climate events in Atlantic Canada

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In recent years Atlantic Canada has seen many examples of extreme weather and climate events such as floods, hurricanes, thunderstorms, severe rainfalls and snowstorms, storm surges, heat waves and others. These extreme weather events resulted in significant economic damage which has affected the lives of people in the region as well as public finances. The existing literature on extreme weather and climate events claims that the frequency and magnitude of these events are going to increase in the future due to changing the climate. In this regard, this study addresses two issues-

establishing the link between climate change and extreme weather events on the one hand and evaluating economic damage from those events on the other – by means of rigorous statistical analysis. The relationship between frequencies of floods, hurricanes, heavy rainfalls and snowstorms and climate variables such as temperature, precipitation and sea level is established on the basis of the log-log complimentary model and Poisson regressions. Other specific factors associated with each extreme weather event are used as control variables. Our estimation based on these statistical methods has shown a strong and statistically significant positive correlation between frequencies of the above mentioned extreme weather events and climate variables which proves the link between frequencies of these events and climate change in Atlantic Canada. These results are the basis for estimation of

the so-called damage functions associated with extreme weather events in Atlantic Canada that will provide economic justification for the investments into preventive and mitigation measures in the region.

Biography

Yuri Yevdokimov is a Professor at the University of New Brunswick (Fredericton, Canada). Having completed degrees in economics and engineering, he holds a joint appointment in the departments of Economics and Civil Engineering. Dr. Yevdokimov's research interests lie in the field of sustainable development and climate change impacts particularly sustainable transportation and climate change impacts on regional economy. His work has been published in academic journals and conference proceedings in USA, UK, Canada, France, Greece, Germany, India, China, Croatia and former USSR, particularly in Russia and Ukraine. To date Dr. Yevdokimov has more than 20 publications. One monograph, three textbooks, fifteen refereed journal articles and nine chapters in books are among these publications. Currently Dr. Yevdokimov teaches in undergraduate and graduate programs in economics and civil engineering at the University of New Brunswick and conducts research in the areas of climate change impacts on transportation, energy economics and political economy of emerging economies.

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