

# Milk: Using Genetic Variation as an Indicator of Long Run Development<sup>\*</sup>

Preliminary Draft: Not for Circulation.

Justin Cook<sup>†</sup>  
Louisiana State University

January 15, 2011

## Abstract

This paper uses the frequency of individuals within a country who are able to digest milk as an indicator of both the depth and scope of a country's past milking culture. The hypothesis being that those countries containing a greater milking culture acquired an additional advantage that allowed for a greater collection of wealth in the year 1500. The ability to digest lactose, or to drink milk, is a genetic adaptation that originated during the Neolithic Period. Accordingly, this genetic variation can be seen as an indicator of both the length of time milking has been practiced and the importance of milk to individual health levels and survival within a particular country. The empirical analysis constructs a percentage measure of the number of lactose tolerant individuals within a country, and a relationship is established in which the frequency of lactose tolerant individuals has a positive and significant effect on population densities in the year 1500. Specifically, it is shown that a one standard deviation increase in the frequency of lactose tolerance within a country causes an increased population density of 0.66% in the year 1500; this is associated with an increased population of 5,500 individuals in Senegal, the median country of population density in 1500.

*JEL classification Numbers:* O11, O13, Z13, N50

---

<sup>\*</sup> I owe thanks to Areendam Chanda for thoughtful discussion and direction, to participants at the LSU 3<sup>rd</sup> year paper presentation for comments and suggestions, and to Stelios Michalopolous for sharing data on agricultural suitability. All errors and omissions are my own.

<sup>†</sup> Ph.D. Candidate, Louisiana State University, 2107 Patrick F. Taylor Hall, Baton Rouge, LA, 70803. Telephone: (225) 578-3806. E-mail: ccook2@tigers.lsu.edu