Gains from Trade When Firms Matter
By Marc Melitz

Globalization in Retreat?
By Davin Chor

Migration in the World Economy
By Marc Melitz
Dear Reader,

In this issue, we delve into the field of international economics and examine important issues related to trade and globalization. The movement of goods, people, and technology between countries has been a topic at the forefront of debate – most recently, the presidential debates. Trade and globalization benefit and hurt different parts of our economy such that it is impossible to claim these phenomena as pareto improvements. Our increasingly interconnected world is a fascinating place, and we are fortunate to feature the work of very accomplished economists who are helping us understand it.

Ying Zhang and Andre van Stel share their findings on how entrepreneurship stemmed from and now drives economic development in China’s contemporary economy. Davin Chor addresses the phenomenon of global trade slowdown and discusses how its impact depends on whether the cause is fundamental or cyclical. Marc Melitz and Daniel Trefler explain how trade is no longer only driven by comparative advantage and differences in natural resources. They propose several novel ways that trade is improving efficiency for producers and variety available to consumers.

Esteban Rossi-Hansberg examines the impact of migration by acknowledging its positive and negative consequences for Americans and by ultimately suggesting that increased economic activity can lead to a net benefit for all. Thomas Prusa questions the efficiency of anti-dumping laws by reevaluating when a trade law is “unfair” and when anti-dumping laws are needed to combat unfairness.

In the context of the post-crisis global economy, Carter Johnson analyzes the consequences of unpegging the Swiss franc and looks broadly at the monetary policies of Europe, Japan, and the United States. Masoud Movahed returns to the pre-crisis economy and suggests that the 2008 crisis resulted from a discrepancy between “what is good for banks” and “what is good for the economy.” Finally, Diego Perez reminds us of what we often take for granted: the availability of economic statistics. Perez studies an episode in which the Argentinian government purposefully understated inflation, leading to inefficiency and underproduction.

Thank you to the writers for sharing your work and knowledge.

Thank you to the editorial board for putting together this issue. We hope you enjoy.

Sincerely,

Angela Ma
ne of the most prominent features of China’s transition from a centrally planned economy to a market-based economy is the emergence of entrepreneurship, although previous literature discusses this phenomenon descriptively rather than prescriptively. In this article, we consider entrepreneurship developments in China since the end of the 1970s and argue that the role of entrepreneurship in the economy has changed considerably over the last four decades. Our perception is that initially, China’s entrepreneurship development stemmed from China’s economic transition, but currently, entrepreneurship is both influenced by and influences economic development.

We propose a conceptual model of the role of entrepreneurship in China’s contemporary economy, which we test using a unique database for 31 Chinese regions during the period from 1997 to 2009. Our analysis shows that two types of entrepreneurial organizations (syzyy and getihu) in China play important but distinct roles in stimulating China’s economic development.

By Ying Zhang & Andre van Steijn

Rotterdam School of Management, Erasmus University Rotterdam, the Netherlands
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Given China’s economic development in recent decades, we posit that the fundamental pillar of this growth—entrepreneurship—is powered by its economic transition and its economic and institutional antecedents. Figure 1 displays our view on the butterfly miracle of the role of entrepreneurship in China’s contemporary economy.

Since 1978, the Chinese government has gradually experimenting with various transitional policies, which have led to the improvement of welfare (the standard of living) for the majority of the population (illuminated by the direct link between the leftmost and rightmost box in Figure 1). These transitional policies have also promoted entrepreneurial activities in two ways. First, by allowing and developing the important role of private enterprise in the Chinese economy, the policies directly contributed to an increase in the numbers of private firms (arrow 1 in Figure 1). Second, by improving the conditions (antecedents) for entrepreneurship (e.g., investing in education or upgrading the institutional environment), the policies boosted entrepreneurial activities in a more indirect manner (arrow 2 in Figure 1). This is the link between economic antecedents and entrepreneurship (arrow 2 in Figure 1) that we investigate empirically. In particular, we explain regional rates of getihu and syzyy over the period from 1997 to 2009 using a number of economic antecedents and investigate the extent to which these antecedents are in line with the theory of the ‘entrepreneurial economy’ (Audretsch and Thurik 2000). The theory describes how ‘productive entrepreneurship’ (Baumol 1998) contributes to macroeconomic growth in the innovation-driven stage of economic development. This study is particularly relevant for entrepreneurship development in China, which is now moving from an efficiency-driven economy towards an innovation-driven one.

Figure 1 – Economic Mechanism of China’s Entrepreneurship and Economic Development

EMPIRICAL MODEL

We select economic antecedents from the literature on regional determinants of entrepreneurship (e.g., Reynolds et al., 1998) and from the various China Statistical Yearbooks from the National Bureau of Statistics of China (NBSC) database, covering 31 Chinese regions over 15 years (from 1997 to 2009, in total 453 region-year observations). As an illustration of our dependent variables, Figure 2 presents the rates of getihu and syzyy in Chinese regions for our most recent year of data, 2009.

Figure 2 – Rates of Getihu and Syzyy across regions (2009)
We found the impact of getihu on siyingqiye (estimated elasticity 0.51) is even stronger than vice versa (0.29), predicting that, ceteris paribus, the gap between the number of getihu and siyingqiye will decrease in the near future. As siyingqiye antecedents have been found to be more in line with the ‘entrepreneurial’ economy, this predicted increase in the share of siyingqiye firms (relative to getihu) suggests that China is slowly but surely transitioning towards an ‘entrepreneurial’ economy.

We refer that, among other findings, a region’s prevalence of human capital (measured as the share of college graduates in the local population) is positively related to the rate of siyingqiye but not so to the rate of getihu. Our results also suggest that agglomeration advantages accrue to siyingqiye rather than getihu firms. Thus, siyingqiye firms are relatively more often present in regions where economic antecedents are conducive to knowledge production and knowledge spillovers. As knowledge is the main source of competitive advantages in innovation-driven economies, we may therefore say that regional incentive structures for strategists seem to be in line with a modern competitive economy, where knowledge-based entrepreneurship is key.

Although strategists thus seem to be conducive to China’s innovation-driven economic development, our estimation results also show that the presence of large companies, either in the form of inward FDI or in the form of SOEs, still crowds out domestic strategists firms. This suggests that, although China is transitioning towards an innovation-driven economy and away from an efficiency-driven economy, economies of scale still play an important role.

Regarding getihu, our results suggest that antecedents of regional getihu rates are less in line with the ‘entrepreneurial’ economy. For instance, we do not find evidence of a positive association between the education level of the regional population and the number of getihu firms. This may suggest that a portion of getihu firms are started out of a necessity-motivated desire to getihu on siyingqiye (estimated elasticity 0.51) is even stronger than vice versa (0.29), predicting that, ceteris paribus, the gap between the number of getihu and siyingqiye will decrease in the near future. As siyingqiye antecedents have been found to be more in line with the ‘entrepreneurial’ economy, this predicted increase in the share of siyingqiye firms (relative to getihu) suggests that China is slowly but surely transitioning towards an ‘entrepreneurial’ economy.


driven as its rates are found to be highest in re-
gions where economic antecedents are conducive to-
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In contrast, antecedents of getihu firms are
less clearly linked to reaping the fruits of the ‘en-
trepreneurial’ economy, possibly indicating that
the getihu sector consists of a mixture between neces-
sity-driven and opportunity-driven entrepreneurs.

However, our analysis also suggests that the share
of high-quality, opportunity-driven entrepreneurs
in the getihu sector may also increase, as getihu
firms were found to play an important role in en-
abling the number of strategists firms to increase.

We believe that by investigating the eco-
omic antecedents of regional private firm rates and
by distinguishing between two types of private firms, getihu and strategists, our study contributes to a bet-
ner understanding of the complex role that entrepre-
nuership plays in China’s contemporary economy.
As China goes, so goes world trade?

The case of China warrants particular attention. Given China’s important position as a manufacturing center of the world, it has dominated trade flows and has been a major source of growth for the global economy. The rapid growth of China in the 2000s was driven by the expansion of its manufacturing sector, which fueled economic growth and demand.

Several leading explanations emerged to account for this “global trade puzzle.” One theory is that the trade-to-GDP ratio for China had started decreasing in the mid-2000s. In Figure 3, we see further that there was a tapering off of the use of imported intermediates by the Chinese economy. This visual evidence is in line with the findings from a careful and empirical study conducted by Fox and Yang (2016).

Based on author’s own calculations, with data from the World Bank, the IMF, and Noguera (2012), and Koopman, Wang and Wei (2014).

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CONCLUSION

In this article, we have argued that the outlook for the world trade will hinge on the extent to which the slowdown we are witnessing is cyclical in nature, as opposed to being driven by structural shifts in global value chains. With the latter counter, we could be seeing the start of a significant rearrangement of global production that is driving change in modeling the Chinese economy. From a perspective of external demand, the outlook for world trade will be further complicated by the prevailing political climate in many developed countries, where rhetoric and public opinion toward deeper integration (such as through the TPP) has taken a decided turn for the worse in the past few years.

Global trade is indeed a crossroads.

For the USA, its manufacturing trade ratio mirrors that seen earlier in Figure 1 for the world as a whole: A steady increase leading up to the global financial crisis, a sharp dip followed by a quick recovery, but flat and even falling thereafter.

In support of this view, one could argue that there are signs of a pronounced change in external demand for several key export-oriented countries. As Figure 2 indicates, the manufacturing trade-to-GDP ratio in both Germany and Japan appears to be on the increase once again. If this cyclical interpretation of events is correct, this current trade slowdown should abate once the world economy gets back on a stronger recovery path. The outlook for world trade will then hinge on how quick and successful countries are in reinvesting macroeconomic growth and demand.

For countries that are reliant on their trade links with China as upstream suppliers of intermediate inputs to China’s export processing firms, there would be cause for concern if China was systematically rolling back on its use of foreign intermediate inputs. Conversely, other developing economies that rely heavily on exports to China and countries who have not become unskilled labor could stand to benefit, as low value-added manufacturing jobs may migrate out of China in search of lower labor costs.

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Global trade is indeed a crossroads.
Gains from Trade when Firms Matter

By Marc Melitz and Daniel Trefler

The gains from long-distance international trade have been understood and exploited since prehistoric times. Our preurban ancestors were benefiting from long-distance trade in obsidian some 10,000 years ago. Plato’s Academy was built on the profits of Athenian silver exports, and Rome was not built in a day partly because goods moved too slowly in the vast Roman trade network. But whereas trade was once dominated by the movement of goods that could only be produced, harvested, or mined regionaly, the international trade landscape is now dominated by two striking facts. The first is the rise of intra-industry trade—that is, two-way trade in similar products. Chinese consumers can now buy a microwave car from Toyota (Japan), Kia (Korea), General Motors (United States), and Cherry (China). Ditto for consumers in Japan, Korea, and the United States. The second striking fact is that world trade is dominated by huge, innovative and extraordinarily productive firms. For example, Intel is so large that it can pay licensing fees to four mid-size car manufacturers. China’s Foxconn is enamored with $400,000 worker in a single one of its many export-oriented electronics factories. These are big companies, but they are virtual across countries.

The rising prominence of intran-industry trade and huge multinationals has transformed the way economists think about the gains from trade. In the past, we thought gains on steadily from endowment differences (wheat for iron ore) or inter-industry comparative advantage (David Ricardo’s classic example of cloth for port). Today, we focus on three sources of gains from trade: (1) love-of-variety gains associated with intra-industry trade, (2) allocative efficiency gains associated with shifting labor and capital out of small, less productive firms and into large, more productive firms, and (3) productive efficiency gains associated with trade-induced innovation.

Back in the 1980s, a “New Trade Theory” was developed that focused on intra-industry trade in differentiated goods produced subject to increasing returns to scale. This theory centered on an elegant tension: Consumers love variety and are willing to pay a premium for the perfect product, but as the market fragments into niche products, producers struggle to attain the volumes needed to recoup their development dollars and this in turn raises productivity. Theories of innovation-based gains from trade with homogeneous firms were developed by Melitz (2003) and Bernard et al. (2003). This is the firm-level “reallocations” that occurs when there is firm heterogeneity. By firm heterogeneity we mean that even within narrowly defined industries some firms are much larger and more profitable than others because, for example, they are much more productive. Globalization generates both winners and losers among firms within an industry and these effects are magnified by heterogeneity among firms. Recent results in particular show that the industry the best-performing firms have the sales and profits that are much more productive than the worst performing firms while others are much more profitable. Also, a firm’s performance can change over time. For example, Intel and Apple are major patent holders.

We are now in a period of relatively calm in which trade promotion is a key policy goal. In the past, we focused on gains that stemmed either from endowment differences (wheat for iron ore) or inter-industry comparative advantage (David Ricardo’s classic example of cloth for port). Today, we focus on three sources of gains from trade: (1) love-of-variety gains assoctated with intra-industry trade, (2) allocative efficiency gains associated with shifting labor and capital out of small, less productive firms and into large, more productive firms, and (3) productive efficiency gains associated with trade-induced innovation.

One can then categorize trade flows as either intra-industry (two-way trade within the same industry classification code) or inter-industry (imports and exports in separate industry codes). The United Nations uses the Standard International Trade Classification, or SITC, to categorize world trade flows. In its most detailed form, the SITC contains 1,161 separate industry codes (that can be consistently traced back over time), but these industries are often aggregated into a smaller subset of industries.

Figure 1 shows the trend for the share of intra-industry trade according to this most detailed classification, and a more aggregated version with only 59 industry codes. Mechanically, the share of intra-industry rises with the level of aggregation for the international classification system (after all, with a single aggregate industry code, all trade would be “intra” to this aggregated industry). However, the

**Gains from Love of Variety:**

*Economies of Scale and Product Variety*

**Figure 1: World Share of Intra-Industry Trade 1962-2006**

*Source: Data from Brotherton (2009). We thank Ilialetu Brealfert for generously sharing his data.*

**Table 1:**

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time trends for the two series are very similar: intra-industry trade grew from 1962 to the mid-1990s, before stabilizing at a substantially higher level. As countries industrialize, they tend to experience a higher share of intra-industry trade, because they tend to produce and export differentiated manufactured goods that are similar to other brands of goods that are imported. However, some of the countries with the highest shares of intra-industry trade in 2000 were newly industrializing nations such as the Czech Republic (77 percent), the Slovak Republic (76 percent), Mexico (73 percent), and Hungary (72 percent). For comparison, the U.S. had a 69 percent share of intra-industry trade in 2000 (OECD, Economic Outlook, 2002, Ch. 6; based on the 59-industry level of aggregation). Most recently, China’s share of intra-industry trade has risen above the 50 percent mark.

Why might a country both export and import goods that are similar? As a starting point, consider world trade in automobiles. Consumers in a car-producing country are not limited to buying the car models that are produced domestically: many of those consumers choose to buy models that are produced elsewhere and imported. The extent of this product differentiation is then limited by high fixed start-up costs for a new brand of car. A new automobile manufacturer in the United States would require $5 billion worth of capital to start production of a new model to consumers in the other country.

In our theoretical example, two identical countries, which provides a stark contrast with the gains from inter-industry trade that arise from exploiting differences across countries such as differences in technology (Ricardian) or differences in factor supplies (Heckscher-Ohlin). In our theoretical example, two identical countries produce differentiated varieties subject to the same constant returns-to-scale technology. Assume that one worker can produce 1 widget, but that production of any new variety of widgets requires 4 workers to cover fixed overhead costs: this implies decreasing average costs of production as the fixed cost is spread over an increasing number of workers (hence the economies of scale). Above 2. Also be specific, suppose that both countries have a fixed supply of 12 workers. If they do not trade, then each country can produce a) 8 units of 1 variety, or b) 2 units each of 2 different varieties.

Allowing countries to trade leads to a new possibility that is better than what either country can achieve on its own. Suppose that each country produces 8 units of 1 variety and exports 4 of these units to the other country. Consumers are now consuming 4 units of the home variety and 4 units of the foreign variety. This is preferred to either of the no-trade production plans above. Compared to choice b, there is the same number of varieties (2 varieties), but more of each variety (4 versus 2). Compared to choice a, there is the same number of units (8 units), but more varieties (2 versus 1). Thus, trade expands the set of consumer choices and eases the tradeoff between consumption units and for autos that allowed manufacturers to consolidate the production of particular car models in one country, and export that model to consumers in the other country. For example, General Motors cut in half the number of models assembled in Canada. However, total production of autos in Canada increased as the remaining models produced in Canada supplied the U.S. market as well as the Canadian one. Canadian automotive exports to the United States increased from $16 million in 1962 to $2.4 billion in 1968. That same year, U.S. automotive exports to Canada were valued at $2.9 billion: intra-industry trade in action. Today, $85 billion worth of goods cross the U.S.-Canada border each year—roughly half in each direction. The productivity gains associated with this consolidation were substantial. Over the course of the 1960s, the Canadian auto industry’s 30 percent labor productivity shortfall relative to its U.S. counterpart disappeared. Later, Ford transformed its automobile production to be more of the automobile industry was extended to include Mexico. In 1989, Volkswagen consolidated its North American operations in Mexico, shutting down its plant in Pennsylvania. This process continued with the implementation of the North American Free Trade Agreement between the United States, Canada, and Mexico. In 1994 Volkswagen started producing the new Beetle for the entire North American market in one of its Mexican plants.

This consolidation in response to closer economic integration with the United States was not limited to the auto industry. Following the implementation of the Canadian-U.S Free Trade Agreement in 1989, each Canadian manufacturing industry experienced a dramatic reduction in its product offerings, concentrating on a smaller number of products (Baldwin, Beckstead, and Caves, 2002; Baldwin, Caves, and Gu, 2005; Baldwin and Gu, 2006b; Bernard et al., 2011). Baldwin, Caves, and Gu (2005) also report that the decrease in product offerings was accompanied by substantial increases in production runs for individual products. This process is even evident in the Canadian wine industry, an industry that exclusively produced low-end wines that could not possibly compete with Californian giants such as Gallo. In response to the Agreement, Canadian winemakers dramatically reduced the number of varietals produced and focused on the varietals used to produce ice wine. The industry is now healthier than ever (Beaumont and Caddy, 1998).
Gains from Re-allocation at the Firm Level

By the mid-1980s there was a large body of theoretical work demonstrating that freer trade could impact productivity by forcing firms to move up or down their average cost curves. Much of the follow-on empirical work assumed that firms were identical and made a variety of assumptions that allowed inferences to be drawn from industry-lev
del data e.g., Harris (1994). We now know that the heterogeneity of firms even within narrowly defined industries is a central feature of the data that cannot be ignored. See, for example, Bernard et al. (2007).

Our second source of gains from trade is the result of shifting resources away from less productive firms and towards more productive firms. To analyze gains from reallocation of trade between firms, we need a model of trade with heterogeneous firms. That is, in which performance varies across different firms. We can then capture how firms with different characteristics respond differently to trade. Consider the case from the previous example where opening to trade leads to a transition from production plan a in which each country produces 2 varieties to production plan b in which each country produces 1 variety. In the real world, those varieties are associated with the firms that produce them. Opening up to trade therefore implies that 1 of the 2 firms in each country shuts down, while the remaining firms expand production from 2 units to 8 units. But what factors are to explain which firms expand and which ones exit?

Monopolistic Competition with Heterogeneous Costs

With monopolistic competition, many firms compete by offering different products that are relatively close substitutes for one another — at least as compared to products in other industries. For simplicity, we assume that each firm produces a single product, that demand for all products is symmetric, and that firms differ only with respect to their marginal costs of production , where is a firm index. A number of authors have developed related models that allow firms to produce multiple products. See Eckel and Neary, 2010, Bernard et al., 2011, and Mayer et al., 2011. Also, demand need not be symmetric: there can be product-quality differences across firms. Such product-quality differences lead to very similar predictions for firm performance as the ones we now discuss for cost differences.)

Panel (a) of Figure 2 illustrates the price and quantity choices for two monopolistically competitive firms. Both firms face the same of the love-of-variety gains that accrue to consumers, firms benefit from the increased productivity derived from an increased range of available production inputs. Recent firm-level research has confirmed this product variety benefit for firms that import a substantial portion of the increased trade is the result of shifting resources away from less productive firms and towards more productive firms. To analyze gains from reallocation of trade between firms, we need a model of trade with heterogeneous firms. That is, in which performance varies across different firms. We can then capture how firms with different characteris
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Figure 2: Price and Quantity Choice for Monopolistically Competitive Firms

Which firms expand and which ones exit?
Putting together the downward shift in domestic operating profits and the upward shift in export operating profits, we see that trade liberalization generates both winners and losers – just as in the case of economic integration. Non-exporters lose because they only incur the losses from the lower domestic profits. Exporters, on the other hand, stand to gain as they can make up for the loss of domestic profits with profits earned from exporting.

### WHAT CHANGES WHEN ECONOMIES INTEGRATE?

H ow will the situation faced by these heterogeneous firms alter when they can freely enter and exit the market and engage in international trade? Firms with higher marginal costs (shaded area to the right of the horizontal axis) lose, whereas the firms with lower marginal costs (shaded area to the left of the horizontal axis) gain. Because the demand curve is flatter for firms with lower marginal costs, their profits increase.

### TRADE COSTS, EXPORT DECISIONS, AND TRADE LIBERALIZATION

Trade liberalization transfers the gains from production and consumption to a new class of firms that have a comparative advantage in the new, larger market. These gains are not equally distributed across firms. For some firms, the gains are offset by increases in their costs of production. For other firms, the gains are greater than the losses. The overall effect of trade liberalization is an increase in aggregate productivity. This is because firms that are more productive in the larger market are able to expand their production and exports, leading to a rise in aggregate productivity.
instead only serve domestic consumers. We now extend our theoretical model to incorporate trade costs and firms’ export decisions. For this purpose, we can no longer analyze a single market; instead, we need to jointly look at firms’ decisions in both the domestic and export markets. For simplicity, we consider a special case where both countries are symmetric, so that demand conditions in both the domestic and export markets will be identical. Assume that a firm must incur an additional trade cost t for each unit of output that it sells to customers across the border. As a result of this trade cost, each firm will set a different price in its export market relative to its domestic market, which will lead to different profit levels earned in each market. Because we are assuming that each firm’s marginal cost is constant and does not vary with production levels, the decisions regarding pricing and quantity sold in each market can be separated: a decision regarding the domestic market will have no effect on the profitability of different decisions for the export market. Consider the case of firms located in Home. Their situation regarding their domestic (Home) market is exactly as was illustrated in Figure 2, except that all the outcomes such as price, output, and profit relate to the domestic market only. Now consider the export (Foreign) market. The firms face the same demand curve in Foreign as they do in Home (the two countries are identical). The only difference is that each firm’s marginal cost in the export market is shifted up by the trade cost t. What are the effects of the trade cost on the firms’ decisions regarding the export market? A higher marginal cost indicates a firm to raise its price, which leads to a lower output quantity sold and to lower profits (as highlighted in Figure 2). We also know that if marginal cost is raised above a threshold level, then a firm cannot profitably operate in that market. Thus, when there are trade costs, some firms will find it profitable to operate in the domestic market but not in the export market because the trade cost pushes their marginal cost for that market above the threshold. Figure 4 helps to visualize the production and export decisions for all firms based on their marginal cost. Panel (a) of Figure 4 separates a firm’s operating profit into a portion earned from domestic sales, and a portion earned from export sales. (Both portions are functions of a firm’s marginal cost as in Figure 2.) Because the only difference between the domestic and export markets is the additional per-unit trade cost t, the horizontal distance between the two curves is equal to the trade cost t. Firm 1 earns positive operating profits from sales in both the domestic and export markets; the total operating profit increases up to the trade cost t. However, the operating profit for the export market tends to reduce operating profits there, but this effect is dominated by the direct effect of the trade cost reduction. (Increased competition in the export market tends to reduce operating profits there, but this effect is dominated by the direct effect of the trade cost reduction.) Therefore, we can see that some firms start exporting. Specifically, among the firms that did not export prior to trade liberalization, only the most productive of these start exporting. In many ways, the Canada-U.S. Free Trade Agreement is a useful natural experiment for considering the effects of trade liberalization. The policy experiment is clearly defined: it dealt only with market integration of the two countries, or a portion of a larger package of macroeconomic reforms that often accompany trade liberalization. The enactment of the agreement was largely uncontested: a Canadian general election was fought on the issue one month before the agreement was to be signed into law and policymakers had already predicted that Canada’s ruling party – along with the free trade agreement – would be defeated (Brander, 1991; Thompson, 1993). Thus, evidence about the extent of aggregate productivity changes as a result of reallocations among heterogeneous firms can be sought by looking at the distribution of productivity across Canadian manufacturing plants before and after the agreement, at entrants before and after the agreement, and at the productivity distribution of exporters and non-exporters. The agreement came into effect on January 1, 1989. Panel (a) of Figure 5 shows the correlation between productivity of Canadian manufacturing plants in 1985 and 1996, when there had been time for firms to adjust to the new market realities and the distribution of productivity across all 35,000 Canadian manufacturing plants in that year. Clearly, the distribution of firms shifted rightward: Between 1988 and 1996, the share of low-productivity plants in manufacturing declined and the share of high-productivity plants rose. The horizontal axis is based on a measure of the log of labor productivity. However, to ensure that dispersion is driven by within-industry rather than between-industry differences in labor productivity, we scale each plant’s log productivity by subtracting from it the median log productivity of the plant’s 4-digit SIC industry. Thus, the median plant in each industry has a score of zero on the horizontal axis. The vertical axis shows the share of plants with the indicated level of productivity. These frequencies are weighted by plant employment; otherwise, tiny plants that account for a tiny fraction of total employment would dominate the figure. To get a sense of the degree of productivity dispersion, consider the horizontal axis of Figure 5 and suppose that log productivity at plant A is one unit higher than at plant B. This is equivalent to saying that plant A is three times more productive than plant B. If A is four units higher than B then A is 30 times more productive than B. Obviously, labor productivity as shown in Figure 5 is not an identical concept to the horizontal lines showing levels of marginal cost in the theoretical discussion. When marginal costs are low, we typically expect productivity to be high. Therefore, the inverse of marginal costs (1/c) is often plotted in empirical work on productivity. The productivity heterogeneity shown for
A central prediction of the theory is that the presence of trade costs, only low-cost, high-productivity firms export. Panel (c) of Figure 5 shows the distribution of Canadian plants separated for exporters and non-exporters. Clearly, the distribution for exporters is to the right of that for non-exporters. On average, the most productive 40 percent more productive than non-exporters in the same industry (Baldwin and Gu, 2003). Since the seminal work of Bernard and Jensen (1995), a huge body of research covering dozens of countries has found this same pattern of higher productivity for exporters relative to non-exporters. A much more demanding prediction of the theory deals with who will start exporting in response to falling trade costs. Panel (b) of Figure 4 shows that those who start exporting will be among the most productive of those who never exported before. To test this prediction, Lileeva and Trefler (2010) examined a sample of over 5,000 Canadian manufacturing plants that had never exported prior to the Canada-U.S. free trade agreement. A very large percentage of these plants (40 percent) started exporting after the agreement came into force on January 1, 1989. Lileeva and Trefler examine whether these plants started exporting because of the U.S. tariff cuts and, more importantly, whether those that started exporting were the most productive. A variety of tariff cuts led to more productive non-exporters. To this end, Lileeva and Trefler divide up their sample into quartiles of the 1988 distribution of labor productivity (with the quartiles defined separately for each industry, to net out industry characteristics). Only 20 percent of the plants in the bottom quartile of labor productivity started exporting because of the tariff cuts, compared to nearly 60 percent of the plants from the top quartile of labor productivity. (These estimates are from a probit regression in which the dependent variable is 1 if the plant started exporting and 0 if it did not, for each exporter.) The key independent variable is a plant-specific measure of the change in the U.S. tariff. This measure is described below. The key conclusion is that, among firms that did not export before trade liberalization, the most productive of these specific functional forms for preferences that determine the extent of product differentiation, as well as for the utility derived from love-of-variety) and that make use of parametric estimates about which we are highly uncertain. In short, there is a lot of uncertainty surrounding welfare-gain estimates. In the heterogeneous-firms literature the focus has shifted to estimating productivity gains rather than welfare. The last two decades have seen major improvements in our ability to estimate productivity gains associated with high-quality firm-level longitudinal data and because of methodological developments aimed at exploiting these data. Thus, although productivity gains are not the same as welfare gains, we have much greater confidence in our estimates of the productivity gains associated with freer trade.

The productivity gains associated with the reallocation of market shares across firms following the Canada-U.S. free trade agreement are usefully broken into two components. First, the fall in the U.S. tariffs allowed Canadian plants to export more. This shifted the composition of output towards high-productivity exporters and away from low-productivity non-exporters. Lileeva and Trefler (2010) estimate that the fall in U.S. tariffs caused Canadian manufacturing productivity by 4.1 percent via this export-composition channel. Second, the fall in the Canadian tariffs led to a shift in domestic market shares – exporters gained market share at the expense of non-exporters. In the extreme, many non-exporters simply went out of business.

In the wake of the Canada-U.S. free trade agreement, Canadian manufacturing productivity rose sharply. We have shown that part of this productivity gain was due to the reallocation highlighted by the theory. But exactly how important were these productivity gains in the same way (Baldwin and Gu, 2003). Since the seminal work of Bernard and Jensen (1995), a huge body of research covering dozens of countries has found this same pattern of higher productivity for exporters relative to non-exporters. A much more demanding prediction of the theory deals with who will start exporting in response to falling trade costs. Panel (b) of Figure 4 shows that those who start exporting will be among the most productive of those who never exported before. To test this prediction, Lileeva and Trefler (2010) examined a sample of over 5,000 Canadian manufacturing plants that had never exported prior to the Canada-U.S. free trade agreement. A very large percentage of these plants (40 percent) started exporting after the agreement came into force on January 1, 1989. Lileeva and Trefler examine whether these plants started exporting because of the U.S. tariff cuts and, more importantly, whether those that started exporting were the most productive. A variety of tariff cuts led to more productive non-exporters. To this end, Lileeva and Trefler divide up their sample into quartiles of the 1988 distribution of labor productivity (with the quartiles defined separately for each industry, to net out industry characteristics). Only 20 percent of the plants in the bottom quartile of labor productivity started exporting because of the tariff cuts, compared to nearly 60 percent of the plants from the top quartile of labor productivity. (These estimates are from a probit regression in which the dependent variable is 1 if the plant started exporting and 0 if it did not, for each exporter.) The key independent variable is a plant-specific measure of the change in the U.S. tariff. This measure is described below. The key conclusion is that, among firms that did not export before trade liberalization, the most productive of these specific functional forms for preferences that determine the extent of product differentiation, as well as for the utility derived from love-of-variety) and that make use of parametric estimates about which we are highly uncertain. In short, there is a lot of uncertainty surrounding welfare-gain estimates. In the heterogeneous-firms literature the focus has shifted to estimating productivity gains rather than welfare. The last two decades have seen major improvements in our ability to estimate productivity gains associated with high-quality firm-level longitudinal data and because of methodological developments aimed at exploiting these data. Thus, although productivity gains are not the same as welfare gains, we have much greater confidence in our estimates of the productivity gains associated with freer trade.

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with a short extension to the theoretical model that captures how larger markets generate incentives for some firms to innovate, and then turn to empirical evidence. Suppose that there is an innovation process that requires an up-front fixed cost, and in return generates the labor productivity of those who start exporting because Canada's export growth. Of course, this 29 percent number – in the raw data, a reduction in marginal cost. That is, innovation reduces marginal cost from c to c' . A firm that produces q units of output and engages in innovation will lower its production costs by . The firm will weigh this cost saving against the fixed innovation cost, and innovate if or . In words, only firms with large volumes q (i.e., those with initially lower levels of marginal cost) will find it profitable to innovate. What happens to this firm-level innovation decision when trade is liberalized? Lower trade costs increase an exporter's sales in the export market, and thus increases the exporter's overall output level q. For some exporters, this increase in output will tip the balance in favor of innovating. For some non-exporters, trade liberalization will tip the balance in favor exporting and innovating. For evidence on the link from growth of trade to within-firm productivity, we turn again to Canada's experience with the free trade agreement. Lileeva and Trefler (2010) look at their sample of 5,000 Canadian manufacturing plants that did not export before 1992 and compare those plants to those who started exporting after the passage of the free trade agreement and those who did not. In the raw data, the labor productivity of those who started to export rose 29 percent more than for non-exporters: Starting to export was high ly correlated with within-firm productivity growth. Of course, this 29 percent number – in the raw data, a reduction in marginal cost. That is, innovation reduces marginal cost from c to c' . A firm that produces q units of output and engages in innovation will lower its production costs by . The firm will weigh this cost saving against the fixed innovation cost, and innovate if or . In words, only firms with large volumes q (i.e., those with initially lower levels of marginal cost) will find it profitable to innovate. What happens to this firm-level innovation decision when trade is liberalized? Lower trade costs increase an exporter's sales in the export market, and thus increases the exporter's overall output level q. For some exporters, this increase in output will tip the balance in favor of innovating. For some non-exporters, trade liberalization will tip the balance in favor exporting and innovating.

**Table 1: Innovation Response to FTA by New Exporters**

<table>
<thead>
<tr>
<th>Category</th>
<th>New Exporters</th>
<th>Non-Exporters</th>
<th>Difference</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing Information Systems</td>
<td>16%</td>
<td>6%</td>
<td>10%</td>
<td>7%</td>
</tr>
<tr>
<td>Inspection and Communications</td>
<td>18%</td>
<td>10%</td>
<td>8%</td>
<td>8%</td>
</tr>
<tr>
<td>Any Product or Process Innovation</td>
<td>30%</td>
<td>20%</td>
<td>10%</td>
<td>8%</td>
</tr>
<tr>
<td>Any Product Innovation</td>
<td>26%</td>
<td>14%</td>
<td>12%</td>
<td>7%</td>
</tr>
</tbody>
</table>

We summarize the causal effects of the free trade agreement on labor productivity by rose by 13.8 percent. The idea that a single government policy could raise productivity by such a large amount and in such a short timespan is truly remarkable.

Table 2. As the last row shows, Canadian manufacturing productivity in 2016 was 13.8 percent.
R

A NEW DIMENSION OF HOMOGENEITY

(2012) also finds strong complementarities between exporting and productivity-enhancing investments among Spanish firms.

In our theoretical model above, firms below a certain productivity threshold should not be exporting. Yet in the empirical work reviewed above, we saw that many low-productivity Canadian plants started exporting in response to U.S. tariff cuts. This is a second point where our model was not yet noted: Lielle and Trefler (2010, Table III) report that the plants that gained most from starting to export (both in terms of productivity gains and increased innovation) were primarily plants that initially had low productivity. That is, among plants that started to export, the benefit was greatest for the least-productive plants.

To see why, consider a firm that is just indifferent between investing and not investing. From Equation (1), indifference means that $q = \beta c$, where $\beta$ is the reduction in the trade costs. That paper also documents the many facets of the rise of intra-industry trade, and also appear import innovations for a larger market. Each of these mechanisms could push the demand for a firm to be exported. Yet in the empirical work reviewed above, we saw that many low-productivity Canadian plants started exporting in response to U.S. tariff cuts. This is a second point where our model was not yet noted: Lielle and Trefler (2010, Table III) report that the plants that gained most from starting to export (both in terms of productivity gains and increased innovation) were primarily plants that initially had low productivity. That is, among plants that started to export, the benefit was greatest for the least-productive plants.

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Migration and the World Economy

By Esteban Rossi-Hansberg
Princeton University

The process of globalization, so lauded until recently, is under attack.
Many people blame international trade and migration for the stagnation of their incomes and the difficulties that they face in life. Politicians are, naturally, exploiting this discontent. None of the major candidates in the primaries in the U.S. supported expanding the number of free trade agreements, and the nominees of both parties oppose it.
Migration is, perhaps, suffering even more. Listening to the debate between Reagan and Bush Sr. in the 1980 presidential primary and contrasting it with the current discussion on immigration reforms is a case in point. The idea that migrants are good for the development of a country is simply not present in the current debate in most countries. At best, people advance arguments on why bringing in highly skilled workers is good for the development of the country. Furthermore, hiring a stranger at home strains resources, particularly if he does not pay rent, or not fully. The size of our home is smaller if one extra person lives there partially free. The same could be said for a country. Foreigners come and use the land and other fixed or inflexible factors (like good institutions), and as a result things are more congested. There is less for the original owners, the original citizens, to use. This is the case if migrants get some of these fixed factors for free (like government services or good institutions), or ownership is unevenly distributed across citizens, which is undoubtedly the case everywhere in the world. Of course, one can question who are the original citizens and who own claim property rights of a country. Although perhaps interesting, let's leave that discussion aside and let's just say that the current citizens are the owners. Should they leave the door open and share the fixed endowments of their country? Is this the interest of current citizens?
If all resources were fixed and in use and technology was given, the answer to these questions would clearly be no. Otherwise, we would break one of the fundamental mechanisms in economics, namely that returns are diminishing in the quantity of a factor when other factors are constant. The rationale is simply based on congestion. The more there are of us, the more we need to share the other factors, which causes our marginal contribution to decline. Owners of private factors could gain, but citizens that do not own factors lose. And if returns to fixed factors and public resources are shared uniformly between all residents, including migrants, everyone loses. This basic economic logic is sound, and I do not attempt to argue in favor of migration by arguing that the large amount of evidence in its favor is somehow flawed. Instead, my point is that the premise of the argument is violated; that is, many factors apart from labor are not fixed, not all factors are fully utilized, and technology evolves endogenously as a result of investments, spillovers, and diffusion.
Clearly, as we increase the number of people in a country, the returns of capital and other complementary factors increase, in turn increasing capital investments. Similarly, more workers translate to greater expenditures, which incentivize a firm's investment in technology and across the world are linked via trade networks, migration networks, and production networks. The world is incredibly productive, and some are simply where your friends, family, or that local vibe that you like so much, are. Accounting for this heterogeneity is important. Perhaps even more important is accounting for the fact that locations in an economy and across the world are linked via trade networks, migration networks, and production networks. The world is incredibly interconnected and these connections are important to truly measure the effect of migration.
The impact of migration is the sum of their effects throughout the network. One thing is clear: simply measuring the effect that migrants to a city have on the wages of other similarly skilled agents in the same city misses a tremendous number of effects. What if current residents move to other cities and improve those? What if they leave for the suburbs instead?
What if they decide to obtain a degree or become entrepreneurs? The logic of partial equilibrium measurement that treat locations as isolated islands is flawed, and will result in wrong answers. In economics, it is fairly common to focus on certain details and leave the big picture behind. Such an approach can be particularly perilous when analyzing the effects of migration. With these concerns in mind, I have been working on frameworks that account for many of these channels in order to try to measure the welfare effect of liberalizing migration. I want to think about general migration flows, independently of the skill or wealth of the migrant. Ultimately, the skill and wealth of the current generation is just a temporary, and short lived, characteristic. Future generations will decide their own savings and investments in education based on the returns they face. Together with Klaus Desmet and David Ngy, I have recently measured the implications of relaxing migration flows in such a framework. The exercise requires large amounts of data for thousands of locations in the world. The goal is to assess the evolution of the world economy over time with current migration restrictions as well as with counterfactual migration flows, and compare them. The results are stark. A reform that liberalizes migration so that 10% of the population moves at impact would yield an increase in real world output in present discounted value of 18%. Such a reform would also cause some extra congestion in Europe and the U.S., which implies that average welfare would increase by 9%, a smaller but still impressive figure.

There is no policy that could be readily applied at the world level for which estimated world benefits are as large. Migration is uniquely powerful in generating good effects. So in economic terms, this is a no brainer because of implausibly abstract or theoretical arguments, but because the measurement of the relevant forces tells us so. If one is worried about secular stagnation, namely the slowdown in growth and innovation, liberalizing migration seems like a much more effective policy than any other we know. It certainly promises to be more effective than monetary or industrial policy.
Clearly, once we start discussion policy, we need to extend the scope of our thinking beyond economics. Can the world incorporate 10% of migrants without suffering important disruptions in institutions and its social fabric? My guess is that it can, in fact, some of these costs are already accounted for in the welfare numbers presented above. Migrants do create congestion and disrupt societies, but our measurement says that the associated increase in real output alleviates, by far, these costs.
Globalization has brought many economic gains. It can, sometimes, also create losers, particularly when people do not react optimally to the new opportunities it offers. Even if we acknowledge these problems, allowing for the flow of goods and people across regions and countries is still one of the best ways we know to create wealth and wellbeing.
Are the Unfair Trade Laws Fair?

By Thomas J. Prusa
Rutgers University

In recent decades many long-established firms and industries have struggled with foreign competition. Profits have declined, and in some cases turned negative. Jobs have been lost. Economists argue that such changes are a natural and important part of development and progress. Schumpeter (1942) called this process “creative destruction.”

This ivory tower view is often seen by businessmen and politicians as out of touch with reality. Job change and resource reallocation are painful, often slow, and almost always hard to accept. The unhappiness with job losses is intensified when there is a sense that the competition might not be playing fair. In fact, it is often unclear, at least in the short run, whether a domestic industry’s struggles are the result of imports or whether something devious is going on.

For some workers and consumers, the feeling with job losses is intensified when they believe that their foreign competitors are not treating their products fairly. In fact, it is often unclear, at least in the short run, whether a domestic industry’s struggles are the result of imports or whether something devious is going on.

Whether or not a firm can be subject to dumping claims has nothing to do with the basic economics of competition. For example, dumping does not even require that the foreign firm has dumped on its home market.

The question of how firms should set prices in order to maximize profits is addressed in every introductory microeconomics textbook, e.g., Mankiw (2011). In short, a firm will sell a quantity up to the point where marginal revenue equals marginal cost. The price the firm will receive is then given by the demand curve. For some demand and cost configurations a firm will earn a positive economic profit. For other demand and cost configurations the firm will earn a negative economic profit. One of the important lessons in “Eco 100” introductory economics classes is that simply earning a negative profit does not mean a firm should not sell its product. You’re the one, the “not sold” condition is a special case.

Under AD law, however, any firm earning a negative profit, even if for just a single quarter, can be found to have dumped and therefore can be subject to high AD duties. The surprise of nearly all students, preeminent firms like Apple, Microsoft, Intel, Maytag, US Steel, etc. have all priced, at one time or another, in such a way that they would have legally been deemed to have dumped. The fact that most firms have not been subject to dumping claims just simply means that their foreign competitors have not made the claim against them, not that they trade fairly. For all intents and purposes, according to the legal definition of fair trade, all firms dump. Students are further surprised to discover that compared to businesses in other countries, U.S. firms are among the most frequently targeted in AD investigations (Blonigen and Prusa, 2016). The bottom line is that the unfair trade that dumping laws sanction is often, perhaps even mostly, trade that would have never been deemed unfair had it been purely based purely on domestic competition. Politicians often say they want to “level the playing field” when it comes to trade. If they truly meant that, they would amend AD so as to make them consistent not just with basic microeconomics but also with the many laws we have to protect competition among domestic firms.

As it turns out, the legal definition of unfair trade has virtually nothing to do with the basic economics of competition. As the question of how firms should set prices in order to maximize profits is addressed in every introductory microeconomics textbook, e.g., Mankiw (2011). In short, a firm will sell a quantity up to the point where marginal revenue equals marginal cost. The price the firm will receive is then given by the demand curve. For some demand and cost configurations a firm will earn a positive economic profit. For other demand and cost configurations the firm will earn a negative economic profit. One of the important lessons in “Eco 100” introductory economics classes is that simply earning a negative profit does not mean a firm should not sell its product. You’re the one, the “not sold” condition is a special case.

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Through different lenses, AD and the world of microeconomics can be seen as parts of a bigger picture, including the many laws we have to protect competition among domestic firms.
Zeroing

While the WTO provides general guidelines and principles for how the dumping margin should be computed, individual countries have substantial latitude in implementing these guidelines. For example, in the process of computing the AD duty, a government must aggregate the results of comparisons between the normal value and export prices. Hundreds or even thousands of individual transactions are aggregated to produce a single AD duty. Zeroing refers to one particular step in the calculation. Zeroing is the practice of replacing the actual amount of dumping by zero in those transaction comparisons with negative dumping margins (i.e., export transactions for which the export price exceeds the calculated normal value) with a value of zero. Prior to the final calculation of a weighted average dumping margin for the product under investigation with respect to the exporters under investigation, because the zeroing method drops transactions that have negative margins, it has the effect of increasing the overall dumping margin.

Zeroing is particularly problematic under the WTO process of computing the AD duty, a government must aggregate the results of comparisons between the normal value and export prices. Hundreds or even thousands of individual transactions are aggregated to produce a single AD duty. Zeroing refers to one particular step in the calculation. Zeroing is the practice of replacing the actual amount of dumping by zero in those transaction comparisons with negative dumping margins (i.e., export transactions for which the export price exceeds the calculated normal value) with a value of zero. Prior to the final calculation of a weighted average dumping margin for the product under investigation with respect to the exporters under investigation, because the zeroing method drops transactions that have negative margins, it has the effect of increasing the overall dumping margin.

Table 1 – An Example of Zeroing

<table>
<thead>
<tr>
<th>Sales</th>
<th>Export transaction</th>
<th>Home Mkt transaction</th>
<th>Difference: No Zeroing</th>
<th>Difference: Zeroing</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Sep</td>
<td>75</td>
<td>90</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>4-Sep</td>
<td>75</td>
<td>95</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>6-Sep</td>
<td>95</td>
<td>95</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10-Sep</td>
<td>100</td>
<td>95</td>
<td>-5</td>
<td>-10</td>
</tr>
<tr>
<td>12-Sep</td>
<td>105</td>
<td>95</td>
<td>-10</td>
<td>-10</td>
</tr>
<tr>
<td>16-Sep</td>
<td>105</td>
<td>105</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>18-Sep</td>
<td>110</td>
<td>105</td>
<td>-5</td>
<td>-5</td>
</tr>
<tr>
<td>20-Sep</td>
<td>115</td>
<td>110</td>
<td>-5</td>
<td>-5</td>
</tr>
<tr>
<td>24-Sep</td>
<td>120</td>
<td>110</td>
<td>-10</td>
<td>-10</td>
</tr>
</tbody>
</table>

Wtd Avg. Price 100 100

Dumping Value 0 35

Dumping Margin 0.00% 3.9%

CONCLUDING COMMENTS

Readers of this article might think that the two examples of the perversity of modern AD are the exceptions. While they are right to be suspicious that these examples could be representative of the reality, it is the examples cited here but not discussed in many trade textbooks that are the real exceptions. While they are right to be suspicious that these examples could be representative of the reality, it is the examples cited here but not discussed in many trade textbooks that are the real exceptions.

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by Carter Johnson
Brown University

seven years since the Global Financial Crisis, it has become abundantly clear that global financial markets post-2008 have increasingly been defined not by the crisis itself, but rather by the world’s reaction to it. The most fundamental of differences in a world pre- and post-crisis are not to be found in an investment bank’s balance sheet or a homeowner’s mortgage. Rather, they are to be found in the actions of a lone government institution: the central bank. Institutions of this kind—in brighter days, the sole arbiters of interest rates and money supply—now serve functions as murky and complex as the subprime bonds of days gone by.

THE FRANC TAKES A HIT

In December, global financial markets watched as Europe, still experiencing low and stuttering growth, prepared to announce that its own central bank would also introduce Quantitative Easing (QE). The most sudden reaction, however, came not from investors but from another central bank. On November 6th, the Swiss National Bank (SNB) announced the repeal of the euro-franc cap that had existed since 1999. The peg had become too expensive to maintain in the face of rest of the ECB’s QE and a weakened European currency. A sudden appreciation occurred, and within one hour the currency rose nearly 30 percent against the Euro (later to fall down to “just” 16 percent) and nearly 20 percent against the dollar in 2000s as the country fought through what has since been termed a “Lost Decade” of falling prices, declining wages, and low growth. The practice, however, marked a radical departure for the Federal Reserve and Bank of England. Between 2008 and 2010, these two central banks collectively purchased nearly $8 trillion worth of mortgage-backed bonds and Treasury securities.

GAME OF LOANS

Even all that has happened, perhaps it isn’t surprising to see Bill Gross, ex-PIMCO chief, criticize the very system upon which he has based a successful career. In his February, 2015 letter to investors, Gross—now running Janus Capital—compared global money to “one remotely connected to the financial markets to the board game Monopoly.” He wrote, “Players [in this case, investors or any one remotely connected to the financial markets] would be justified in saying that competitive devaluations and currency devaluations (don’t) work?” And so recent central bank moves to “rewrite” the rules of the game call to mind several burning questions: Why do these rules need to be rewritten? What aspects of modern, global financial markets and economies are so fundamentally flawed as to be unfixable under decades-long systems and practices? And, perhaps most ominously, what happens when these aggressive practices (negative interest rates, Quantitative Easing, and currency devaluations) don’t work?" 

Charting the Ascendency of Unconventional, Post-Crisis Monetary Policy

And so recent central bank moves to "rewrite" the rules of the game call to mind several burning questions: Why do these rules need to be rewritten? What aspects of modern, global financial markets and economies are so fundamentally flawed as to be unfixable under decades-long systems and practices? And, perhaps most ominously, what happens when these aggressive practices (negative interest rates, Quantitative Easing, and currency devaluations) don’t work?"
Economists and analysts of the 2007-2009 financial meltdown usually take the domestic housing and securities markets as the point of departure in their diagnoses of the crisis. While refusing to look beyond the apparent roots of the malaise, they continue to begrudge looking to the internationalization and financialization of the economy in the 1990s and 2000s. By the early 2000s, the “Old Economy” of complex machinery and laborious manufacturing had given its way to the “New Economy” of finance, software engineering and information technology. Quibbles among economists notwithstanding, the unmistakable broad trend is that the largest share of the aggregate profits in the economy—estimated to be roughly 40 percent of total profits— is generated in the financial sector (see Figure 1). This datum is often taken as the strongest evidence of the salience of finance in the U.S. economy. Financialization is defined in multiple ways, but Gert Krueger’s definition as “a pattern accumulation in which profits accrue through financial channels rather than through trade and commodity production” seems to capture what has changed about investment and capital accumulation in our economy. Provision or transfer of liquid capital in expectation of future interest, dividends and capital gains are only a few of the many other strata of financial activities, in which investment bankers are the most adept and innovative.

Naturally, such a tectonic economic change has invited a series of explanations aiming to explicate the roots of the phenomenon. There are those, for instance, who would attribute financialization to the natural progression of capitalist development where the productive sector, namely manufacturing, is subject to intensified international competition and witnesses an enormous reduction in profit rates. Thus, the ascent of finance is a natural response to the stagnating tendency of the manufacturing sector. In this vein, economists such as Paul Sweezy and Harry Magdoff argued that with decline of rates in manufacturing due to intensifying global competition, stagnation instead of dynamism and financialization instead of industrialization, become the twin trajectories of the advanced world. It should be noted, however, that financialization is not endemic to the U.S. economy alone. Finance, across the advanced world with the exception of Germany, has become a salient sector of the economy. Indeed, as I will show later in this essay, despite the decline in the rates of profit in U.S. manufacturing has been the primary reason behind the massive explosion of finance across the world, and the crisis of 2007 to 2009 by no means can be construed independent of the rise of finance. There are also those who would take not only the decline in manufacturing profits, but also certain macroeconomic policies of the U.S. Federal Reserve as driving forces of financialization. This perspective has been led most notably by Robert Brenner of UCLA whose book The Economics of Global Turbulence demonstrated that the titanic fall in the rates of manufacturing profitability of the advanced economies has to do with the over-capacity in global manufacturing. The implication is that since the late 1960s, the manufacturers of consecutively newly emerging economic powers have been able to make use of the latest technology coupled with relatively lower wages of domestic labor markets to manufacture export goods that were already being produced, but now sold and manufactured at a lower cost and offered for a lower price. Germany and Japan in the 1960s, the East Asian Tigers (e.g. South Korea and Taiwan) in the 1970s and 1980s, and the Chinese behemoth in the 1990s and 2000s have all been able to adroitly acquire significant market share in global manufacturing. For U.S. firms, however, to maintain the same market share that they had in the early 1950s to 1960s and to remain competitive globally, they have had to offer their output to the international market at lower prices, which translates to lower rates of profit on U.S. firms’ balance sheet. The upshot was, as Brenner accurately observes, oversupply for low global demand, which depressed not only prices, but also profits. Hence, the reduction in manufacturing profitability meant that firms had smaller surpluses at their disposal, which itself dampened hiring and labor demand. This manifested itself conspicuously in the rapid decline of manufacturing employment in the U.S. economy. As a result, by the end of 2010, the sector had lost almost 50 percent of the 22 million jobs it had at its 1979 postwar peak (see Figure 2). Indeed, slower growth of the sector relates to the reserve of financial and information technology), almost daily soaring trade deficits, record manufacturing job losses and factory closures, and

What Is Good for Banks is not Good for the Economy

By Masoud Movahed

The fate of the world economy is now totally dependent on the stock market, whose growth is dependent on about 50 stocks, half of which have never reported any earnings.”

Former Fed Chairman Paul Volcker.

“The economy has seen a reconstructing so fundamental that its magnitude is hard to overstate. We hear much about financialization of the economy, which has permitted the stratospheric ascent of finance. The “Old Economy” of complex machinery and laborious manufacturing has given its way to the “New Economy” of finance, software engineering and information technology. Quibbles among economists notwithstanding, the unmistakable broad trend is that the largest share of the aggregate profits in the economy—estimated to be roughly 40 percent of total profits—is generated in the financial sector (see Figure 1). This datum is often taken as the strongest evidence of the salience of finance in the U.S. economy. Financialization is defined in multiple ways, but Gert Krueger’s definition as “a pattern accumulation in which profits accrue through financial channels rather than through trade and commodity production” seems to capture what has changed about investment and capital accumulation in our economy. Provision or transfer of liquid capital in expectation of future interest, dividends and capital gains are only a few of the many other strata of financial activities, in which investment bankers are the most adept and innovative.

Naturally, such a tectonic economic change has invited a series of explanations aiming to explicate the roots of the phenomenon. There are those, for instance, who would attribute financialization to the natural progression of capitalist development where the productive sector, namely manufacturing, is subject to intensified international competition and witnesses an enormous reduction in profit rates. Thus, the ascent of finance is a natural response to the stagnating tendency of the manufacturing sector. In this vein, economists such as Paul Sweezy and Harry Magdoff argued that with decline of rates in manufacturing due to intensifying global competition, stagnation instead of dynamism and financialization instead of industrialization, become the twin trajectories of the advanced world. It should be noted, however, that financialization is not endemic to the U.S. economy alone. Finance, across the advanced world with the exception of Germany, has become a salient sector of the economy. Indeed, as I will show later in this essay, despite the decline in the rates of profit in U.S. manufacturing has been the primary reason behind the massive explosion of finance across the world, and the crisis of 2007 to 2009 by no means can be construed independent of the rise of finance. There are also those who would take not only the decline in manufacturing profits, but also certain macroeconomic policies of the U.S. Federal Reserve as driving forces of financialization. This perspective has been led most notably by Robert Brenner of UCLA whose book The Economics of Global Turbulence demonstrated that the titanic fall in the rates of manufacturing profitability of the advanced economies has to do with the over-capacity in global manufacturing. The implication is that since the late 1960s, the manufacturers of consecutively newly emerging economic powers have been able to make use of the latest technology coupled with relatively lower wages of domestic labor markets to manufacture export goods that were already being produced, but now sold and manufactured at a lower cost and offered for a lower price. Germany and Japan in the 1960s, the East Asian Tigers (e.g. South Korea and Taiwan) in the 1970s and 1980s, and the Chinese behemoth in the 1990s and 2000s have all been able to adroitly acquire significant market share in global manufacturing. For U.S. firms, however, to maintain the same market share that they had in the early 1950s to 1960s and to remain competitive globally, they have had to offer their output to the international market at lower prices, which translates to lower rates of profit on U.S. firms’ balance sheet. The upshot was, as Brenner accurately observes, oversupply for low global demand, which depressed not only prices, but also profits. Hence, the reduction in manufacturing profitability meant that firms had smaller surpluses at their disposal, which itself dampened hiring and labor demand. This manifested itself conspicuously in the rapid decline of manufacturing employment in the U.S. economy. As a result, by the end of 2010, the sector had lost almost 50 percent of the 22 million jobs it had at its 1979 postwar peak (see Figure 2). Indeed, slower growth of the sector relates to the reserve of financial and information technology), almost daily soaring trade deficits, record manufacturing job losses and factory closures, and
The logic of the rise of finance—
the most thriving and profit-generating sector of the economy—can be explained by the following simple economic rationale. For any given industry to borrow for investment—and for a specific industry to determine the growth rate of that industry—there has to be sufficient demand for the output of that industry. The level of demand—the volume of spending and investment—for a specific industry determines the growth rate of that industry because of the growing demand for soft-
ware and high-speed IT infrastructure, which has invited a mammoth investment in the sector. Little wonder why! Now in such a depressing economic climate, where demand—or to encourage spending—other-
wise than by way of ever greater borrow-
ing, which meant running the economy on credit. This was essentially dependent upon banks. To boost private spending, the Fed lowered the short-term inter-
est rate in the 1990s, which made highly risky credit available to households, many of which were unqualified (see Figure 3).

As a matter of fact, because of the stagnant growth of wages, many of those households had even higher debts compared to their incomes. In an attempt to pin-
point origins of the housing bubble prior to 2006, two economists at the University of Chicago Atif Mian and Amir Sufi argued that there exists a statistically causal relationship between the massive supply of mortgages and the rapid rise of hous-
ing prices which led to the bubble by the end of 2006. Surprisingly enough, they find that the period between 2001 and 2005 is the only one in recent U.S. histo-
ry where housing prices increased in zip codes that had negative income growth. This is strong evidence that credit was in one way or another supplied in an ex-
trordinarily risky way to ever more un-
qualified borrowers. In an economy that had already demonstrated sluggish growth rates by the mid 1990s, injections of risky credit by way of lowering short-term in-
terest rates offered a way out of the pre-
dicament (see Figure 4). This massive in-
jection of credit became the benchmark eco-
nomic policy that laid the ground work for the spectacular ascent of finance.

I mentioned earlier that since the 1960s, manufacturing firms have been enfeebled by the decline of profit rates, as it were households by the wage stagnation. Corporations along with households were thus enabled to increase their borrow-
ing. Speculative run-ups in asset prices in both the housing and securities mar-
kets enabled huge, largely fictitious in-
creases in the wealth of corporations and households. Nurtured by easy credit and deregulation policies of the Federal Re-
serve Banks, there was a massive run-up in the housing prices between 2000 and 2006. Whenever the run-ups in financial markets led along with the Fed would not hesitate to reduce the short-term in-
terest rates so as to incentivize financial investors to step up their borrowing in order to correspondingly increase their purchases of housing and financial assets.

The key to the complete explosion of the credit market was the Fed’s policy of maintaining low short-
term interest rates. For banks, that was a license to make very little risk, particularly since they can get peo-
ple to open savings accounts that pay close to nothing. The low short-term rates meant easy access to cheap credit for bor-
rowers who then invested enormously in the stock and securities market. Indeed, what is good for banks is not good for the economy. The excessively low short-term interest rates in the past two decades thus created an environment conducive to fi-
nancieralization. The flood of easy credit to the stock and housing markets paved the path for the historic run-ups of equity and land prices that ensued during the second half of the decade. The ever-increasing wealth in paper wealth that was required to enable both corporations and house-
holds to step up their borrowing, raise investment and consumption, and keep the economy expanding. The low interest rates of the 1990s and early 2000s created conditions under which firms and house-
holds could borrow easily; invest in the housing and stock markets, and push up their prices. So banks took it upon them-
theselves to stimulate growth by enabling cor-
porations and households to increase their borrowing, which precipitated a significant increase in housing and secu-
rities prices. With credit made so cheap, and profit-making on lending rendered so easy, banks and non-bank financial insti-
tutions could not resist opening the flood-
gates and advancing funds without limit.

In short, the crisis of 2007 to 2009 was one of the most disastrous finan-
cial meltdowns since the Great Depres-
sion. While there is a pervasive tendency among economists to look at the financial and securities market to understand the roots of the crunch, a few have departed from them. Viewed against what the main-
stream economists put forward, those who differ often argue that the origins of the crisis ought to be investigated in the con-
text of the lower rates of profits as a result of intensifying international competition. Decline in the rates of manufacturing profits and certain macroeconomic poli-
cies of the Federal Reserve Bank are seen to have provided the impetus towards the financialization of the economy as well as the recent crisis in the financial sector. The decline of U.S. manufacturing profitability posed serious threats to economic dynamism and vitality as firms were ever more reluctant to hire labor or raise wages. For the Fed to continue generating growth, it had to enable both the public and pri-
vate sectors—both households and the government—to increase their borrow-
ing. This process was entirely dependent on banks. With the policy of low interest rates that provided cheap credit to bor-
rrowers, households that struggled with stagnant wages and runaway debt, and housing prices that fell day by day after the bubble burst in 2006, the Fed along with banks continued to stimulate the economy by expanding the credit market. Running the economy on deficit spend-
ing in both public and private resulted in the devastating crunch of 2007 to 2009.

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ers, Harvard International Review, For-
eign Affairs, Yale Journal of Internation-
al Affairs, World Economic Forum and Harvard College Economics Review.

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ufacturing profitability posed serious threats to economic dynamism and vitality as firms were ever more reluctant to hire labor or raise wages. For the Fed to continue generating growth, it had to enable both the public and private sectors—both households and the government—to increase their borrowing.
The Value of Economic Statistics

By Diego Perez
New York University

Every month, the Bureau of Labor Statistics and the Bureau of Economic Analysis publish statistics on inflation, employment, and several other economic variables. Providing macroeconomic statistics entails an economic cost associated with gathering and processing a large amount of data. At the same time, the public provision of economically relevant information is widely recognized as a common feature of any solid institutional framework and intertemporal allocative device that in turn increases social welfare. We also find that the increase in welfare is greater when more accurate inflation statistics are available, the price of a cup of coffee should be more similar between different stores and brands. The reason is that, with more accurate information (information about aggregate inflation rates) as well as aggregate information (information about economic activity), firms can better allocate resources in a more efficient way. Additionally, these welfare effects associated with this policy are more salient features of the American economy. On the other hand, in a low inflation environment, a high level of sales is more likely to be attributable to aggregate factors such as an expansionary monetary policy; if there are more dollars circulating, families will demand more of all goods in the economy. On the other hand, in a low inflation environment, a high level of sales is more likely to be attributable to a higher real demand for the goods that the firm produces. Therefore, more precise information about inflation helps firms disentangle idiosyncratic from aggregate shocks, as well as monetary from real shocks. With better information regarding the demand for their goods, firms can set prices in a way that better reflects both the production cost and the value assigned by buyers. When prices more accurately reflect the value of demand and the cost of production, inputs of production (labor, physical capital, intermediate inputs) are assigned in a more efficient way. If input factors are more efficiently assigned, the aggregate level of production given the same amount of inputs is higher, which leads to higher social welfare. A symptom of better access to information about inflation is a lower level of price dispersion for a given type of good. When more precise inflation statistics are available, the price of a cup of coffee should be more similar between different stores and brands. The reason is that, with more accurate information about aggregate inflation, firms optimally choose to put more weight in inflation statistics when setting prices; when all firms optimize in this way, their prices are more aligned with each other. Once the mechanism through which the availability of public information can affect the macro economy is understood, the next challenge is to quantify it. We can measure this effect if we have: (i) an economic model that fits the macroeconomic behavior of an economy and (ii) an episode of analysis in which the access to information about the inflation rate changed significantly. 

The Economic Effects of the Provision of Statistics

In 2007 the Argentinean government started manipulating official inflation statistics to prevent figures from reflecting accelerating inflation. The manipulation started in January 2007 with the government’s intervention in the national statistical agency (Indec) that included the removal of the authorities in charge of computing and publishing the CPI. Since then, local and international media as well as international institutions and academic circles have disputed the official inflation statistics. In the past decade Argentina has had two regimes controlling access to inflation statistics. In the past decade Argentina has had two regimes controlling access to statistical information about the inflation rate. A significant change in the availability of public information about the level of inflation is associated with this policy. We then explore the extent to which our estimates can be generalized to the United States. To do so, we re-estimate our model to match the most salient features of the American economy and then re-do our hypothetical exercise that replicates the manipulation of inflation statistics. We find that the negative welfare effects associated with this policy are more pronounced in Argentina than the US. In other words, the US would not incur such large efficiency losses if firms set their prices by taking into account the long run level of inflation rather than by considering the current level of inflation. In summary, we find that significant welfare gains can be made by providing trustworthy and precise statistical information about the inflation rate, as it helps allocate resources in a more efficient way. Additionally, these welfare gains are larger in highly volatile economies where prices fluctuate significantly and firms place greater value on information about the aggregate macroeconomic state. The Argentinean episode is ideally suited to measuring these welfare consequences and quantifying their magnitudes.

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