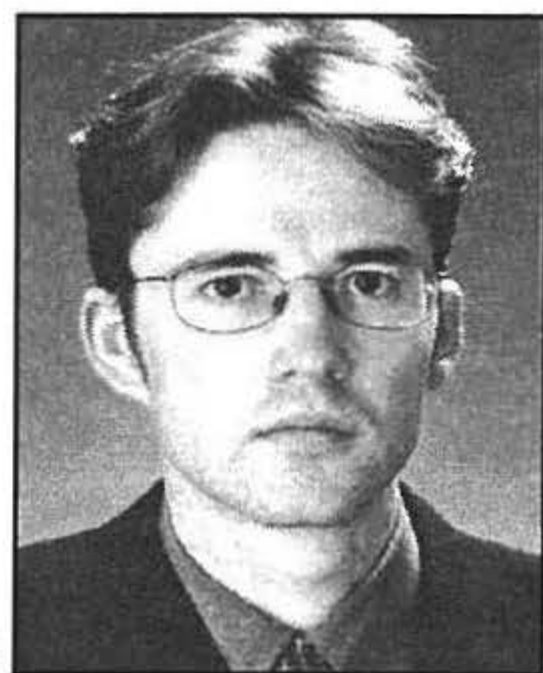




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TRADE AND THE WAGE STRUCTURE: THE CASE OF MANUFACTURING

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Abstract

This paper considers the relationship between international competitiveness and labour market outcomes in New Zealand manufacturing over a twenty-one-year period from 1978 through 1998. Regression evidence suggests increased globalisation has had important and significant impacts on labour demand, particular in the heavily trade-impacted manufacturing sector of the New Zealand economy. The analysis presented suggests foreign competitors are able to capture rents that would otherwise accrue to domestic producers. In particular, entry of international competitors into domestic markets decreases demand for (domestic) labour in those industries. In terms of the New Zealand economy, this is manifest, not through lower wages, but through lower employment levels in those markets most affected by imports. Exports, on the other hand, appear to have a positive effect on both wages and employment, although all of the former and much of the latter effect were offset by effects of the Employment Contracts Act (ECA) in the 1990s.

Keywords: International competitiveness, manufacturing, rents, foreign competition

Since European settlement, international trade has played an important and significant role in the New Zealand's economy. Nonetheless, trade restrictions in the form of customs duties and tariffs have also long been an integral part of the country's domestic policy (Hawke, 1985; Maitra, 1997; Le Heron and Pawson, 1996). In particular, as unemployment rose during the 1930s, support mounted in New Zealand for use of tariffs as a protective measure for domestic manufacturers and manufacturing employment. In 1938, the First Labour Government introduced quantitative controls in the form of import licensing, which served as a mechanism for maintaining full employment and, at least for a period of time, achieving cyclical employment stabilisation in New Zealand (Mabbett 1995).

Criticism of trade protectionism grew throughout the 1960s. Yet, the political will to pursue major reform of New Zealand's trade policy was noticeably absent in the 1970s (Wooding, 1987, 1993).¹ The implementation of industry plans, establishing specific timetables for the reduction of import protection for industries considered to be highly sensitive to trade liberalisation, was included in

the 1979 budget, and a system of tendering for import licenses was initiated in 1981. The intention of these reforms was the gradual phasing out of licensing altogether. The extent of goods subject to licensing requirements at this stage, however, had already fallen to around 18 per cent of imports by value (Duncan et al., 1992).

The Fourth Labour Government's first term in office was a period of unprecedented economic reform, including reforms to international trade policies (Bollard and Buckle, 1987; Walker, 1989; and Holland and Boston, 1990). In 1984, the New Zealand Treasury's briefing paper to the incoming Government highlighted the country's poor economic performance, which partly reflected an "unwillingness to adjust to changing external conditions," over the previous decade (Treasury, 1984:309). The Treasury also reported the country's tariff levels rendered New Zealand's manufacturing sector the most highly protected in the OECD. This put trade liberalisation high on the reform agenda.

By 1990, import licenses remained for only a few items,

mainly footwear, clothing and other apparel (Chatterjee, 1992). In addition, tariff reductions continued under the Fourth Labour Government, which proposed reducing all tariffs to a maximum of 10 percent by July 1996. This retreat from direct economic management and regulation marked a dramatic turnaround in the New Zealand Government's approach to markets and, in particular, to the country's role in the global economy.

The cost of import controls tends to be borne by consumers and, indeed, constitutes a source of revenues to government (Raynor 1988). Much of Labour's reforms were, nevertheless, focused on eliminating export subsidies, which—as direct transfers from government to industry—have a direct fiscal impact. Export incentive schemes emerged during the 1960s as the Government sought to encourage export diversification as well as to provide a means of avoiding the need to devalue the exchange rate. These took the form of tax incentives—such as accelerated depreciation schedules, write-offs and exemptions—in addition to direct subsidies to exporters. These schemes increasingly became seen as a means of compensating manufacturing exporters for the high costs of productive inputs resulting from import controls (Wooding, 1987; Galt, 1989).

Reductions in trade barriers and elimination of export subsidies led to increases in both imports and exports, rationalised production in both agriculture and manufacturing, and expanded both the range of export-oriented industries and the scope of firms within those industries (Lattimore and Wooding 1996). Nevertheless, the National Party returned to power in 1990, and the new Government promptly suspended Labour's tariff reduction programme, subject to a review, which (eventually) proposed somewhat more gradual reductions. It was announced, in 1994, that tariffs would be reduced to one of three rates—15, 10 or 5 percent—by 2000. Further plans were announced in the 1998 budget to phase out all tariffs before the 2010 deadline set by the Asia-Pacific Economic Conference (APEC), although subsequent political and public pressure resulted in a suspension of these reductions in certain import-sensitive industries, such as clothing and apparel manufacturing.

Immediately following its victory in the 1990 election, the National Government introduced what became the *Employment Contracts Act 1991*, which considerably deregulated New Zealand's labour markets in much the same way as trade policy reform had deregulated the country's product markets a decade earlier. The significance of the Employment Contracts Act in the context of the New Zealand Government's trade policy is that deregulation of collective bargaining and worker representation allowed the full consequences of trade liberalisation to work its way through the New Zealand labour market. The former arbitration system, on the other hand, mediated the impact of New Zealand's participation in the international economy and ensured that its costs and benefits were spread relatively evenly. The intention behind both trade and

labour market liberalisation was to open the economy to the unmediated impact of globalisation.

Effects of International Trade on Wages and Employment

Trade theory offers insights into the relationship between international trade and employment. According to Heckscher-Ohlin (H-O) trade theory, an economy will export goods which intensively use its 'abundant' factor and import goods which are intensive in their use of its 'scarce' factor (Heckscher, 1949; Ohlin, 1933). Development of this theory suggests an increase in the relative price of a good—an artifact of enhanced trade in that good—raises the relative price of the factor used intensively in its production. Increased international trade, therefore, increases the price of the abundant factor and reduces the price of the scarce factor (Stolper and Samuelson, 1941). In industrialised market economies, skilled labour and capital are considered 'abundant' factors, and unskilled labour is thought of as a 'scarce' factor. This implies increased trade reduces the real wages of unskilled workers and increases the earnings of skilled workers in industrialised market economies.

Only a handful of studies to date consider the impact of trade policy and international trade on labour demand in New Zealand. Gibson and Harris (1996), for instance, examine the impact of trade liberalisation on plant exit in New Zealand manufacturing. These authors conclude that firms responded to the increased competition generated by New Zealand's reforms in the 1980s by eliminating less efficient lines of business and closing higher-cost plants in their remaining product lines. Evidence from other research, however, suggests that the process of technological adjustment was relatively short-lived. That is, by the 1990s, New Zealand managers had essentially completed their adjustment to market expansion precipitating from trade liberalisation both by narrowing existing product lines and by expanding production into new, more competitive markets (Campbell-Hunt and Corbett 1996). This implies that, while increased trade may well have resulted in the elimination of some jobs, it also likely contributed to the creation of new jobs.²

In another study, Lang (1998) uses a computable general equilibrium (CGE) model of the New Zealand economy to estimate the effects of the Government's trade liberalisation policies on wages and employment. The subsidy or tax equivalent of New Zealand import licenses and tariffs on inputs is used to calculate effective rates of trade protection across 74 New Zealand manufacturing industries for the years 1982, 1986 and 1988. Data on the value of trade protection are matched with wage and employment figures derived from the New Zealand *Quarterly Employment Survey* (QES) for February of each of these three years. Results of this analysis point to the conclusion that greater trade protection would have increased wages by only a marginally significant and relatively small amount and would have had no statistically significant impact on

employment levels in New Zealand manufacturing during the 1980s. Moreover, any positive impact of import licenses and tariff protection would have been offset by the (indirect) effect of these trade barriers on other industries which rely on protected outputs as intermediary inputs.

Deardorff and Lattimore (1999), in yet another New Zealand study, use 1987 and 1995 input-output tables along with employment data from the 1986 population census and 1997 labour input data in a 'factor content of trade' (FCT) model to ascertain whether international trade has altered factor input prices in New Zealand.³ These authors consider factor returns relative to autarky before and after the trade policy reforms implemented by the New Zealand Government in the late 1980s and early 1990s. Although a number of policy shifts took place between 1986 and 1996, it is assumed that the dominant changes in the New Zealand economy which occurred between these two years are (directly or indirectly) related to the New Zealand Government's trade policies. Hence, differences in relative factor returns in these two periods are attributed to these specific reforms.

Results of Deardorff's and Lattimore's study reveal that labour—especially unskilled labour—has *benefited* most from New Zealand's trade policy reforms. Two groups which do not appear to have gained from trade liberalisation are males with skill-based qualifications and those with university degrees, who are concentrated in major importable markets. Together, these findings suggest New Zealand's recent trade policy has contributed to a *narrowing* of the income gap between unskilled workers and their more skilled counterparts. In spite of these findings, the 'factor content of trade' (FCT) approach used by Deardorff and Lattimore (1999) has, nevertheless, been widely criticised. In particular, Woods (1994) has objected to this approach for its assumption that imports from all parts of the world—i.e., industrialized, newly industrialized, and less-developed economies—are dollar-for-dollar substitutes for domestic goods.

In addition, Deardorff's and Lattimore's findings conflict considerably with H-O trade theory, which predicts that, under free trade, income will be redistributed from owners of a 'scarce' factor to owners of an 'abundant' factor. This theory implies that those who benefit most from international trade in industrialised market economies are investors in the export sector and owners of skilled labour. Those who lose from increased trade are unskilled and semi-skilled workers, especially those employed in industries affected by increased imports. This is what is referred to as the 'redistributional effect' of international trade, and it serves to explain why many have suggested increased trade is a primary factor affecting the widening gap between skilled and unskilled workers' earnings in the world's industrialised economies.

Effects of Product and Labour Market Factors on Wages and Employment

It is generally believed that, because international trade affects product demand elasticity, imports and exports influence wage and employment outcomes through an industry's product market (Freeman and Katz, 1991). As a consequence of this thinking, most research on the impact of trade on labour market outcomes has focused on product market shifts resulting from international trade. It follows that these studies typically control for various industry characteristics thought to affect wage and employment outcomes. With regard to the present analysis, it is important to control for these factors in order to distinguish their effects from those flowing from international trade.

To account for labour market influences on workers' earnings, regression models typically include a measure of unemployment. The availability of alternative employment opportunities is considered a major influence on relative bargaining power. Hence, it should be expected that the value of an employment contract settlement is inversely related to the level of unemployment (Vroman and Abowd 1988). Other research further suggests that certain demographic characteristics of the work force may influence employees' average skill level and productivity potential. These factors include the gender composition and employment of part-timers in the industry.

Studies of effects of social welfare benefits on labour market behaviour generally conclude that relative differences in welfare payments and wages yield significant differences in labour force and welfare participation (Blank 1985). In addition, although disputed by widely-reported recent evidence to the contrary (Card 1992a, 1992b, Katz and Krueger 1992), it is also suggested that minimum wage rates have significant negative effects on employment across all sectors of the economy (Brown, Gilroy, and Kohen, 1982). As such, most labour market studies control for the potential effects of welfare benefits and minimum wages on employment and wages.

Other industry measures thought to influence wage and employment levels include industry sales, the value of raw materials and finished goods on hand, and the capital-to-labour ratio. Sales volume is viewed as an indicator of the general strength of the industry, which can translate into higher profits and a greater ability to pay. High inventory levels may reflect over-supply or lagging demand for product, which typically implies declining demand for labour and, in turn, can affect lower levels of both wages and employment in an industry. Previous research also suggests that, where labour's share of total costs is low, employers are more willing to pay higher wages (Katz and Summers 1989).

Data and Analysis

Our data consist of 252 observations drawn from 12 manufacturing industries over a 21-year period from 1978

Table 1. Division of the Manufacturing Sector

Sub Group	NZSIC Range	Main activities included
Seasonal Food	3111 to 3114	Meat, dairy, fish, fruit and vegetable processing
Non-Seasonal Food, Beverage & Tobacco	3115 to 3119, and 312 to 314	Oil, fat & grain processing; bakery, sugar and other food products, beverages and tobacco products manufacturing
Textiles	32	Textile, wearing apparel, footwear and leather products manufacturing
Wood	33	Wood processing and wood products manufacturing
Paper	34	Paper and paper products manufacturing, publishing and printing
Chemicals	35	Chemicals and chemical, petroleum, coal, rubber and plastic products manufacturing
Minerals	36	Pottery, glass and cement materials and products manufacturing
Metal	37 and 381	Basic metals and fabricated metal products manufacturing
Machinery	382	Non-electrical industrial and commercial machinery manufacturing
Electrical	383	Electrical machinery, appliances and supplies manufacturing
Transport	384	Transport equipment manufacturing and assembly
Other	385 and 39	Professional and scientific measuring and controlling equipment, jewellery, musical instruments, sporting goods and other non-classified products manufacturing

through 1998. These industries are defined by a combination of 2-, 3- and 4-digit level New Zealand Standard Industrial Classification (NZSIC) groups. The constitution of these groups is outlined in Table 1. Variable names, definitions, and sources are found in Table 2. Descriptive statistics weighted by full-time equivalent (FTE) employment in the industry averaged over the sample period are found in Table 3. These measures are used in regressions discussed in the next section to test the impact of trade on wages and employment in New Zealand manufacturing.

A detailed discussion of the trade and employment measures used in this analysis is found in the Data Appendix to this paper. Several measures are included in regression models to control for the impact of labour market conditions. A dummy variable is used to capture the effects of passage of the *Employment Contracts Act* 1991. The unemployment rate, the statutory minimum wage rate, and the rate of the benefit payable to single, unemployed individuals, 25 years of age and older are included to measure labour supply effects on wages and employment.

Ideally, measures of both industry union density and industry concentration would be included in this analysis. Nevertheless, for most of the period covered by this study, the compulsory union membership provisions of New Zealand's arbitration system were in effect. As a consequence, one could reasonably assume union density figures did not vary substantially between different manufacturing indus-

tries prior to enactment of the ECA in May 1991 as a result. In addition, the most recent available data on industry concentration in New Zealand are for 1990 (Harper, 1992). Yet, by including an industry fixed effect in regressions, our analysis implicitly holds constant the industry composition of the economy. The coefficient on the ECA dummy in our regressions, therefore, reflects the *overall* decline in union density, net of any effect of shifts in the industry composition of New Zealand's labour market.

With the exception of the last 4 variables listed here, values reported in Table 3 are averages across all 12 manufacturing industry sectors for the years 1978 through 1998. Means are weighted by full-time equivalent (FTE) employment at the industry level for each of these twenty-one years. Unemployment is measured economy-wide in each year, as there is no official breakdown of unemployment by (former) industry in New Zealand. Minimum wages and the weekly benefit rate, proxies for social policy and social service replacement costs, are constant across market segments at any given point in time but will vary over time, not simply because of changes in these policies, but also—and more importantly—because of changes in the (potential) real (replacement) value of these policies and benefits to workers over time due to price inflation. The real value of total sales and raw material and finished product stock are specified to control for the effects of employers' ability to pay and need to pay, respectively. Fi-

Table 2. Data and Variable Definition

Category & Variable	Unit	Description and source
Financial Data		
Sales	\$ 1993	Total sales and other income (source: QMS).
Operating Expenses	\$ 1993	Total operating expenditure excluding salaries and wages, but including depreciation (source QMS).
Depreciation	\$ 1993	Total depreciation expense (source: QMS from 1992). Estimated as a percentage of operating expenses prior to 1992 based Census of Manufacturing, ENT and AES data.
Salaries & Wages	\$ 1993	Total expenditure on salaries and wages (including severance payments) paid to employees (source: QMS).
Capital Intensity	%	Calculated as the ratio of total depreciation to the sum of total salaries and wages plus operating expenses.
Additions to Fixed Assets	\$ 1993	Five-year moving average of total value of additions to fixed assets adjusted for inflation (source: QMS).
Stocks	\$ 1993	Total value of raw material and finished good stocks at 31 March (source: QMS).
Trade Data		
Exports	\$ 1993	Total value of merchandise exports (excluding re-exported goods) measured free-on-board (source: EXP).
Export Intensity	%	Calculated as the five-year moving average value of exported merchandise as a percentage of total Sales.
Imports	\$ 1993	Total value of merchandise imports including freight and insurance costs (source: IMP).
Import Penetration	%	Calculated as the five-year moving average value of imported merchandise as a percentage of total Sales plus Imports.
Employment & Wages		
FTE Employees	-	Calculated as all full-time employees plus part-time employees divided by two (source: QES)
Gender	%	Calculated as female full-time equivalent employees as a percentage of total full time equivalents (source: QES).
Part-time	%	Calculated as part time employees as a percentage of total engagements (source: QES).
Total Hourly Earnings	\$ 1993	Average ordinary and overtime rate paid to employees (weighted by hours worked) (source: QES).
Labour Market Conditions		
Employment Contracts Act	-	Dummy variable equal to 1 from March 1992, to capture effect of the Employment Contracts Act 1991.
Minimum Wage	\$ 1993	The rate of the statutory weekly minimum wage applying at 31 March.
Benefit	\$ 1993	The rate of the unemployment benefit payable to single beneficiaries 25 years of age or over.
Unemployment	%	The prevailing unemployment rate. Prior to 1987 this is calculated as registered unemployed as a percentage of the estimated labour force. From 1987 onwards the official unemployment rate from the Household Labour Force Survey (HLFS) is used.

Table 3. Total Hourly Earnings (\$ 1993)

Variable	Mean	Standard Deviation	Minimum Value	Maximum Value
Total Hourly Earnings (\$ 1993)	\$14.84	\$1.77	\$11.32	\$21.26
FTE Employees	20,141	11,968	2,806	55,260
Import Penetration	28.7%	19.5%	1.9%	69.5%
Export Intensity	24.7%	21.8%	2.6%	92.0%
Sales (\$ 1993)	\$3,667,300	\$2,411,000	\$411,700	\$12,380,000
Stocks (\$ 1993)	\$310,950	\$285,950	\$8,607	\$1,598,000
Additions to Fixed Assets (\$ 1993)	\$222,010	\$257,510	\$11,660	\$1,725,000
Capital Intensity(%)	3.0%	1.4%	1.4%	7.7%
Gender (%)	28.6%	15.2%	12.3%	68.2%
Part-time (%)	6.4%	3.8%	1.6%	20.4%
Unemployment (%)	5.7%	2.5%	1.8%	10.6%
Real Weekly Min.Wage (\$ 1993)	\$246.75	\$35.46	\$171.50	\$312.60
Real Weekly Benefit (\$ 1993)	\$159.89	\$22.15	\$131.10	\$186.10
Employment Contracts Act (Dummy Variable)	0.33	0.47	0	1

nally, the mean value for the ECA (0-1) dummy variable indicates that two-thirds of the observations in these regressions are from the era prior to enactment of the ECA.

The reader will note that the minimum and maximum values for total hourly earnings are both under 2 standard deviations from the mean. These values are, respectively, \$11.32 and \$21.26, in 1993 dollars. Far greater variation exists in the number of FTE employees and, in particular, in the trade share ratios. Imports range from 1.9 to 69.5 percent of total industry sales in New Zealand, and exports account for between 2.6 and 92.0 percent of domestic shipments in these industries over the 21-year period observed.

Discussion of Empirical Results

New Zealand's imports outpaced the country's exports in terms of total dollar value over most of the period under study. Yet while the import share of the domestic economy remained below 30 percent of total domestic sales between 1978 and 1998, exports grew to more than one-third of all goods produced in New Zealand. Also worth noting is the fact that, during this twenty-one-year timeframe, manufactured goods accounted for the lion's share-80.1 percent-of the value of New Zealand goods sold overseas as well as the vast majority-84.8 percent-of goods imported into New Zealand. These last observations point to the conclusion that limiting this study to manufacturing in-

Figure 1. Value of NZ Manufacturing Imports & Exports, 1978-98

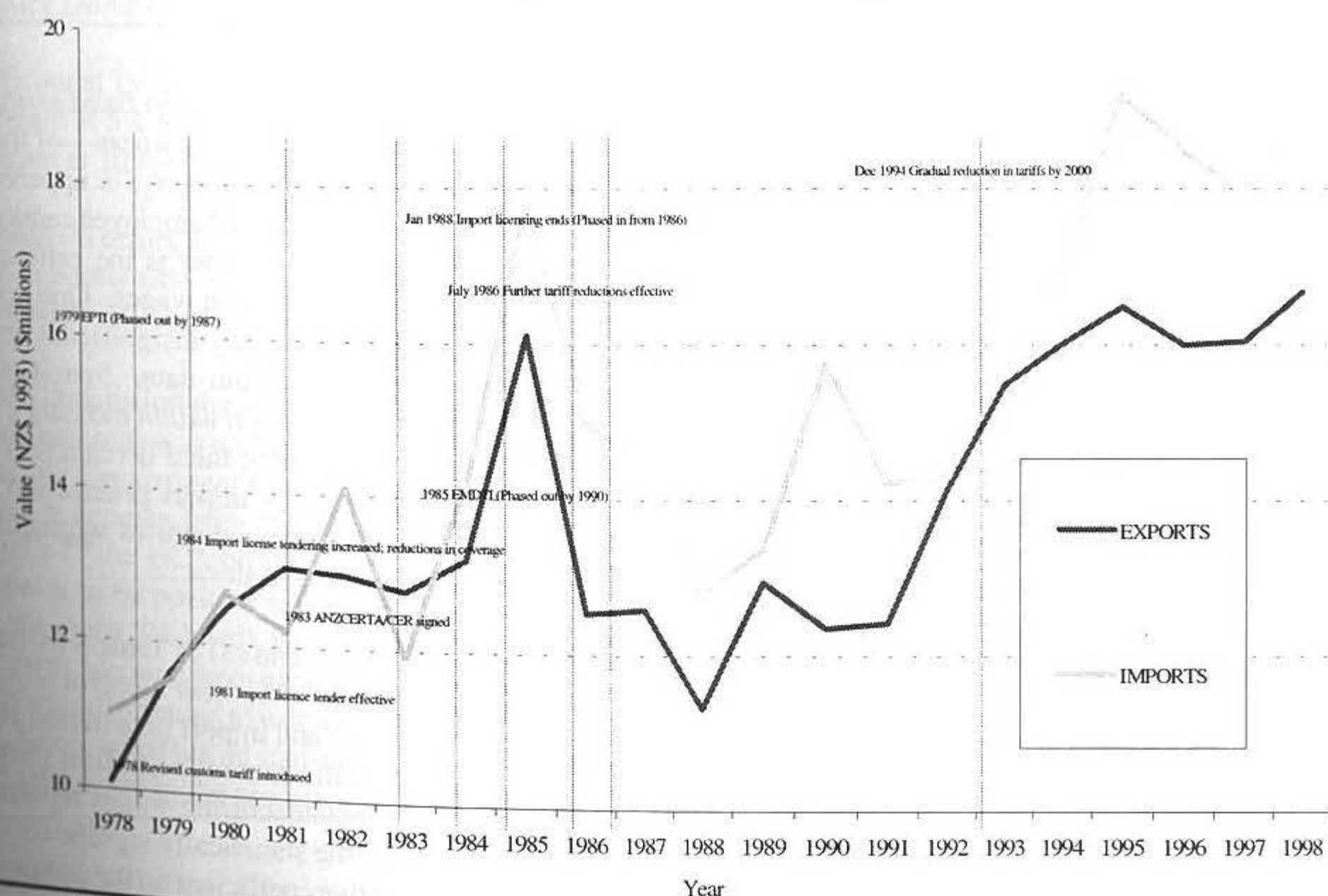
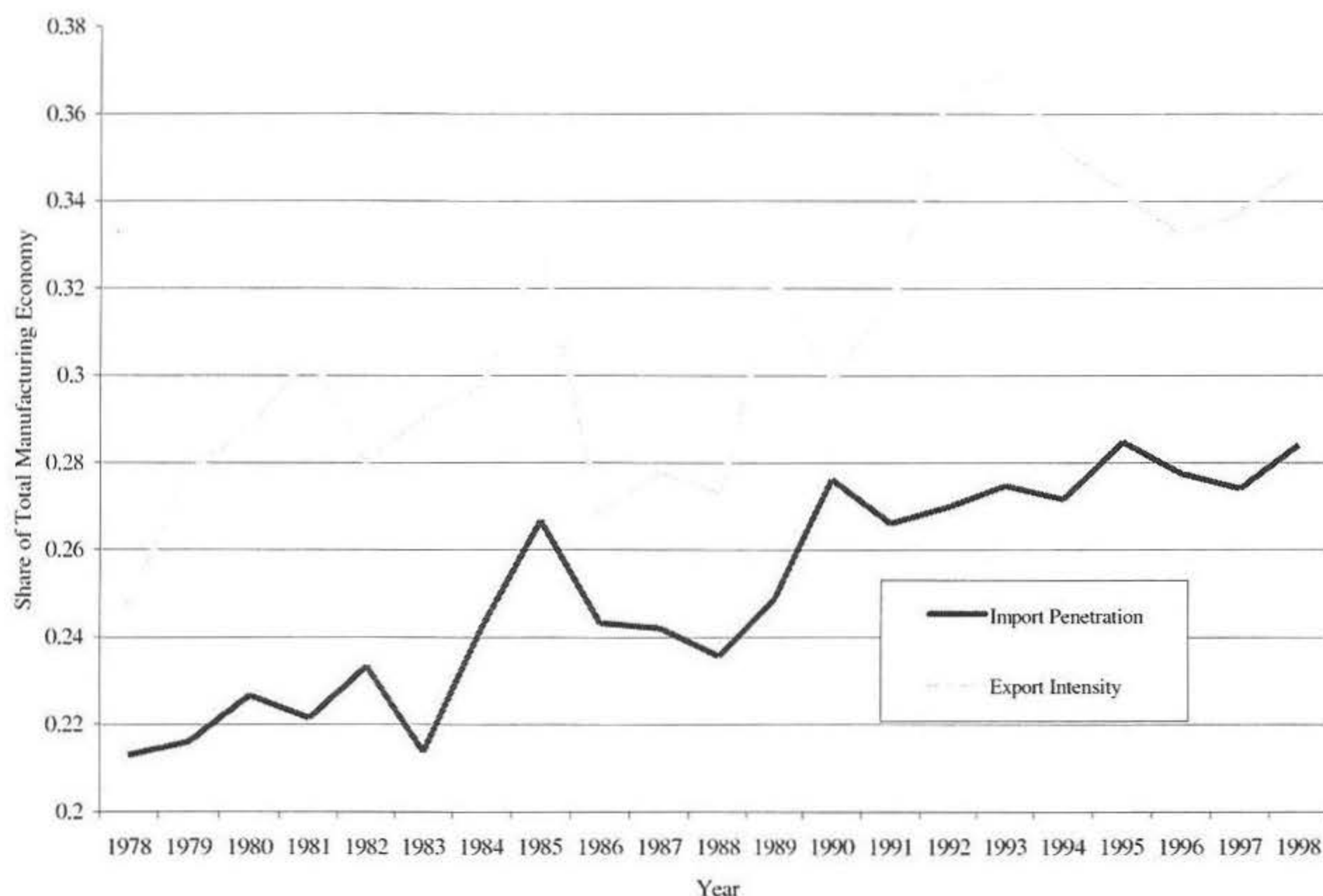


Figure 2. Import Penetration & Export Intensity in NZ Manufacturing, 1978-98



dustries does not seriously impede the generalisability of the results to the New Zealand economy as a whole.

Table 4 offers regression estimates, (again) weighted by full-time equivalent (FTE) employment in the industry averaged over the 21-year study period. Column (2) of Table 4 shows the influence of exports (imports) on the natural log of the industry average wage (in \$ 1993). Estimates reported here suggest that import penetration has no statistically significant impact, but that export intensity does have a statistically significant (at the alpha .01 level), positive effect on employee earnings. Because the dependent variable is specified as the natural log of earnings, this result is interpreted to mean that, on average, for every 1 percentage point increase in the export share of total industry output, employee earnings in the industry increase by an additional .2 percent. For example, in a market where exports comprise 50 percent of output, wages are expected, on average, to be 6 percent higher than in markets where only 20 percent of output is sold overseas.

Other estimates derived in this regression are in the expected direction, although not all are statistically significant. Estimates of the effects of industry sales and capital stocks on salaries and wages in New Zealand manufacturing, for instance, are also both statistically significant. In the case of the former, this result suggests employers' ability to pay is positively correlated with employee earnings at the industry level. The latter result points to the conclusion that labour demand and, therefore, earnings are less in industries where employers have greater stockpiles of raw materials and/or finished goods.

Measures of the real weekly minimum wage and the real weekly benefit rate are both positive and statistically significant. This confirms the economic theory of labour markets, which posits that the work-leisure allocation—i.e., the amount of labour individuals are willing to supply—is likely influenced by the availability of alternative sources of income in the absence of work. That is, some lower paid workers will prefer leisure over work when the (replacement) value or benefit of the former approaches the value of income to be generated by the latter (Hall 1973).

The variable measuring additions to fixed assets, a proxy for the relative age—or, rather, newness—of the physical plant and operations in the industry, is apparently not a highly significant determinant of employee earnings in New Zealand manufacturing. Neither is the estimate for the impact of import penetration on wages. One possible explanation for these statistically insignificant estimates is the level of aggregation of our data. Specifically, there may be considerable variation *within* industry categories, notwithstanding the fact that there is relatively little dispersion in the value of the import penetration ratio, for instance, *between* industry categories aggregated at the level specified in our regressions.

The specification in column (3) of Table 4 includes interactions between the *Employment Contracts Act* (ECA) 1991 dummy variable and import penetration and export intensity. These results generally confirm those for the impact of trade on manufacturing wages reported in column (2). However, the statistically significant (at the alpha .01 level), negative coefficient on the interaction term

Table 4. Fixed-Effects Estimates of the Impact of Imports and Exports on Total Hourly Wages in New Zealand Manufacturing, 1979 – 1998

Independent Variables	Dependent Variable: Log of Real Total Hourly Earnings (\$1993)	
	Without Interaction Between ECA and Trade Variables	With Interaction Between ECA and Trade Variables
Import Penetration	0.001 (0.001)	0.001 (0.001)
Export Intensity	0.002*** (0.001)	0.002*** (0.001)
ECA 1991 Dummy * Import Penetration	—	-0.001 (0.001)
ECA 1991 Dummy * Export Intensity	—	-0.002*** (0.000)
Log Sales (\$ 1993)	0.073*** (0.025)	0.076** (0.024)
Log Stocks (\$ 1993)	-0.041*** (0.009)	-0.033*** (0.009)
Additions to Fixed Assets (\$ 1993)	0.021* (0.012)	0.002 (0.012)
Capital Intensity (%)	1.272** (0.517)	0.067 (0.536)
Gender	-0.005*** (0.001)	-0.0047*** (0.001)
Part-time	-0.003 (0.003)	-0.003 (0.003)
Unemployment	-0.001 (0.002)	-0.002 (0.002)
Log Real Weekly Min. Wage (\$ 1993)	0.065*** (0.020)	0.062*** (0.019)
Log Real Weekly Benefit (\$ 1993)	0.296*** (0.054)	0.318*** (0.053)
Employment Contracts Act	0.0517*** (0.015)	0.126*** (0.026)
Number of Observations	240	240
R ² for Regressors	0.923	0.930
R ² for Regressors and Industry Dummies	0.962	0.970

*** Significant at 1% level, two-tailed test.

** Significant at 5% level, two-tailed test.

* Significant at 10% level, two-tailed test.

Notes: Standard errors are in parentheses. See TABLE 2 for definitions and sources of the independent variables. Regressions are corrected for first-order autocorrelation. Observations are weighted by full-time equivalent industry employment averaged over the sample period.

points to the conclusion that the positive impact of export intensity on earnings was no longer present following enactment of the *Employment Contracts Act* in May 1991. To this end, it appears from these results that, while the direct impact of the ECA on manufacturing salaries and wages appears to be positive and statistically significant (again, at the alpha .01 level), workers are no longer able to capture rents accruing from exports. Prior to 1991, these quasi-rents were distributed to workers in the form of higher earnings. Again, while not all statistically significant, other measured effects are in the predicted direction.

Conclusions

This study has considered the relationship between international competitiveness and employee earnings in New Zealand manufacturing from 1978 through 1998. Evidence from the analysis presented herein suggests the increasing globalisation of the New Zealand economy has had important and significant employment impacts, particular in the heavily trade-impacted manufacturing sector. With regard to the effect of imports on the domestic labour market, foreign competitors appear able to capture rents that would otherwise accrue to domestic producers. Employers in the trade-impacted domestic economy respond

to this increased competition by cutting employment levels rather than wages and salaries. Hence, entry of international competitors into domestic markets decreases the number of workers rather than relative wages in those industries. This not only results from the fact that the rents of domestic producers have declined, but is also a consequence of foreign competition constraining the demand for labour in those industries.

On balance, results from this study tend to support the traditional economic reasoning regarding the role and impact of trade on labour market outcomes. That is, while import penetration appears to hold negative consequences for New Zealand workers, export markets can offer greater opportunities for growth, not only in firm profits, but also for employees working in export-oriented industries. Imports of both durable and non-durable goods have reduced the rents going to domestic firms (and, in turn, to workers). This has undoubtedly had adverse spillover effects, as displaced workers move from import-impacted industries into other sectors of the economy. To this end, at least some of the job loss created by increases in imported goods, appear to be offset by gains derived from expanding exports—at least, in the period prior to enactment of the ECA.

As suggested by Heckscher-Ohlin (H-O) theory, greater competition from imports tends to bid down wages of those in the domestic economy who produce substitutable goods, and increased exports tend to bid up wages of workers primarily producing goods for export (Heckscher, 1949; Ohlin, 1933). Yet, given the “downward stickiness” of wages—to some extent, an artifact of New Zealand’s long-standing arbitration and award system—, instead of reducing wages, employers in New Zealand tend to reduce the level of employment.

This study also highlights the importance of the role of national institutions in mediating the effects of globalisation on labour market outcomes (see Dicken, 1998; Lee, 1995). The final irony is the suggestion from these results that New Zealand’s labour market reforms, which were premised on the need to be responsive to trends in the global economy, have not only exacerbated the negative labour market effects of increasing import competition, but have also weakened the ability of workers to obtain a share of the gains from exports.

Soon after the Labour-Alliance victory in the November 1999 election, new Commerce Minister Trevor Mallard announced that, in accordance with Labour Party policy, the New Zealand Government would freeze tariffs until 2005. Upon making this announcement, the Commerce Minister stated, “The signal to other countries is that no longer can New Zealand be relied upon to be foolish.” Nonetheless, on 16 November 2000, at the annual APEC summit in Brunei, New Zealand Prime Minister, Helen Clark, announced her Government’s intention to eliminate tariffs on goods imported to New Zealand from developing nations, which are able to compete with industrialized

economies primarily on the basis of their labour cost advantage, an artifact of the relatively low wages paid to workers in these countries.

Future Research

Future research will undoubtedly seek to determine whether the impact of international trade on the New Zealand labour market varies depending on the country of origin or destination of importables and exportables, respectively. Research conducted in other economic contexts has shown that the greatest threat from international trade to domestic labour in industrialised countries comes from low wage, developing economies. This threat is felt, in particular, by unskilled workers in labour-intensive industries in industrialised economies (Wood 1994).

In addition, researchers will likely want to consider the indirect effects—along with the direct effects—of trade on employment in New Zealand. Such analysis, however, requires development of an input-output model, which accounts for inter-industrial linkages. Unfortunately, the most recent completed full inter-industry study for the New Zealand economy is for 1986-87. Between full studies, at irregular intervals, the Department of Statistics has produced updates based on the last full study, using the latest available information. These and were produced with less industry and commodity detail. Also, beginning in 1990-91, as part of the annual national accounts compilation process, Statistics New Zealand has produced less detailed studies on an annual basis, although these annual studies are not published.

In addition, since estimates derived from these regressions represent industry averages, they may hide substantial variation within sectors and establishments. This implies that research on more disaggregated data might, in fact, reveal statistically significant results where no relationship appears to exist in the data employed in this analysis.

Notes

1. Important exceptions include negotiation of two bilateral trade agreements with Australia: the New Zealand Australia Free Trade Agreement (NAFTA) and the Australia-New Zealand Closer Economic Relations and Trade Agreement (CER).
2. These findings, nevertheless, also call into question the validity of managers’ continued lament in the early 1990s that New Zealand’s long-standing system of industrial relations imposed constraints on firms’ ability to adjust to the exigencies of the more (globally) competitive markets (Savage and Bollard 1990).
3. For further discussion of this model, see Deardorff and Staiger (1988).

References

- Bednarzik, R.** (1993) An Analysis of U.S. Industries Sensitive to Foreign Trade, 1982-87. *Monthly Labor Review*. 116(2): 5-31
- Blank, R.** (1985) The Impact of State Economic Differentials on Household Welfare and Labor Force Behavior. *Journal of Public Economics*. 28(1): 25-58
- Brown, C. Gilroy, C. and Kohen, A.** (1982) The Effect of the Minimum Wage on Employment and Unemployment. *Journal of Economic Literature*. 20(2): 487-528
- Buckle, R.** (1987) Sequencing and the Role of the Foreign Exchange Market. Bollard, a. and Buckle, R. (Eds.) *Economic Liberalisation in New Zealand*. Wellington: Allen & Unwin.
- Campbell-Hunt, C. and Corbett, L.** (1996) *Season of Excellence? Overview of New Zealand Enterprise in the Nineties*. Wellington: New Zealand Institute of Economic Research.
- Card, D.** (1992a) Using Regional Variation in Wages to Measure the Effects of the Federal Minimum Wage. *Industrial and Labor Relations Review*. 46(1): 22-37.
- Card, D.** (1992b) Do Minimum Wages Reduce Employment? A Case Study of California, 1987-1989. *Industrial and Labor Relations Review*. 46(1): 38-54.
- Chatterjee, S.** (1992) International Trade: Structure and Policy. Birks, S., and Chatterjee, S. (Eds.) *The New Zealand Economy: Issues and Policies (1992 edition)*. Palmerston North: Dunmore Press.
- Dicken, P.** (1998) *Global Shift: Transforming the World Economy (3rd Edition)*. London, Paul Chapman Publishing.
- Duncan, I. Lattimore, R. and Bollard, A.** (1992) *Dismantling the Barriers: Tariff Policy in New Zealand*. Wellington: New Zealand Institute of Economic Research, Research Monograph No. 57.
- Freeman, R. B. and Katz, L.** (1991). Industrial Wage and Employment Determination in an Open Economy. Abowd, J., and Freeman, R. (Eds.) *Immigration, Trade, and the Labor Market*. Chicago: University of Chicago Press.
- Galt, D.** (1989) Industry and Trade Policies. Walker, S. (Ed.) *Rogernomics: Reshaping New Zealand's Economy*. Auckland: Centre for Independent Studies.
- Gibson, J. and Harris, R.** (1996) Trade Liberalisation and Plant Exit in New Zealand Manufacturing. *Review of Economics and Statistics*. 78(3): 521-529.
- Hall, R.** (1973) Wages, Income, and Hours of Work in the U.S. Labor Force. Cain, G., and Watts, H. (Eds.) *Income Maintenance and Labor Supply*. Chicago: Markham.
- Harper, D.** (1992) *Industrial Concentration in New Zealand 1987-1990*. Wellington: Commerce Commission.
- Hawke, G.** (1985) *The Making of New Zealand: An Economic History*. Cambridge: Cambridge University Press.
- Holland, M. and Boston, J.** (Eds.) (1990) *The Fourth Labour Government: Politics and Policy in New Zealand (Second Edition)*. Auckland: Oxford University Press.
- Katz, L. and Krueger, A.** (1992) The Effect of the Minimum Wage on the Fast-food Industry. *Industrial and Labor Relations Review*. 46(1): 6-21.
- Katz, L. and Summers, L.** (1989) Industry Rents: Evidence and Implications. *Brookings Papers on Economic Activity*. 8: 209-275.
- Lattimore, R. and Wooding, P.** (1996), International trade. Silverstone, B.; Bollard, A.; and Lattimore, R. (Eds.) *A Study of Economic Reform: The Case of New Zealand*. Amsterdam: Elsevier.
- Le Heron, R., and Pawson, E.** (Eds.) (1996) *Changing Places: New Zealand in the Nineties*. Auckland: Longman Paul.
- Lee, E.** (1995) Globalization and Employment: Is Anxiety Justified? *International Labour Review*. 135(5): 485-497.
- Mabbett, D.** (1995) *Trade, Employment, and Welfare: A Comparative Study of Trade and Labour Market Policies in Sweden and New Zealand, 1880-1980*. Oxford: Clarendon Press.
- Maitra, P.** (1997) The Globalisation of Capitalism and Economic Transition in New Zealand. Rudd, C. and Roper, B. (Eds.) *The Political Economy of New Zealand*. Auckland: Oxford University Press.
- Philpott, B.** (1993) *Statistics on Commodity Composition and Direction of New Zealand Trade Prepared for Japanese Institute of Developing Economies*, Wellington: Research Project on Economic Planning, Economic Group, Victoria University of Wellington, RPEP Internal Paper No. 248.

Philpott, B. and Nana, G. (1993) *A Tentative 1990 Interindustry Table For New Zealand*. Wellington: Research Project on Economic Planning, Economic Group, Victoria University of Wellington, RPEP Internal Paper No. 250.

Raynor, T. (1988) New Zealand in the world trading economy. *New Zealand in a Changing World: The Management of Economic Change*. Wellington: Institute of Policy Studies, Victoria University of Wellington.

Savage, J. and Bollard, A. (Eds.) (1990) *Turning it Around: Closure and Revitalization in New Zealand Industry*, Auckland: Oxford University Press.

Schoepfle, G. (1982) Imports and Domestic Employment: Identifying Affected Industries. *Monthly Labor Review*, 105(8): 13-26.

Stolper, W. and Samuelson, P. (1941) Protection and Real Wages. *Review of Economic Studies*, 9(1): 58-73.

Treasury (1984) *Economic Management*. Wellington: The Treasury.

Vroman, W. and Abowd, J. (1988) Disaggregated Wage Developments. *Brookings Papers on Economic Activity*, 19(1): 313-388.

Walker, S. (Ed.) (1989) *Rogernomics: Reshaping New Zealand's Economy*, Auckland: Centre for Independent Studies.

Wood, A. (1994) *North-South Trade, Employment, and Inequality: Changing Fortunes in a Skill-Driven World*, Oxford: Clarendon Press.

Wooding, P. (1987) Liberalising the international trading regime. *Economic Liberalisation in New Zealand*, Bollard, A., and Buckle, R. (Eds.). Wellington: Allen & Unwin Press.

Wooding, P. (1993) New Zealand in the international economy. *State & Economy in New Zealand*, Roper, B. and Rudd, C. (Eds.). Auckland: Oxford University Press.

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