Essays on forest conservation policies, weather and school attendance

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Abstracts

Heterogeneous Local Spillovers from Protected Areas in Costa Rica

Spillovers can significantly reduce or enhance net effects of land-use policies, yet there exists little rigorous evidence concerning their magnitudes. We examine how Costa Rica's national parks affect forest clearing nearby. We find that average deforestation spillovers are not significant in 0-5km and 5-10km rings around parks. However, this average blends multiple effects that are significant and vary in magnitude across the landscape, yielding varied net impacts. We distinguish the locations with different net spillovers by their distances to roads and park entrances – both of which are of economic importance given critical local roles for transport costs and tourism. We find large and statistically significant leakage close to roads but far from the park entrances, which are areas with high agricultural returns and less influenced by tourism. We do not find leakage far from roads (lower agriculture returns) or close to park entrances (higher tourism returns). Finally, parks facing higher levels of deforestation threat show greater leakage.

*Keywords***:** Protected Areas, National Parks, deforestation, conservation, spillover effects, impact evaluation, Costa Rica.

JEL codes: Q23, Q24, Q28, Q57, O13

Has forest certification reduced forest degradation in Sweden?

Voluntary forest certification is an increasingly popular tool to promote sustainable forest management. Certification allows producers who meet stringent environmental standards to label their products and potentially achieve greater market access and receive higher prices for their products. The voluntary nature of certification programs implies, however, that it is difficult to determine the effects of forest certification due to selection bias. This paper contributes to the impact evaluation of forest certification by estimating the effects of certification of non-industrial private forest owners on forest degradation in Sweden – one of the countries with the largest total area of certified forests. We rely on official forest inventory data at the plot level, information on certification status, and standard impact evaluation methods to identify the causal effect of certification on three environmental outcomes aimed at preserving areas of special significance for biodiversity conservation. Our results indicate that certification has not halted forest degradation in that it has not improved any of the environmental outcomes. Our findings suggest that, for forest certification to have an effect, the standards should be tightened and the monitoring and enforcement of forest certification schemes strengthened.

Keywords: forest certification, impact evaluation, sustainable forest management, FSC, PEFC.

JEL Codes: L15; Q12; Q23; Q28.

Effects of weather on daily school attendance decisions and academic performance

This paper investigates how weather affects human capital by estimating the impact of meteorological conditions on schooling outcomes across high schools in Costa Rica, a tropical middle-income country. Combining hourly weather records from local weather stations with data on absenteeism at the individual-lecture level, I find higher absenteeism when it rains compared to a no-rain scenario, and a non-linear relationship between absenteeism and temperature. Absenteeism increases with every additional degree for students exposed to temperatures higher than 26˚C. Furthermore, I document that non-attendance is associated with worse academic performance. These effects are in line with previous literature showing the negative effects of thermal (heat) stress on human cognitive skills, and suggest that higher temperature and precipitation can hamper human capital acquisition. These results are relevant for policy making, as adaptation strategies such as climate control technologies and schedule adjustments could have significant effects in increasing attendance.

Keywords: School attendance; education; weather; temperature; precipitation; heat stress; human capital

JEL Codes: I20; J24; O15; Q54; Q56.

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