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August 9, 2000

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If you would like to receive copies of any of these papers, please write the Public Policy Department or e-mail [twallace@aflcio.org](mailto:twallace@aflcio.org).

In Solidarity,

Thomas I. Palley  
Assistant Director of Public Policy

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**List of Economic Policy Papers, Technical Working Papers**  
**and Policy Handbooks, 2000**

**Economic Policy Papers**

<b>Date</b>	<b>Number</b>	<b>Author(s)</b>	<b>Title</b>
<b>2000</b>	E045	Palley, Thomas I.	The e-Money Revolution: Challenges and Implications for Monetary Policy
	E044	Palley, Thomas I.	Destabilizing Speculation and the Case for an International Currency Transactions Tax
	E043	Yudken, Joel S.	The Internet and Labor - Riding the Wave!
	E042	Palley, Thomas I.	Escaping the Policy Credibility Trap: International Financial Markets and Socially Responsive Macroeconomic Policy.

**Technical Working Papers**

<b>Date</b>	<b>Number</b>	<b>Author(s)</b>	<b>Title</b>
<b>2000</b>	T031	Palley, Thomas I.	The Backward Bending Phillips Curve: Wage Adjustment with Opportunistic Firms versus Near-Rationality
	T030	Palley, Thomas I.	Labor Standards and Governance as Public Institutional Capital: Cross-Country Evidence from the 1980s and 1990s
	T029	Palley, Thomas I.	Labor Standards, Economic Governance, and Income Distribution: The Cross-Country Evidence

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February 8, 2000

*June 9/5/00 @ 1:15 P.M.*

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Please find enclosed the half yearly listing of recent Economic Policy and Technical Working Papers prepared by the AFL-CIO's Public Policy Department. The listing also details Policy Handbooks that the department has recently produced.

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*Thomas I. Palley.*

Thomas I. Palley  
Assistant Director of Public Policy

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**AFL-CIO, PUBLIC POLICY DEPARTMENT**  
**List of Economic Policy Papers, Technical Working Papers**  
**and Policy Handbooks, 1998-1999**

**Economic Policy Papers**

<b>Date</b>	<b>Number</b>	<b>Author(s)</b>	<b>Title</b>
<b>1999</b>	E041	Palley, Thomas I. Drake, Elizabeth Lee, Thea	The Case for Labor Standards in the International Economy: A Report Submitted to the International Financial Institution Advisory Commission
	E040	Palley, Thomas I.	Industrialized Country Financial Markets: The Missing Dimension in the Stabilizing Global Finance Debate
	E039	Palley, Thomas I.	The Economic Expansion of the 1990s: Implications for Progressive Economics
	E038	Palley, Thomas I.	The Economics of Globalization: A Labor View
	E037	Palley, Thomas I.	The ABCs of Exchange Rates and the Case Against Currency Boards
	E036	Palley, Thomas I.	The Economic Case for International Labor Standards: Theory and Some Evidence
	E035	Palley, Thomas I.	Manufacturing Matters: The Impact on Productivity Growth, Wages and Income Distribution
	E034	Jorgensen, Helene	Odd Jobs: Does Nonstandard Work Increase Flexibility in Hours?
	E033	Palley, Thomas I.	Increasing Growth in the Global Economy
	E032	Palley, Thomas I.	End of the Expansion: Soft Landing, Hard Landing, or Even Crash?
	E031	Palley, Thomas I.	Accounting for Income Inequality in the U.S.: The Role of Unions, the Minimum Wage, Unemployment, Family Structure, and International Trade
	E030	Jorgensen, Helene	When Good Jobs Go Bad: Young Adults and Temporary Work in the New Economy
	E029	Friedman, Sheldon	The Future of Social Security
	E028	Palley, Thomas I.	Slow Growth and Unequal Incomes
	E027	Palley, Thomas I.	Toward a New International Economic Order: Goodbye Washington Consensus, Hello Main Street Alternative
	E026	Palley, Thomas I.	Lessons From Brazil: Existing Global Economic Arrangements and IMF Policy Don't Add Up

E025	Palley, Thomas I.	The Economic Case for International Labor Standards <i>(Reissued as E036)</i>
E024	Palley, Thomas I.	The Economics of Globalization: Problems and Policy Responses
<b>1998</b> E023	Palley, Thomas I.	Why a Global Currency Union with Fixed Exchange Rates Won't Work
E022	Palley, Thomas I.	Life Expectancy and Social Security: Why Longevity Indexing the Social Security Payroll Tax Makes Good Economic Sense
E021	Adams Roy Friedman, Sheldon	Human Rights in Employment
E020	Palley, Thomas I.	The Myth of Labor Market Flexibility and the Costs of Bad Macroeconomic Policy: U.S. and European Unemployment Explained
E019	Palley, Thomas I.	The New Economy: Where's the Beef and What Next?
E018	Palley, Thomas I.	International Finance and Global Deflation: There is an Alternative
E017	Palley, Thomas I.	International Finance and the Problem of Capital Account Governance: A Blue Print for Reform
E016	Parente, Frank	Jobs in the New Millennium: A look at the DOL's Occupational Projections to the Year 2006
E015	Palley, Thomas I.	The Economics of Social Security: An Old Keynesian Perspective
E014	Friedman, Sheldon McDonald-Pines, J.	Continuing the Search for a "New Covenant" for America's Dislocated Workers
E013	Friedman, Sheldon	Taxing Our Patience: Why Workers Pay More and the Rich Pay Less
E012	Palley, Thomas I.	Building Prosperity from the Bottom Up: the New Economics of the Minimum Wage
E011	Friedman, Sheldon Weller, Christian	One More Time: Labor Market Flexibility, Aggregate Demand and Comparative Employment Growth in the U.S. and Europe
E010	Palley, Thomas I.	The Structural Unemployment Trap: How the NAIRU Can Mislead Policymakers
E009	Palley, Thomas I.	Challenging Open Markets: The 'Third Way' Involves Making Markets Work For All

## Technical Working Papers

<b>Date</b>	<b>Number</b>	<b>Author(s)</b>	<b>Title</b>
<b>1999</b>	T028	Palley, Thomas I.	Bank Runs and Optimal Public Suspension of Payment: The Case for Temporary Use of Capital Controls
	T027	Palley, Thomas I.	Chilean Style Capital Controls as a Screening Mechanism: Some New and Surprising Findings
	T026	Palley, Thomas I.	Asset Based Reserve Requirements: Reasserting Domestic Monetary Control in an Era of Financial Innovation and Instability
	T025	Palley, Thomas I.	The Case for Equilibrium Low Inflation: Some Financial Market Considerations with Special Attention to the Problems of Japan
	T024	Palley, Thomas I.	Evaluating the OECD's <i>Job Strategy</i> : Has it Helped Lower Unemployment?
	T023	Palley, Thomas I.	Keynesian Macroeconomics and the Theory of Economic Growth: Putting Aggregate Demand Back in the Picture
	T022	Palley, Thomas I.	Open Economy Macroeconomics with Foreign Currency Denominated Debt
	T021	Palley, Thomas I.	General Disequilibrium Analysis with Inside Debt
	T020	Palley, Thomas I.	Conflict, Distribution and Finance in Alternative Macroeconomic Traditions
	T019	Palley, Thomas I.	The Stock Market and Investment: Another look at the Micro-foundations of <i>q</i> Theory
<b>1998</b>	T018	Palley, Thomas I.	Unemployment in the U.S.: New Estimates of the Structural and Cyclical components
	T017	Palley, Thomas I.	Macroeconomics with Conflict and Income Distribution
	T016	Palley, Thomas I.	The U.S. Inflation Process: Does Nominal Wage Inflation Cause Price Inflation, Vice-versa, or Neither?
	T015	Palley, Thomas I.	Speculation and Tobin Taxes: Why Sand in the Wheels Can Increase Economic Efficiency
	T014	Palley, Thomas I.	Does it Matter Whether Payroll Taxes are Levied on Firms or Employers? A Comparative Analysis
	T013	Weller, Christian	Buyer Beware: A Comparison of Returns under Social Security and Galveston County's Privatized Plan

T012	Weller, Christian	Risky Business: A Stochastic Simulation of Social Security with Equity Investment
T011	Palley, Thomas I.	The Minimum Wage and the Low Wage Labor Market: A Wage Curve Analysis
T010	Palley, Thomas I.	The Beneficial Effect of Core Labor Standards on Economic Growth <i>(Reissued as E036)</i>

## Policy Handbooks

Date	Number	Title
<b>1999</b>	H008	Factbook on Union Membership and Earnings. 1983-1999
	H007	Workers' Rights at the World Trade Organization and in U.S. Trade Policy
	H006	Raising the Minimum Wage : Updated July 1999
	H005	Factbook on Union Membership and Earnings. 1983-1998
<b>1998</b>	H004	Strengthening Social Security: A Guide for Working Families
	H003	Raising the Minimum Wage <i>(withdrawn and revised in H006)</i>
	H002	Paying More and Losing Ground: How Employer Cost-Shifting is Eroding Health Coverage of Working Families
	H001	The Union Difference: Fast facts on Union Membership and Pay in 1998

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February 9, 2000



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May 17, 2000

Dear Martin,

Please find enclosed two papers on the impact of labor standards on "governance, wages, and income distribution" and on "country productivity levels". These papers provide strong empirical support regarding the positive economic outcomes associated with labor standards.

I hope that you will share these papers with your staff economists, and that they will help the Administration in making the case for labor standards.

If you have any questions please feel free to call me.

Sincerely,

Thomas I. Palley  
Assistant Director of Public Policy



**Labor Standards, Economic Governance, and Income Distribution:  
The Cross-Country Evidence**

**Thomas I. Palley**  
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## **Labor Standards, Economic Governance, and Income Distribution: The Cross-Country Evidence**

### **Abstract**

The international community is currently riven by debate over whether labor standards should be part of international trade agreements. Opponents claim that such standards are protectionist and aimed at protecting jobs in the developed economies. Proponents say that they are good development policy and will benefit developing economies by improving economic governance and income distribution. They can also help prevent a race to the bottom in the global economy. As such, they constitute a “win - win” outcome for both developed and developing economies. This paper presents new findings that support the case for labor standards. Using cross-country evidence from the second half of the 1980s and the first half of the 1990s, the paper provides strong evidence that improved labor standards are associated with improved governance, reduced corruption, and improvement in security of economic contracting. The evidence also shows that labor standards contribute to improved income distribution as measured by the labor share of manufacturing value added and country gini coefficients, and that labor standards are strongly associated with higher wages. These findings strongly support Rodrik’s (1999) findings that institutions matter for distributive outcomes. But they also qualify his findings by suggesting that it is labor standards rather than democracy that matters, at least in terms of “direct” impact on wages and income distribution.

JEL ref. J30, H40, O15

Keywords: Labor standards, economic governance, income distribution, democracy

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My thanks to Heidi Hessler for her assistance in compiling the data base used in this study. My thanks also to Dani Rodrik for generously providing data. All errors of fact and interpretation are mine.

## **I Introduction**

The decade of the 1990s witnessed the emergence of a vigorous policy debate over the place of labor standards in the new world economic order. No where was this more evident than in the Seattle WTO ministerial meeting held in December 1999, at which the international labor movement called for incorporation of labor standards into the rules governing international trade.

This call for inclusion of international labor standards in international trade agreements has sharply divided the international community, with opponents calling the measure protectionist. They argue that such standards are being pushed by organized labor in the developed economies as a way of protecting jobs and blunting the comparative advantage of low wage developing economies. Proponents of labor standards deny this charge, and instead maintain that labor standards constitute good development policy that can raise living standards and economic growth in the developing world. The argument is that labor standards confer both static and dynamic economic efficiencies (Palley, 1999). Static efficiencies include one time gains that come from improvements in existing economic practice. Dynamic efficiencies refer to gains that come from improvements to the growth path as a result of shifting from a “low road” path of development to a “high road” path.

The “good development policy” argument for labor standards rests on two principal lines of reasoning. First, by correcting gross imbalances of power between workers and firms in labor markets, labor standards promote an improved distribution of income that contributes to the development of robust domestic markets which in turn foster domestic growth. Second, labor standards promote good governance which serves to check economic cronyism, thereby

preventing the mis-allocation and dissipation of scarce resources. Finally, labor standards are good for the international economy because they tilt developing economies away from an exclusive reliance on export-led growth. Such growth tends to produce a global shortage of demand and deflation since countries look for markets in other countries rather than growing their own domestic markets. For developing countries it may also exacerbate the trend of declining terms of trade since increases in productive capacity are automatically directed on to world markets, which lowers prices. Thus, by fostering domestic demand-led growth and mitigating the dangers posed by excessive reliance on export-led growth, labor standards contribute to a “win - win” outcome for both developed and developing countries.

In an earlier paper (Palley 1999) I have provided empirical evidence showing that developing countries which initiate improvements in worker rights of free association grow faster in the five year period after reform. This paper presents some new findings that are supportive of the above claims regarding the benefits of labor standards. Using cross-country evidence from the second half of the 1980s and first half of the 1990s, the paper provides strong evidence that improved labor standards are associated with improvements in political governance, reduced levels of corruption, and improvement in the level of security regarding economic contracting. The evidence also shows that improved labor standards are associated with improvements in the pattern of income distribution as measured by the labor share of manufacturing value added and country gini coefficients. Finally, the paper shows that improved labor standards are strongly associated with higher wages. Interestingly, it is labor standards rather than democracy that are directly instrumental for higher wages, though democracy may be indirectly important in that it may promote labor standards. This finding qualifies the results of

Rodrik (1999) regarding the relation between wages and democracy.

## II Description of the data

The data used in the current exercise are cross-country data from the period 1985 - 94. The definition of variables is as follows:

LABSTDS = rating of labor standards in country j (rating scale = 1 - 4 with 1 = best)

OECDUM = OECD dummy variable (1 if country j is a member of the OECD and 0 otherwise)

GDPCAP95 = country j 1995 per capita GDP in US dollars

GDPCAP = country j five year average per capita GDP in US dollars

DEMNEW = five year average of Freedom House democracy index for country j (rating scale = 0 - 1 with 1 = most democratic)

DEMPOL = five year average of Polity III democracy index for country j (rating scale = 0 - 1 with 1 = most democratic)

FREE = five year average index of freedom in country j constructed from Freedom House's rankings (rating scale = 1 - 3 with 3 = least free)

FREE1999 = Freedom House index of freedom in 1999 in country j (rating scale = 1 - 3 with 3 = least free)

CORRUPT = country j corruption perception index in 1996 (rating scale = 0 - 10 with 0 = most corrupt)

ECONSEC = country j index of security for economic contracting (rating scale = 0 - 10 with 0 = least secure)

LABS = five year average measure of the labor share in country j

GINI = country j gini coefficient

LANDINEQ = country j index of land ownership inequality

WAGE = five year average annual nominal wage in country j converted to U.S. dollars at current exchange rates

MVA = five year average annual nominal manufacturing value added per worker in country j.

The five year country averages are based on the periods 1985 - 89 and 1990 - 94. The data on country labor standards and 1995 per capita GDP are drawn from the OECD's *An Update of the 1996 Study "Trade, Employment, and Labor Standards: A Study of Core Workers' Rights and International Trade"* (OECD, 2000). The OECD index of labor standards is based on country observations mostly made in the early 1990s, but for a few countries the observations are from the late 1980s. In all regressions the index of labor standards was multiplied by minus one so

that -1 = best and -4 = worst.

The democracy indexes DEMNEW and DEMPOL were supplied by Dani Rodrik. The index values run from zero (undemocratic) to unity (democratic). The indexes of freedom, FREE and FREE1999, are drawn from Freedom House's web site. Each year Freedom House constructs a country index of freedom ranging from one (free) to three (unfree). FREE1999 represents the index value in 1999, while FREE is the simple average of the index for the five year periods 1985 - 1989 and 1990 - 1994. In all regressions the indexes FREE1999 and FREE were multiplied by minus one so that -1 = free and -3 = unfree.

The country gini coefficients were obtained from the World Bank's web page and updated to include the most recent measure of the gini coefficient published in the *2000 World Development Report*. The country corruption perception index is from Transparency International as reported in Tanzi (1998). The economic contracting security index was drawn from Fabricius (1998). Data on country five year averages for labor costs, manufacturing value added per worker, GDP per capita, and country price levels were supplied by Dani Rodrik. A labor share index was constructed by taking the ratio of labor costs to manufacturing value added. The index of land ownership inequality is the same as that used by Gupta, Davoodi, and Alonso-Terme (1998).

### **III Empirical results**

#### ***Labor standards, freedom, and democracy***

Recently, there has been interest in the role of democracy and freedom in promoting economic development. In a widely cited paper, Rodrik (1999) reports that democracy is positively associated with higher wages. Sen (1999) has argued that development itself needs to

be re-conceptualized as a process of expanding freedom, with freedom being both the means and end of development. Thus, freedom contributes positively to economic development, and the process of development in turn confers freedom by relaxing economic constraints and burdens.

Democracy and freedom are therefore important as both means and ends of development. Figures 1 and 2 suggest that there is a positive relationship between labor standards, freedom, and democracy. Figure 1 shows a cross-country scatter plot of an index of economic freedom (FREE9094) against an index of labor standards, and it also contains a uni-variate regression line that has a positive slope. This positive slope suggests that there exists a positive association between improvements in labor standards and improvements in freedom. Figure 2 shows a scatter plot between an index of democracy (DEMNEW9094) and labor standards, and once again the uni-variate regression line has a positive slope that suggests a positive association between the two.

To test formally for an empirical association between labor standards, freedom, and democracy, the following empirical model was estimated:

$$(1.a) \text{ FREE1999}_j = a_0 + a_1 \text{ LABSTDS}_j + a_2 \ln \text{ GDPCAP95}_j + a_3 \text{ OECD DUMMY}_j$$

$$(1.b) \text{ FREE9094}_j = a_0 + a_1 \text{ LABSTDS}_j + a_2 \ln \text{ GDPCAP9094}_j + a_3 \text{ OECD DUMMY}_j$$

$$(1.c) \text{ DEMPOL9094}_j = a_0 + a_1 \text{ LABSTDS}_j + a_2 \ln \text{ GDPCAP9094}_j + a_3 \text{ OECD DUMMY}_j$$

$$(1.d) \text{ DEMNEW9094}_j = a_0 + a_1 \text{ LABSTDS}_j + a_2 \ln \text{ GDPCAP9094}_j + a_3 \text{ OECD DUMMY}_j$$

Equations (1.a) - (1.d) were estimated under a range of coefficient restrictions using OLS. The inclusion of the natural log of GDPCAP95 and GDPCAP9094 variables control for the effect of income on the political process, while the OECD dummy variable controls for the possibility that OECD countries form a special elite rich group of countries that are characterized by greater

Figure 1 Scatter plot of freedom index against labor standards

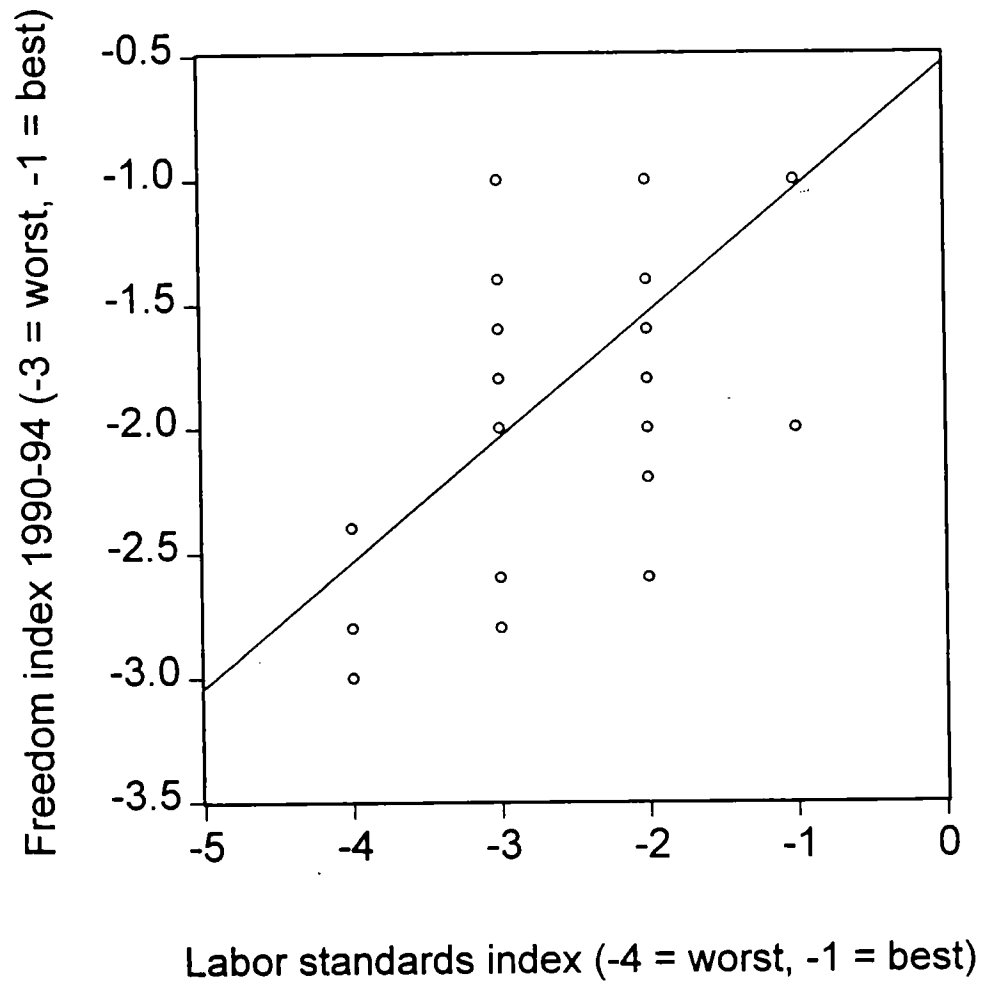
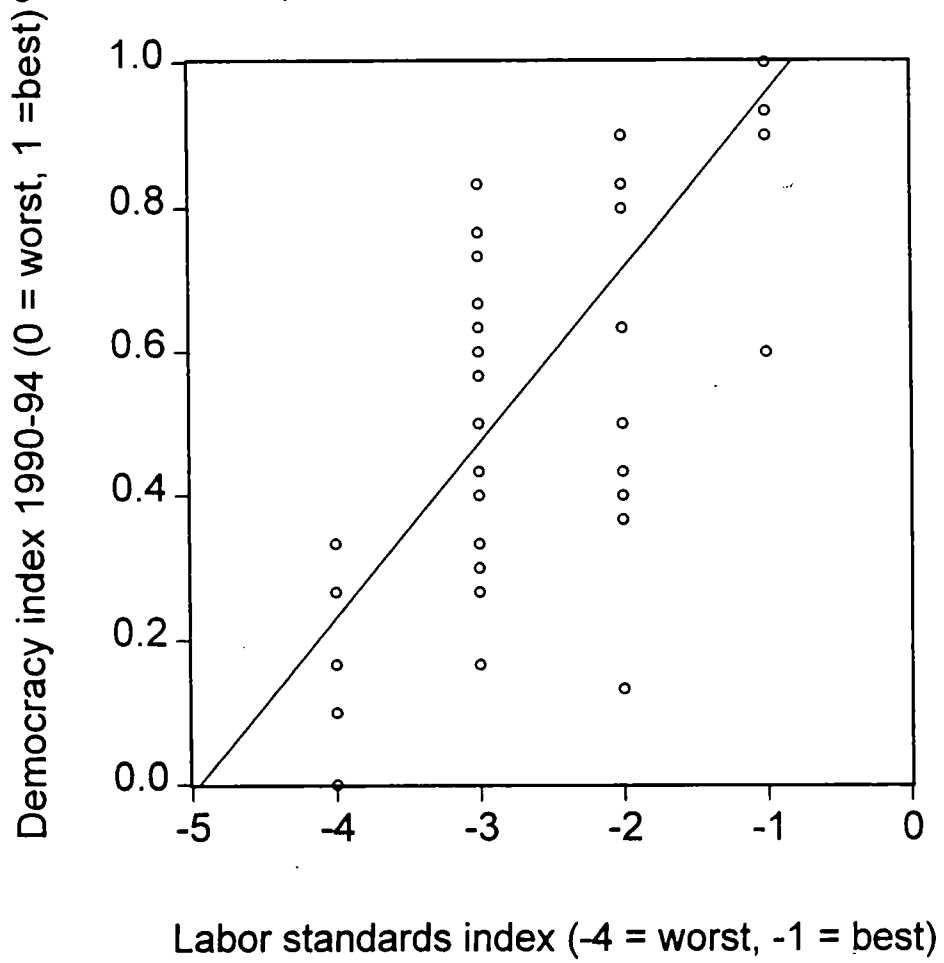


Figure 2 Scatter plot of democracy index against labor standards



freedom and democracy.<sup>1</sup>

The regression results are reported in table 1. For each independent variable, three different regression specifications are estimated. In all cases (twelve regressions) the labor standards variable is statistically significant at the 1% level and has a positive sign.<sup>2</sup> This confirms a positive association between labor standards and the level of freedom and democracy, though the direction of causation remains open. Interestingly, neither the per capita GDP variable nor the OECD dummy variable are statistically significant, and their sign also varies. This suggests that a high level of income is not the determining factor for improved freedom and democracy, and that freedom and democracy are not luxuries that only high income countries can afford.

### ***Labor standards and corruption***

Just as there has been growth of interest in the economic development implications of political freedom, so too there has been a surge of interest in the role of good governance in promoting development. Thus, in 1997 the IMF Executive Board adopted a resolution whereby the promotion of good governance became a key objective of the Fund. This interest in good governance is now reflected in what the IMF is terming “second generation reforms”. The first generation of reform focused on promoting sustainable macroeconomic conditions through

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<sup>1</sup>. In the regressions using FREE1999 the income measure is (GDPCAP95) is a lagged measure. In the other regressions in table 1 the income measure (GDPCAP9094) is a contemporaneous measure since the democracy and freedom measures are averages for the period 1990 - 94.

<sup>2</sup>. The Freedom house index of freedom is constructed from a questionnaire consisting of twenty two questions and yielding a maximum score of 88 points. One of these questions (maximum 4 points) deals with labor standards so that there may be a weak simultaneity bias in the regressions using the index of freedom as the independent variable.

Dependent variable	Constant	Labor Standards	ln(GDP Per Capita)	OECD Dummy	Adj. R <sup>2</sup>	S.E.E.
1. FREE1999	-0.599*** (-4.63)	0.425*** (7.65)			0.455	0.483 N = 70
2. FREE1999	-1.801*** (-3.80)	0.307*** (4.41)	0.115** (2.63)		0.498	0.463 N = 70
3. FREE1999	-1.911*** (-3.93)	0.331*** (4.50)	0.142*** (2.77)	-0.177 (-1.08)	0.498	0.463 N = 70
4. FREE9094	-0.537*** (-5.46)	0.500*** (11.79)			0.670	0.367 N = 69
5. FREE9094	-1.481*** (-2.66)	0.435*** (8.22)	0.99* (1.73)		0.690	0.343 N = 66
6. FREE9094	-1.461** (-2.37)	0.434*** (7.62)	0.095 (1.35)	0.011 (0.08)	0.686	0.346 N = 66
7. DEMPOL	1.274*** (18.91)	0.277*** (9.81)			0.594	0.237 N = 66
8. DEMPOL	1.193*** (3.13)	0.268*** (7.34)	0.009 (0.23)		0.600	0.228 N = 64
9. DEMPOL	1.187*** (2.86)	0.269*** (6.48)	0.010 (0.21)	-0.004 (-0.04)	0.593	0.230 N = 64
10. DEMNEW	1.198*** (25.51)	0.242*** (11.98)			0.671	0.175 N = 71
11. DEMNEW	0.719*** (2.80)	0.212*** (8.62)	0.051* (1.93)		0.701	0.161 N = 68
12. DEMNEW	0.842*** (3.07)	0.200*** (7.59)	0.39 (0.35)	0.078 (0.22)	0.708	0.160 N = 68

Table 1 Labor standards, freedom, and democracy regressions. Figures in parentheses are t-statistics. \*\*\* = significant at 1%, \*\* = significant at 5%. \* = significant at 10%.

restoration of fiscal balance, external balance, and monetary stability. The second generation of reform is intended to complement these earlier reforms by promoting institutions that contribute to good economic governance.

This interest in good governance has been furthered strengthened by the recent east Asian financial crisis, with many arguing that economic cronyism was an important causal factor. The argument is that cronyism contributed to mis-allocation of bank resources, thereby leaving economies vulnerable to financial crisis once investors learned what had happened to their funds. To the extent that cronyism is politically sponsored, labor standards may have a role to play in preventing cronyism by contributing to the development of counter-vailing powers that can check such behavior. This possibility is suggested in figure 3 which shows a cross-country scatter plot between an index of corruption and labor standards, along with a regression line. The slope of the line is positive, indicating that improved labor standards are associated with less corruption.

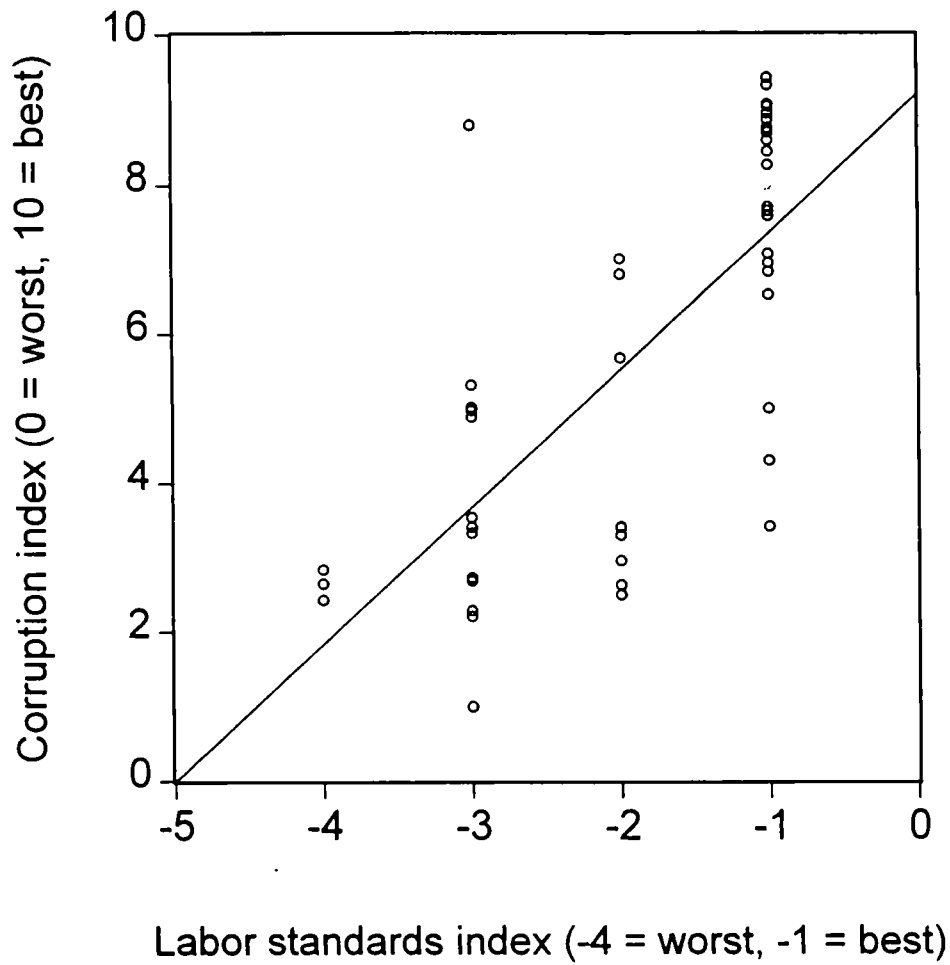
To test this hypothesis the following multi-variate model was estimated using OLS:

$$(2) \text{CORRUPT}_j = a_0 + a_1 \text{LABSTDS}_j + a_2 \text{DEMOCPOL9094}_j + a_3 \text{DEMOCNEW9094}_j \\ + a_4 \text{FREE9094}_j + a_5 \text{OECD DUMMY}_j$$

where CORRUPT = Transparency International index of corruption for 1996. The inclusion of the democracy and freedom variables is intended to control for the possibility that it is political forces that rein in corruption, while the inclusion of the OECD dummy variable is intended to control for the fact that the OECD countries may represent a special group of honest economies.

The regression results are shown in table 2. In all cases the labor standards variable has a negative sign indicating that improved labor standards are associated with reduced corruption. In

Figure 3 Scatter plot of corruption index against labor standards



Dependent variable	Constant	Labor Standards	Dempol	Demnew	Free9094	OECD Dummy	Adj. R <sup>2</sup>	S.E.E.
1. CORRUPT	9.198*** (15.82)	-1.840*** (-6.89)					0.503 N = 47	1.827
2. CORRUPT	9.921*** (5.92)	-1.989*** (-4.86)	-0.602 (-0.48)				0.498 N = 46	1.850
3. CORRUPT	10.785*** (4.44)	-2.142*** (-4.09)		-1.298 (-0.67)			0.496 N = 47	1.838
4. CORRUPT	9.421*** (12.42)	-1.594*** (-3.10)			-0.506 (-0.55)		0.490 N = 45	1.869
5. CORRUPT	8.279*** (4.28)	-1.497*** (-2.97)	-0.597 (-0.48)			1.316 (1.62)	0.516 N = 47	1.816
6. CORRUPT	9.849*** (3.99)	-1.793*** (-3.18)		-1.778 (-0.92)		1.234 (1.54)	0.512 N = 46	1.810
7. CORRUPT	7.793*** (6.16)	-1.112* (-1.89)			-0.500 (-0.56)	1.311 (1.59)	0.507 N = 45	1.836

Table 2 Labor standards, democracy, freedom, and corruption regressions. Figures in parentheses are t-statistics. \*\*\* = significant at 1%, \*\* = significant at 5%. \* = significant at 10%.

six of the regressions the labor standards variable is significant at the 1% level. In the seventh regression, which includes the variable FREE9094, it is significant at the 10% level. The two democracy variables actually have a negative sign, while the OECD dummy variable is statistically insignificant in all cases.<sup>3</sup>

### ***Labor standards and economic security***

Economic security, predicated upon the ability to make binding contracts, is critical to market based economic activity. As such, economic security is therefore important for economic development. However, just as attaining low levels of corruption likely depends on political conditions, so too may the attainment of economic security. Once again, labor standards may also matter by contributing to a balance of political power that blocks arbitrary governance that undermines economic security.

Figure 4 shows a cross-country scatter plot between the index of economic security and labor standards, along with a uni-variate regression line. The slope of the regression line is positive, indicating that improved labor standards are indeed associated with improved economic security. To formally test this finding the following multi-variate regression model was estimated:

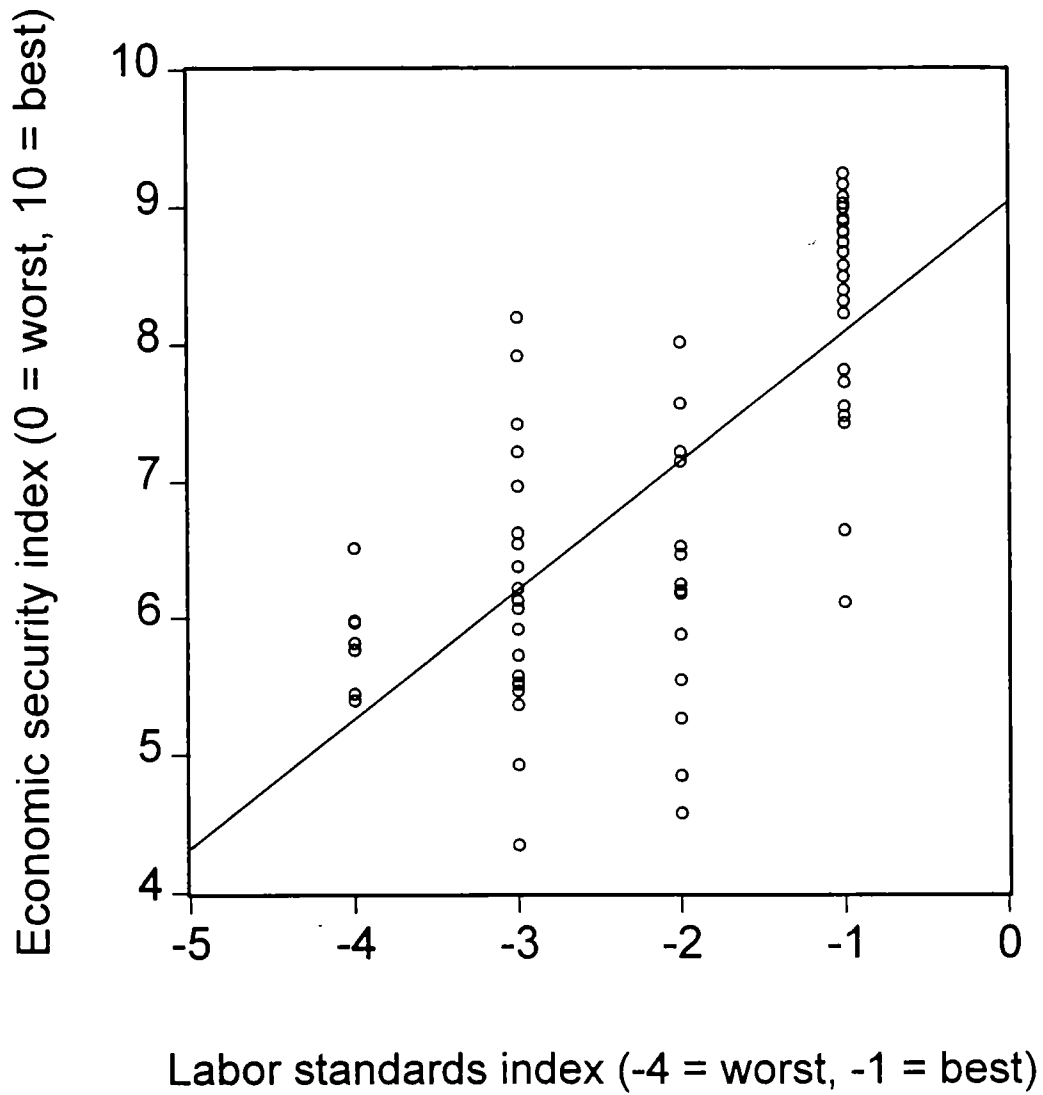
$$(3) \text{ECONSEC}_j = a_0 + a_1 \text{LABSTDS}_j + a_2 \text{DEMOCPOL9094}_j + a_3 \text{DEMOCNEW9094}_j \\ + a_4 \text{FREE9094}_j + a_5 \text{OECD DUMMY}_j$$

The regression results are shown in table 3. In all seven reported regressions the sign of the labor

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<sup>3</sup>. The freedom index (FREE9094) includes as part of its construction questions regarding rule of law so that it may embody the phenomenon of corruption itself. This would make it an inappropriate regressor, and this may explain the weakened statistical significance of labor standards in this regression.

Figure 4 Scatter plot of economic security index against labor standards



Dependent variable	Constant	Labor Standards	Dempol	Demnew	Free9094	OECD Dummy	Adj. R <sup>2</sup>	S.E.E.
1. ECONSEC	9.036*** (33.91)	0.942*** (8.29)					0.499 N = 69	0.980
2. ECONSEC	8.169*** (11.61)	0.768*** (4.23)	0.753 (1.48)				0.533 N = 65	0.960
3. ECONSEC	6.315*** (7.81)	0.395** (2.11)		2.263*** (3.54)			0.572 N = 69	0.905
4. ECONSEC	9.623*** (32.62)	0.382** (2.06)			1.127*** (3.69)		0.582 N = 67	0.904
5. ECONSEC	6.631*** (9.81)	0.289 (1.59)		0.655 (1.51)		1.495*** (4.93)	0.661 N = 69	0.819
6. ECONSEC	5.942*** (8.16)	0.201 (1.16)	1.605*** (2.70)			1.165*** (4.19)	0.658 N = 65	0.810
7. ECONSEC	8.217*** (21.70)	0.084 (0.49)			0.938 (1.51)	1.298*** (4.93)	0.695 N = 67	0.772

Table 3 Labor standards, democracy, freedom, and economic security regressions. Figures in parentheses are t-statistics. \*\*\* = significant at 1%, \*\* = significant at 5%. \* = significant at 10%.

standards variable is positive, and it is statistically significant at the 1% level in those equations containing just the democracy indexes. However, inclusion of the OECD dummy variable causes the labor standards coefficient to become statistically insignificant.

### ***Labor standards and inequality***

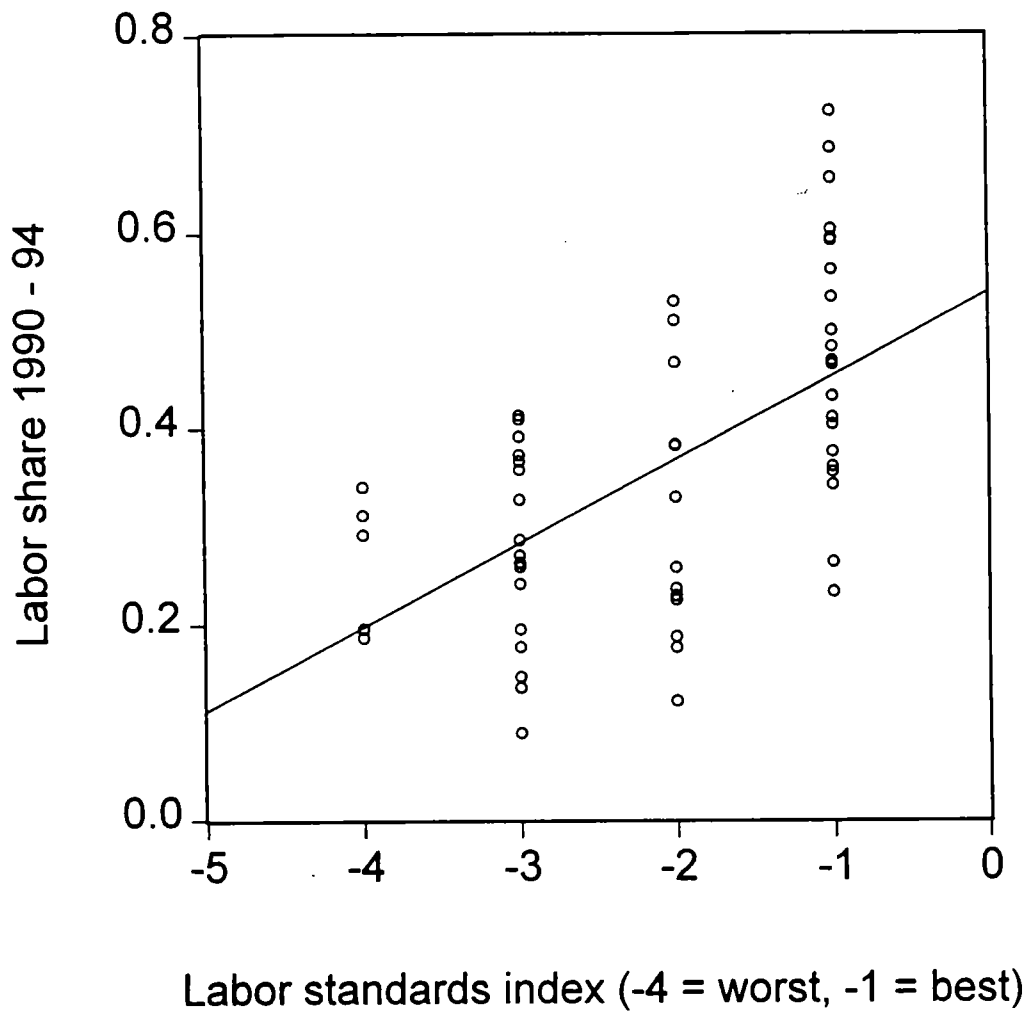
An important claim on behalf of labor standards is that they reduce income inequality. The argument is that labor standards level the playing field between business and labor, and in doing so they contribute to an increased labor share. This increase in labor share is important both in terms of its impact on inequality, and because it can contribute to the development of robust domestic consumer markets that aid domestic growth. Robust domestic markets also help steer the global economy away from excessive reliance on export-led growth which carries the twin dangers of a race to the bottom and global deflation. The former may result if countries seek international competitive advantage at any cost, while the latter may result if countries seek to grow their economies on the back of demand in other countries so that the world economy ends up short of aggregate demand.

A labor share variable was constructed as follows:

$$\text{Labor share (LABS)} = \frac{\text{wage per worker (WAGE)}}{\text{manufacturing value added per worker (MVA)}}$$

where the wage per worker and manufacturing value added per worker are both averages for the five year periods 1985 - 89 and 1990 - 94. Figure 5 shows a cross-country scatter plot of the labor share for the period 1990 - 94 against the labor standards, along with a regression line. The slope of the regression line is positive, indicating that improved labor standards are associated with an increased labor share.

Figure 5 Scatter plot of labor share against labor standards.



Once again, to test the hypothesis more formally the model is estimated in multi-variate form. The empirical model is given by:

$$(4) \text{ LABS}_j = a_0 + a_1 \text{ LABSTDS}_j + a_2 \text{ DEMOCPOL}_j + a_3 \text{ DEMOCNEW}_j \\ + a_4 \text{ FREE}_j + a_5 \ln(\text{GDPCAP})_j + a_6 \text{ OECD DUMMY}_j$$

The democracy and freedom variables control for the impact of political institutions on income distribution, while the GDP per capita variable controls for the possibility that labor's share rises with income. Finally, the OECD dummy controls for the possibility that the OECD countries have a unique "rich club" distributional structure. The regressions are reported in table 4.

Regressions 1 - 12 use observations drawn from the period 1990 - 94 (i.e. there is one observation per country). In all twelve regressions improved labor standards have a positive impact on the labor share, and in all twelve regressions the labor standards coefficient is statistically significant at the 1% level. Interestingly, in all the regressions including a democracy variable, the coefficient of democracy is negative, and in two cases it is statistically significant at the 5% level. This is not to say that democracy has no positive impact on the labor share, but only that if it does, this effect works indirectly through a positive impact on labor standards (recall from table 1 that the two are positively associated). This would make sense economically, since the labor market effects of democracy are likely to be felt through the labor market rules it encourages. Finally, the coefficient of GDP per capita is positive in all the regressions including this variable, but in only one instance is it statistically significant, and then only at the 10% level.

Regressions 13 - 24 in table 4 are based on the extended sample period 1985 - 94, so that there are now two observations per country in most cases. These latter regressions confirm the

Dependent variable	Constant	Labor Standards	Dempol	Demnew	Free	ln(GDP per Capita)	OECD Dummy	Adj. R <sup>2</sup>	S.E.E.
1990-94:									
1. LABS	0.539*** (15.20)	0.085*** (5.53)						0.334 N = 60	0.121
2. LABS	0.602*** (6.72)	0.097*** (4.17)	-0.067 (-1.05)					0.315 N = 56	0.117
3. LABS	0.699*** (5.88)	0.117*** (4.33)		-0.134 (-1.41)				0.346 N = 60	0.120
4. LABS	0.501*** (11.86)	0.113*** (4.17)			0.062 (1.35)			0.340 N = 58	0.119
5. LABS	0.197 (0.85)	0.065*** (3.21)				0.036 (1.51)		0.360 N = 58	0.118
6. LABS	0.322 (1.32)	0.088*** (3.26)	-0.108 (-1.61)			0.034 (1.48)		0.354 N = 55	0.114
7. LABS	0.470* (1.84)	0.122*** (3.93)		-0.249** (-2.41)		0.039* (1.67)		0.403 N = 58	0.115
8. LABS	0.181 (0.78)	0.116*** (3.67)			0.106** (2.12)	0.31 (1.33)		0.381 N = 56	0.116
9. LABS	0.136 (0.54)	0.069*** (3.13)				0.045 (1.64)	-0.032 (-0.65)	0.344 N = 58	0.121
10. LABS	0.370 (1.42)	0.083*** (2.87)	-0.108 (-1.60)			0.026 (0.93)	0.030 (0.57)	0.345 N = 55	0.115
11. LABS	0.445 (1.62)	0.123*** (3.90)		-0.245** (-2.30)		0.042 (1.58)	-0.012 (-0.25)	0.392 N = 58	0.116
12. LABS	0.140 (0.56)	0.119*** (3.65)			0.106** (2.10)	0.038 (1.35)	-0.022 (-0.45)	0.372 N = 56	0.117

Table 4 Labor standards, democracy, freedom, and labor share regressions. Figures in parentheses are t-statistics. \*\*\* = significant at 1%, \*\* = significant at 5%. \* = significant at 10%.

Dependent variable	Constant	Labor Standards	Dempol	Demnew	Free	ln(GDP per Capita)	OECD Dummy	Adj. R <sup>2</sup>	S.E.E.
1985-94:									
13 LABS	0.518*** (20.93)	0.076*** (7.15)						0.285	0.122 N = 127
14. LABS	0.520*** (8.77)	0.075*** (4.58)	-0.020 (-0.47)					0.257	0.119 N = 119
15. LABS	0.531*** (6.92)	0.079*** (4.43)		-0.013 (-0.20)				0.283	0.122 N = 126
16. LABS	0.513*** (17.75)	0.074*** (4.39)			0.000 (0.02)			0.276	0.121 N = 123
17. LABS	0.085 (0.60)	0.050*** (3.78)				0.045*** (3.14)		0.332	0.119 N = 125
18. LABS	0.117 (0.84)	0.060*** (3.56)	-0.061 (-1.45)			0.048*** (3.30)		0.320	0.114 N = 118
19. LABS	0.155 (1.08)	0.071*** (3.94)		-0.106 (-1.62)		0.051*** (3.36)		0.340	0.117 N = 124
20. LABS	0.072 (0.49)	0.061*** (3.45)			-0.027 (-0.93)	0.045*** (2.99)		0.322	0.118 N = 121
21. LABS	0.044 (0.30)	0.055*** (3.88)				0.053*** (3.24)	-0.033 (-1.00)	0.332	0.119 N = 125
22. LABS	0.146 (0.99)	0.055*** (3.01)	-0.060 (-1.42)			0.042*** (2.46)	0.023 (0.64)	0.317	0.114 N = 118
23. LABS	0.126 (0.84)	0.074*** (3.97)		-0.102 (-1.54)		0.055*** (3.29)	-0.020 (-0.62)	0.337	0.118 N = 124
24. LABS	0.032 (0.20)	0.066*** (3.51)			-0.029 (-1.00)	0.051*** (2.98)	-0.026 (-0.79)	0.320	0.118 N = 121

Table 4 Continued.

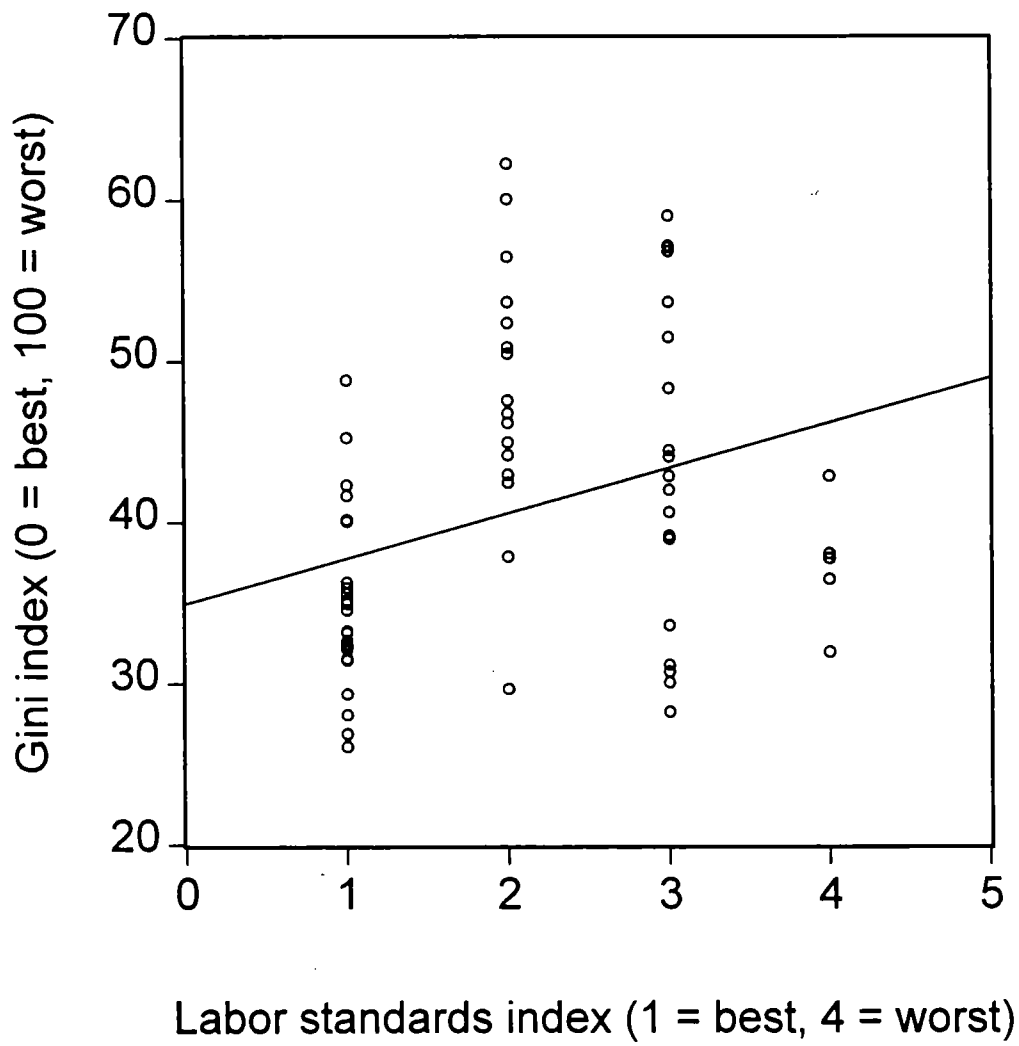
positive effect of labor standards on the labor share. In all twelve regressions the coefficient of labor standards is positive and significant at the 1% level. The principal differences from the shorter sample period are (i) the coefficient of labor standards is now fractionally smaller, (ii) the coefficients of the democracy and freedom variables now become statistically insignificant, and (iii) the coefficient of GDP per capita is now statistically significant at the 1% level in all eight regressions in which it is included. Labor standards do raise the labor share, but so too does a higher GDP per capita.

A second test of the distributional implications of labor standards comes from looking at their effect on country gini coefficients. Figure 6 presents a scatter plot of country gini coefficients against labor standards, and the accompanying regression line is negatively sloped. This suggests that labor standards are associated with a more equal distribution of income. To test the proposition more deeply, the following regression model was estimated:

$$(6) \text{GINI}_j = a_0 + a_1 \text{LABSTDS}_j + a_2 \text{GDPCAP9094}_j + a_3 (\text{GDPCAP9094}_j)^2_j \\ + a_4 \text{LANDINEQ}_j + a_5 \text{AFRICA}_j + a_6 \text{WESTHEM}_j$$

where WESTHEM = western hemisphere dummy variable (excluding Canada and the US), AFRICA = African dummy variable, and LANDINEQ = index of inequality of land holdings. The GDP per capita variable is now in absolute levels, and a squared measure is included to control for the possibility of non-linearity in income associated with a Kuznets curve. The results are reported in table 5. In all six regressions the labor standards coefficient is negatively signed. In one regression the coefficient is statistically significant at the 1% level, and in three it is statistically significant at the 5% level. The coefficients of the WESTHEM and AFRICA dummies are always positive and statistically significant at the 1% level, revealing the

Figure 6 Scatter plot of gini index against labor standards



Independent variable	Constant	Labor Standards	Land Inequality	GDP per capita	GDP per Capita <sup>2</sup>	Africa	West Hemis.	Adj. R <sup>2</sup>
1. GINI	34.975*** (13.66)	-2.807** (-2.49)						0.074 N = 66
2. GINI	11.404** (2.04)	-4.475*** (-3.38)	0.306*** (3.64)					0.449 N = 36
3. GINI	17.493* (1.75)	-3.131 (-1.38)	0.289*** (3.25)	-2.0x10 <sup>-4</sup> (-0.74)				0.442 N = 36
4. GINI	15.520 (1.23)	-3.370 (-1.37)	0.294*** (3.15)	5.0x10 <sup>-5</sup> (0.04)	-1.8x10 <sup>-8</sup> (-0.26)			0.425 N = 36
5. GINI	15.092 (1.41)	-4.592** (-2.21)	0.105 (1.11)	0.001 (1.18)	-6.2x10 <sup>-8</sup> (-1.08)	16.577*** (3.14)	14.401*** (3.45)	0.603 N = 36
6. GINI	32.491*** (16.93)	-1.715** (-2.02)				11.511*** (4.36)	13.703*** (6.97)	0.501 N = 66

Table 5 Labor standards, democracy, freedom, and gini coefficient regressions. Figures in parentheses are t-statistics. \*\*\* = significant at 1%, \*\* = significant at 5%. \* = significant at 10%.

pathological state of income distribution in these two regions. The LANDINEQ variable is positive in all four regressions, and statistically significant at the 1% level in three of them. It is not statistically significant when the AFRICA and WESTHEM region dummies are included, but the labor standards variable does remain statistically significant. In sum, table 5 provides further evidence, consistent with that in table 4, that labor standards promote more equal distributional outcomes.

### ***Labor standards and wages***

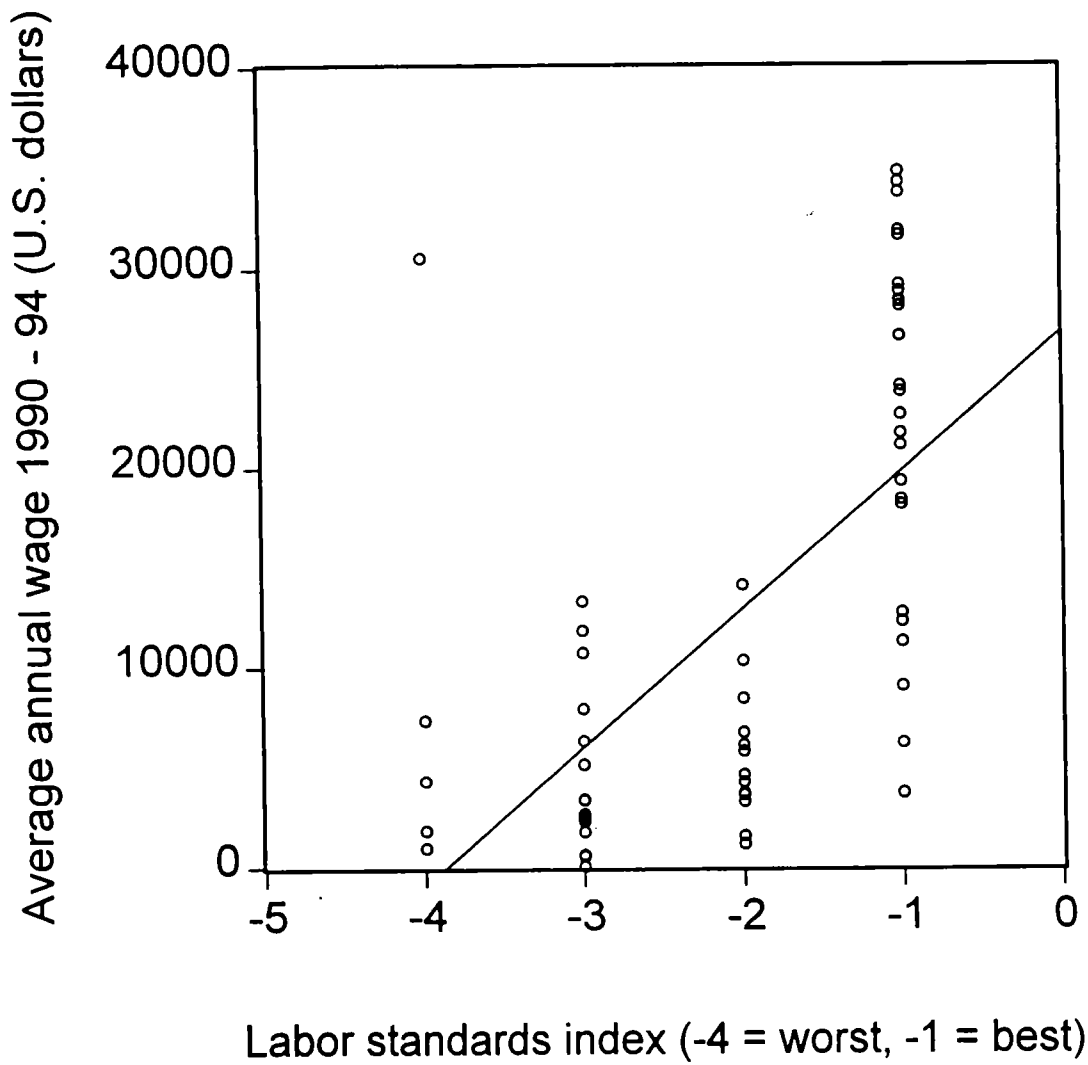
Finally, a key part of the argument for labor standards is that they contribute to good development policy by raising wages. In terms of Sen's (1999) "development as freedom" argument, higher wages confer freedom by loosening the economic constraints on individual workers. From a more conventional economic perspective, higher wages facilitate domestic demand-led growth. Figure 7 provides a scatter plot of average wages against the index of labor standards with an accompanying regression line. The slope of the line is positive, suggesting that labor standards have a positive impact on the level of wages.

To test for such an effect the following regression, which resembles those reported in Rodrik (1999), was estimated.

$$(7) \ln(\text{WAGE}_j) = a_0 + a_1\text{LABSTDS}_j + a_2\ln(\text{PRICE}_j) + a_3\ln(\text{MVA}_j) \\ + a_4\ln(\text{GDPCAP}_j) + a_5\text{DEMOCNEW}_j \\ + a_6\text{FREE}_j + a_7\text{OECD DUMMY}_j$$

where  $\ln(\text{WAGE})$  = log of average nominal wage in country  $j$  converted to U.S. dollars using current exchange rates,  $\ln(\text{PRICE})$  = log of average price level in country  $j$  relative to the U.S. price level converted at current exchange rates, and  $\ln(\text{MVA})$  = average manufacturing value

Figure 7 Scatter plot of average annual wage against labor standards



added per worker in country *j*. The regression estimates are shown in table 6. Regressions 1 - 8 use observations from the period 1990 - 94 (i.e one per country), while regressions 9 - 16 use observations from the period 1985 - 94 so that there are two observations for most countries.

With regard to the 1990 - 94 regressions, in all cases the coefficient of labor standards is positive and statistically significant at the 1% level. Labor standards clearly result in higher wages. The coefficients of MVA and the relative price level are also both positive and statistically significant at the 1% level. The GDP per capita variable is also positive in all cases, and statistically significant at the 5% level in five instances. These findings broadly replicate those reported in Rodrik (1998). However, surprisingly, the democracy and freedom variables are always negatively signed, and DEMNEW is also statistically significant at the 5%. *Prima facie*, this finding runs counter to that reported in Rodrik (1998).<sup>4</sup> However, the two findings can be reconciled as follows. Democracies may indeed pay higher wages, but the effect of democracy works indirectly through acceptance of labor standards and through the imposition of rules governing labor markets that contribute to higher wages.

Regressions 8 - 16 in table 6 use the extended sample covering 1985 - 94. The coefficient of labor standards remains positive and statistically significant at the 1% level in all eight cases.. The principle differences from the shorter sample period regressions are (i) the coefficient of labor standards is a little smaller, (ii) the magnitude and statistical significance of the GDP per capita coefficient is increased, and (iii) the coefficient of DEMNEW is now statistically

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<sup>4</sup>. It should also be noted that Rodrik's (1998) study uses data from the period 1970 - 94 whereas the current study only uses data from 1990 - 94. This is because the OECD's labor standards index is only available for this period.

	Dependent variable = ln(Wage)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1990-94:								
Constant	2.024*** (2.96)	0.688 (0.79)	1.241 (1.41)	0.761 (0.84)	0.261 (0.29)	1.503 (1.63)	1.108 (1.17)	0.472 (0.48)
Labor Standards	0.236*** (4.75)	0.171*** (3.13)	0.319*** (3.70)	0.218*** (2.77)	0.292*** (3.21)	0.309*** (3.55)	0.184*** (2.22)	0.278*** (2.96)
ln(Relative price level)	0.704*** (4.10)	0.557*** (3.23)	0.527*** (3.14)	0.517*** (2.83)	0.465*** (2.57)	0.534*** (3.18)	0.532*** (2.92)	0.478*** (2.61)
ln(MVA per worker)	0.779*** (13.28)	0.693*** (10.91)	0.736*** (11.41)	0.727*** (10.58)	0.750*** (10.95)	0.730*** (11.27)	0.725*** (10.60)	0.746*** (10.75)
ln(GDP per capita)		0.232** (2.56)	0.205** (2.31)	0.207** (2.12)	0.195** (2.03)	0.177** (1.88)	0.152 (1.42)	0.170 (1.63)
Demnew			-0.632** (-2.17)			-0.672** (-2.28)		
Dempol				-0.185 (-0.93)			-0.182 (-0.91)	
Free					-0.245 (-1.68)			-0.241 (-1.65)
OECD dummy						0.119 (0.93)	0.185 (1.22)	0.087 (0.64)
Adj. R <sup>2</sup>	0.926	0.933	0.937	0.934	0.936	0.937	0.942	0.936
S.E.E	0.336	0.319	0.309	0.324	0.315	0.309	0.323	0.317
N =	60	58	58	55	56	58	55	56

Table 6 Labor standards, democracy, freedom, and wage regressions. Figures in parentheses are t-statistics.  
 \*\*\* = significant at 1%, \*\* = significant at 5%. \* = significant at 10%.

Dependent variable = ln(Wage)

	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1985-94:								
Constant	2.100*** (4.66)	0.680 (1.39)	0.724 (1.47)	0.635 (1.24)	0.688 (1.29)	0.705 (1.39)	0.689 (1.32)	0.664 (1.20)
Labor Standards	0.212*** (6.25)	0.144*** (4.32)	0.174*** (3.75)	0.147*** (3.21)	0.129*** (2.86)	0.176*** (3.69)	0.136*** (2.74)	0.132*** (2.74)
ln(Relative price level)	0.753*** (7.22)	0.596*** (6.07)	0.586*** (5.92)	0.588*** (5.74)	0.579*** (5.61)	0.587*** (5.89)	0.586*** (5.70)	0.579*** (5.59)
ln(MVA per worker)	0.766*** (19.53)	0.663*** (16.61)	0.669*** (16.45)	0.679*** (16.05)	0.671*** (16.17)	0.669*** (16.38)	0.680*** (16.00)	0.671*** (16.10)
ln(GDP per capita)		0.262** (5.42)	0.270** (5.30)	0.250** (4.79)	0.252** (4.90)	0.273*** (5.06)	0.237*** (4.08)	0.256*** (4.57)
Demnew			-0.155 (-0.92)			-0.152 (-0.89)		
Dempol				-0.039 (-0.34)			-0.038 (-0.33)	
Free					0.032 (0.43)			0.031 (0.41)
OECD dummy						-0.015 (-0.18)	0.051 (0.52)	-0.015 (-0.18)
Adj. R <sup>2</sup>	0.924	0.939	0.939	0.939	0.939	0.938	0.938	0.938
S.E.E	0.331	0.298	0.299	0.304	0.301	0.300	0.305	0.302
N =	127	125	124	118	121	124	118	121

Table 6 Continued.

insignificant, and the coefficients of the democracy and freedom variables are smaller.

In sum, the regressions in tables 4, 5, and 6 give strong support to Rodrik's (1999, p.733) central finding that "Institutions matter to distributive outcomes." However, the regressions qualify his findings and suggest that it is labor standards rather than democracy that matters, at least in terms of "direct" impact on wages and income distribution.

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**Labor Standards and Governance as Public Institutional Capital:  
Cross-country Evidence from the 1980s and 1990s**

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## **Labor Standards and Governance as Public Institutional Capital: Cross-country Evidence from the 1980s and 1990s**

### **Abstract**

This paper empirically investigates the impact of labor standards, democracy, and the quality of economic governance on the GDP per capita production function. The paper provides strong evidence that both labor standards and the quality of economic governance have positive effects on the level of per capita GDP, and act on the production function as shift factors. These impacts suggest viewing labor standards and quality of governance as public institutional capital which is an input into the aggregate production function. Such capital complements public infrastructure capital, private physical capital, and private organization capital.

Key words: Labor standards, governance, production function, public institutional capital.

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## **I Introduction**

The world community is divided regarding the place of labor standards in the system of global economic governance. Supporters of labor standards argue that they will foster development in developing countries, and that they will also bar a race to the bottom in the international economy. Opponents argue that they are hidden protection designed to strip developing countries of their comparative advantage in the production of labor intensive goods.

In an earlier paper (Palley, 1999) I presented empirical evidence showing that countries which instituted improvements in domestic labor standards grew faster in the five year period after reform than in the five year period prior to reform. A subsequent paper (Palley, 2000) presented empirical evidence showing that labor standards are associated with improved democracy, reduced corruption, and improved security of economic contracting. The paper also showed that improved labor standards result in a higher labor share, higher wages, and a more equal distribution of income.

This paper provides further evidence on the positive economic outcomes associated with improved labor standards. Using cross-country data from the second half of the 1980s and the first half of the 1990s, the paper shows that improved labor standards are associated with higher per capita GDP. These findings can be understood through a production function lens which sees labor standards and quality of governance as forms of public institutional capital. Such an approach is illustrated in figure 1 which shows GDP per capita as a positive function of labor productivity. As labor productivity increases, GDP per capita increases. However, the position of the function governing the relationship between the two is affected by institutional arrangements, and the function can be shifted by changes in these arrangements. This is because

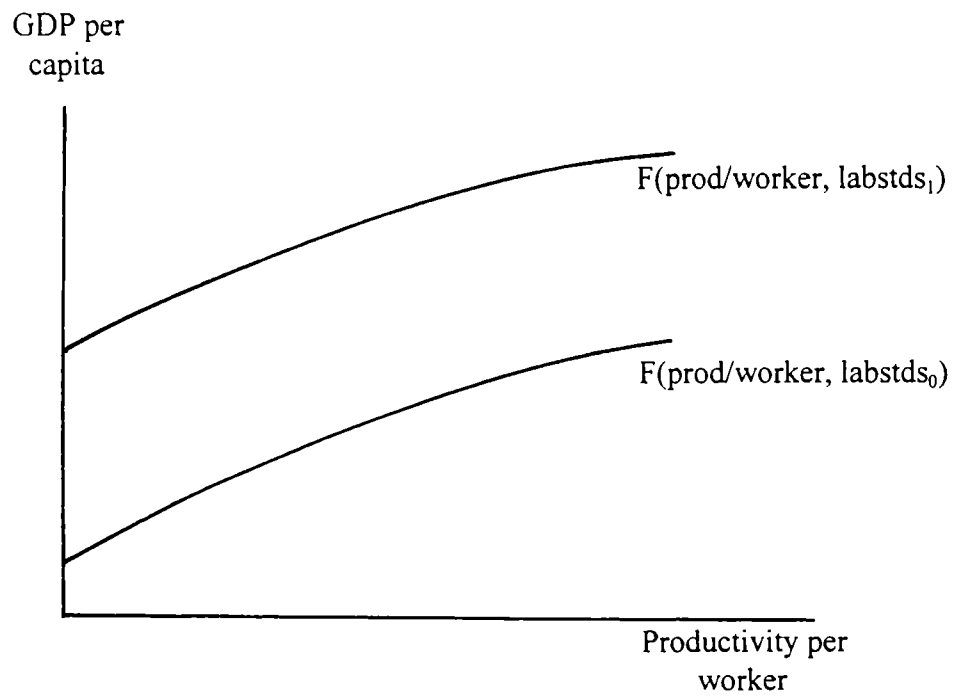


Figure 1 The relationship between GDP per capita, productivity per worker, and labor standards:  $\text{labstds}_1 > \text{labstds}_0$ .

the translation of productive potentials into GDP is intermediated by institutions, with improved institutional structures generating higher realizations of potential. The paper presents evidence showing that improved labor standards appear to have such an effect, as do improvements in governmental efficiency and reduced corruption. In these latter instances, improvements can be thought of as reducing transactions costs and directly unproductive activities such as rent seeking.

Finally, the theoretical framework represented in figure 1 also provides a possible explanation of the results reported in Palley (1999) regarding the positive growth effects associated with labor standards reforms. Such reforms shift up the per capita GDP function, and there follows a period of accelerated growth as the economy traverses from the lower function to the new higher function.<sup>1</sup>

## **II The data**

The data used in the current exercise are cross-country data from the second half of the 1980s and the first half of the 1990s. The definition of variables is as follows:

GDPCAP = country j per capita GDP in US dollars.

MVA = manufacturing value added per worker in country j

LABSTDS = rating of labor standards in country j (rating scale = 1 - 4 with 1 = best)

DEMNEW = average of Freedom House democracy index for country j (rating scale = 0 - 1 with 1 = most democratic)

DEMPOL = average of Polity III democracy index for country j (rating scale = 0 - 1 with 1 = most democratic)

CORRUPT = country j corruption perception index in 1996 (rating scale = 0 - 10 with 0 = most Corrupt)

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<sup>1</sup>. Improved labor standards may also raise the steady state rate of growth through the mechanisms associated with new endogenous growth theory (Romer, 1994). However, this remains an open theoretical possibility that is yet to be empirically supported.

Corrupt)

GOVTEFF = index of efficiency of government for period 1980 - 83 (rating scale = 0 - 10, with 0 = least efficient).

AFRICA = Africa regional dummy

WESTHEM = western hemisphere regional dummy excluding the U.S. and Canada

ASIA = Asian regional dummy excluding Japan.

KGDPRAT = average ratio of the stock of physical capital to GDP, both measured in constant 1987 prices in local currency between 1980 and 1990.

The data are pooled cross-country data. For the variables LABSTDS, CORRUPT, and GOVTEFF there is one observation per country. For the GDPCAP, MVA, DEMPOL, and DEMNEW there are two observations per country. These observations correspond to averages for the periods 1985 - 89 and 1990 - 94 respectively.

The data on country labor standards are drawn from the OECD's *An Update of the 1996 Study "Trade, Employment, and Labor Standards: A Study of Core Workers' Rights and International Trade"* (OECD, 2000). In all regressions the index of labor standards was multiplied by minus one so that -1 = best and -4 = worst. The index of labor standards was constructed from country observations collected in the late 1980s and early 1990s. The democracy indexes DEMNEW and DEMPOL were supplied by Dani Rodrik, and the index values run from zero (undemocratic) to unity (democratic). The DEMNEW variable is the five year average of the index of democracy constructed by Freedom House. The DEMPOL measure is the five year average of the index of democracy constructed by Polity III. Data on manufacturing value added per worker and GDP per capita were also supplied by Dani Rodrik, and again are five year averages. The CORRUPT and GOVTEFF measures are those reported in Bardhan (1997). The CORRUPT measure is an index of perceived corruption in 1996 constructed by Transparency International. The GOVTEFF variable is a measure of government

efficiency for the period 1980-83 based on a simple average of three indexes measuring the extent of corruption, the extent of red tape, and the efficiency of the legal system. The KGDP/RAT measure of the capital output ratio is that used by Gupta, Davoodi, and Alonso-Terme (1998) who in turn drew their data from Nehru and Dhareshwar (1993).

### III Empirical results

The empirical model testing for the effect of labor standards on per capita GDP is given by

$$(1) \ln(\text{GDPCAP}_j) = a_0 + a_1 \ln(\text{MVA}_j) + a_2 \text{LABSTDS}_j + a_3 \text{DEMPOL}_j + a_4 \text{DEMNEW}_j \\ + a_5 \text{GOVTEFF}_j + a_6 \text{CORRUPT}_j + a_7 \text{WESTHEM} + a_8 \text{AFRICA} \\ + a_9 \text{ASIA}$$

The justification for the empirical model is as follows. The manufacturing value added variable (MVA) serves as a proxy for the underlying productive potential of workers. The LABSTDS variable captures the potential shift effect of labor standards, while the Dempol and DEMNEW variables are included to test if the quality of democracy has any impact on the production function. The inclusion of these latter variables is suggested in light of Rodrik's (1999) finding that improved democracy is associated with higher wages. The GOVTEFF and CORRUPT variables are included because government efficiency and corruption both likely impact the production process. Finally, regional dummy variables for the western hemisphere, Africa, and Asia are included. These dummies control for regional fixed effects associated with developing economies in each of these regions.

Table 1 reports seventeen regression estimates of equation (1) estimated under a range of different coefficient restrictions. The regressions in these tables use only observations on GDPCAP, MVA, Dempol, and DEMNEW for the period 1990 - 94. Regression (1) is the

	C	ln(MVA)	Labstds	Dempol	Demnew	Govteff	Corrupt	Westhem	Africa	Asia	Adj.R <sup>2</sup>	S.E.
1.	2.840*** (4.25)	0.570*** (8.57)									0.527 N = 66	0.599
2.	4.707*** (6.08)	0.450*** (6.59)	0.327*** (4.52)								0.683 N = 61	0.502
3.	4.846*** (5.88)	0.468*** (6.79)	0.391*** (3.74)	-0.290 (-1.00)							0.700 N = 58	0.494
4.	5.263*** (6.29)	0.480*** (6.88)	0.487*** (3.99)		-0.726 (-1.62)						0.692 N = 61	0.495
5.	4.179*** (6.41)	0.391*** (6.91)	0.204*** (2.80)			0.127*** (3.72)					0.810 N = 50	0.379
6.	4.344*** (6.36)	0.405*** (7.26)	0.256** (2.65)	-0.131 (-0.57)		0.109*** (3.18)					0.820 N = 49	0.368
7.	4.343*** (5.61)	0.397*** (6.68)	0.246* (1.93)		-0.177 (-0.40)	0.125*** (3.57)					0.807 N = 50	0.382
8.	5.272*** (7.40)	0.341*** (5.58)	0.271*** (2.72)	-0.220 (-0.90)		0.102*** (3.14)		-0.357** (-2.51)	-0.594** (-2.53)	-0.082 (-0.45)	0.853 N = 49	0.333
9.	5.596*** (6.34)	0.341*** (5.43)	0.337*** (2.72)		-0.591 (-1.28)	0.116*** (3.53)		-0.342** (-2.44)	-0.673** (-2.54)	-0.039 (-0.23)	0.844 N = 50	0.343

Table 1 Regression estimates of ln(GDPCAP) using the empirical model given by equation (1). Sample period 1990 - 94. Figures in parentheses are t-statistics. \*\*\* = 1% significance, \*\* = 5% significance, \* = 10% significance.

	C	ln(MVA)	Labstds	Dempol	Demnew	Govteff	Corrupt	Westhem	Africa	Asia	Adj.R <sup>2</sup>	S.E.
10.	5.227*** (7.47)	0.297*** (4.70)	0.188** (2.36)				0.144*** (4.56)				0.834 N = 45	0.355
11.	5.326*** (8.07)	0.346*** (5.45)	0.286*** (3.12)	-0.398 (-1.64)			0.124*** (4.06)				0.855 N = 44	0.332
12.	5.651*** (7.96)	0.358*** (5.23)	0.359*** (3.10)		-0.801 (-1.97)		0.127*** (4.03)				0.845 N = 45	0.343
13.	5.051*** (7.40)	0.319*** (5.39)	0.213** (2.71)			0.022 (0.39)	0.115** (2.32)				0.861 N = 42	0.321
14.	5.203*** (8.14)	0.350*** (6.01)	0.282*** (3.24)	-0.222 (-0.99)		-0.008 (0.14)	0.121** (2.60)				0.881 N = 41	0.298
15.	5.359*** (7.29)	0.347*** (5.40)	0.312** (2.62)		-0.461 (-1.10)	0.021 (0.37)	0.109** (2.17)				0.862 N = 42	0.321
16.	5.178*** (6.78)	0.364*** (4.98)	0.291** (2.72)	-0.248 (-1.02)		0.012 (0.20)	0.089 (1.61)	-0.185 (-1.11)	-0.093 (-0.32)	-0.001 (-0.01)	0.876 N = 41	0.305
17.	5.590*** (5.93)	0.349*** (4.62)	0.364*** (2.74)		-0.572 (-1.23)	0.043 (0.72)	0.074 (1.28)	-0.164 (-0.93)	-0.225 (-0.68)	-0.068 (-0.38)	0.859 N = 42	0.324

Table 1 continued.

baseline regression and shows a strong positive and statistically significant (at the 1% level) relationship between MVA and GDPCAP. Regression (2) shows that the coefficient of LABSTDS is also positive and statistically significant at the 1% level. There are sixteen regression estimates that include the LABSTDS variable, and the estimated coefficient is positive and statistically significant at the 10% level in all of them. Beyond that, it is statistically significant at the 1% level in ten regressions, and at the 5% level in five regressions. This provides strong evidence of a positive effect of improved labor standards on the aggregate GDP production function.

The democracy indexes are statistically insignificant at the 10% level in all twelve regressions in which they are included, and in all twelve cases the coefficient is negatively signed. This suggests that democracy does not exert a shift effect on the GDP production function. Both the government efficiency index and the corruption index are positively signed and statistically significant at the 1% level when they are included alone. This suggests that the quality and honesty of governance matters for the production of per capita GDP. However, the two are highly co-linear, and the corruption index dominates when they are both included.

The regional dummies for the western hemisphere (excluding the U.S. and Canada) and Africa are negatively signed and statistically significant at the 5% level in regressions 8 and 9 that include just the government efficiency index. However, when the corruption index is also included (regressions 16 and 17) the regional dummies become statistically insignificant. This suggests that the low GDP per capita production in these countries, conditional on the local level of manufacturing value added per worker, is the result of poor quality of governance rather than some regional specific factor.

The regressions reported in table 1 use only observations on GDP, MVA, and democracy for the period 1990 - 94. Table 2 reports similar regressions using a pooled sample that includes observations for the period 1985 - 89. The LABSTDS, GOVTEFF, and CORRUPT variables now become fixed effect variables since there is only one observation per country for each of these variables. The results are broadly similar to those reported in table 1. The estimated LABSTDS coefficient is positive and statistically significant at the 1% level in all sixteen regressions. The democracy indexes are statistically insignificant in all but one regression in which they are included, while the GOVTEFF and CORRUPT variables display the same pattern of signing and significance as in table 1. Finally, the region dummies display the same pattern of signing and significance as in table 1, and again lose their significance in the presence of the corruption index.

The regressions in tables 1 and 2 rely on manufacturing value added as the proxy for worker productivity. To test for other capital stock effects on GDP, equation (1) was augmented to include a measure of the capital - output ratio:

$$(2) \ln(\text{GDPCAP}_j) = a_0 + a_1 \ln(\text{MVA}_j) + a_2 \text{LABSTDS}_j + a_3 \text{DEMPOL}_j + a_4 \text{DEMNEW}_j \\ + a_5 \text{GOVTEFF}_j + a_6 \text{CORRUPT}_j + a_7 \ln(\text{KGDPRAT}_j)$$

where KGDPRAT = average ratio of the stock of physical capital to GDP, both measured in constant 1987 prices in local currency between 1980 and 1990. Table 3 contains fourteen estimates of equation (2). Regressions 1 - 7 use data on GDPCAP, MVA, DEMPOL, and DEMNEW from 1990 - 1994, while regressions 8 - 14 use data drawn from 1985 - 1994.

Broadly speaking, the regression estimates replicate the findings reported in tables 1 and 2. The coefficient of LMVA is positive and statistically significant at the 1% level in all fourteen

	C	ln(MVA)	Labstds	Dempol	Demnew	Govteff	Corrupt	Westhem	Africa	Asia	Adj.R <sup>2</sup>	S.E.
1.	2.398*** (4.73)	0.613*** (11.94)									0.505 N = 140	0.651
2.	4.100*** (6.44)	0.502*** (8.81)	0.302*** (5.17)								0.626 N = 129	0.580
3.	3.672*** (5.50)	0.500*** (8.58)	0.201** (2.43)	0.314 (1.48)							0.641 N = 122	0.575
4.	3.551*** (5.43)	0.476*** (8.30)	0.153* (1.78)		0.690** (2.24)						0.646 N = 128	0.565
5.	3.843*** (8.27)	0.423*** (10.14)	0.184*** (3.59)			0.124*** (5.13)					0.809 N = 102	0.378
6.	3.870*** (8.06)	0.439*** (10.54)	0.212*** (2.99)	-0.048 (-0.29)		0.107*** (4.39)					0.820 N = 100	0.368
7.	3.699*** (7.07)	0.426*** (9.66)	0.160* (1.85)		0.129 (0.43)	0.119*** (4.78)					0.814 N = 101	0.374
8.	4.805*** (9.68)	0.367*** (7.96)	0.190*** (2.74)	-0.056 (-0.36)		0.097*** (4.23)		-0.431*** (-4.62)	-0.563*** (-2.53)	-0.228* (-1.85)	0.857 N = 100	0.327
9.	4.931*** (8.38)	0.373*** (7.94)	0.231*** (2.76)		-0.265 (-0.86)	0.104*** (4.44)		-0.419** (-4.43)	-0.599*** (-3.28)	-0.167 (-1.40)	0.850 N = 101	0.335

Table 2 Regression estimates of ln(GDPCAP) using the empirical model given by equation (1). Sample period 1985 - 94. Figures in parentheses are t-statistics. \*\*\* = 1% significance, \*\* = 5% significance, \* = 10% significance.

	C	ln(MVA)	Labstds	Dempol	Demnew	Govteff	Corrupt	Westhem	Africa	Asia	Adj.R <sup>2</sup>	S.E.
10.	5.071*** (10.86)	0.315*** (7.37)	0.196*** (3.71)				0.141*** (6.90)				0.855 N = 91	0.332
11.	5.062*** (11.32)	0.349*** (8.05)	0.256*** (4.05)	-0.205 (-1.34)			0.126*** (6.30)				0.871 N = 89	0.314
12.	5.162*** (10.88)	0.355*** (7.49)	0.274*** (3.57)		-0.362 (-1.33)		0.128*** (6.15)				0.863 N = 90	0.324
13.	4.908*** (10.77)	0.333*** (8.26)	0.218*** (4.15)			0.025 (0.66)	0.112*** (3.44)				0.876 N = 85	0.305
14.	4.930*** (11.43)	0.353*** (8.78)	0.246*** (4.02)	-0.033 (-0.23)		-0.006 (-0.16)	0.123*** (3.99)				0.893 N = 83	0.284
15.	4.873*** (10.31)	0.345*** (7.84)	0.226*** (2.97)		-0.006 (-0.02)	0.011 (0.29)	0.117*** (3.64)				0.883 N = 84	0.297
16.	4.820*** (9.44)	0.370*** (7.24)	0.221** (3.14)	-0.028 (-0.18)		0.003 (0.08)	0.101*** (2.89)	-0.181 (-1.67)	-0.028 (-0.14)	-0.101 (-0.85)	0.893 N = 83	0.284
17.	4.770*** (7.75)	0.368*** (7.07)	0.231*** (2.65)		-0.042 (-0.14)	0.023 (0.59)	0.091** (2.50)	-0.162 (-1.41)	-0.018 (-0.08)	-0.014 (-0.11)	0.881 N = 84	0.299

Table 2 continued.

	C	ln(MVA)	Labstds	ln(KGDPRAT)	Dempol	Demnew	Govteff	Corrupt	Adj.R <sup>2</sup>	S.E.
1990 - 94:										
1.	5.694*	0.387***	0.470***	-0.011					0.830	0.368
	(1.87)	(6.02)	(4.78)	(-0.02)					N = 33	
2.	6.102*	0.398***	0.531***	-0.045	-0.271				0.827	0.371
	(1.95)	(5.96)	(4.02)	(-0.10)	(-0.70)				N = 33	
3.	5.891	0.388***	0.487**	-0.034		-0.068			0.824	0.374
	(1.59)	(5.79)	(2.39)	(-0.06)		(-0.92)			N = 33	
4.	2.544	0.367***	0.280***	0.384			0.110***		0.886	0.293
	(0.91)	(6.96)	(2.79)	(0.88)			(3.04)		N = 30	
5.	6.054*	0.334***	0.263**	-0.161				0.116***	0.853	0.323
	(1.83)	(4.34)	(2.08)	(-0.33)				(3.11)	N = 29	
6.	3.022	0.346***	0.287**	0.344			0.048	0.066	0.879	0.299
	(0.92)	(4.84)	(2.41)	(0.70)			(1.14)	(0.73)	N = 28	
7.	3.023	0.346***	0.286**	0.344	0.001		0.048	0.066	0.873	0.306
	(0.89)	(3.83)	(2.15)	(0.68)	(0.00)		(1.12)	(0.70)	N = 28	

Table 3 Regression estimates of ln(GDPCAP) using the empirical model given by equation (2). Figures in parentheses are t-statistics. \*\*\* = 1% significance, \*\* = 5% significance, \* = 10% significance.

	C	ln(MVA)	Labstds	ln(KGDPRAT)	Dempol	Demnew	Govteff	Corrupt	Adj.R <sup>2</sup>	S.E.
1985 - 94:										
1	3.781*	0.428***	0.413***	0.234					0.830	0.367
	(1.81)	(9.00)	(5.90)	(0.73)					N = 68	
2.	3.861**	0.447***	0.492***	0.261	-0.347				0.824	0.374
	(1.86)	(9.11)	(5.48)	(0.82)	(-1.39)				N = 68	
3	4.547*	0.438***	0.485***	0.146		-0.297			0.828	0.367
	(1.91)	(8.82)	(3.87)	(0.42)		(-0.69)			N = 68	
4.	1.241	0.400***	0.224***	0.530*			0.113***		0.884	0.297
	(0.66)	(10.21)	(3.16)	(1.81)			(4.35)		N = 62	
5.	4.489*	0.359***	0.227***	0.053				0.120***	0.881	0.294
	(2.21)	(7.18)	(2.81)	(0.18)				(5.07)	N = 59	
6.	1.816	0.370***	0.252***	0.493			0.057	0.063	0.907	0.266
	(0.92)	(8.17)	(3.41)	(1.69)			(1.39)	(1.74)	N = 57	
7.	1.845	0.368***	0.248***	0.489	0.020		0.057	0.063	0.905	0.269
	(0.92)	(6.80)	(3.01)	(1.62)	(0.09)		(1.37)	(1.72)	N = 57	

Table 3 continued.

regressions. The coefficient of LABSTDS is positive in all fourteen regressions. In ten of these it is significant at the 1% level, and in four it is significant at the 5% level. The KGDP/PRAT measure is not statistically significant in the regressions using the shorter sample period, but it is positive and statistically significant at the 10% level in two of the regressions using the longer sample period. These weak outcomes suggest that the productivity effects of the capital stock are fully captured by the MVA measure. Finally, the democracy variables remain statistically insignificant, while the CORRUPT and GOVTEFF variables both continue to be significant at the 1% level.

#### **IV Conclusion**

This paper has empirically investigated the impact of labor standards, democracy, and the quality of economic governance on the GDP per capita production function. The paper provides strong evidence that both labor standards and the quality of economic governance have positive effects on the level of per capita GDP, and act on the production function as shift factors. The quality of democracy does not have such an effect, at least directly. However, it may matter indirectly because labor standards and the quality of governance are positively associated with democracy (Palley, 2000), so that democracy may work its economic impact indirectly through these channels. Finally, the impacts of labor standards and quality of governance on the GDP per capita production function suggest viewing these factors as public institutional capital which is an input into the aggregate production function. Such capital complements public infrastructure, private physical capital, and private organization capital, and its accumulation should be fostered by development policy.

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EXECUTIVE OFFICE OF THE PRESIDENT  
COUNCIL OF ECONOMIC ADVISERS  
WASHINGTON, D.C. 20502

THE CHAIRMAN

January 12, 2000

MEMORANDUM FOR GENE SPERLING

FROM: MARTIN N. BAILY *MNB*  
ROBERT Z. LAWRENCE *RZL*

SUBJECT: Meetings between Administration and Union Economists

This memorandum provides a report to the National Economic Council from the meetings held at CEA, starting in July 1999, with economists and policy analysts from the AFL-CIO. Labor, Commerce, USTR, and Treasury also participated in the meetings. The initial meetings were devoted to sharing our understanding of the state of the manufacturing sector and its importance to the economy. We then explored a number of policy options to strengthen the sector. We recommend that the NEC refer these issues to the manufacturing task force and the appropriate agencies for their consideration.

We were able to reach agreement on several issues about the manufacturing sector. Most significantly, we agreed that to understand manufacturing employment it is necessary to distinguish between long run trends, which are heavily driven by factors such as productivity growth and demand patterns, and the more recent negative impact of the Asian crisis and slower economic growth abroad, which has contributed to recent job loss. We could all agree, therefore, that since 1998 trade has had a negative impact on employment, but that over long time periods other factors are also important in explaining the declining share of employment in manufacturing.

We also shared views on why manufacturing is important to the economy: its role as a source of high-wage jobs for blue-collar workers, the spillovers generated from manufacturing R&D and the important role for manufacturing in productivity growth and international competition.

In the second set of meetings we turned to discussions of policies to aid the manufacturing sector. In particular, the union economists identified seven policy issues that were of the highest priority to them.

**Safeguards.** Union economists have expressed concern about the ability of industries to obtain swift and certain relief under Section 201 of the Trade Act. Specific concerns relate to:

- (1) Problems in defining the scope of an industry;
- (2) The organizational and expense problems faced by industries with large numbers of small firms in bringing a case;
- (3) The standard of causation required – the US standard is tougher than that actually required by WTO rules;
- (4) The need to demonstrate a plan for adjustment relief in cases where industries may have already experienced considerable adjustment;
- (5) The fact that the special surge mechanism under NAFTA only permits the restoration of tariffs to previous levels rather than to a level required to stem the injury cause by NAFTA imports.

**Offsets.** Of particular concern to aerospace workers is the use of agreements to localize component production to boost sales. The first problem relates to gathering information. In particular, sales are often lost by second and third tier suppliers that are hard to track. The second problem is what can be done about the practice. Bilateral (an agreement with the EU) and multilateral approaches (the possibility of dealing with offsets as a trade-related investment measure in the WTO or an agreement at the OECD) were advocated. We are, of course in the process of launching a joint Commerce-Labor Commission on the International Competitiveness of the US Aerospace Industry with the mandate to examine offsets. In addition, Senator Feingold is also launching a Commission specifically to examine offsets.

**Tax treatment of multinational enterprises.** The tax system contains several measures, which are said to bias US firms to invest abroad. In particular, the unions would like to see the foreign tax credit repealed and replaced by a deduction. In the absence of this radical measure they advocate the following alternatives:

- (1) Repeal of foreign tax deferral.  
-- Currently, firms pay foreign taxes only when dividends are remitted. This represents a preference over domestic profits, which are paid upon accrual.
- (2) Restrict the use of foreign tax credit baskets--eliminate the practice of offsetting taxes paid in low tax countries with taxes paid in high tax countries.
- (3) Set a maximum rate for the foreign tax credit at the US rate of 35 percent.
- (4) Replace the system of arms-length transfer pricing with the allocation of profits on the basis of sales.
- (5) Ensure international consistency of the reporting status of branches and affiliates.
- (6) Address (and limit) state level tax competition.
- (7) Establish a commission of inquiry to look at the tax system and tax treaties.

**Training.** In their presentation, the union analysts voiced concern about the inadequate commitment of resources to training, They were critical of moves to devolve authority for training to the states and to privatize the oversight of training programs. They felt that the current WARN system (which provides notice of mass layoffs) was weak and that the notice period should be extended to at least 90 days. They expressed concerns about assessment and counseling offered by the Employment service, calling for counseling with a permanent case

manager and peer support. They decried the use of for-profit institutions as counselors, called for better labor market information for workers and advocated child care, transportation and relocation assistance. They emphasized the need for funding for BLS programs to ensure the continued collection of statistics on mass layoffs and dislocated workers. They proposed performance standards and improved accountability for firms providing subsidized on-the-job training. They support union and worker involvement in the design and evaluation of training programs. They called for short-term public service jobs. They advocated consideration of an expansion of unemployment benefits to provide income support (rather than simply vouchers) for workers who are seeking training.

**Finance.** Concern was expressed about the ability of the manufacturing sector to raise capital, with particular problems facing small and medium sized firms. Noting that price earnings ratios are far lower for manufacturing firms than for the market as a whole, they argue that the cost of capital facing these firms is therefore higher—there is an anti-manufacturing bias in the capital markets. It was proposed that the Federal Government should undertake a study of the issue of capital access for manufacturing companies.

**Enforcement of Trade Agreements.** The concerns here fell into two categories. The first was a general concern that some foreign governments effectively nullify trade agreements. In particular, agreements with Japan were said to be too vague. It was argued that quantitative standards (e.g. specific market shares) need to be agreed upon. The second concern was about labor standards provisions. One idea is to sign trade agreements obligating countries to enforce their own labor standards in addition to core labor standards. A variety of other suggestions for changes in legislation are included in the position paper that accompanied the presentation.

**The Impact of Environmental Provisions on Competitiveness.** Concerns about the impact of environmental regulations on investment and international competition – i.e. the need for a level playing field were expressed. It was argued that while meeting environmental standards is not very costly on average, it can be very costly in some industries, such as the steel industry. The unions argued that a more level playing field would be achieved through the use of a system of countervailing duties to offset differentials in costs of complying with pollution regulations.

The opportunity to discuss these policy proposals was very helpful to the CEA and other agency participants and gave us a clearer picture of the positions of the union policy analysts and the reasons behind their positions. Clearly, many industries in the manufacturing sector are under duress. We urge you to review the ideas developed in the meetings and we would be happy to discuss them with you in greater detail.

cc: The Honorable John Podesta  
Counselor Karen Tramontano  
The Honorable Lawrence Summers  
The Honorable William Daly  
The Honorable Alexis Herman  
The Honorable Charlene Barshefsky

**Shares of Employment**  
**Accounted For by Manufacturing: By Race and Gender**

	<u>1979</u>		<u>1983</u>		<u>1998</u>	
	<u>DM</u> <sup>is more</sup>	<u>NDM</u>	<u>DM</u>	<u>NDM</u>	<u>DM</u>	<u>NDM</u>
<b>Males</b>						
White	.187	.096	.153	.084	.131	.069
Non-White	.190	.107	.145	.099	.111	.087
Black	--	--	.145	.101	.113	.087
Hispanic	--	--	.146	.095	.109	.086
<b>Females</b>						
White	.087	.088	.070	.075	.057	.050
Non-White	.089	.102	.075	.102	.054	.074
Black	--	--	.067	.094	.047	.064
Hispanic	--	--	.093	.121	.059	.081

**Shares of Manufacturing Employment**  
**Accounted For By Less Educated Workers:**  
**By Race and Gender**

	<u>1983</u>				<u>1998</u>			
	<u>DM</u> <sup>is more</sup>		<u>NDM</u>		<u>DM</u>		<u>NDM</u>	
	<u>HSD</u>	<u>HSG</u>	<u>HSD</u>	<u>HSG</u>	<u>HSD</u>	<u>HSG</u>	<u>HSD</u>	<u>HSG</u>
<b>Males</b>								
White	.208	.424	.228	.434	.138	.377	.159	.372
Black	.394	.382	.344	.431	.194	.405	.125	.482
<b>Females</b>								
White	.209	.558	.305	.486	.131	.447	.195	.395
Black	.239	.553	.298	.471	.141	.463	.208	.503

### Factors Accounting for Changes in Industrial Production and Employment, 1993 - 1998 (total changes)

Period	Base Employment (thousands of jobs)	Change in Employment (percent)	Change in Employment (thousands of jobs)	Attributable to:			Change in Exports	Change in Imports
				Change in Consumption	Productivity Growth	Change in Net Exports		
Jan 93 - Dec 98	18656.4 Jan 93	2.47	461.1	55.2	-43.0	-9.7	17.3	-27.0
Jan 93 - July 97	18656.4 Jan 93	2.33	434.8	36.5	-29.5	-4.7	13.1	-17.8
July 97 - Dec 98	19091.2 July97	0.14	26.3	7.9	-4.5	-3.2	1.1	-4.4

### Factors Accounting for Changes in Industrial Production and Employment, 1993 - 1998 (annual average rates)

Period	Attributable to:					
	Change in Employment	Change in Consumption	Productivity Growth	Change in Net Exports	Change in Exports	Change in Imports
Jan 93 - Dec 98	0.42	9.3	-7.3	-1.6	2.9	-4.6
Jan 93 - July 97	0.52	8.1	-6.6	-1.0	2.9	-4.0
July 97 - Dec 98	0.10	5.6	-3.2	-2.3	0.8	-3.1

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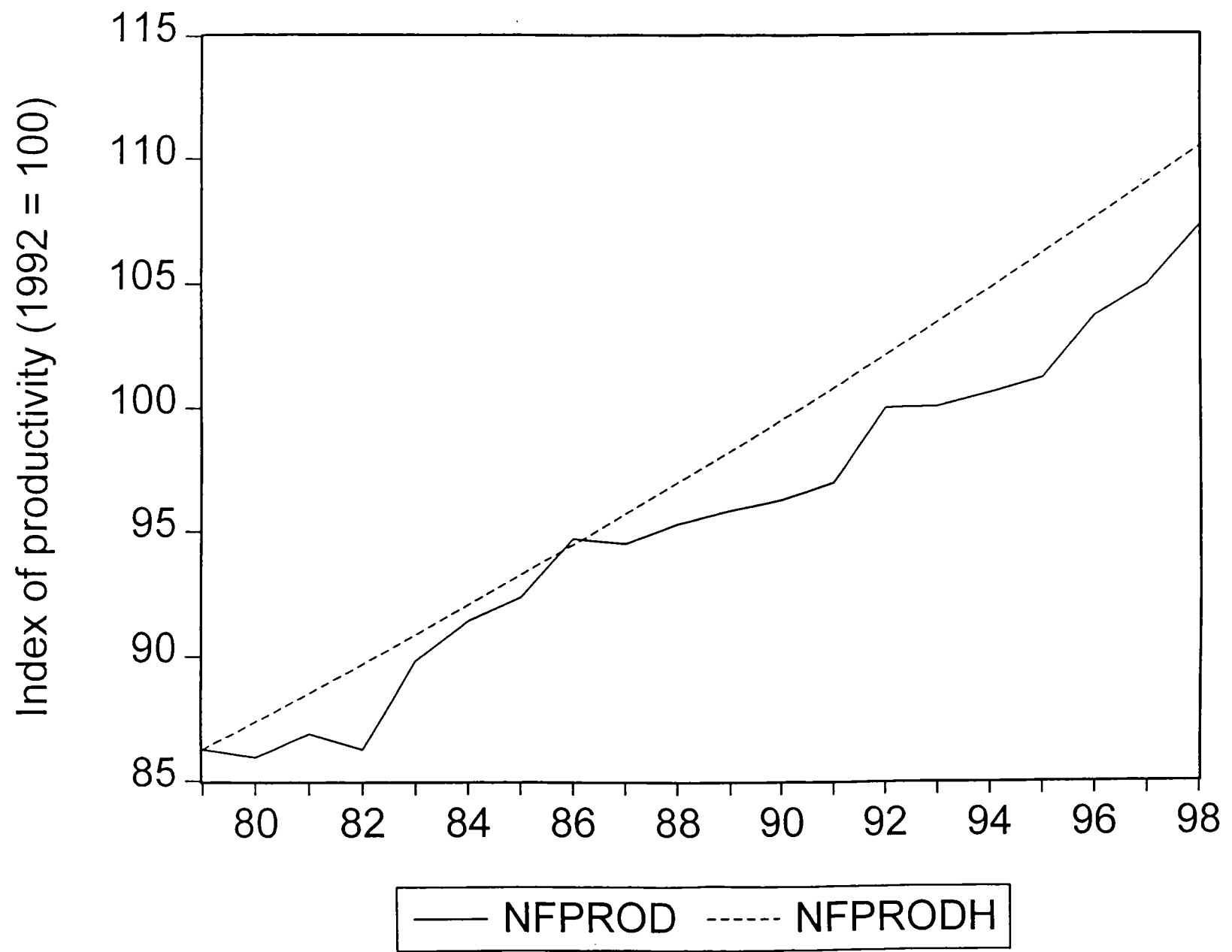


	Manufacturing	Non-manufacturing
1950 - 59	1.99	3.17
1960 - 69	2.67	2.88
1970 - 79	2.66	1.51
1980 - 89	2.57	0.57
1990 - 98	3.51	0.71

Table 2 Average productivity growth (output per hour) in the manufacturing and non-manufacturing private business sectors for selected decades.

*"manufacturing is the engine of prod. growth"*

Non-farm business productivity and estimated non-farm business productivity assuming a fifty percent slower decline in the manufacturing employment share.



	<-----Real hourly wage, 1998 dollars----->			
	1973	1981	1991	1998
Manufacturing	14.11	14.46	13.38	13.50
Durable goods	15.00	15.43	14.06	13.96
Non-durable goods	12.78	13.00	12.50	12.58
Median	11.79	11.19	11.29	11.29
Average	13.60	13.12	12.35	12.78

	<-----Ratio hourly:median wage----->			
	1973	1981	1991	1998
Manufacturing	1.20	1.29	1.20	1.20
Durable goods	1.27	1.38	1.25	1.24
Non-durable goods	1.08	1.16	1.12	1.11

Table 4 Real hourly wages (1998 dollars deflated by the CPI-U-X1) and manufacturing wage premia relative to the median hourly wage (50th decile cut-off wage from the CPS survey).

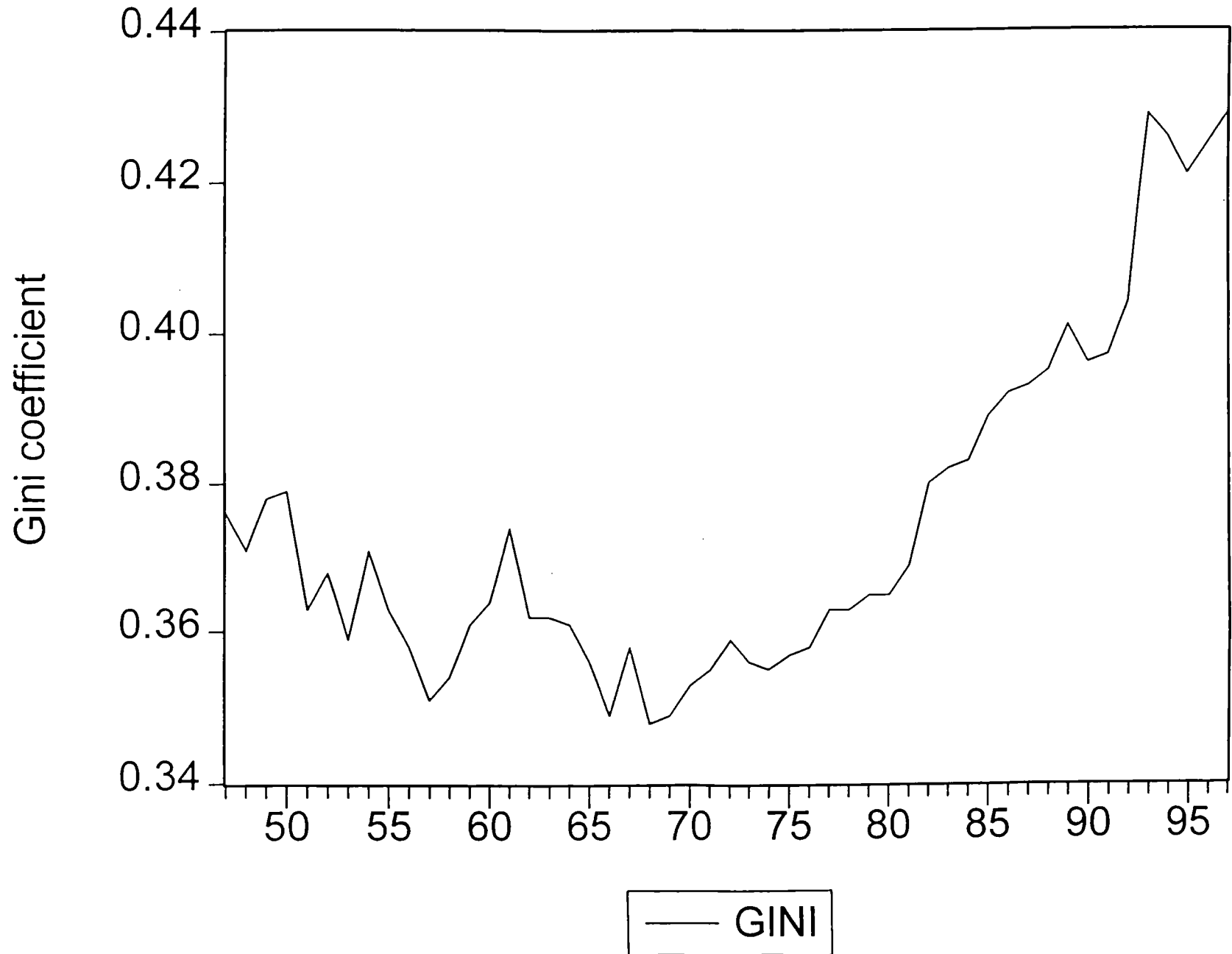
*(Size of manuf industry will has positive effect for county as whole" productivity*

	Manufacturing	All Wage and Salary
Number of workers <sup>20x</sup> (millions):		
High school degree or less	11.5	52.3
More than high school	9.5	67.0
Total	21.0	119.3
Distribution (percent):		
High school or less	54.8	43.8
More than high school	45.2	56.2
Total	100.0	100.0

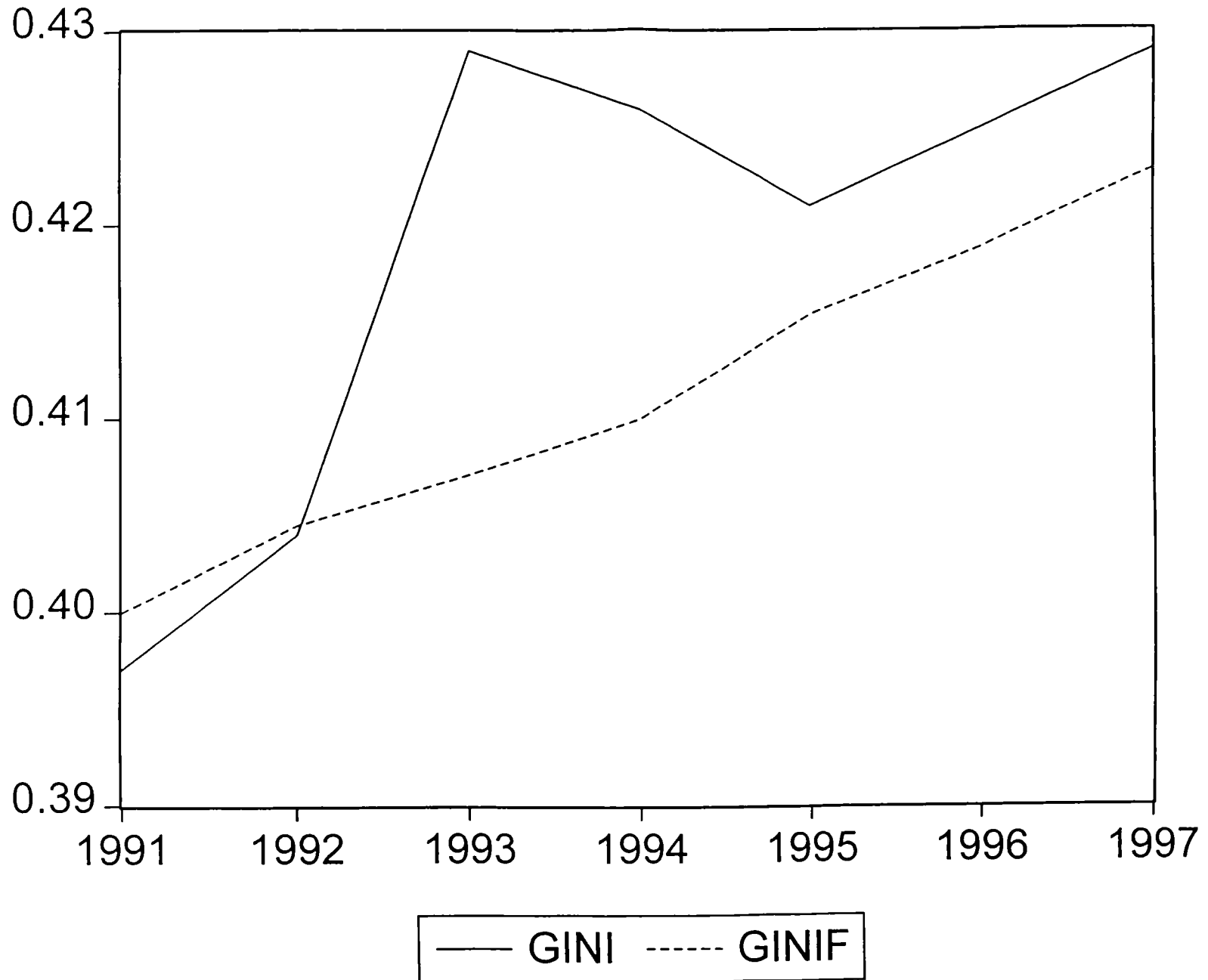
Table 5 Number of workers and distribution of workers in manufacturing and wage and salary employment by educational attainment. Source: 1998 CPS survey.

wages, income distribution etc

Gini coefficient for U.S. family income.  
Source: U.S. Census Bureau



Actual and out of sample forecast of the U.S. family income gini coefficient.



	1968	1997	Change 1968-1997	Percent of change
Constant	0.565	0.565	-	-
Manufacturing emp.share	-0.139	-0.071	0.068	81%
Unemployment rate	0.005	0.007	0.007	2%
Real minimum wage	-0.035	-0.029	0.006	7%
International openness	-0.046	-0.038	0.008	10%
PREDICTED GINI	0.350	0.434	0.084	100%
ACTUAL GINI	0.348	0.429	0.081	100%

Table 6 Decomposition of sources of change in the gini coefficient.

Table 6. Explaining Deindustrialization, 1970-94

	Change in Share or Manufacturing Employment	Change Due to:						Residual
		Normal growth	Investment	Total internal	North-south trade	Other trade	Total trade	
Industrial countries	-8.7	-6.9	-1.5	-8.4	-1.6	0.1	-1.5	1.2
United States	-10.4	-7.8	-0.6	-8.4	-2.0	-0.5	-2.5	0.6
European Union	-9.5	-6.0	-2.0	-8.0	-1.6	0.2	-1.4	-0.1
Japan	-3.3	-8.0	-1.9	-10.0	-0.9	1.3	0.4	6.2

Notes: This table decomposes changes in the employment share of manufacturing. The estimates shown here are based on regression equation (9) in Table 4. The column showing the residuals includes the interaction effects due to the nonlinear (logarithmic) form of the estimated equation. "Normal growth" refers to the income effect estimated from the income coefficient in equation (9); it includes the effect of those productivity and price changes that are normally associated with rising incomes. It excludes the effect of abnormal price and productivity changes, in particular the effects of abnormal productivity growth arising from competition with low-wage countries. The latter is included under the heading "north-south trade."

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	Absolute impact	Percent of change
Direct effect of openness on gini:	0.008	10%
Indirect effect:		
Per Rowthorn and Ramaswamy (1999)		
1970 - 94 Manuf. emp share decrease 10.4 points		
Trade contributed to 2.5 points (24%)		
indirect effect of trade on gini coefficient	0.014	19.5%
Absolute indirect impact = $.24 \times 0.068$		
Percent indirect impact = $.24 \times 81\%$		
Total effect on increase in gini	0.022	29.5%

Table 7 Calculation of total impact (direct and indirect) of increased international openness on the U.S. family income gini coefficient.

Spillover from manuf productivity  
telecom, healthcare, software, services that are  
affected by manuf efficiencies

next - trade policy questions

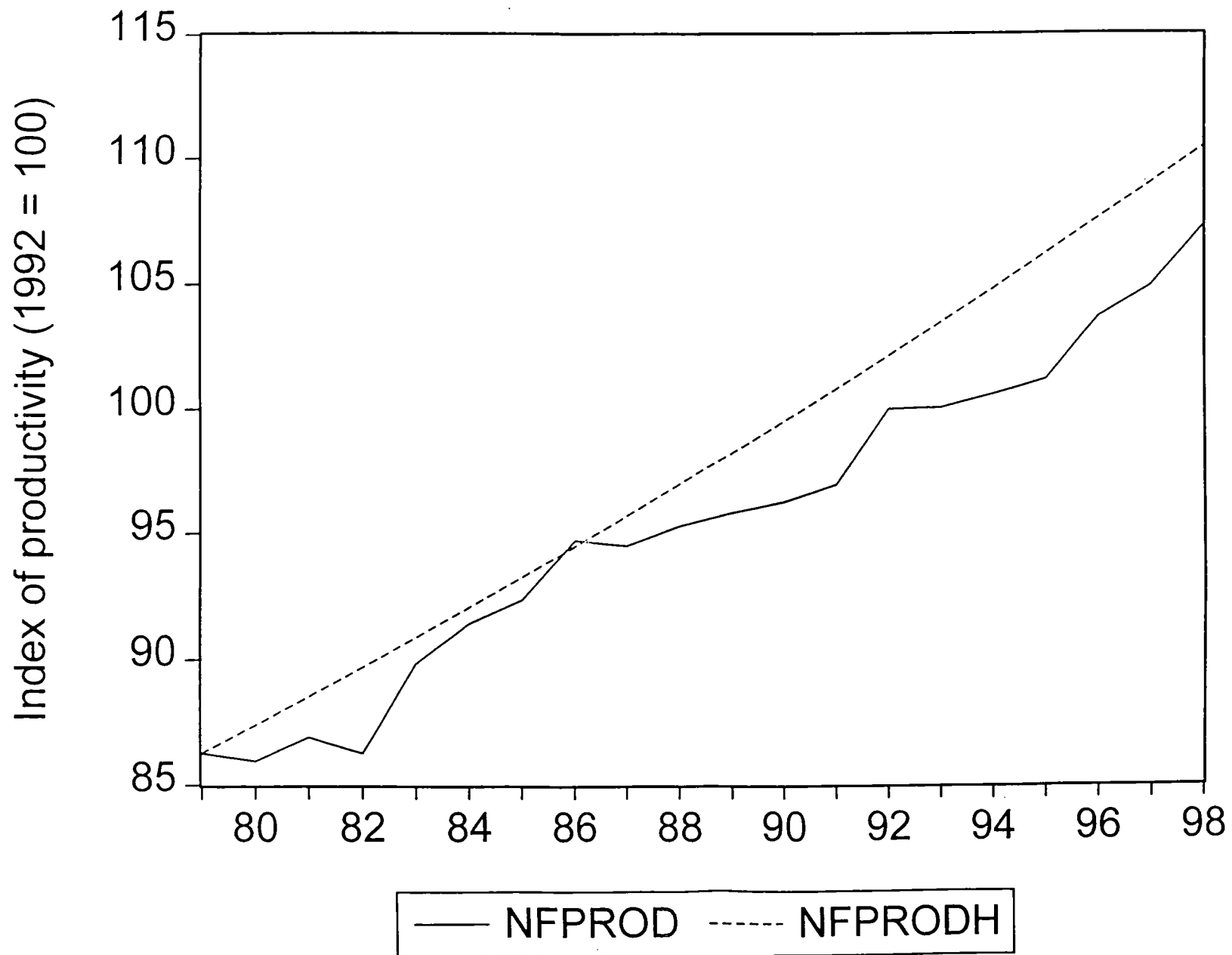
	Manufacturing	Durable goods	Non-durable goods
Employment share:			
1950	38.9%	20.6%	18.3%
1979	28.5%	17.2%	11.3%
1998	17.7%	10.5%	7.2%
Employment (millions):			
1950	15.2	8.1	7.1
1979	21.0	12.7	8.3
1998	18.7	11.1	7.6

Table 1 Manufacturing, durable manufacturing, and non-durable manufacturing employment as a percent of private employment in selected years, and actual employment.

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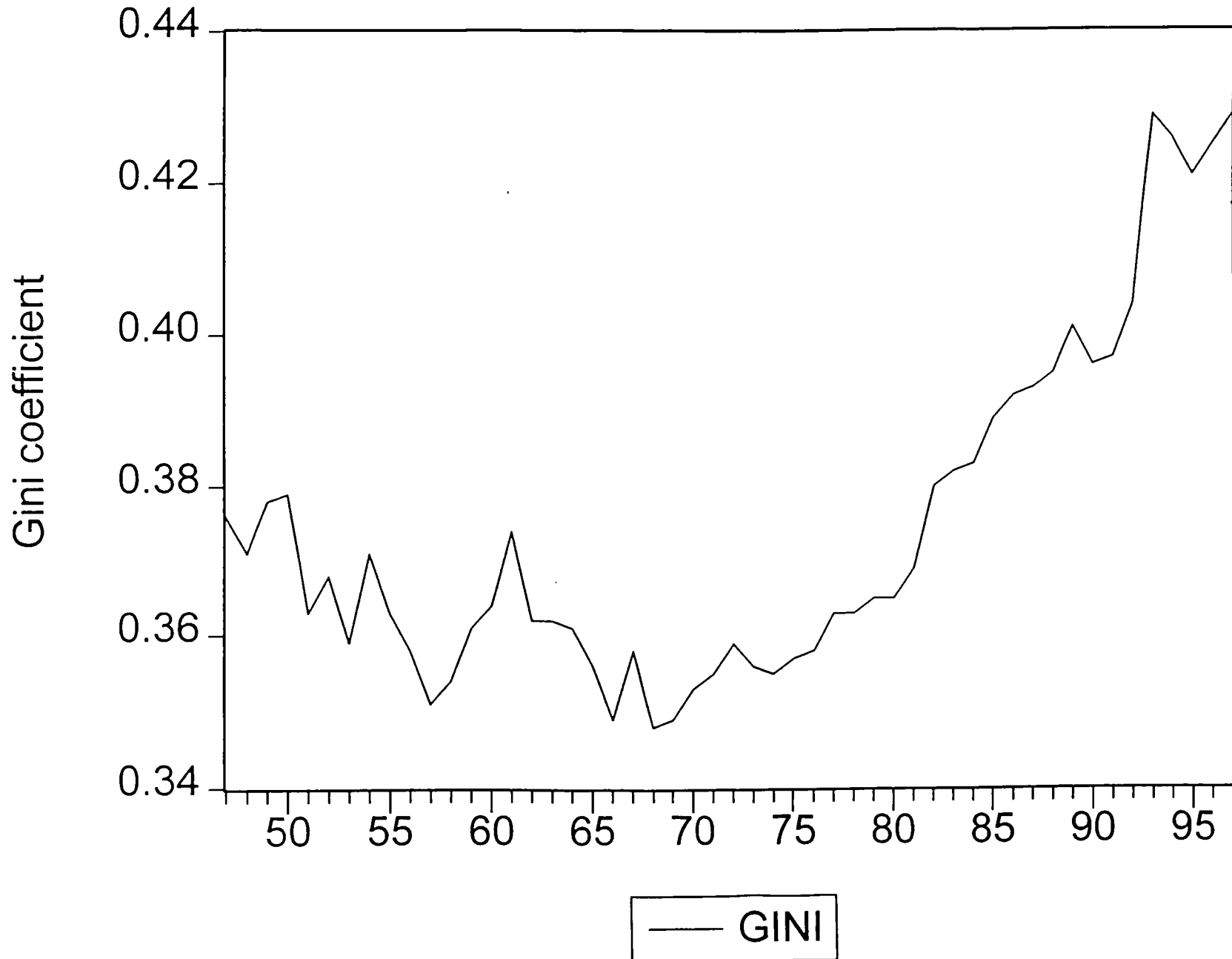
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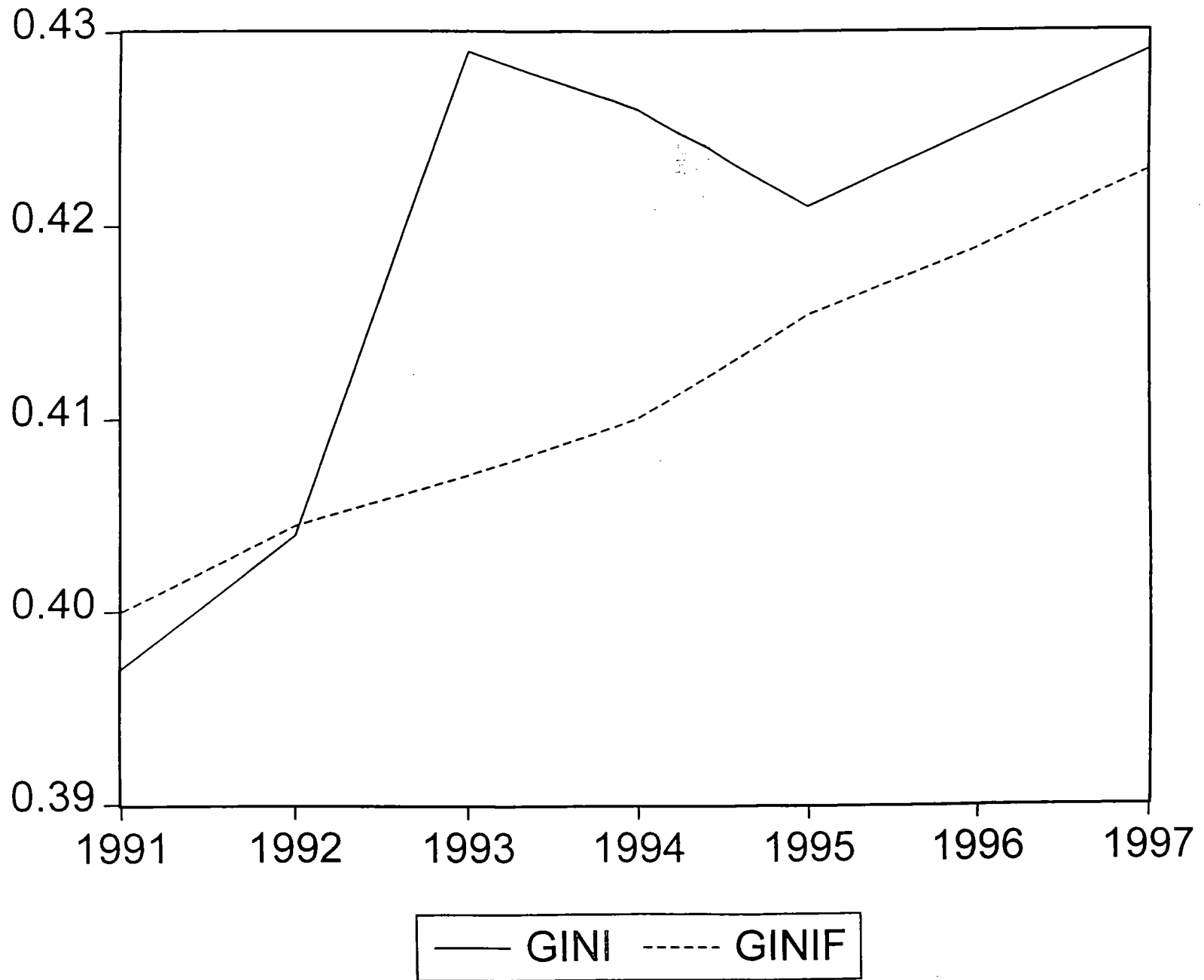
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European Union	-9.5	-6.0	-2.0	-8.0	-1.6	0.2	-1.4	-0.1
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Robert Rowthorn and Ramana Ramaswamy

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THOMAS I. PALLEY  
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RS  
AC

FAX TRANSMITTAL MEMO

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TO: Bob Lawrence, CEA  
FAX NO. 395-6958  
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(EXCLUDING COVER SHEET)

COMMENTS: Bob, outline agenda. Please  
contact if you would like to discuss  
it further.

If there is a problem with this fax, please call: 637-5165

MANUFACTURING AND THE U.S. ECONOMY  
DRAFT AGENDA

Introduction. The agenda detailed below aims to establish an understanding of the place of manufacturing in the U.S. economy - what is its significance and what are the factors explaining the evolution of manufacturing employment.

Having completed this first stage of analysis, the goal is to have another discussion addressing policy implications and possibilities.

Questions

(1) The contribution of manufacturing to national productivity growth.

What is the contribution of the manufacturing sector to productivity growth, and how is national productivity growth impacted by a decline in the relative and absolute size of the manufacturing sector?

(2) The significance of manufacturing jobs for wages and income distribution.

What is the impact of manufacturing jobs on wages and income distribution?

(3) The relationship between the size of the manufacturing sector, the trade deficit, and the ability of the U.S. economy to follow a path of sustained full employment.

3.a. How has the declining relative size of the U.S. manufacturing sector impacted the U.S. trade deficit?

3.b. Is the current trade deficit sustainable?

3.c. If not, how does the council foresee the deficit being narrowed and what will be the impact on standards of living?

(4) Long run trends in the manufacturing share of employment.

4.a. Over the long run this share is falling. What are the causes of this decline?