Immigrant-Based Networks and the U.S. Bilateral Trade: Role of Immigrant Occupation

Kusum Mundra
Department of Economics
Rutgers University
Newark NJ 07102-1801
kmundra@andromeda.rutgers.edu
Immigrant-Based Networks and the U.S. Bilateral Trade

- Coethnic and social networks increase trade by reducing informational trade barriers
  (Grief 1993; Rauch and Casella 1998)
  - missing trade links (Trefler 1995)
  - home bias in international trade (McCallum 1995 and Helliwell 1998)

- Immigrant population provides the coethnic networks facilitating trade with their home country
  - (Gould 1994; Rauch and Trindade 2002; Mundra 2005; Herander and Saavedra 2004)
Literature

• A positive effect on bilateral trade
  – for the U.S. (Gould 1994; Dunlevy and Hutchinson 1999; Dunlevy 2004; Rauch 1999; Herander and Saavedra 2005)
  – for Canada (Head and Reis 1998)
  – for Netherlands (White 2007)

• Rauch and Trindale (2002) show that the ethnic Chinese population increases bilateral trade between countries for differentiated goods

• Herander and Saavedra (2004) find that geographical proximity to the home country immigrant networks is an important determinant of immigrants’ trade promoting channels for U.S. state level exports

• Size of the Immigrant Network

Department of Economics, Newark
Immigrant Information Effect

- **Immigrants**
  - carry home-country information that helps in matching buyers and sellers
  - have information on the legal set up in their country of origin that helps to enforce trading contacts
  - are familiar with the home-country language and how business is conducted in their home country

- **Depends on the Quality of the Immigrant Network**
  - The literature has not yet examined the effect of the distribution of immigrants’ occupation on the U.S. bilateral trade
Immigrant Occupation

• Not all immigrants are at an equal footing on the Immigrant Information Effect
  – The immigrants' social capital and coethnic networks in the U.S. will vary with their occupation
  – The CEO’s, professionals, and managers will have a bigger effect in trade creation than refugees, home-maker, and students

• Effect of Immigrant Entrepreneurship on Trade
  – Light et al. (2002) find that entrepreneurship rates significantly increase U.S. exports but not U.S. imports.
  – Head and Ries (1998) fail to find any positive effect of entrepreneur independent class of immigrants on trade for Canada.

• Explore the role of immigrants’ occupation on the U.S. bilateral trade
Gravity Model

\[ F_{ij} = \frac{Y_i Y_j}{D_{ij} x_{ij}} \]

\[ F_{USj} = \left( GNP_{US} GNP_j \right)^\alpha \left( PGNP_{US} PGNP_j \right)^\beta (Distance)_j^{-\gamma} e^{-x_{USj}} \]

\[ X_{USj} = (\text{Adjacency}_{USj}, \ln (\text{IMMSTOCK})_{USj}, \text{Proportion of Immigrants}_{USjk}) \]

Group the six occupation categories from Census 2000 into four occupation categories:

- Management and Professional (PROPPROEXC)
- Service and Sales (PROPSERSLS)
- Construction, Laborers, Farming (PROPPCRLABFFF)
- No occupation (reference category)

Department of Economics, Newark
Econometric Model

\[ \ln F_{USjt} = \]

\[ \rho + \alpha \ln(GNP_{US} GNP_j) + \beta \ln(PGNP_{US} GNP_j) + \gamma \ln(Distance) + \delta \text{Adjacency}_{USj} + \]

\[ \sum \delta_k \text{Proportion of Immigrants}_{kUSjt} + \delta \ln(IMMSTOCK)_{USjt} + \epsilon_{USjt} \quad (3) \]

Size of Immigrant network (IMMSTOCK) and the Distribution of the Immigrant Network across Occupation is possibly endogenous.
Data

• Sample consists of 62 countries over 1991 – 2000

• Trade data is obtained from the World Trade Database of Statistics Canada (NBER World Trade Database by Feenstra and Lipsey) . Aggregate & SITC 4

• The GNP and Population is from the Penn World Tables

• Immigrants across occupation is from the Immigration Statistical Yearbook of the Immigration and Naturalization Services (INS) and 2000 Census

• Distance and English language is obtained from Frankel (1997)
Immigrant Stock Variable

• The stock of the immigrants across occupation is calculated using the INS flow data and the 2000 US Census
  – (Dunlevy 2004; Herander and Saavedra 2005).
• INS collects annual information on legal permanent residents from different countries when the individual obtains an immigration status
• For ease of data availability we use the 2000 Census data and use the annual INS data for the years 1991-2000 to calculate the immigrant stock variables for the years 1991 – 2000 as follows:

\[ S_{imm_{jkt-1}} = S_{imm_{jkt}} - l_{imm_{jkt}} \]

• where \( S_{IMM} \) is the stock of immigrants from country \( j \) in occupation \( k \) and \( l_{imm} \) is the annual flow of immigrants in occupation \( k \) in the year \( t \)
59% of the countries have more than 25% of their immigrants in the Management and Professional occupation.
56% of the countries have more than 25% of their immigrants in the Management and Professional occupation.
Classification of Commodities

• Three groups: Organized Exchange, Referenced Price, and Differentiated
  – Rauch (1999)
    – Organized Exchange (Goods traded on organized exchange – homogenous goods)
    – Referenced Price (Prices of these traded goods is published in the trade bulletins)
    – Differentiated (Non-homogenous good)

• Immigrant Network effect is most effective for Differentiated goods
Main Findings

• Size of Immigrant network has a significant effect on trade flows (elasticity of 0.4%)

• PRPPROEXC have a highly significant and positive impact on the bilateral trade for aggregate, organized, referenced price, and differentiated group
  – A 1% points increase in the executives and professional immigrants increase U.S. exports by 3% & U.S. imports by 4%
  – Highest magnitude is for differentiated imports at 1% level of significance

• PROPSERSLS have significant effect on referenced price goods
• PROPPCRLABFFF have a significant effect on organized and differentiated imports
Robustness of the Main Findings

• Re-estimate the model after dropping the obvious extreme cases with migrant selection such as Mexico, Canada, Nigeria, South Africa, and Taiwan

• Estimate a system consisting of occupation categories together with trade flows using 3SLS
  – Popular instruments or the exogenous factors for migration
    • home-country income inequality measure (gini coefficient)
    • whether the home country allows a dual citizenship
    • personal computers and telephone lines (per 100 people)
    • home country education measures such as level of secondary and higher education attainment rates