Employment Oriented Macroeconomic Policy and the Challenge of Outsourcing

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I. Introduction

There is no longer much doubt that globalization and global integration are having significant impacts on the trajectories of many economies around the world. But there is still little agreement about what that impact is. Several years ago, I and my co-authors identified a number of possible trajectories found in the debate, and most of these possibilities still seem relevant today (Crotty, Epstein, Kelly, 1998).[1]

The first is "The Race to the Bottom". (Bluestone and Harrison, 1982; Greider, 1997). According to this view, capital will increasingly be able to play workers, communities and nations off against one another as they demand tax, regulation and wage concessions while threatening to move. According to this view, increased mobility of multinational corporations (MNC's) benefits capital while workers and communities lose. A modified version is that the winners in the race to the bottom will include highly educated (or skilled) workers, or workers in particular MNC rent appropriating professions (e.g. lawyers and investment bankers), along with the capitalists; the losers will be unskilled workers and the unemployed.

The second view, "The Climb to the Top", is the opposite of the first. It suggests that multinational corporations are attracted less by low wages and taxes than by highly educated workers, good infrastructure, high levels of demand and agglomeration effects arising from the existence of other companies who have already located in a particular place. According to this view, competition among states for foreign direct investment (FDI) will lead counties in both the North and the South to try to provide well educated labor and high quality infrastructure in order to retain and attract foreign investment.(Reich, 1992; Bhagwati, 2004; Friedman, 2004) Thus footloose capital and competition, far from creating a race to the bottom will induce a climb to the top around the world.

This climb to the top could lead to the outcome represented by the third view: "Neo-liberal Convergence". This is the widely held mainstream claim that free mobility of multinational corporations, in the context of de-regulation and free trade, will produce increased living standards in all countries. This process will, moreover, transfer capital

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[1] See Crotty, Epstein and Kelly (1998) for much more discussion of these trajectories and the argument, more generally, in this first section.

and technology abroad, thereby raising the standards of living of those in the poorer countries at a faster rate than those in the wealthier ones, eventually generating a world wide convergence in living standards. This may result from the process of competition for capital described above, or simply from the market processes of dissemination of capital and technology throughout the globe.

These same processes could, however lead to the outcome envisaged in the fourth view, "Uneven Development". "Uneven Development" has a long and, now, ironic history: it holds that one region of the world will grow at the expense of another region. Of course, for decades, the dominant version of this view was the theory of imperialism: if the South integrated itself with the North, the North would grow at the expense of the South. Now, the fear seems to be the opposite: by having to compete with cheap Southern labor, an integrated world economy will help the South grow, but this time at the expense of the North.

Outsourcing/off-shoring in manufacturing and now increasingly in services reflect newer production and sourcing strategies by major companies, many of them multinational corporations. Hence, these phenomena raise many of the same issues discussed above. In particular, does outsourcing/offshoring make one or the other of these trajectories more likely?[2]

As one might expect, there are advocates for each of the positions. As Alan Blinder reminds us in a recent paper, "One thing you should never predict is the future" (Blinder, 2005). Nonetheless, in the area of off-shoring and outsourcing,one cannot avoid rejecting this sage advice since offshoring, particularly in services, is more a thing of the future, then it is of the present or past.

The major point I wish to make here is the same point we made with respect to FDI more generally (Crotty, Epstein and Kelly, 1998). Offshoring is not inherently good or bad. It depends on the context. In particular, which of the four views best approximates reality will strongly depend on the overall national and international context within which offshoring occurs. In particular, I focus here on three aspects of the overall context which are especially important in determining the impact of offshoring: the state of aggregate

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[2]In line with emerging practice, I will mostly use the term "offshoring" or "foreign outsourcing" to refer to outsourcing from abroad.

demand (AD), the nature of the domestic and international rules of the game and institutions governing investment, and the nature of domestic and international competition. These three factors have a significant impact on the effects of offshoring on the economy, and in particular on their effects on wages, inequality and the level of unemployment.

More concretely, when offshoring occurs in a context of high levels of aggregate demand and effective rules of the game which in turn limit the destructive aspects of competition, then it may indeed have a positive impact on nations and communities. On the other hand, when it occurs in a context of low levels of aggregate demand and destructive economic and political competition in the absence of effective rules of the game, then it can have a significantly negative impact on workers in both home and host countries.

While the mechanisms through which these three factors condition the impacts of offshoring are myriad, I focus on two: the effect of these three factors on the bargaining power of firms relative to workers, nations and communities; and their contribution to coordination problems that hinder the ability of governments at all levels to make policies which can capture the benefits from offshoring. The increased relative bargaining power of capital means that their leaving or even the threat to leave can lead to reductions in wages, worsening of working conditions for workers and low tax rates and revenues for governments. As for coordination problems, this weakened bargaining position and these weakened rules of the game make it more difficult for communities and nations to avoid "Prisoner's Dilemma" solutions where countries' wages, tax rates, expenditure choices and regulatory structures are severely distorted from the point of view of the community as a whole as they try to compete for capital and contracts. Indeed, they may become so distorted that they are suboptimal from the point of view of the corporations themselves. As a result, in this context, off-shoring can contribute in a significant way to the problems of unemployment, wage stagnation and inequality.

Currently, the dominant governance framework in the global economy can be defined as "neo-liberal" (eg. Baker, Epstein, Pollin, 1998; Stiglitz, 2002) where macroeconomic austerity, privatization, financial liberalization, and trade liberalization are promoted by international officials, business people, governments and many

economists. Like some others, I believe that in the current "Neo-liberal" regime, makes a race to the bottom much more likely than many mainstream economists believe. This view stems from the claim that within the Neo-liberal regime, there are strong forces which lead to insufficient levels of aggregate demand and therefore chronic unemployment, coercive competition, and destructive domestic and international rules of the game -- that is, precisely those factors which undermine the potentially positive effects of offshoring.

Among the most important of these factors is the government revenue and governance implications of capital mobility generally, and competition for off-shoring in particular. A number of authors, believe that as offshoring expands, it may lead to large scale disruptions in developed country labor markets, disruptions that might call for significant government interventions, including broadening the social safety net (eg. Blinder, 2005; Jensen and Kletzer, 2005; Madrick and Milberg, 2006). Yet, the very processes of globalization and off-shoring themselves might undermine both the capacity and the will of governments to intervene in these ways. In this case, the race to the bottom scenario becomes more likely.

To redress this balance, policies and activities must be undertaken to enhance the bargaining power of states and citizens as globalization and offshoring expands, in order for states to be able to have the ability and "willingness" to compensate losers. These policies might even need to include forms of "protection" or at least, states must retain the ability to "threaten" to protect in order to preserve the power to compensate losers. In this context – where the full political economy of globalization and power is taken into account – some forms of protection may be found to be efficient.

The rest of the paper is organized as follows. In the next section, I present some new findings, developed in conjunction with James Burke, on the scope and impacts of outsourcing in the manufacturing sector in the U.S. These results show that manufacturing outsourcing in the US has been accelerating in recent years, is associated with job losses in a number of U.S. manufacturing industries, and that it does seem to be associated with unit labor cost differentials between the U.S. and off-shoring host countries. In section III, I briefly discuss service sector off-shoring, briefly summarizing some key information from the work of others. In the final section, I discuss the impacts

of these processes on the capacity and willingness of the government to undertake necessary policies to reduce the costs and spread the benefits of the changes.

II. Foreign Outsourcing and Intermediate Goods Trade In Manufacturing[3]

There has been much more research on the dimensions and impacts of off-shoring from the manufacturing sector in developed countries than on service sector off-shoring both because the former has been occurring for a longer period of time and also the data to study the phenomenon are much better. Building on the work of Feenstra and Hansen and Campa and Goldberg, most of this empirical research has looked at manufacturing off-shoring as leading to a rise in the international trade of intermediate goods. As inputs produced globally take the place of intermediate stages of production at home, we witness an increased flow of imports of intermediate goods across country borders. Past studies have calculated the importation of intermediate goods relative to total intermediate input purchases as an indicator of foreign outsourcing activity in an industry sector (see, for example, Feenstra and Hanson, 1999 and Campa and Goldberg 1997). While changes in the share of imports in total intermediate goods will not fully capture the extent of globalization of production in an industry – some foreign outsourcing activity by US firms will show itself as a displacement of US production of final goods or exports rather than an increase in imports of intermediate goods – it does provide a measurable indicator that can be tied directly to important channels offshoring activity. Tracking the share of imported intermediate manufactured goods in total purchases of intermediate manufactured goods allows us to discern changes in a significant part of foreign outsourcing in the US manufacturing sector over time.[4]

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[3] This section draws liberally on my joint paper with James Burke, "Rising Foreign Outsourcing and Employment Losses in US Manufacturing, 1987 - 2003", PERI, 2006.

[4] There are other possible sources of increasing imported inputs in US production in addition to outsourcing activities by US firms. First, if foreign firms set up production in US sites, they are likely to use intermediate goods shipped from their home countries or other foreign suppliers. These activities would increase the shares of imported inputs in US production without any new outsourcing activity by US firms. Second, a rise in the relative price of domestic versus foreign inputs can lead to a rise in the value share of imported inputs without actually representing a shift in the location of production abroad.

Feenstra and Hanson (1999) find that imported intermediate goods have increased from 5.3% of total intermediate purchases for U.S. manufacturing industries in 1972 to 7.3 % in 1979, and 12.1% in 1990. Using a narrower measure of intermediate goods, Campa and Goldberg (1997) provide evidence for Canada, Japan, the United Kingdom and the United States in the mid-1970s, mid-1980s and mid-1990s. They find that imported inputs have increased from 4.1% of total intermediate goods in 1975 to 6.2 % in 1985, and 8.2% in 1995 for U.S. manufacturing industries.

In this paper, we will present our own measure of imports of intermediate goods in manufacturing industries and include a more recent period, covering years from 1987 to 2003. We then look at the relationship between our measure of foreign outsourcing activity and job loss and wages in US manufacturing industries in recent years. We also explore how foreign outsourcing activity in US industries is related to the unit labor costs in foreign industries.

Measuring Imported Inputs in US Manufacturing Industries

We use data provided in the Bureau of Economic Analysis's national input-output accounts to calculate our measures of imported intermediate goods. We measure imported intermediate goods used by US manufacturing industries using a similar methodology as the Feenstra and Hanson the Campos and Goldberg studies mentioned above. That is, we begin by finding the import share of each commodity (the share of the commodity used in the US economy that is imported) as well as the value of each commodity used in the production process of each industry. For each industry, we then multiply the value of the commodity used in production by the import share of that commodity to find the value of imported inputs of the commodity used by that industry.[5]

In future work, we will test the size of some of these effects but we assume for now that these effects are small compared to the effect of outsourcing activity.

[5] A basic assumption of this method of calculating the value of imported inputs is that the import share of the commodity when it is used as an intermediate good in each particular industry is the same as the import share of the commodity in the economy as a whole as calculated from the I/O accounts.

By summing up the imported inputs of each commodity used by that industry, we can find the industry's total imported inputs used in production. The industry data we require to carry out these calculations are included in the 'use tables' of the BEA's input-output accounts. These tables show how industries use inputs of commodities to produce goods in the economy and also report the quantities of commodities that are imported into the US.[6]

Imports of intermediate goods used in manufacturing industry production

We calculate the share of imported goods in total purchases of intermediate manufactured goods for manufacturing groups and for the manufacturing sector as a whole for the years 1987, 1992, 1997, and for 1998 through 2003. We consider only intermediate goods that are manufactured commodities.[7]

Chart 1 shows the share of imported inputs in total inputs of manufactured goods used in production for nineteen manufacturing industry groups and for the manufacturing sector as a whole in 1987 and 2003. For every industry group and for the manufacturing sector as a whole, the share of imported inputs used in production has risen substantially over the time period. For all manufacturing, the share of imported inputs rose from 12.4 percent to 22.7 percent between 1987 and 2003. The industry groups with the highest measures of foreign outsourcing activity in the use of inputs were the Apparel/Leather Products group, the Computer/Electronic Products group, and the Motor Vehicles/Bodies and Trailers/Parts group. In these three industry groups, imported inputs made up about one-third of all manufactured inputs used in production in 2003.

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[6] In 1997, the Bureau of Economic Analysis began to provide industry input-output tables using the North American Industry Classification System (NAICS); in the years previous to 1997, the input-output accounts used the Standard Industrial Classification (SIC) system. The data we present and use in our analysis breaks the manufacturing sector into the nineteen manufacturing groups defined by the NAICS; for years previous to 1997, we need to allocate the industry groups defined by the SIC system into these nineteen NAICS groups. Although the transition from the SIC system to the NAICS does not allow a perfect allocation of group data across industrial classifications, we strove to minimize the distortion of industry data as much as possible. Refer to our paper to see how industry data was converted from the SIC system into NAICS defined groups.

[7] For more detailed information, see Burke and Epstein (2006).

Table 1 shows the share of imported inputs in total inputs used in production for the whole manufacturing sector and manufacturing industry groups in 1987, 1992, 1997, 2002, and 2003. Between 1987 and 2003, the industry groups with the largest increases in the share of imported inputs used in production were the Apparel/Leather Products group (15.4%), the Textiles group (15.2%), the Motor Vehicles/Bodies and Trailers/Parts group (13.9%), the Plastics and Rubber Products group (11.9%), and the Computer/Electronic Products group (11.4%). Table 1 also shows that the growth in the share of imported inputs in the manufacturing sector as a whole accelerated in the later part of the 1987 to 2003 period. Of the total increase of 10.4 percentage points in the import share of inputs used in production in the sector as a whole, the earliest period (1987 - 1992) accounts for 1.5 percentage points, the middle 5-year period (1992 - 1997) accounts for 3.8 percentage points, and the latest 6-year period (1997 – 2003) accounts for 5.0 percentage points. Faster growth in the share of imported inputs in the most recent 1997 – 2003 period is also seen in 13 of the 19 manufacturing industry groups. The increase in foreign outsourcing in the latest period was especially fast for the Motor Vehicles/Bodies and Trailers/Parts industry group in which the years from 1997 – 2003 accounted for over three-quarters of the increase in the share of foreign-sourced inputs. Of the 13.9 percentage point increase in that group's imported input share between 1987 and 2003, from 16.3 percent to 30.2 percent, the most recent 6-year period accounted for 11.1 percentage points.

Chart 1: Imported inputs of manufactured goods used in production, as share of total inputs used in industry, 1987-2003.

Legend: 1987, 2003

Categories (left to right):
All Manufacturing
Computer and electronic products
Apparel and leather and allied products
Motor vehicles, bodies and trailers, and parts
Miscellaneous manufacturing
Electrical equipment, appliances, and components
Other transportation equipment
Textile mills and textile product mills
Machinery
Primary metals
Chemical products
Plastics and rubber products
Fabricated metal products
Wood products
Nonmetallic mineral products
Furniture and related products
Printing and related support activities
Paper products
Petroleum and coal products
Food and beverage and tobacco products

Table 1: Imported inputs of manufactured goods used in production in US manufacturing industries, as a share of total inputs used by industry, various years.						
Industry	Imported Inputs as a Share of Total Inputs					
	1987	1992	1997	2002	2003	Change in Share, 1987 - 2003
All Manufacturing	12.4%	13.9%	17.7%	22.3%	22.7%	10.4%
Apparel and leather and allied products	18.9%	24.1%	24.5%	32.3%	34.2%	15.4%
Computer and electronic products	22.3%	26.5%	32.7%	34.6%	33.7%	11.4%
Motor vehicles, bodies and trailers, and parts	16.3%	18.0%	19.1%	28.7%	30.2%	13.9%
Textile mills and textile product mills	8.8%	11.3%	14.3%	22.5%	24.0%	15.2%
Miscellaneous manufacturing	16.5%	18.6%	18.0%	23.6%	23.8%	7.3%
Electrical equipment, appliances, and components	13.2%	14.8%	18.3%	23.1%	23.5%	10.3%
Machinery	13.0%	13.9%	17.1%	22.1%	23.1%	10.1%
Other transportation equipment	12.6%	15.9%	18.5%	23.5%	22.3%	9.7%
Primary metals	12.8%	14.3%	21.2%	21.3%	21.3%	8.5%
Chemical products	10.6%	12.0%	15.7%	20.5%	21.1%	10.5%
Plastics and rubber products	9.0%	10.6%	13.3%	20.2%	21.0%	11.9%
Fabricated metal products	12.4%	12.5%	15.8%	18.8%	19.2%	6.8%
Nonmetallic mineral products	9.9%	10.4%	13.8%	17.4%	18.3%	8.3%
Wood products	8.9%	8.8%	14.3%	17.8%	17.9%	9.0%
Furniture and related products	10.1%	10.6%	13.1%	17.1%	17.7%	7.6%
Printing and related support activities	9.4%	8.1%	14.9%	15.3%	16.0%	6.7%
Paper products	10.6%	10.3%	15.2%	15.1%	15.3%	4.7%
Petroleum and coal products	9.5%	8.5%	9.4%	12.8%	13.2%	3.7%
Food and beverage and tobacco products	5.8%	6.1%	6.5%	9.8%	10.5%	4.7%

Imports of intermediate goods produced in manufacturing industries

In addition to examining how industries use imported intermediate goods in production, we also measure the degree to which imported inputs compete with the production of intermediate goods by US manufacturing industry groups. That is, we look at the phenomenon of foreign outsourcing from the perspective of the industry *making* intermediate goods as well as the perspective of the industry *using* intermediate goods in production. We do this because firms often use intermediate goods that are not produced in their own industry group. Consequently, foreign outsourcing that involves shifting purchases of intermediate goods from domestic to foreign suppliers can raise the share of imported inputs used in production while not directly displacing production in a firm's own industry group. Instead, the demand for production (and workers) will fall in other industries as a result of this kind of foreign outsourcing activity. Because we are interested in data that will allow us to explore links between foreign outsourcing and industry employment at home, we want to identify the industries where these manufactured inputs are *produced* as well as where they are used.

Using the "make tables" of the BEA's industry input-output accounts, we find the share of production of each manufactured commodity attributable to each of the nineteen major manufacturing industry groups. [8] First, we refer to the calculations described above, which drew on the use tables, to find the amounts of each commodity that are used as inputs to production and the share of these inputs that are imported. We then assign these commodity values according to each industry's production or 'make' share. Summing across all commodities for the imported intermediate goods assigned to an industry, we find the total value of imports among the intermediate goods produced by

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[8] For example, all commodities categorized as 'Apparel, leather and allied products' are produced by the following manufacturing industry groups in these shares:

Food and beverage and tobacco products	0.51%
Textile mills and textile product mills	0.95%
Apparel and leather and allied products	96.80%
Printing and related support activities	0.81%
Electrical equipment, appliances, and components	0.12%

the industry. We find these industry group calculations for 1998 through 2003, the years for which the required data was available in a consistent way from the BEA. We are especially in this time period, as manufacturing sector employment fell precipitously in the US during this time (from 17.5 million workers in 1998 to 14.5 million workers five years later). [9] Note that in our discussion of employment and unit labor costs below, we use these "make tables".

Chart 2 shows the import share of the intermediate manufactured goods produced by US manufacturing groups for the manufacturing sector as a whole and for nineteen manufacturing industry groups in 1998 and 2003. For every industry group and for the manufacturing sector as a whole, the share of imports in total inputs produced has risen over the time period. For all manufacturing, the share of imported inputs rose from 19.1 percent to 22.8 percent between 1998 and 2003.[10] The industry group facing the highest share of imports in the supply of manufactured inputs it produces was the Apparel/Leather Products group – almost two-thirds of inputs produced by this group is produced in foreign sites. Other industry groups producing manufactured inputs with high import shares were the Computer/Electronic Products group, the Miscellaneous Manufacturing group, the Motor Vehicles/Bodies and Trailers/Parts group, and the Electrical Equipment, Appliances and Components group. In these four industry groups, imported inputs made up one-third or more of the supply of the manufactured inputs they produced in 2003.

Table 2 shows the import share of total inputs produced by the whole manufacturing sector and manufacturing industry groups for the years between 1998 and 2003. For these years, the industry groups with the largest increases in the share of

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[9] Current Employment Statistics, US Bureau of Labor Statistics.

[10] For the manufacturing sector as a whole in 2003, the import share for inputs produced by industries in Chart 2 is essentially the same as the one shown in Chart 1 for inputs *used* in production (22.8% and 22.7%, respectively) . This makes sense because almost all manufactured inputs used in the manufacturing sector as a whole are also produced in the manufacturing sector. The differences between imported input shares in Charts 1 and 2 (and Tables 1 and 2) show up when comparing the manufacturing industry groups. As discussed in the text, this is because industries often use inputs in their production which are produced in another industry.

imported inputs used in production were the Furniture and Related Products group, the Apparel/Leather Products group, the Electrical Equipment, Appliances and Components group, the Motor Vehicles/Bodies and Trailers/Parts group, and the Textile Mills and Textile Product Mills group. For these groups, the import share of the total supply of manufactured inputs produced rose by between eight and ten percentage points in five years.

Foreign outsourcing and shifts in demand and supply within US manufacturing

The rising share of imported inputs in US manufacturing has taken place in the context of shifts in both the level and composition of domestic demand and supply in the manufacturing sector. Chart 3 shows the levels of domestic and foreign-sourced intermediate manufacturing goods used in US manufacturing production from 1987 to 2003 in constant 2003 dollars. In the earlier period, from 1987 to 1997, the share of imported intermediate goods rose as their use in production grew at a faster rate than the growth in the use of domestic inputs. Between 1987 and 1997, foreign-sourced inputs

Chart 2: Imported inputs of manufactured goods used in US manufacturing production, as a share of total inputs produced by industry, 1998 and 2003

Legend:
- 1998
- 2003

Categories (left to right):
- All Manufacturing
- Apparel and leather and allied products
- Computer and electronic products
- Miscellaneous manufacturing
- Motor vehicles, bodies and trailers, and parts
- Electrical equipment, appliances, and components
- Machinery
- Furniture and related products
- Chemical products
- Textile mills and textile product mills
- Primary metals
- Other transportation equipment
- Wood products
- Nonmetallic mineral products
- Petroleum and coal products
- Fabricated metal products
- Plastics and rubber products
- Paper products
- Food and beverage and tobacco products
- Printing and related support activities

Industry	Imported inputs as a share of total inputs						
	1998	1999	2000	2001	2002	2003	Change in Share, 1988-2003
All Manufacturing	19.1%	20.0%	21.8%	21.9%	22.3%	22.8%	3.6%
Apparel and leather and allied products	54.3%	56.2%	59.7%	63.2%	62.5%	64.0%	9.7%
Computer and electronic products	36.3%	37.5%	40.2%	39.2%	41.0%	39.4%	3.1%
Miscellaneous manufacturing	32.1%	33.3%	35.1%	35.7%	36.2%	35.5%	3.3%
Motor vehicles, bodies and trailers, and parts	26.7%	27.8%	31.3%	32.9%	33.7%	35.4%	8.7%
Electrical equipment, appliances, and components	25.2%	27.3%	29.6%	31.2%	33.0%	34.7%	9.6%
Machinery	25.5%	26.1%	27.5%	27.6%	26.9%	29.4%	3.8%
Furniture and related products	15.1%	17.3%	19.6%	20.0%	22.5%	25.0%	9.9%
Chemical products	17.3%	18.2%	19.7%	21.1%	22.7%	23.4%	6.1%
Textile mills and textile product mills	15.0%	16.1%	18.0%	19.4%	21.1%	23.0%	8.0%
Primary metals	20.7%	20.1%	23.0%	22.5%	21.5%	21.3%	0.6%
Other transportation equipment	19.6%	20.9%	24.2%	24.1%	21.1%	19.9%	0.3%
Wood products	14.1%	15.5%	15.4%	16.2%	16.7%	16.6%	2.5%
Nonmetallic mineral products	12.5%	13.5%	14.4%	14.0%	15.3%	16.5%	3.9%
Petroleum and coal products	9.2%	9.5%	11.4%	12.2%	12.1%	13.0%	3.8%
Fabricated metal products	9.5%	10.1%	10.9%	11.1%	11.8%	12.5%	3.0%
Plastics and rubber products	10.2%	10.6%	11.0%	11.2%	11.5%	12.2%	2.0%
Paper products	10.9%	11.3%	12.1%	12.2%	12.2%	12.1%	1.1%
Food and beverage and tobacco products	5.9%	6.2%	6.4%	6.6%	7.0%	7.7%	1.8%
Printing and related support activities	2.3%	2.7%	2.8%	2.7%	3.1%	3.5%	1.2%

Table 2: Imported inputs of manufactured goods used in production in US manufacturing industries, as share of total inputs made by industry, various years.

grew by 75 percent in real terms (from $140 billion to $245 billion) while domestic inputs grew by just 12 percent (from $988 to $1,117 billion). Imported intermediate goods grew more slowly in real terms in the later period from 1998 to 2003, but their share in total inputs continued to grow as the volume of domestic inputs fell. During these years of poor growth in US manufacturing production, the real value of total inputs used in US manufacturing fell by 9 percent. In this later period, the value of foreign-sourced intermediate goods rose by 15 percent (from $245 billion to $282 billion) while the value of domestic inputs fell by 14 percent (from $1,117 billion to $957 billion).

Table 3 focuses on the recent period from 1998 to 2003 and allows us to look more closely at the demand and supply of both final and intermediate manufacturing goods. Real production by US manufacturing industries grew by just 3.3 percent during these five years. While domestic demand for all manufactured goods rose by 8.5 percent in real terms in the period, three-quarters of the growth in demand was met by the rise in imported goods. The supply of all imported manufactured goods rose by 32 percent while the supply of all domestically produced goods rose by 3 percent during this time. For final goods, domestic demand increased by 17 percent during this period, of which almost half was met by the growth of imported final goods (domestic supply rose by 11 percent while imports of final goods rose by 40 percent).

The domestic demand for intermediate goods for production by the US manufacturing sector fell by 9 percent during these years. Given the 3.3 percent rise in manufacturing output, this 9 percent drop in demand for inputs of manufactured goods represents the effect of technological change and rising productivity in manufacturing production in relation to inputs of manufactured goods. While the domestic demand for manufactured inputs fell, foreign sourced inputs continued to grow. Thus, of the $159 billion dollar drop in the sale of domestically produced intermediate goods between 1998 and 2003, we can attribute about three-quarters to the $122 billion fall in domestic demand for inputs due to rising productivity and about one-quarter to the $37 billion dollar growth in the foreign outsourcing of inputs.

Chart 3: Domestic and Imported Inputs to US Manufacturing Industries, 1987-2003
2003 dollars
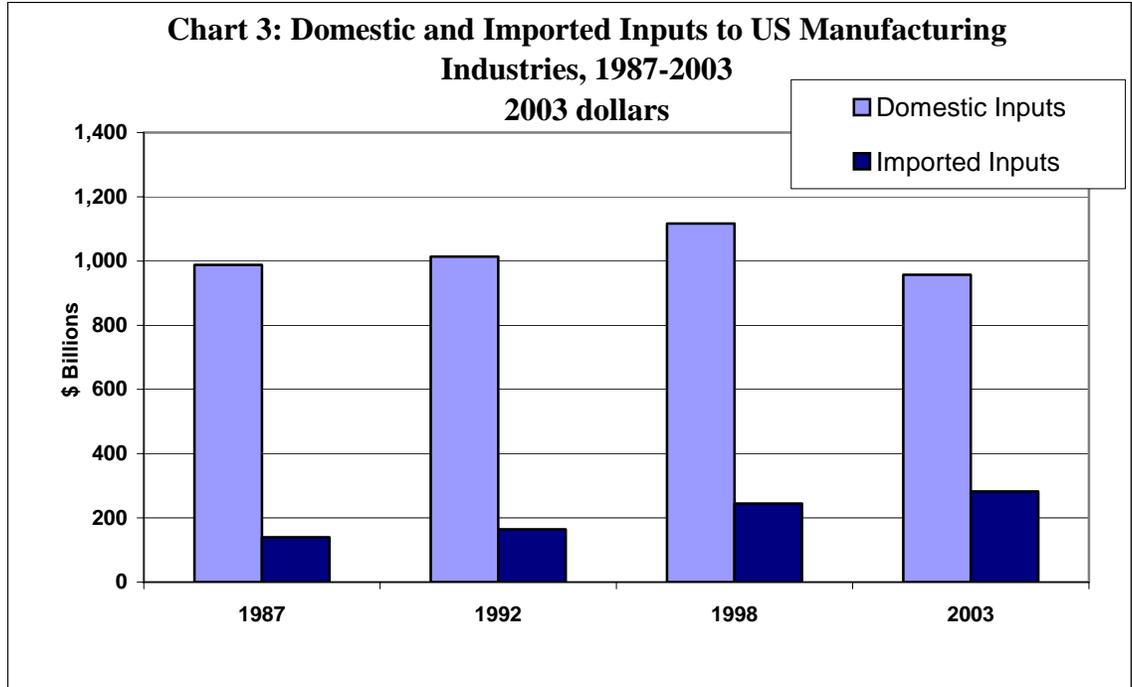
		1987	1992	1998	2003
Domestic Inputs	Dollars	988	1,014	1,117	957
	Share	87.6%	86.1%	82.0%	77.2%
Imported Inputs	Dollars	140	164	245	282
	Share	12.4%	13.9%	18.0%	22.8%
Total Inputs		1,128	1,178	1,362	1,239

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	1998	2003	Change, 1998-2003	Percent change, 1998-2003
Table 3: Change in domestic demand, domestic supply, imports, and exports for US manufacturing industries, 1998-2003. (billions of 2003 dollars)				
Total domestic demand (shipments – exports + imports)	4,127.3	4,476.6	349.3	8.5%
Domestic supply	3,326.5	3,419.2	92.7	2.8%
Imports	800.8	1,057.4	256.6	32.0%
Domestic demand for final goods	2765.4	3,236.8	471.4	17.0%
Domestic supply	2,209.9	2,461.8	251.9	11.4%
Imports	555.5	775.0	219.5	39.5%
Domestic demand for intermediate goods used in manufacturing production	1,361.9	1,239.8	-122.2	-9.0%
Domestic supply	1,116.6	957.4	-159.2	-14.3%
Imports	245.3	282.4	37.1	15.1%
Export demand	543.2	577.0	33.7	6.2%
Total US production (exports and domestic supply)	3,869.7	3,996.2	126.5	3.3%

Foreign Outsourcing and Employment Loss in US Manufacturing

Employment in US manufacturing has fallen precipitously since the late 1990s. Following a more gradual downward trend since the late 1970s, between 1998 and 2003 employment in manufacturing fell by 18 percent, declining by over 3 million jobs in five years to reach its lowest level in over half a century (see Chart 4). There is considerable debate among economists and policy makers about the causes of this dramatic dislocation of manufacturing workers in recent years.[11] Along with the growth of foreign outsourcing, mounting import competition is also put forward as playing a substantial role in the large-scale downsizing of US manufacturing employment. Both of these potential pressures on US manufacturing are often associated with the rapid growth of industrial production in developing counties in the last decade.[12] Rising labor productivity and structural changes in the economy leading to shifts in the composition of demand away from purchases of manufactured goods are also pointed to as factors drawing down US manufacturing employment. In this section, we use our estimated measures of imported intermediate goods to explore how the level of foreign outsourcing activity and other factors are related to the drop in employment in US manufacturing industries in the years from 1998 to 2003.[13]

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[11] See, for example, these articles for a range of views on the sharp decline in manufacturing employment in recent years: Martin Baily and Robert Lawrence, 2004; and Josh Bivens, 2004

[12] Among the developing countries that have attracted the most attention as new competitors for US producers are China and India. For these countries, industrial production grew by 16 and 12 percent annually over the last year (Emerging Market Indicators, The Economist, September10, 2005). Imports from China to the US grew by about 30 percent between 2003 and 2004.

[13] Two estimates of the size of outsourcing activity and its effects on employment have received attention recently. First, reports produced by the Forrester Research consulting firm in 2002 and 2004 have projected job loss in service industries over the next decade as the result of outsourcing. However, the lead author of the Forrester Research reports has described them in press interviews as based on "a very rough and gross calculation" and "educated guesses". A second recent estimate of the effects of outsourcing on US jobs has come from the addition of a new question added this year to the Bureau of Labor Statistics' (BLS) Mass Layoffs Survey. This question asked firms carrying out layoffs of more than fifty workers whether these layoffs were the result of relocating production to foreign sites. The estimate of job loss related to outsourcing derived from the BLS's Mass Layoffs Survey, however, has significant limitations. Most notably, the Survey

Table 4 shows data on employment together with the share of imports in the intermediate goods produced by nineteen industry groups that make up the manufacturing sector for the period from 1998 to 2003. Employment fell in all nineteen industry groups during these years, although the rates of employment decline varied greatly across industries. The Apparel and Leather and Allied Products group, which saw its workforce cut in half during this period, experienced the largest drop in employment; the industry group with the smallest decline in employment was the Food, Beverage and Tobacco Products group with a fall of just 3.5 percent.

We begin a preliminary analysis of the relationship between outsourcing activity and job loss by examining the correlation between the import share of intermediate goods produced in each of the nineteen industry groups and the change in industry employment between 1998 and 2003. Table 5 presents both Pearson and rank-order correlation results for 1998 to 2003 between employment change and outsourcing activity. We correlate employment change with both 1) the level of the import share of inputs in 2003, and, 2) the 1998 – 2003 change in the import share of inputs. The results show a highly significant and moderate correlation ($\rho = -0.656$) between the import share of inputs in 2003 and the decline in industry employment between 1998 and 2003. Industries with high levels of outsourcing activity in 2003 tended to experience higher levels of employment loss since 1998. This result is not apparent from simply ranking industries by outsourcing levels and employment losses - the rank-order correlation between the import share of inputs in 2003 and employment decline is not significant. The 1998 to

only covers a small fraction of all job losses each quarter, namely job losses from large layoffs taking place over a limited span of time. In addition, this survey doesn't capture outsourcing that involves replacing the firm's domestic production with imports of intermediate goods or services, or outsourcing that replaces the firm's domestic suppliers of intermediate goods or services with foreign suppliers. Finally, we question whether the employers included in the BLS survey fully report how many of their laid-off workers are replaced by workers in their foreign production sites.

Chart 4: US Manufacturing Employment, 1987-2003
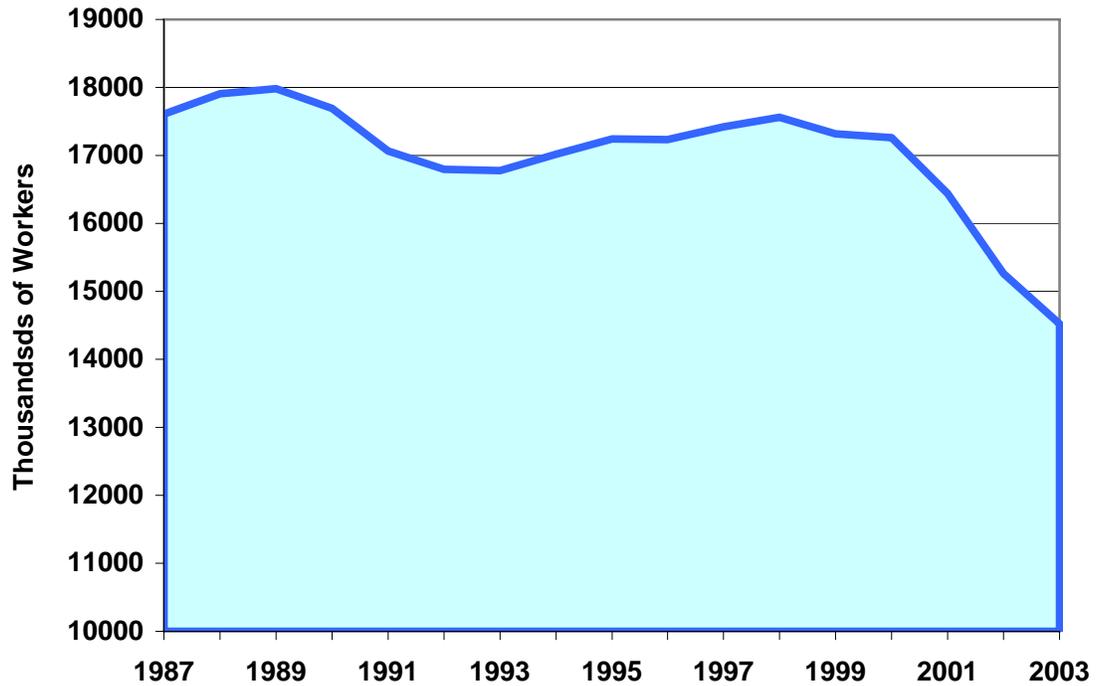
2003 change in the import share of inputs is not significantly correlated with industry employment decline, measured either with the Pearson or the rank-order correlation. These results suggest that the industries with high employment losses from 1998 to 2003 tend to have high levels of outsourcing activity, but high employment losses in an industry over the period are not associated with growth in the extent of outsourcing activity.

We continue our analysis by comparing the extent of foreign outsourcing activity in 2003 for the six industries with the highest rate of job loss between 1998 and 2003 to a group made up of the remaining thirteen industries. Testing supported using the division of the sample into 6 high job loss industries versus 13 low job loss industries. A t-test procedure indicated that the average rate of job loss in the top six job loss industries was

significantly different from the average for the remaining 13 groups, with t = -5.231, significant at the 0.01 level.[14] Additionally, of all possible partitions of the sample, this

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[14] The independent samples t-test is used to test whether the means of two groups are significantly different. Testing supported using the division of the sample into 6 high job loss industries versus 13 low job loss industries - of all possible partitions of the sample, this one yielded a t-test score with the highest significance level.

Table 4: Employment and imported intermediate goods as a share of inputs produced, 1998-2003 (employment in thousands)					
Industry Name	Employment 1998	Employment2 003	Employment Change, 98-03	Employment Change, %, 98-03	Imports Share of Inputs, 2003	Imports Share of Inputs Change, 98-03
Apparel and leather and allied products	682.2	339.3	-342.9	-50.3%	64.0%	9.7%
Textile mills and textile product mills	629.3	417.6	-211.7	-33.6%	23.0%	8.0%
Computer and electronic products	1,793.4	1,319.1	-474.3	-26.4%	39.4%	3.1%
Primary metals	632.6	466.1	-166.5	-26.3%	21.3%	0.6%
Machinery	1,488.7	1,131.6	-357.1	-24.0%	29.4%	3.8%
Electrical equipment, appliances, and components	590.3	450.1	-140.2	-23.8%	34.7%	9.6%
Other transportation equipment	805.0	644.5	-160.5	-19.9%	19.9%	0.3%
Paper products	619.1	503.3	-115.8	-18.7%	12.1%	1.1%
Printing and related support activities	823.1	671.5	-151.6	-18.4%	3.5%	1.2%
Petroleum and coal products	132.7	111.4	-21.3	-16.1%	13.0%	3.8%
Fabricated metal products	1,733.3	1472	-261.3	-15.1%	12.5%	3.0%
Plastics and rubber products	940.5	805.4	-135.1	-14.4%	12.2%	2.0%
Motor vehicles, bodies and trailers, and parts	1,301.7	1,124.5	-177.2	-13.6%	35.4%	8.7%
Furniture and related products	651.4	569.6	-81.8	-12.6%	25.0%	9.9%
Wood products	614.9	540.3	-74.6	-12.1%	16.6%	2.5%
Miscellaneous manufacturing	727.4	653.9	-73.5	-10.1%	35.5%	3.3%
Chemical products	989.5	891.7	-97.8	-9.9%	23.4%	6.1%
Nonmetallic mineral products	539.8	492	-47.8	-8.9%	16.5%	3.9%
Food and beverage and tobacco products	1,764.2	1,702.9	-61.3	-3.5%	7.7%	1.8%

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Table 5: Pearson and Rank-Order Correlation of Employment Change and Import Share of Intermediate Goods, 1998 - 2003			
Percent Employment Change 1998-2003 and….		Correlation coefficient	Significance
Import Share of Inputs in 2003	Pearson Correlation	-0.656***	.002
	Rank-Order Correlation	0.344	.149
Change in Import Share of Inputs, 1998 - 2003	Pearson Correlation	-0.343	.151
	Rank-Order Correlation	0.021	.932
Observations: 19			
*Significant at 10% level; ** Significant at 5% level; *** Significant at 1% level			
Rank-order correlations show the Spearman's rho correlation statistic.			
Import share in total manufacturing inputs produced by industry.			

one yielded a t-test score with the highest significance level. The six industries in the highest job loss group (with their 1998 – 2003 employment declines in parentheses) are: Apparel/Leather Products (50.3 percent), Textiles 33.6 percent), Computer/Electronic Products (26.4 percent), Primary Metals (26.3 percent), Machinery (24.0 percent), and Electrical equipment/ Appliances/ Components (23.8 percent). These six high job loss industry groups made up 33 percent of total manufacturing sector employment in 1998 and accounted for 54 percent of the total decline of over 3.1 million jobs in manufacturing employment between 1998 and 2003.

Chart 5 shows the average for the import share of manufactured inputs produced in 2003 for the high and low job loss groups. The average of the import share of inputs for the six high job loss industry groups was 35.3 percent versus 17.9 percent for the low

job loss industry groups. A t-test procedure indicated that the average share of imported inputs for the high job loss group is significantly different from the average for the low job loss group with t = 2.989, significant at the 0.01 level. This result is consistent with the view that high rates of job loss are related to higher levels of foreign outsourcing of production activity in US industries.

We now look at how growth in the level of import shares of intermediate goods is related to employment loss for manufacturing industries. Chart 6 shows the average for the percentage point change in the import share of manufactured inputs from 1998 to 2003 in the high and low job loss groups. For 1998 to 2003, the average change in the import share of inputs was 5.8 percent for the six high job loss industry groups versus 3.7 percent for the low job loss industry groups. A t-test procedure indicated that there is not a significant difference in these percentage changes between the high job loss group and the low job loss group (t = 1.357, significant at the 0.20 level). These results suggest that, while high rates of job loss are related to high levels of foreign outsourcing across industries between 1998 and 2003, high growth rates in foreign outsourcing are not related to high job loss during these years.   This is consistent with our earlier analyses of correlation between foreign outsourcing and employment loss discussed above.

Chart 5: Manufacturing job loss in 1998-2003 and foreign outsourcing

Average share of imports in total manufacturing inputs produced by industry in 2003
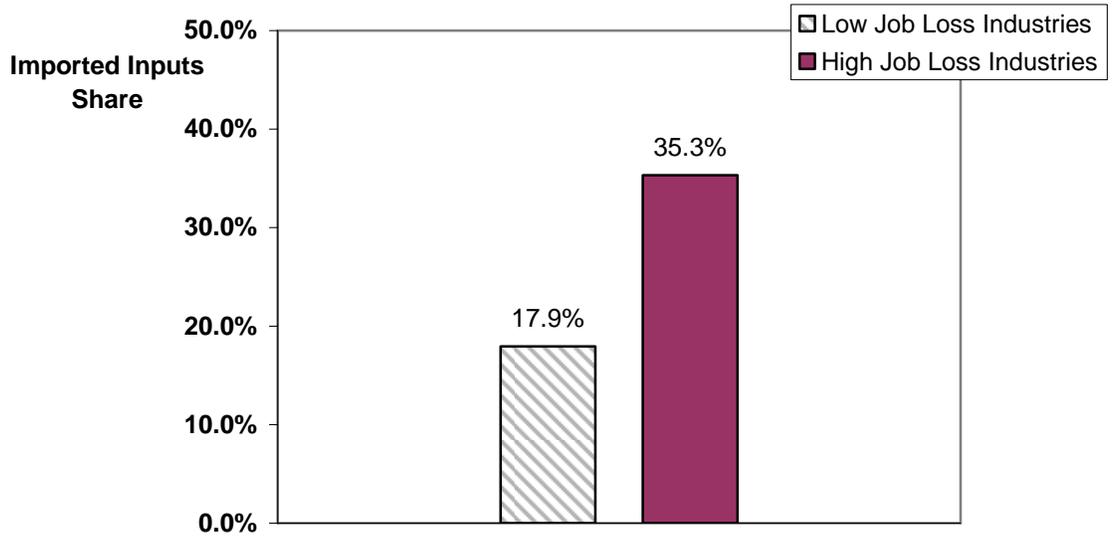
Imported Inputs Share

| | Low Job Loss Industries | High Job Loss Industries |

- 50.0%
- 40.0%
- 30.0%
- 20.0%
- 10.0%
- 0.0%

17.9%   35.3%

The six industries in the 'high job loss' group are: Computer/Electronic Products; Apparel/Leather Products; Machinery; Textiles; Primary Metals; and Electrical Equipment/Appliances/Components. The remaining thirteen industries make up the 'low job loss' group.

Chart 6: Manufacturing job loss in 1998-2003 and foreign outsourcing

Average growth in share of imports in total manufacturing inputs produced by industry in 2003
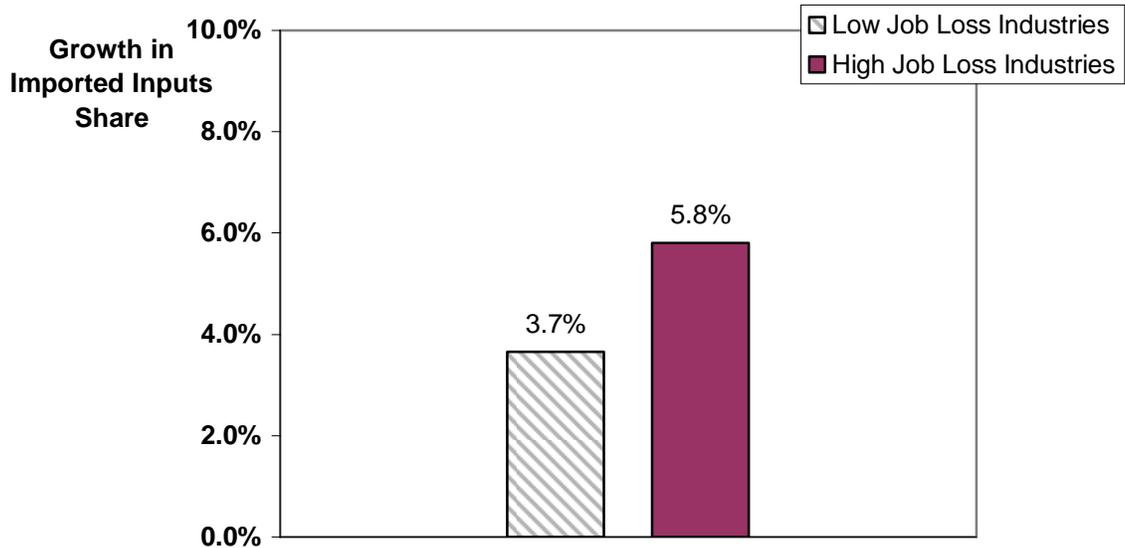
Growth in
Imported Inputs
Share

Legend:
☐ Low Job Loss Industries
■ High Job Loss Industries

Low Job Loss Industries: 3.7%
High Job Loss Industries: 5.8%

The six industries in the 'high job loss' group are: Computer/Electronic Products; Apparel/Leather Products; Machinery; Textiles; Primary Metals; and Electrical Equipment/Appliances/Components. The remaining thirteen industries make up the 'low job loss' group.

Regression Results

Burke and Epstein (2006) report econometric results that support the basic result outlined here. We find that technology, export demand, and outsourcing all play a role in the decline in manufacturing employment. While overall, increased import competition accounts for a relatively small share of the decline in employment (about 5% of the decline) in some industries, the contribution is more economically significant in selected industries, including textiles and motor vehicles. Importantly, domestic and foreign export demand play a larger role than does outsourcing, per se. This suggests that measures to expand aggregate demand at home and abroad can play a useful role in ameliorating the negative impacts of offshoring in manufacturing.

Foreign Outsourcing and Labor Costs

A major question surrounding foreign outsourcing in US manufacturing is whether employers shift production outside US borders in response to lower labor costs abroad, especially in developing countries. In this section, we turn our focus towards how the level of foreign outsourcing activity by US firms is associated with differences in labor costs in US production versus production abroad. More specifically, we explore the relationship between our measure of an industry's foreign outsourcing - the share of imported intermediate goods in total inputs - and the ratio of foreign to US unit labor costs in that industry.

The unit labor cost is defined as worker compensation per hour divided by value-added per hour.[15] The unit labor cost can be interpreted as the labor cost of producing a dollar's worth of value-added in production. We use data provided in the Industrial Statistics Database compiled by the United Nations Industrial Development Organization (UNIDO) to calculate our measures of US and foreign unit labor costs. The UNIDO Industrial Statistics Database provides industry data for 180 countries on annual wages paid and annual value-added. We divide annual wages by annual value-added to calculate the industry's unit labor cost for that country in that year. For each industry, we select a group of countries that appear most likely to host new production sites for intermediate goods used in US production. The criteria we use to select these countries are that they 1) account for more than a 2 percent share of US imports for the industry, and 2) have shown positive growth in US import share for the industry over the 1998 to 2003 period. To calculate the foreign unit labor cost for an industry, we sum the unit labor costs of the countries in the selected group, after weighting each country's unit labor cost by their share of total imports in the group.

Although UNIDO strives to minimize cross-country incompatibilities in the data, some issues still remain that are important to our measures of unit labor cost. First, since wages are reported on a yearly basis rather than hourly, some distortion arises because there is variation across countries in how many hours are worked per year. Next, the data

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[15] Equivalently, the unit labor cost can be described as the hourly wage divided by hourly labor productivity, when productivity is measured in relation to value-added.

generally only reflect wages and usually do not include other labor costs in total compensation, such as health or retirement benefits. These non-wage compensation costs vary across countries.

The most current UNIDO Industrial Statistics Database does not report wages for all of the years in our study period (1998 through 2003). For most of the countries utilized, the latest year for which we are able to calculate a unit labor cost is 2000 or 2001; for a handful of countries within certain industries, we can only calculate the unit labor cost from the mid to late 1990s. As a proxy for the unit labor costs in later years in the period, we use the unit labor cost for the last year available. Also, because the UNIDO database does not include wage data for China, we gather this information from the China Statistical Yearbook to calculate that country's unit labor cost. While the UNIDO data has these limitations, it remains the best data source for our purposes in terms of its country and industry coverage and the variables provided. [16]

We begin a preliminary analysis of the relationship between outsourcing activity and unit labor costs in foreign sites by examining the correlation between the import share of total intermediate goods produced in each of the nineteen industry groups and the foreign/US ratio of unit labor costs in 1998 in each industry. Table 6 presents both Pearson and rank-order correlation results for outsourcing activity and the foreign/US ratio of unit labor costs. We correlate the ratio of unit labor costs in 1998 with both 1) the import share of total inputs produced in 2003, and, 2) the 1998 – 2003 change in the import share of inputs. Of the four correlations shown, only the rank correlation between the foreign/US ratio of unit labor costs and the 1998 – 2003 change in the import share of inputs shows a significant result. In this case, we find a significant (at the 10% level) and moderate correlation between the change in the import share of inputs between 1998 and 2003 and the measure of relative unit labor costs in foreign versus US locations ($\rho = 0.407$). This result offers some evidence that industries facing lower levels of unit labor costs in foreign locations tended to experience higher growth in outsourcing activity

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[16] The ILO's International Labour Statistics database also provides information on industry wages and value-added, but the coverage is more limited. The US Bureau of Labor Statistics' Foreign Labor Statistics database provides unit labor cost data, but coverage is limited to a small set of richer countries.

between 1998 and 2003. Table 6 does not provide evidence that lower unit labor costs abroad are associated with higher levels of outsourcing activity in 2003. According to both bivariate and rank correlation, there is not a significant relationship between the industry level of imported inputs in total inputs in 2003 and the ratio of foreign to domestic unit labor costs for the industry.

We continue our analysis by comparing the average level of outsourcing activity in 2003 between 1) a 'high foreign labor cost' group made up of the seven industries in which weighted unit labor cost in foreign locations is equal or greater than the US unit labor cost in 1998, and 2) a 'low foreign labor cost' group made up of the remaining twelve industries with weighted unit labor costs in foreign locations lower than the US unit labor cost. For the

Table 6: Pearson and Rank-Order Correlation of Foreign/US Unit Labor Cost Ratio in 1998 and Import Share of Intermediate Goods, 1998 – 2003			
Ratio of Foreign to US Unit Labor Costs in Industry Groups in 1998 and ….		Correlation coefficient	Significance
Import Share of Inputs in 2003	Pearson Correlation	-0.328	.171
	Rank-Order Correlation	0.305	.204
Change in Import Share of Inputs, 1998 - 2003	Pearson Correlation	-0.280	.246
	Rank-Order Correlation	0.407*	.084
Observations: 19			
*Significant at 10% level; ** Significant at 5% level			
Rank-order correlations show the Spearman's rho correlation statistic.			
Import share in total manufacturing inputs produced by industry.			

industries in the 'high foreign labor cost' group, the weighted unit labor cost in foreign locations in 1998 ranges from 99 to 167 percent of the US unit labor cost. In the 'low foreign labor cost' group, the weighted foreign unit labor cost is 43 to 90 percent of the US level in 1998. A t-test procedure indicates that the average level of the foreign unit labor cost in 1998 in the seven 'high foreign labor cost' industries is significantly different from the average for the remaining 12 industries, with t = -5.104, significant at the 0.01 level.[17] The seven industries in the 'high foreign labor cost' group are: the Other Transportation Equipment group, the Paper Products group, the Primary Metals Manufacturing group, the Printing and Related Support Activities group, the Food and Beverage and Tobacco Products group, the Petroleum and Coal Products group, and the Chemical Products group. These seven industry groups made up 33 percent of total manufacturing sector employment in 1998.

Chart 7 shows the average for the import share of manufactured inputs produced in 2003 for the high and low foreign labor cost groups. The average of the import share of inputs for the seven industry groups with foreign unit labor cost equal or greater than the US level was 14.4 percent versus 28.7 percent for the industry groups with unit labor costs lower than the US level. A t-test procedure indicated that the average share of imported inputs for the high foreign labor cost group is significantly different from the average for the low foreign labor cost group with t = 2.384, significant at the 0.05 level. This result is consistent with the view that lower labor costs in foreign production sites are associated with higher levels of foreign outsourcing of production activity in US manufacturing industry groups.

Next we look at how growth in outsourcing activity is related to the relative cost of labor in foreign locations for manufacturing industries. Chart 8 shows the average for the percentage point change in the import share of manufactured inputs from 1998 to 2003 in the high and low foreign labor cost groups. For 1998 to 2003, the average change in the import share of inputs was 2.1 percent for the seven high foreign labor cost

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[17] The independent samples t-test is used to test whether the means of two groups are significantly different.

industry groups versus 5.6 percent for the low foreign labor cost industry groups. A t-test procedure indicated that there is a significant difference in these percentage changes between the high foreign labor cost group and the low foreign labor cost group (t = 2.889, significant at the 0.01 level). These results suggest that high growth rates in foreign outsourcing activity between 1998 and 2003 for industry groups are associated with low labor costs in foreign production sites relative to production at home.

Chart 7: Ratio of Foreign to US Unit Labor Cost in 1998 and Foreign Outsourcing in 2003

Average share of inputs in total manufacturing inputs produced by industry.
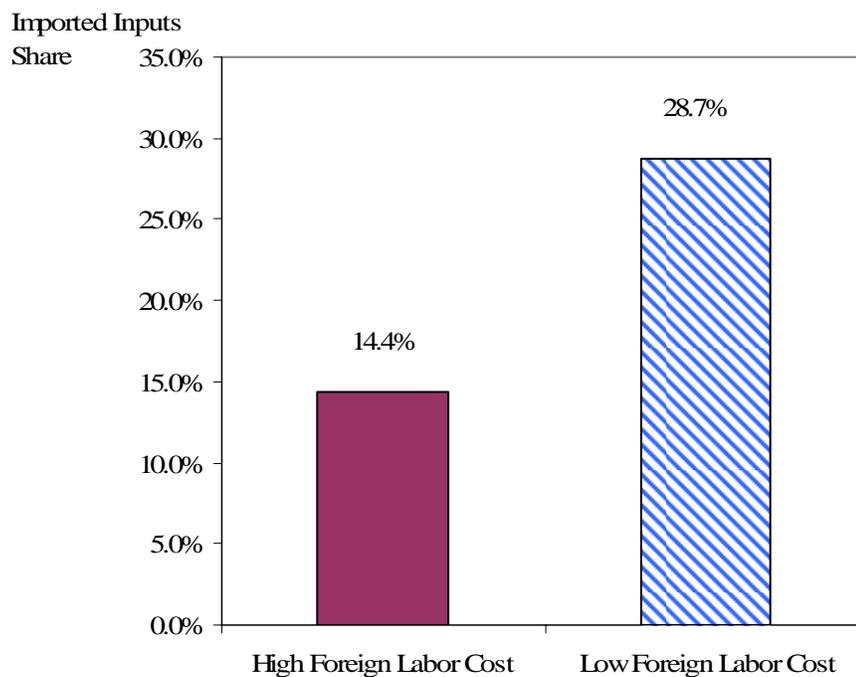
For the 'high foreign labor cost' group, the foreign/US unit labor cost ratio ranges from 0.99 to 1.67. For the 'low foreign labor cost' group, the foreign/US unit labor cost ratio is between 0.43 and 0.90.

The seven industries in the 'high foreign labor cost' group are: Other Transportation Equipment; Paper Products; Primary Metals Manufacturing; Printing and Related Support Activities; Food and Beverage and Tobacco Products; Petroleum and Coal Products; and Chemical Products. The remaining twelve industries make up the 'low foreign labor cost' group.

Chart 8: Ratio of Foreign to US Unit Labor Cost in 1998 and Foreign
Outsourcing in 2003

Average growth in the share of inputs in total manufacturing inputs produced by
industry.
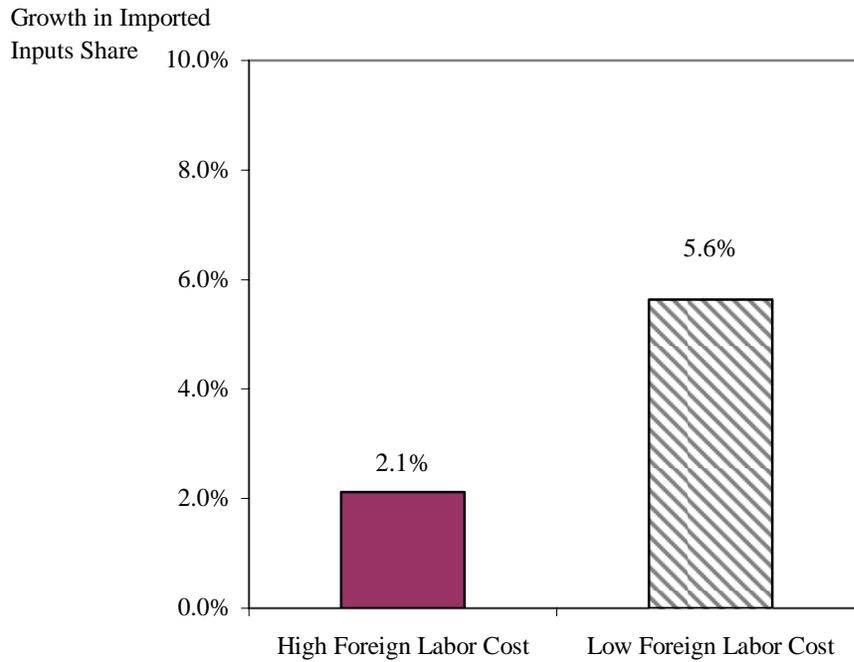
Growth in Imported
Inputs Share

For the 'high foreign labor cost' group, the foreign/US unit labor cost ratio ranges from 0.99 to 1.67. For the 'low foreign labor cost' group, the foreign/US unit labor cost ratio is between 0.43 and 0.90.

The seven industries in the 'high foreign labor cost' group are: Other Transportation Equipment; Paper Products; Primary Metals Manufacturing; Printing and Related Support Activities; Food and Beverage and Tobacco Products; Petroleum and Coal Products; and Chemical Products. The remaining twelve industries make up the 'low foreign labor cost' group.

Regression Analysis on Foreign Outsourcing and Labor Costs

Burke and Epstein (2006) present regression analysis of the impacts of relative labor costs on foreign outsourcing. Again, the results support the bi-variate results discussed so far. U.S. firms do respond to relative unit labor costs when making outsourcing decisions.

Such responses, all else equal, are consistent with pressures that contribute to a "race to the bottom".

Conclusions on Impacts of Outsourcing in Manufacturing

Our empirical suggests that manufacturing outsourcing has increased significantly in recent years and that, moreover, it has contributed to employment losses, especially in industries where foreign outsourcing has been concentrated. Firm choices to engage in outsourcing does seem to respond to relative unit labor costs at home and abroad, which is consistent with the idea that relative wage competition could put pressure on wages, and/or employment at home. Still, aggregate demand measures, at home and abroad, are even more significant in determining employment losses in manufacturing, and technology changes are also important. The important role of aggregate demand has important policy implications, which I draw out in somewhat more detail below.

III. Off-Shoring in the Services Sector

A newer phenomenon of increasing concern, but also of less clear dimensions, is the spread of off-shoring to the service sector. Other papers in this conference have focused on this issue so I will not attempt to cover the same in detail. Here I will make only a few remarks.

While there is enormous uncertainty about how widespread service off-shoring will become, several authors have made compelling arguments that it is likely to become much more widespread over the next ten to twenty years than it is today. Through careful empirical analysis, Jensen and Kletzer (2005) find that a significant number of service industries and occupations that traditionally appear to be un-tradable, are likely to become tradable in the new world of digital commerce. Moreover, workers in these tradable services generally have higher skill levels and are paid more than workers in tradable manufacturing or in non-tradable service sectors. In addition, they find that workers in tradable services that are displaced are different from manufacturing workers who are displaced by trade, in that, they too have higher skill and earnings than those displaced from manufacturing. In short, domestic employment loss is evidently occurring

as a result of services offshoring as well as manufacturing offshoring, as we described above. Moreover, workers with higher skills and wages are evidently being affected in the case of service sector offshoring.

Alan Blinder (2005) speculates that this phenomenon could become much more widespread and significant in the future. He argues that in the future, "impersonal services" will be increasingly tradable, placing higher paid US, European and Japanese workers in direct competition with much lower paid workers in developing countries, especially those who are able to communicate in Western languages. These pressures will increasingly put jobs and wages at risk in the richer countries and will require significant labor market adjustments and call for significant interventions by governments, especially in the area of education and social safety nets.

Blinder and others argue strongly against "protectionism" in the sense of policies that will interfere with trade in these goods and services. They argue that interfering with trade will lower global, if not national, welfare, and that, moreover, in the cases of electronic offshoring, such protectionism is likely to be impossible.

Some economists from off-shoring hosts such as India doubt that this offshoring is likely to have large and widely dispersed benefits in their home countries (Chandrasekhar and Gosh, 2006). Their argument hinges partly on the claim that large multinational firms will increasingly enter these activities and capture the lion share of the value added from them, leaving the host country workers and capitalists with a relatively small share of the benefits.

Milberg, et. al. (2005), also raise the key question of profit accumulation from off-shoring activities. They argue that the key determinant of the impact of off-shoring on the overall economy will stem, not from static efficiency gains from increases in the division of labor, but from the dynamic effects (or lack thereof) of employment generating impacts of investment undertaken by firms making profit gains from these activities.

I believe this issue, in fact, is crucial, but one can broaden the frame. As Milberg, et. al, argue, it will make a great deal of difference how much and where MNC's invest these increased profits, and how much and what type of employment is generated by these investments. But, it will also make a crucial difference as to whether governments

can capture tax revenues from these profits to bolster social safety nets and social investments, and also, whether the political economy of such valuable activities will give governments the ability to implement tax and regulatory policies to manage off-shoring to the benefit of more than a small minority of share-holders of MNC's. However, with MNC's having large increases in profits at stake, they will have political capital available and the incentive to use it to ward off costly regulations and tax bills. These considerations, therefore, take us firmly into the realm of the political economy of redistributive and regulatory policy as a necessary part of our discussion of offshoring.

IV. Impact of Globalization and Off-Shoring on the Ability and Willingness of the State to Spread the Benefits and Reduce the Costs

As discussed above, off-shoring appears to be associated with increasing profit rates and shares for capital (Milberg, et. al., 2005). More generally, in the US and many other OECD countries, in the last decade labor shares have declined significantly and in many cases this decline has been associated with a rise in profit shares.

These declines support the view that neo-liberal globalization, accompanied as it is by capital mobility, and now, its cousin, off-shoring, is shifting the bargaining power toward the owners of mobile firms, and away from immobile labor and states. (eg, Rodrik, 1997, 1998; Burke and Epstein, 2002; among many others). The same processes are making it more difficult to tax capital income, and may be shifting the incidence of taxation from capital to labor in many OECD countries (See Epstein, 2000, for a survey of this literature; and Altshuler and Grubert, 2005, for more recent work.) As Altshuler and Grubert point out, at least three parties play a role in this "race to the bottom": host governments, home governments and multinational companies. (See also Muti, 2003, for a good survey.)

These problems are made more severe by the ways in which the "perceived" ability of MNC's to shift production abroad, either by FDI or by off-shoring, enables companies to issue threats to governments and workers. These threats, in turn, make it costly for workers, unions and governments to implement institutional changes that reduce or threaten to reduce companies' profits or prerogatives. These threat effects have

been recognized to some extent in the literature (Bronfenbrenner, 20000; Burke and Epstein, 2000 and Choi, 2004, for example.).

These points are highly relevant to the issue of the impact of offshoring. Many economists have argued for strengthening the social safety net in developed countries as off-shoring and other types of production shifting accelerates. In other words, Rodrik notes, when globalization increases, there is a perceived increase in the demand for social protection (Rodrik, 1997). At the same, our political economy argument suggests that increased globalization might also reduce the ability and the willingness of the state to provide these social protections, because globalization reduces tax revenues available to the state and reduces the power and appetite of the state to impose restrictions or regulations on capital. By this reasoning, increased globalization *reduces* the supply of social protection. Figure 1 illustrates this dilemma (See Braunstein and Epstein, 2001, from which this diagram was taken, for more discussion of these relationships). It shows that increased openness or globalization increases the "demand" for social protection while, at the same time, reducing the "supply" of social protection.

Figure 1
Demand for and Supply of Social Protection
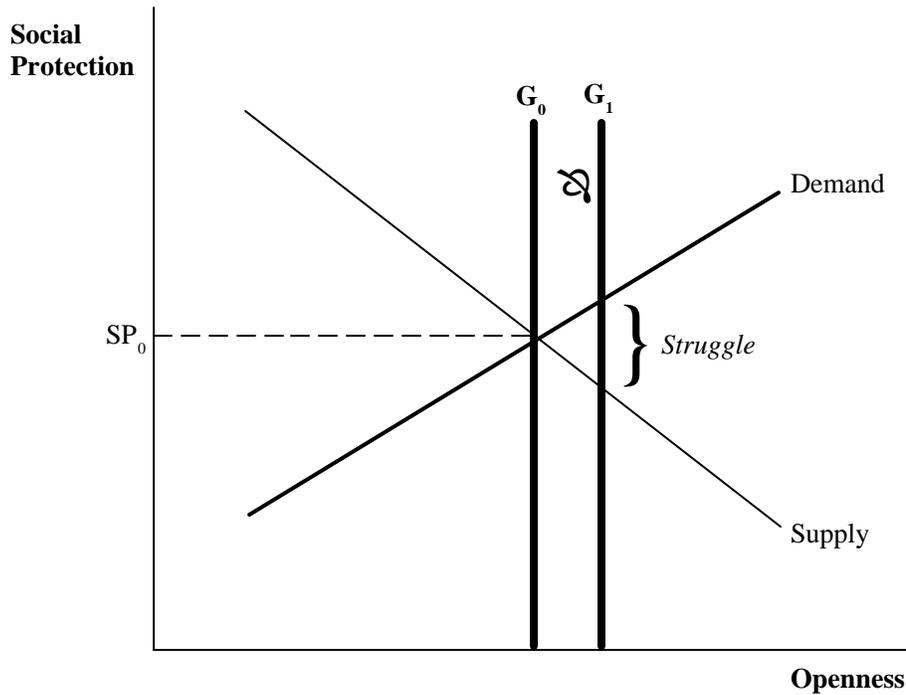
Demand: workers and citizens from firms and the state
Supply: capital supplies at firm level and to the state
G: exogenous level of globalization

What is the impact of significant increases in off-shoring, as we may experience in the next decade or two? We can illustrate a large increase in offshoring in the diagram by an exogenous shift to the right in the level of openness or globalization. At this higher level, there is a greater demand for social protection, but also less ability and willingness of the government to supply it. How will this discrepancy be resolved? It depends on the bargaining power of the corporations with increasingly more sourcing options, relative to the bargaining power of the state to raise revenue, spend and regulate, and relative to

workers as they make wage and benefit demands. Figure 2, also taken from Braunstein and Epstein (2001) illustrates the case where bargaining power of the state declines as openness increases, in this case, as offshoring becomes much more widespread as predicted by Blinder and others. By this logic, the state is less able and willing to provide the social protection desired (demanded) by the population as they face higher disruption and transition costs due to offshoring.

The main point of this discussion is that the bargaining power of these groups is not independent of the degree of capital mobility our sourcing options. If these relationships capture some truths of how governance possibilities evolve with globalization, then the impact of off-shoring needs to be evaluated differently than is typical in economics discussions. Usually, economists split allocational from distributional discussions: typically, economists would argue, first and foremost, that off-shoring will improve efficiency. Then, as a secondary consideration, and if necessary, winners can compensate losers, or a social safety net can be created to help the displaced, or firms can be made to buy wage insurance for this purpose. But what if off-shoring itself makes it difficult or impossible – in a political economy sense—for the state to undertake these policies? Then what? This, in fact, may be the situation we face. In this case, what is to be done?

I would put the argument this way: if the policies that economists themselves propose are to be implemented – that is, social safety nets created, wage insurance implemented, more or better education financed -- something has to be done to enhance the bargaining power of the state and workers vis a vis capital as globalization intensifies and offshoring increases. This is required because the very process of globalization is reducing states' and citizens' bargaining power, arguably below the point at which they have sufficient leverage to enact these policies that economists propose.

I cannot develop here a whole list of policies that could help. Such a list might include a wide range of policy and institutional changes including campaign finance reform, lobbying reform, labor-law reform, to name just a few. But for reasons of space and also my particular areas of knowledge and interest, I will briefly mention just a few policy areas to enhance the bargaining power of labor and the state in this arena, and

thereby make it more likely that the demand for social protection will be either less needed, or will be supplied.

Figure 2
Effects of globalization on social protection
when it favors capital's bargaining power
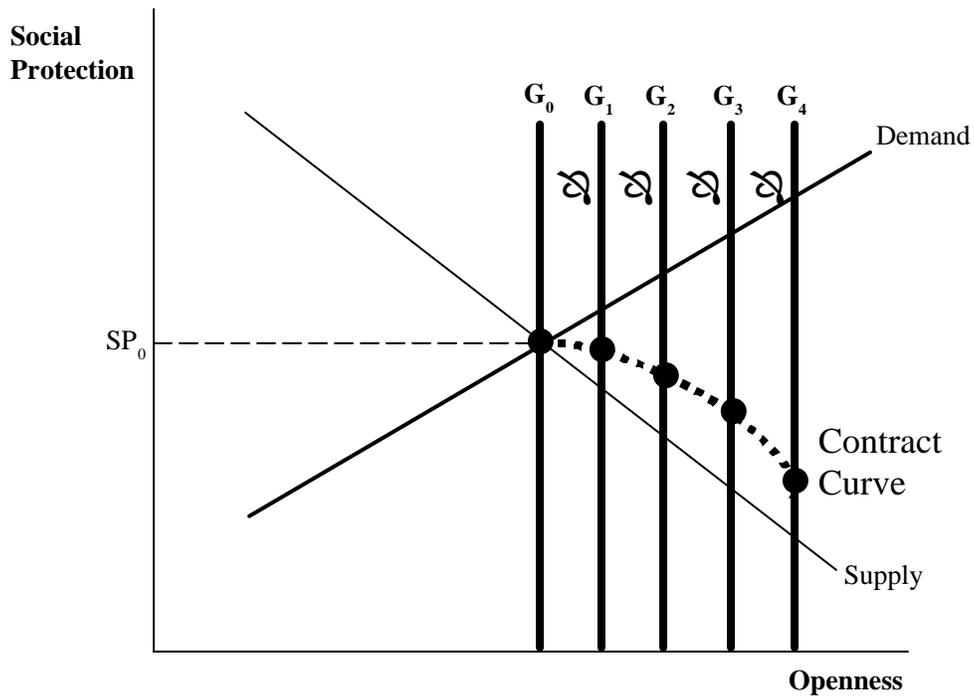
More Expansionary Macroeconomic Policies Can Help

As our statistical analysis on manufacturing outsourcing suggested, aggregate demand at home and abroad has a large impact on employment, and therefore - by extension to standard bargaining models -on bargaining power of workers.

But rather than being aggregate demand expanding, macroeconomic and financial policy in many parts of the globe has been guided by a focus on fiscal austerity, and fighting inflation, sometimes including formal inflation targeting by central banks. In the U.S. and Europe, there has been some relaxation of the fiscal constraint in the last

several years, but the monetary constraint has remained tight. In the rest of the world, however, under IMF guidance and the promotion of macroeconomists trained in US and UK universities, inflation targeting and fiscal austerity has been the norm. (Epstein, 2004; Pollin, 2005). Restrictive macroeconomic policy in much of the world has made many countries focus on running export surpluses to generate employment and profits, and on attracting off-shoring contracts and FDI for the same reason, rather than developing the home or regional markets as the prime source of demand.[18] Compounding the export orientation and lack of aggregate demand emanating from the developing world has been the increased mobility and instability of international short term financial flows, along with the pressure again from the IMF and elsewhere for countries to eliminate their barriers to capital flows. This has put many so-called "emerging markets" in a defensive mode, leading them to accumulate large amounts of external reserves to prevent another financial crisis like the "Asian financial crisis" of the late 1990's.

This focus on attracting FDI and other export oriented production prospects such as off-shoring has led to enormous competition for capital and production contracts from MNC's in a context of stagnating internal aggregate demand. This only serves to raise the bargaining power of capital and lower the bargaining power of labor and states.

Alternative macro-economic policy and macroeconomic policy advice that would promote a greater emphasis on expanding domestic demand, managing capital flows through capital management techniques (eg., Epstein, Grabel and Jomo, 2005) and orienting monetary policy toward domestic employment expansion as well as fighting inflation, could help rebalance power between capital, labor and the state. Such policies would require a re-thinking of macroeconomic policy advice by the IMF, the U.S. Treasury and many western trained mainstream economists. (eg. Epstein, 2004; Pollin, 2005).

Domestic and International Tax Treaties

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[18] China to some extent is an exception to this model where they have pursued export-led growth for other reasons.

While there is still debate about the empirical strength and theoretical basis for the effect, many economists agree that tax competition in the face of mobile capital is likely to undermine the ability of states to collect tax revenue (eg. Altshuler and Grubert, 2005). Such competition can occur within federal systems such as the United States, and it can also occur internationally. It might appear that only international tax competition is relevant to our discussion, but the so-called "War Between the States" as economists at the Federal Reserve Bank of Minneapolis call it, that is, the attempt of competing states to attract investment, can greatly exacerbate international tax competition. (Federal Reserve Bank of Minneapolis, 1994).[19] To counter this trend, some have argued for tax harmonization policies to reduce the destructive forms of tax competition, both at domestic and at international levels. (Tanzi, 1995; 1999) Efforts along these lines have been implemented in Europe and some have argued for their extension to the global sphere. These policies could significantly re-balance bargaining power in a way that would be conducive to building the public safety net. There has been some impetus at international cooperation with respect to money laundering, and in Europe, progress has been made in terms of restricting subsidy competition to attract investment (Muti, 2003). Evidently, though, more needs to be done to prevent the erosion of the state's willingness ability to compensate losers from offshoring and globalization more generally.

International Rules of the Game in Regulating MNC's

International rules limiting the ability of national governments to limit the activities and regulate multinational corporations have been increasingly imbedded in bi-lateral, regional and international agreements, for example at the World Trade Organization (WTO) (UNCTAD, World Investment Report, various years). Some of these agreements have to do with protecting intellectual property rights, limiting performance requirements on firms, and limiting other forms of regulations. Some have reduced the ability of countries to use payments to attract investment but most have interfered with the countries ability to regulate the investment.

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[19] Currently there is a Supreme Court case testing whether such tax breaks are constitutional in the U.S.

On balance, these restrictions are likely to enhance the profitability for MNC's of investing or sourcing in developing countries, and thereby, increase their "reservation price" of staying at home. This outcome would especially be the case when developing countries increasingly depend on such investment and sourcing for jobs in a world of austerity and financial instability as I described above. There is evidence that many developing countries are pressured to accept such restrictions, as part of WTO accession or borrowing from the World Bank or IMF. Creating more flexibility in these rules, and allowing developing countries to adopt more restrictions on investment if they choose to do so, would help to create more balance in bargaining power between labor, capital and the state in both the richer and the poorer countries.

<u>Threat Effects in Reverse</u>

How can governments and citizens convince companies to accept such policies? Crotty and Epstein (1997) argued in a different context that capital controls, or the threat of imposing them, could be helpful, or even necessary to convince firms to pursue more socially desirable behaviors, such as paying more taxes, increasing domestic investment, and generating more employment. As long as firms know they always have an exit strategy, then it is difficult for government or citizens to gain the bargaining power necessary to win concessions from them.

A similar argument is true in the case of offshoring. Governments and citizens have to retain the ability to impose or threaten to impose restrictions on off-shoring and other forms of trade, in order to preserve the bargaining power necessary to be able to perform the roles of the state that citizens need, including maintaining an adequate social safety net.

Imposing such trade restrictions would not be considered by economists to be "efficient" in a static model of perfect competition. But, in a world where allocation, distribution and power are so inextricably linked as they are in the areas of trade and off-shoring, the separation of these policies into neat, different piles will not work. Where trade and trade policies themselves affect the bargaining power of firms, states and citizens, and these changes affect the feasibility of compensating losers from globalization, these factors have to be taken ito account in designing policy.

Economists have not shied away from using 'political economy' arguments when they want to discuss "rent seeking" and "state failure". Nor should they shy away from "political economy" when assessing trade and compensation policy. Economists can convince themselves that they can talk about the efficiency of off-shoring and then, as an afterthought, describe a re-distributional package; but if the new political economy has taught us anything, this artificial separation is wishful thinking, at best, and, more likely, it contains a heavy dose of self-delusion.

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