This project is more of an attempt to visualize complex geographical data, rather than an attempt to use such data to answer a specific research question. The objective has been to represent the interdependence of our global economy through the lens of individual commodities and value chains.

**VISUALIZATION METHODS**

“Flow maps” combine elements of cartography and flow charts to represent the movement, trade and migration of things from one place to another. A typical flow map will represent three data types in each flow – geographical data in its start and end points, numerical data in the graduated thickness or color of the flow, and directionality represented by the arrow heads. Charles Joseph Minard, a French civil engineer living in the 19th century, is known for his use of flow maps (e.g. Napoleon’s march into Russia) and in some sense serves as the aesthetic inspiration for this project.

Unfortunately, the options for creating flow maps with ArcGIS and othersoftware are imperfect, due to the fact that flow maps often do not scale well, resulting in “cluttered” images with overlaying lines and arrow heads. Despite its limitations, the XY to Line tool in ArcGIS meets the basic requirements for creating flow maps and can be manipulated to address some of these cluttering issues.

UN Comtrade data was prepared for import by joining country codes with latitude and longitudinal data, and assigning a unique ID to each trade flow record. After creating lines using this cleaned data and the XY to Line tool, the original UN Comtrade data was then re-joined to the shape file attribute table on the basis of the unique ID in order to associate each flow with its USD value attributes.

Various options were explored for formatting the resulting shapes to reduce clutter and make the flow map more visually appealing. In displaying the USD value of each trade flow, using a graduated thickness approach tended to produce a better looking map than using a range of graduated colors. Display of directionality was initially a problem, since arrow heads tended to pile up in major importing nodes (e.g. China, Europe). This was partially addressed by reformatting the trade flows to display arrow heads in the middle of each line rather than their end points.