

impacts of changes that make the Canada-U.S. border more (less) transparent for trade flows.

Most discussions of global value chains begin by claiming that GVCs have grown in importance as a result of lower transportation costs, improvements to information and communications technologies (ICTs) or similar innovations. To date, however, there has not been any systematic evaluation of these claims. In his chapter "Causes of International Production Fragmentation: Some Evidence", Russell Hillberry attempts to shed some light on this gap. Hillberry first evaluates the role of ICTs by looking at one specific formulation where ICTs are compliments to the use of imported intermediate inputs. He, however, fails to find a linkage between use of ICTs and growth in use of imported intermediate inputs. He next evaluates whether the introduction of new players into the global trading system contributed to the growth of GVCs. He does find some evidence that the opening of former communist countries did play a role in the growth of GVCs and hypothesizes that it may have been these countries' unique combination of strong technical skills and low wages that lent themselves to producing technically complicated intermediate inputs. However, he also finds that these effects had largely run their course by 1996. Lastly, Hillberry examines the role of transportation modes. He shows that while containerized shipping may often be cited as a driver of the growth in GVCs, air transport may have actually been more important. It is important to keep in mind though that the quality of the data available to evaluate these various drivers is rather limited and thus any conclusions should be viewed with an appropriate level of caution. If policy makers are to better understand whether GVCs will continue to grow in importance, stagnate or even decline, it will be important to understand what drove their development. Further work in this direction would contribute to a better understanding of the forces at play.

## **Evidence**

Measurement has probably been the most significant obstacle to developing a better understanding global value chains. It is nearly impossible to predict the impact of, or to design policy to influence, something that cannot be measured. A great deal of progress has been made in recent years to obtain better measures of global value chains. The chapters in this section take a variety of approaches to obtain better measures of global value chains in general or of specific aspects of GVCs.

The first chapter in this section, "International Comparative Evidence on Global Value Chains" by Koen De Backer and Norihiko Yamano provides a cross-country perspective of global value chains largely utilizing a recently developed comparable database of input-output tables for OECD and select other countries. Their data confirms the growing importance of GVCs as defined by the rising share of imported intermediate inputs compared to domestically sourced inputs for nearly all countries in their sample. The rising importance of GVCs is also seen in the author's calculation of a vertical specialization index, which shows the growing role of intermediate inputs for exports (which they call VS1) and the growing importance of one country as a supplier of intermediate inputs that are then exported by a second country (VS2). It is interesting to note that Canada is often an outlier in these measures, first as one of the few countries that did not see a growing share of trade to GDP over the period 1995 to 2005 as well as falling measures of vertical specialization. These findings are likely due to the rapid rise of the Canadian dollar over this period, which discouraged manufacturing exports as well as the growing importance of resources which have fewer intermediate inputs that can be imported. Other resource producers, such as Australia and Norway, saw similar trends.