Is the Maquiladora Downturn Cyclical or Structural?

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First draft: Comments welcome

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It is both.

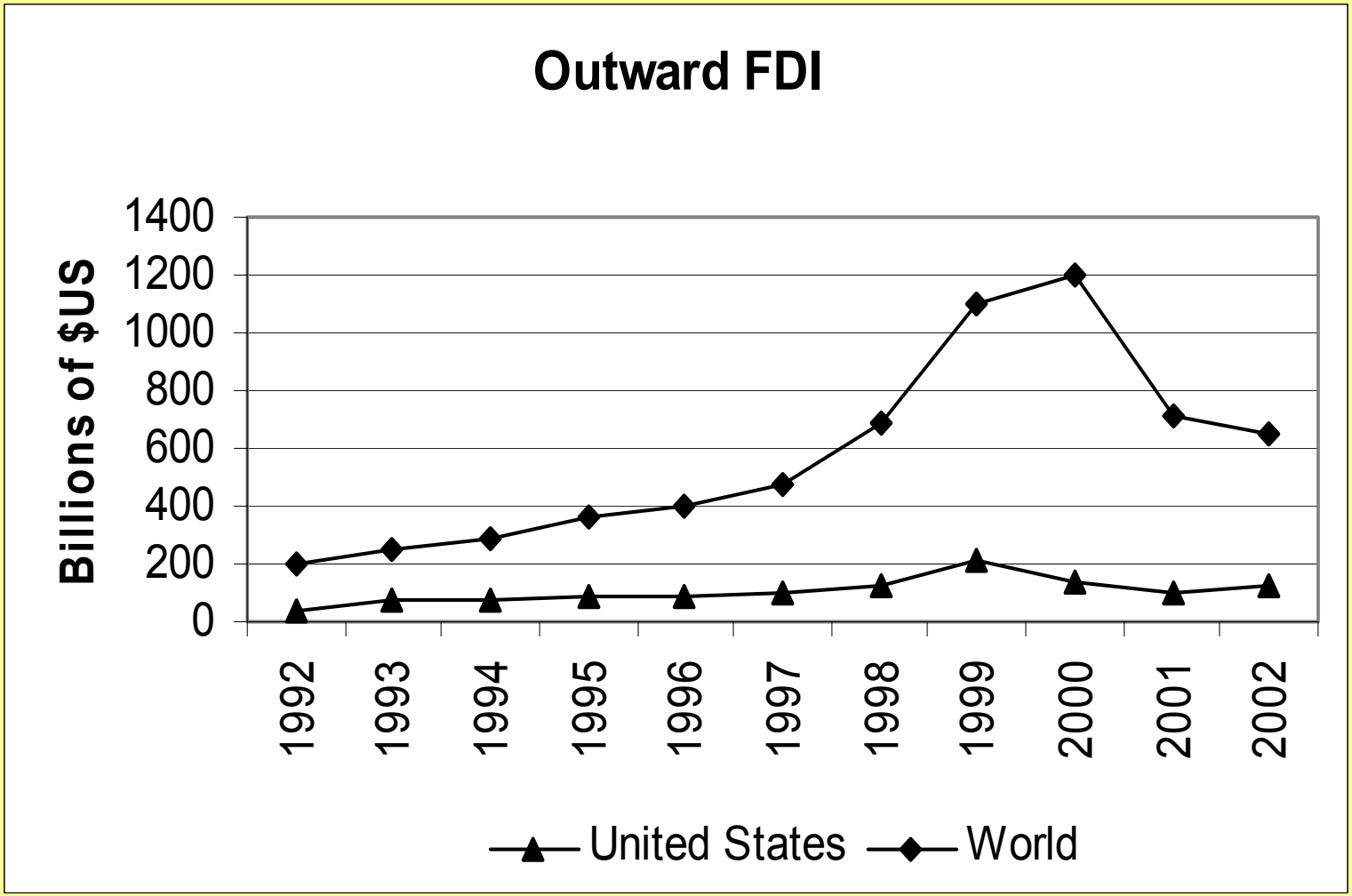
Working assumption:

The maquiladora industry is essentially the same as Mexican manufacturing in general, except that it receives or has received special tax status, both in Mexico and in the United States (production-sharing provisions, Chapter 98, of U.S. tariff code, HTS).

Some factors to consider

- U.S. and world declines in FDI (cyclical)
- U.S. manufacturing recession (cyclical)
- Long run decline in trend growth rate (structural)
- Rising Mexican wages in $U.S. (either or)
- NAFTA and Mexican tax policy (structural)
- Changing U.S. commercial policy (structural)
- China and global competition (structural)

U.S. and World FDI



Inward FDI

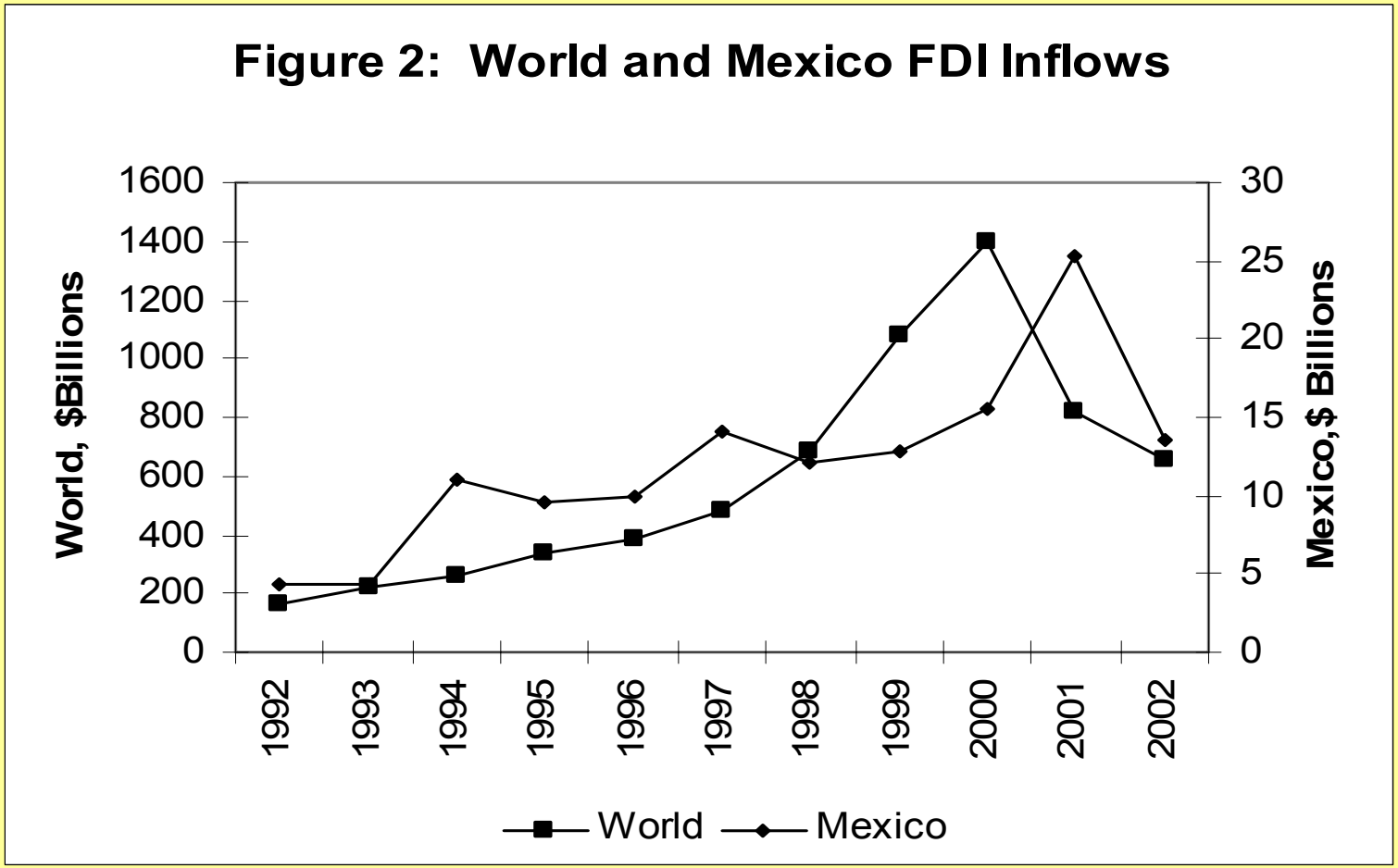
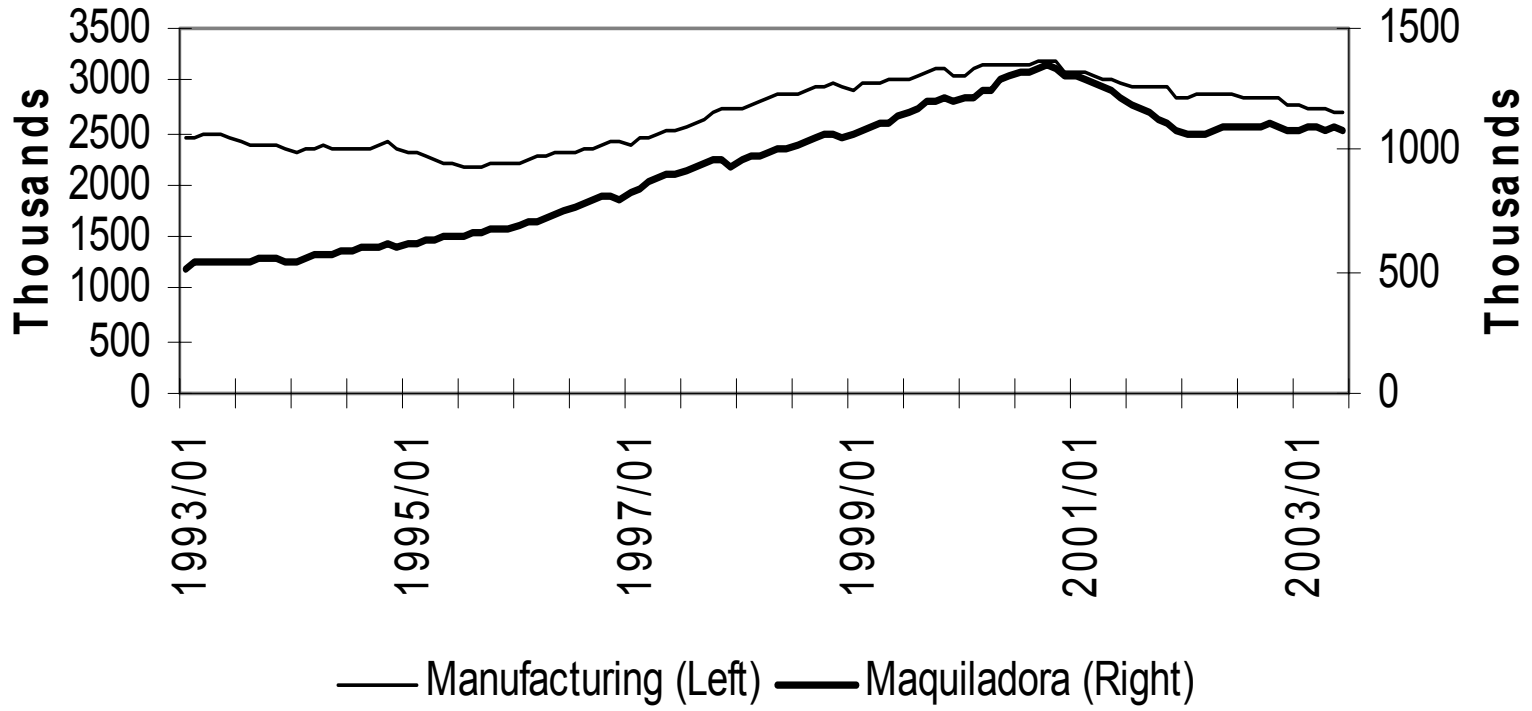


Figure 2: World and Mexico FDI Inflows
World, $Billions
Mexico,$ Billions
1600
1400
1200
1000
800
600
400
200
0
30
25
20
15
10
5
0
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
World
Mexico

Manufactuing employemnt

Figure 3: IMSS Registered and Maquiladora Manufacturing Employment



A dynamic time series model

$$\Delta lE_t = c + \beta_1 t + \beta_2 \Delta lE_{t-1} + \beta_3 \Delta lIP_{t-1} + \beta_4 FDI_{t-1} +$$

$$\beta_5 \Delta XR_t + \beta_6 \left(\frac{MX}{US} Wage \right)_{t-1} + u_t$$

ΔlE = change in maquiladora employment
t = a time trend
ΔlIP = change in US industrial production
FDI = US FDI to the world
ΔXR = change in the real exchange rate
$(MX/US)Wage$ = Mexican-US wage ratio

	Model 1	**Model 2**
ΔlE_{t-1}	0.4179*** (0.0755)	0.4997*** (0.0762)
ΔlIP_{t-1}	1.2616*** (0.1849)	1.1351*** (0.1844)
FDI_{t-1}	1.15E-07 (2.26E-07)	6.62E-08 (1.77E-07)
ΔXR_{t-1}	0.0003 (0.0295)	-0.0168 (0.0272)
$\left(\frac{MX}{US}Wage\right)_{t-1}$	-0.0653** (0.0246)	-0.0578 (0.0181)**
γ_1		-0.2407** (0.1167)
γ_2		-0.3952*** (0.1056)
trend	-0.0002* (0.0001)	-0.0002** (0.0001)
constant	0.0153*** (0.005)	0.0015*** (0.0041)
R^2	0.6710	0.7645
Adjusted R^2	0.6475	0.7391
Akaike criterion	-5.0606	-5.3216
Schwartz criterion	-4.8674	-5.0593

***Significant at 1% level, **Significant at 5% level, *Significant at 1

What else is at work?

- Statistical artifact related to the changing nature of manufacturing in Mexico
- Changes in U.S. commercial policy
- Changes in global competition

An indirect effect of NAFTA

Sometime in the 1990s, the USITC began to note a decline in the use of production-sharing provisions of HTS. For example:

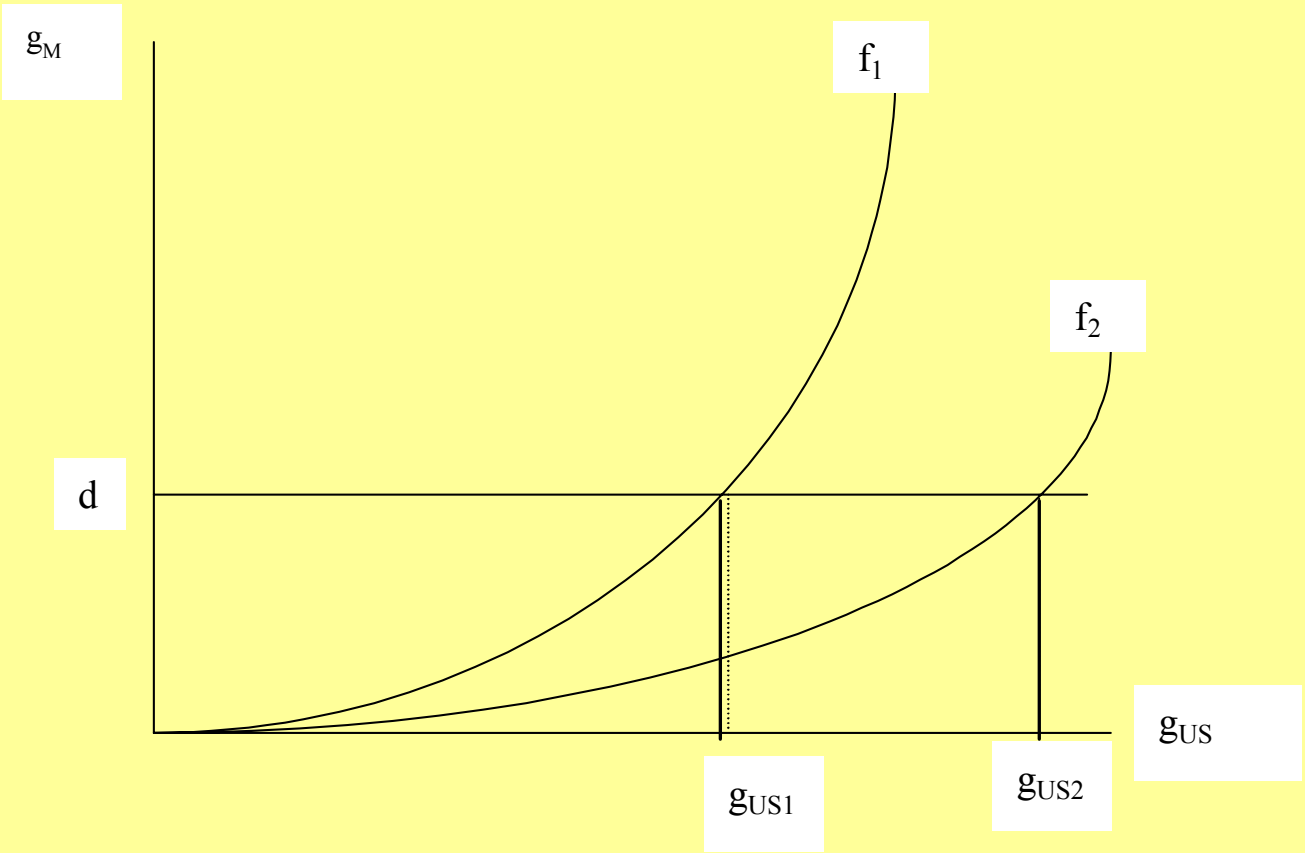
"Firms that import articles free of duty … under trade preference programs such as the North American Free Trade Agreement (NAFTA) … have a greatly reduced incentive to enter those articles under the production-sharing provisions (USITC, 1999)".

PROSEC, et. al.

- Added administrative costs in an environment where there was a
- Increased and access, and superior access, for North American imports and exports

⇒Could some of the decline be a statistical artifact?

Normal attrition plus reduced sensitivity to the U.S. cycle



Sectoral differences

Between October, 2000, and August, 2003

- Apparel maquila lost 88,396 jobs (29.5% of total jobs lost in all sectors)
- Electronics lost 131,594 jobs (44.0%)
- Job losses were proportionately much smaller in other sectors (e.g., transport equipment, 5%)

Some of the job loss is due to changes in U.S. commercial policy

- For example, the Caribbean Basin Trade Partnership Act (2000) expanded the CBERA (1984) to include textiles and apparel
- Creates the same access to U.S. market as Mexico's access under NAFTA

Leading exports to U.S.

SITC 3-digit categories

- El Salvador: Top 5 are apparel
- Guatemala: 4 of top 5 are apparel
- Honduras: 4 of top 5 are apparel
- Nicaragua: 3 of top 5 are apparel
- China: Top 2 apparel categories are number 15 and 16

Country and Articles	*2000*	*2002*	*Top 2 2000*	*Top 2 2002*	*Growth 2000-02*
SITC ***El Salvador***					
845 Articles Of Apparel Of Textile Fabrics	667	729			0.0962
844 Women's Or Girls' Coats, Capes, Knit	227	251	894	980	0.0962
SITC ***Guatemala***					
845 Articles Of Apparel Of Textile Fabrics	508	664			0.0798
842 Women, Girls Coats, Not Knit	469	391	977	1055	0.0798
SITC ***Honduras***					
845 Articles Of Apparel Of Textile Fabrics	1,401	1,555			0.0428
841 Men's Or Boy's Coats, Jackets Etc, Not Knit	373	295	1774	1850	0.0428
SITC ***Nicaragua***					
841 Men's Or Boy's Coats, Jackets Etc, Not Knit	166	186			0.2422
845 Articles Of Apparel Of Textile Fabrics	90	132	256	318	0.2422
Four Central American countries, top 2 items from each			**3645**	**3885**	**0.0658**
SITC ***China: Top apparel (15 and 16)***					
842 Women, Girls Coats, Not Knit	2,335	2,469			
848 Apparel and Accessories Except Textile; Headgear	2,281	2,467	**4616**	**4936**	**0.0693**
SITC ***Mexico: Top apparel (13 and 15)***					
845 Articles Of Apparel Of Textile Fabrics	2,875	2,626			
841 Men's Or Boy's Coats, Jackets Etc, Not Knit	2,349	2,149	**5224**	**4775**	**-0.0859**

Most threatened: low wage, unskilled industries

Based on survey data (COLEF, 2002), Gerber and Carrillo estimate that approximate 40% of electronics maquilas compete primarily on basis of price (1st generation firms).

In addition, many or most apparel maufacturers are likely to fall into this category.

The interior of the country, where wages are lower, lacks infrastructure comparable to China's coastal regions.

Conclusions

- A return to annual growth rates of 12 percent is extremely unlikely: hence, there is a structural component to the current downturn.
- The current decline in jobs is unprecendented over the last 20 years.
- Low wage jobs are most at risk, apparently in apparel and electronics sectors.
- Even so, some of the downturn is cyclical (one-half?) and relates to the slowdown in world economic growth and the depression in U.S. manufacturing.