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INTL 550 Homework 2

April 25, 2021

Regression Report

While most of the environmentally induced migration is expected to be internal, it is argued that in countries where the resilience to environmental degradation (climatic shocks, salinization of land, floods, desertification, etc.) is lower, the urban spaces may not be able to contain the population coming from the rural areas. Hence, a certain degree of out-migration in the face of environmental changes can be expected.

Taking the size of arable land in a country as a proxy (although imperfect) for environmental changes, I regress the size of arable land on net migration in low and middle income countries. Although net migration cannot exactly tell the magnitude of out-migration, it can be used as a rough measure of relative mobility patterns. In the regression, I also control for GDP per capita since adverse economic conditions generally act as a 'push factor' in migration.

Hypothesis: Lower shares of arable land correlate with higher out-migration from a country.

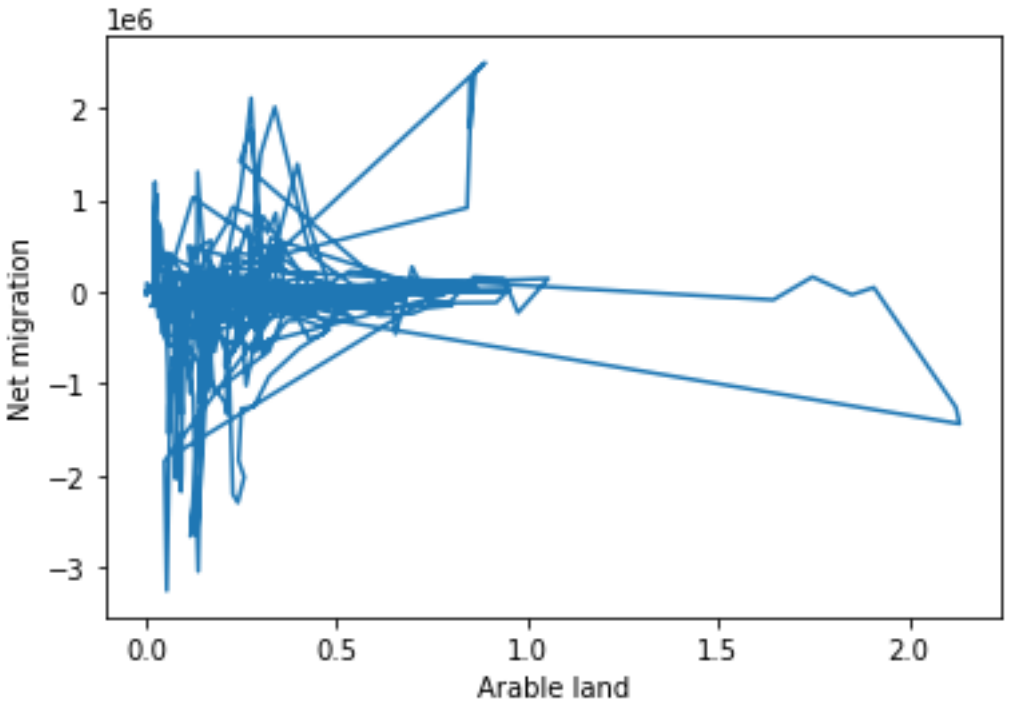
- **Dependent variable**: Net migration (the total number of immigrants less the annual number of emigrant)
- **Explanatory variable**: The size of arable land (land under temporary crop, hectares)
- **Control variable**: GDP per capita (current US$)

The regression output is as follows:

	Coefficient	Std. Err.	Lower Bound	Upper Bound
_cons	-212658.101543	24795.251850	-261317.058756	-163999.144330
arable_land	234055.630044	62445.218390	111511.232102	356600.027985
gdppc	25.192698	5.692531	14.021503	36.363894

The regression output shows that the size of arable land positively correlates with net migration with a coefficient of 234055.63. The relationship is statistically significant as CI does not include zero. As the size of arable land decreases, net migration is expected to decrease as well, which can be interpreted as out-migration increases or in-migration decreases, or both. The first plot below also shows the positive correlation between arable land size and net migration. Controlling for GDP per capita in the second plot, the positive relationship remains similar in shape.

Although the results support the hypothesis, I should note that the model is very simple since only one control variable is included and the proxies for out-migration and environmental changes are flawed.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Net migration
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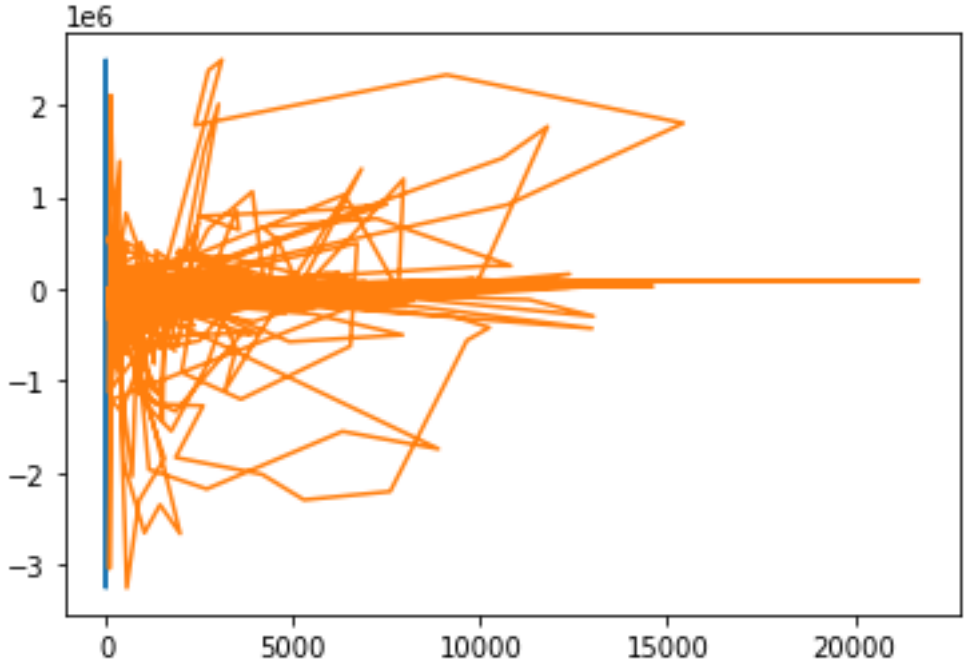
Arable land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