**Read Me**

This file discusses the Matlab code used to generate the quantitative results in “Goods Trade, Factor Mobility and Welfare” by Stephen J. Redding

**Regions Directory**

This directory contains the code used in Section 4 of the paper.

|  |  |
| --- | --- |
| Imperfmobdata.m | - Generates data on unobserved fundamentals in the constant returns to scale model  - Solves for equilibrium endogenous variables in the constant returns model  - Recovers implied unobservables in the constant returns model from the observed endogenous variables  - Recovers implied unobservables in the increasing returns model from the observed endogenous variables |

The file Imperfmobdata.m generates the following results in the paper

|  |  |
| --- | --- |
| Figure 2 | Initial equilibrium in the constant returns to scale model |
| Figure 3 | Impact of transport improvement in the constant returns to scale model |
| Table 1 | Average treatment effects of the transport improvement in the constant and increasing returns to scale models |
| Figure 4 | Histograms of the distribution of treatment effects in the constant returns to scale model |
| Figure 6 | Scatter of calibrated productivities in the constant and increasing returns to scale models |
| Figure 7 | Histograms of the distribution of treatment effects in the increasing returns to scale model |

The file Imperfmobdata.m uses the following function files

|  |  |
| --- | --- |
| solveLw.m | Solves for equilibrium in the constant returns to scale model given fundamentals (productivity, amenities and trade costs) |
| pindex.m | Computes price index in constant returns to scale model |
| landprice.m | Computes land price in constant returns to scale model |
| expectut.m | Computes expected utility in constant returns to scale model |
| welfare.m | Computes another representation of expected utility in constant returns to scale model |
| realw.m | Computes real wage in constant returns to scale model |
| solveab.m | Solves for unobserved productivity and amenities in the constant returns to scale model given observed values of the endogenous variables of the model |
| solveHab.m | Solves for unobserved productivity and amenities in the increasing returns to scale model given observed values of the endogenous variables of the model |
| solveHLw.m | Solves for equilibrium in the increasing returns to scale model given fundamentals (productivity, amenities and trade costs) |
| Hpindex.m | Computes price index in increasing returns to scale model |
| Hexpectut.m | Computes expected utility in increasing returns to scale model |
| Hwelfare.m | Computes another representation of expected utility in increasing returns to scale model |
| Hrealw.m | Computes real wage in increasing returns to scale model |
| welfaregains.m | Computes welfare gains from reductions in trade costs in the constant returns to scale model |
| acrwelfaregains.m | Computes implied welfare gains under the assumption of labor immobility (ACR formula) |
| mobwelfaregains.m | Computes implied welfare gains under the assumption of labor mobility with no preference heterogeneity |
| Hwelfaregains.m | Computes welfare gains from reductions in trade costs in the increasing returns to scale model |

**Countries Directory**

This directory contains the code used in Section 5 of the paper.

|  |  |
| --- | --- |
| Imperfmobdata.m | - Generates data on unobserved fundamentals in the constant returns to scale model  - Solves for equilibrium endogenous variables in the closed economy of the constant returns model  - Recovers implied unobservables in the constant returns model from the closed economy endogenous variables  - Solves for equilibrium endogenous variables in the closed economy of the constant returns model |

The file Imperfmobdata.m generates the following results in the paper

|  |  |
| --- | --- |
| Figure 9 | Impact of opening to trade in the constant returns to scale model |
| Figure 10 | Histogram of opening to trade in the constant returns to scale model |

The file Imperfmobdata.m uses the following function files

|  |  |
| --- | --- |
| solveLwCtyClosed.m | Solves for equilibrium in the closed economy of the constant returns to scale model given fundamentals (productivity, amenities and trade costs) |
| pindex.m | Computes price index in constant returns to scale model |
| landprice.m | Computes land price in constant returns to scale model |
| expectut.m | Computes expected utility in constant returns to scale model |
| welfare.m | Computes another representation of expected utility in constant returns to scale model |
| realw.m | Computes real wage in constant returns to scale model |
| solveabCtyClosed.m | Solves for unobserved productivity and amenities in the closed economy of the constant returns to scale model given observed values of the endogenous variables of the model |
| solveLwCtyOpen.m | Solves for equilibrium in the open economy of the constant returns to scale model given fundamentals (productivity, amenities and trade costs) |
| welfaregains.m | Computes welfare gains from reductions in trade costs in the constant returns to scale model |
| acrwelfaregains.m | Computes implied welfare gains under the assumption of labor immobility (ACR formula) |
| mobwelfaregains.m | Computes implied welfare gains under the assumption of labor mobility with no preference heterogeneity |
| solveabCtyopen.m | Solves for unobserved productivity and amenities in the open conomy of the constant returns to scale model given observed values of the endogenous variables of the model |