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THE DETERMINANTS OF AMERICAN EQUITY INVESTMENT IN AUSTRALIA

by

J.B. Towe

No. 154 DECEMBER 1990

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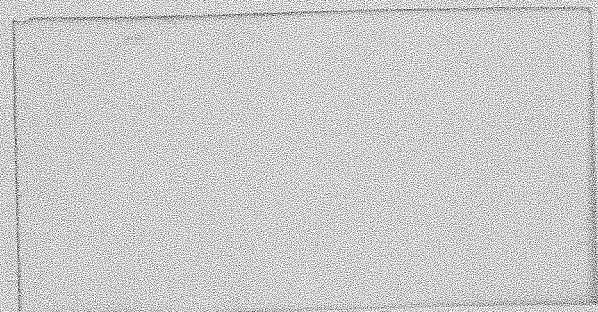

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Abstract

The purpose of this paper is to establish the determinants which motivate American equity investment to Australia. Both the literature on general investment theory and American direct investments in Australia have emphasised the importance of the return on income, investment diversification, market size, economic growth and, the negative effect of tariffs. This paper uses regression analysis to examine these concepts and contrast their effects with interest rates on the trend of direct American investment. The findings confirm the importance of diversification and the return on income as investment motives and acknowledges the shift in Australia of American equity investment from manufacturing to the mining and service industry sectors.

The author wishes to acknowledge a valuable exchange with several people, but especially the excellent criticism and suggestions from C.G.F. Simkin, R. Rowthorn, and J. Sheen.

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CONTENTS

1. Introduction:

Postwar Australian government policy that was implemented to control foreign direct investment for selected industrialization purposes has been studied by Arndt (1957), Robertson[1] (1986), Butlin, Schedvin, Coombs and Moffat. Similarly, the distortionary effects of governmental intervention has been discussed by MacDougall[2] (1960), Kindleberger (1969), Krasner (1978), Miyagiwa and Young (1986). Australian determinants and/or motives for American direct investment has, however, had only one empirical-descriptive study. In his 1965 survey[3] of the American management resident in Australia, Brash concentrated on motives that influenced American equity investment decisions in Australian manufacturing.

The aim of this study is to reconstruct and evaluate the determinants involving American direct investment to Australia. It attempts to explain the net flow of American direct investment to the total economy, including the mining and financial sectors. In a further contrast to Brash's work, the study analyses the regressors from other data sources, as well as, the difference between US and Australian interest rates. Moreover, it explores the role of market size and economic growth. An understanding of these motivations is important in view of the existing US equity investment, being more than a half of the American or two-fifths of the foreign equity investment in 1987/88-1988/89 and still an important source of Australia's investment funds.

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1. Robertson, 1986, p. 159, a literature survey can be found in the bibliography of K. Anderson and R. Garnaut, 1987.
2. MacDougall, 1960, first to model the benefits to Australia from overseas private investment.
3. Brash, 1966.

The Australian tariff wall, formed by government policy in the late 1940s, led to the replacement of some overseas manufactured imports by products made by local branches of overseas companies[1]. Postwar government-guided direct investment did not produce industries sufficiently large or specialised enough to cut their overseas connections and to compete on world markets. Baldwin (1969) further concludes that these infant industries had failed to achieve an efficient allocation of productive resources. Market orientated direct investments, in contrast to politically orientated direct investments, could be an alternative government policy option[2] in the apportionment of investment resources. For example, Lipsey and Kravis (1986) compared the success of market competitiveness by overseas U.S. affiliates in Canada and elsewhere with the original firms located in America. Canada, with its large scale direct American investment (four times the Western European volume in manufacturing)[3] has moved in the direction of capital mobility, and tariff-reduced market orientation[4].

In the most recent studies on factors motivating American direct investment, hypotheses have been comprehensively debated by Goldberg (1972), Lunn (1980), Pugel (1981), Scaperlanda and Mauer in 1969, with a further 'revisited' study by Scaperlanda and Balough in 1983. Two of the three hypotheses posed as motives by the scholars, economic growth and tariff discrimination, could be significant in the Australian example. The third hypothesis, market size, is not given the same significance in this study as a motive in attracting equity investment to Australia on account of the small population.

1. Ibid, page 33.
2. "In retrospect, the period following the Second World War would have been an ideal time in which to dismantle Australia's barriers to the world", page 10, Senate Standing Committee report, 1988.
3. Dunning, 1958, referring to the first decade postwar, page 315.
4. Cox and Harris, 1985.

Accepting that Brash was correct in his thesis that the motive for the early American investment was to secure a foothold behind the tariff wall[1], then the subsequent investment to the mid 1960s to secure that initial manufacturing investment in the expanding economy can also be accepted as a continuation of the same motive[2]. At any rate, the mineral discoveries in the late 1960s decade would have altered the bias that influenced American equity investment in Australia.

An essential objective of this paper is to test the tariff motive[3] comparing manufacturing investment with the total direct investment and, at the same time, determine if American motives for equity investment have changed. Furthermore, it would be interesting to see if the previous tariff and market growth motives are still as relevant when using the longer regression time period.

US direct investments in the Australian manufacturing sector peaked at $US 194 million in 1967, thereafter averaging $US 12 million per year compared to a previous $US 26 million per year in the period 1953-1966. The Australian mining sector benefited first from the shift in

1. For a discussion of a model that specifies 2 goods and 2 countries where tariffs affect the direct investment in the sector of the 2 goods, see Miyagiwa and Young, pages 330-334, and for a discussion on multinational firms tariff behaviour, see the second chapter "The Competitive Advantage of Firms in Global Industries" of Michael E. Porter's *The Competitive Advantage of Nations*, 1990. Earlier tariffs in Australian economic history (Haig 1989) put in place to protect employment in the manufacturing industry, were not designed as a protective 'wall' as happened after 1945. Once the wall had been established, Nigh and Schollhammer (1987) argue convincingly that foreign direct investors are more inclined to react strongly to negative developments like tariffs than to positive developments which they perceive as promoting corporate goals.
2. "the tariff remained, except in a minority of industries, the major instrument of industry policy in the period covered", page 2, Leon Glezer, referring not only to the 1960s, but also the 1970s, *Tariff Politics: Australian Policy-making 1960-1980*, 1982.
3. "attracted foreign investors", ibid, p. 26, a motive paradoxically used by Australian protectionists for keeping the tariff wall.

investments. The oil price shock of 1974, along with attractive interest rates, further diverted funds to the financial sector. Between 1984 and 1986, a total of $US 688 million (net equity) went back to the US, but when the short term interest-rate differential rose to 8.2% (Australian interest rates less American interest rates) in 1987, American investors put $US 1,157 million (net) back into their Australian equity.

To analyse the long-term direct investment flow from the United States to Australia, aggregate data from both countries will be used. After the methodology section, Section 3 will contain a discussion of the empirical results and Section 4 will conclude the paper.

2. Theoretical framework:

A time period 1952-1987, was chosen for which reliable data was available producing 34 annual observations (too few for an ARIMA model). It covered the period Brash used after the War 1953-1962, included the years of Green and Cunningham's study 1965 and 1969, and added subsequent years after the oil crisis of 1974, thus consolidating previous studies with recent international economic events. Three dependent variables, the total American direct investment (net capital flow) to Australia, the equity investment in manufacturing and the equity investment in other industries, were taken from available American data, in contrast to unavailable or inconsistent Australian data. All of the data was converted to logarithms. Table 1 records regression values and the values of Frisch's confluence analysis[1] for detecting multicollinearity. Table 2 lists the correlation and covariance matrices of the explanatory variables. The Time-Series Processor, an econometric package, produced the outcome for the selected variables.

1. Koutsoyiannis, A., *Theory of Econometrics*, 1981, pages 238-242.

In common with the study of Scaperlanda and Balough for the EEC, this study used the annual increase in the book value of US direct investment as the dependent variable. In contrast to that study's use of domestic output as an incentive for investment, this study used the eventual return on investment as measured by the ratio of gross operating surplus of corporate trading enterprises to the gross domestic product.

The model used in the regressions is a variation of the 'basic operational model' of Scaperlanda and Balough[1]

$$I_t = a + b_1 PS_{t-1} + b_2 \Delta PS_t + b_3 TD_t + b_4 CD_t + u_t$$

where

I = the annual increase in the book value of US direct investment in manufacturing or the annual plant and equipment acquisitions by the foreign affiliates;[2]

PS = output variable measured by either GNP or the predicted value of sales of foreign affiliates of US manufacturing investors;

TD = tariff discrimination proxy;

CD = dummy variable scheme to reflect the effects of the US capital control programmes.

This is an accelerator model where the (predicted) value of output is an explanatory variable for direct investment. In a smaller size market like Australia, a better model would be a joined accelerator-multiplier model where the equity investment is equal to the previous performance for the return of income on output. Tariff barriers were central to Scaperlanda and Balough's analysis and the one in this study. Their prior belief was in the repelling effect of tariffs on direct investment and a proxy was used.

1. Scaperlanda, A. and Balough, R.S., 1983, page 383.
2. Ibid, the authors also state that this is equal to the annual change in US ownership of foreign affiliate firms, a function of both capital outflows from the parent to affiliated firm and the parent firm's proportion of the affiliates retained earnings.

2.1 The Model:

Rather than a tariff proxy, the Australian custom duties on imported merchandise goods or the actual tariff itself was used. Related to the tariffs motive as an influence on investment but of special concern to those multinationals already behind the wall, the prices of imports competing with their products should affect additional incoming investment from American parent corporations.

As an influence for attracting investment, the Australian market is small. Other larger markets competing for American investment could repel investment away from Australia. The variable directly relating to overseas American investment is the book value for the US investment position abroad. In a similar vein, another possible competitive motive that would also attract funds away from Australia, are other resource-exporting countries which sell similiar resource products. Market imperfections[1] could also influence such investment. For example, differences between American and Australian interest rates could also affect US direct investment in Australia. Another market imperfection, manufacturing output labour data, was not available for the regression timeframe.

In summary, a suitable Australian model that examines the motive for American direct investment[2] would require such explanatory variables as; (1) previous American investment in manufacturing, (2) mineral resource development since the late 1960s, (3) competition for investment funds of other countries and the world-wide competition for 'market size' investment funds, (4) attractions of market imperfections existing between Australian and other markets, (5) possible relative profits from sales or income to investors from growth in the Australian economy, (6) relative price competition to American products made in Australia from imports, and most importantly, (7) Australian tariffs.

1. Ibid, pages 382-383 and Kindleberger 1969, 1987.
2. Lagged to pick up imported intermediate goods for investment.

The equations to be tested incorporating these variables[1] are

1. $IM_{t-1} = b_o + b_1 T + b_2 X + b_3 A_1 + b_4 R_t + b_5 PM_{t-1} + u_t$
2. $IO_{t-1} = b_o + b_1 T + b_2 X + b_3 A_1 + b_4 R_t + b_5 PM_{t-1} + u_t$
3. $I_{t-1} = b_o + b_1 T + b_2 X + b_3 A_1 + b_4 R_t + b_5 PM_{t-1} + u_t$

where

IM_{t-1} = Net capital flow to Australia of United States total manufacturing direct investment;

IO_{t-1} = Net capital flow to Australia of United States other direct investment (total excluding manufacturing);

I_{t-1} = Net capital flow to foreign affiliates in Australia of United States total direct investment;

$b_1 T$ = Australian custom duties on merchandise imports;

$b_2 X$ = Income ratio, (GOS/GDP) Australian gross operating surplus of corporate trading enterprises / gross domestic product;

$b_3 A_i$ = United States direct position abroad (total assets of the *i*th American firm abroad);

$b_4 R_t$ = $(R_{at} - R_{ust})$ Interest rate difference of Australian short term government bonds less US short term treasury bills;

$b_5 PM_{t-1}$ = Australian imports of goods and services price deflator.

1. The selected regressors differ from the earlier motives of Brash and the determinants of Green and Cunningham. Brash did not make use of regression analysis as he searched for manufacturing investment motives in the local economy, while the latter was a cross country comparative study of 25 nations (some industrialised) for the years 1965 and 1969. The approach of Green and Cunningham's study with its use of incentive and restrictive variables correlated with direct investment, has been utilised in this two-country study while encompassing, at the same time, the tariff motive of Brash and a variation on the basic model of Scaperlanda and Balough. Tariffs, market size and growth received *a priori* treatment. Other previously used variables by scholars, like close proximity to the US and cultural differences, were not found applicable. On the contrary, the two countries have more similarities than they have cultural differences, lending emphasis to the definite choice by investors of what they consider to be the crucial factors determining their recourse to Australia as an alternative investment.

2.2 Data Limitations:

There has been a number of statistical changes to Australian data that make collection of analogous data difficult. For example, Australian stockbrokers until recently, were not required to differentiate between domestic and overseas buyers in their transaction records of share sales. Furthermore, direct equity regulation[1] in both countries was reduced[2] at different periods, two decades apart, making a more complex comparison difficult.

1. This regulation, for American direct investment to Australia from the US, changed from a 25 to a 10 per cent share of (total) holdings in Australian companies at the earlier date in America, making possible comparable data (available from US sources) for two decades before and two decades after the change.

2. The Australian Bureau of Statistics has recently changed their reporting on the Australian shares from a paid-up value to market value, neither directly synonymous with the US data and adding more problems when making comparisons between US and Australian aggregate data.

3. Empirical Results:

The regression results in rows 1 through 6 of Table 1 relate to the net investment flow to the entire Australian economy, and those in rows 7 through 12 to the net flow, excluding manufacturing, to the other Australian industries. Rows 4 and 5 differ in that the first includes the interest rate gap between Australian and American short term bonds and treasury bills, while the latter includes the Australian merchandise goods import price deflator. Both are included in row 6 for 'total' and row 12 for 'other'.

Table 1: Multicollinearity and Regression Coefficients*

(Total I_{t-1} US Net Flow of Direct Funds to Australia and Other IO_{t-1} US Net Flow of Direct Funds)

	b_0	b_1T	b_2X	b_3A	b_4R	b_5PM	R^2	dw	se	f
I=f(T)	7.41	-0.25					0.17	0.68	0.59	7.6
	(12.6)	(-2.8)								
I=f(T,X)	7.68	-0.27	-1.64				0.15	0.66	0.73	3.9
	(10.6)	(-2.8)	(-0.6)							
I=f(T,X,A)	9.66	-1.72	-7.09	1.79			0.49	1.10	0.70	11.8
	(13.8)	(-5.4)	(-3.1)	(4.70)						
I=f(T,X,A,R)	9.37	-1.21	-7.86	1.26	-0.43		0.60	1.51	0.63	13.2
	(14.8)	(-3.6)	(-3.8)	(3.27)	(-2.9)					
I=f(T,X,	10.07	-1.26	-6.79	1.60		-0.71	0.53	1.22	0.71	10.4
A,PM)	(14.2)	(-3.2)	(-3.1)	(4.23)		(-1.9)				
I=f(T,X,	9.74	-0.84	-7.56	1.13	-0.40	-0.61	0.63	1.62	0.65	12.1
A,R,PM)	(15.1)	(-2.2)	(-3.8)	(2.99)	(-2.9)	(-1.8)				
IO=f(T)	6.81	-0.12					0.06	1.86	0.45	3.0
	(15.2)	(-1.7)								
IO=f(T,X)	6.97	-0.13	-0.96				0.03	1.85	0.56	1.6
	(12.5)	(-1.8)	(-0.5)							
IO=f(T,X,A)	8.10	-1.00	-4.06	1.02			0.23	2.28	0.62	4.4
	(13.1)	(-3.4)	(-2.0)	(3.03)						
IO=f(T,X,	7.97	-0.72	-4.41	0.77	-0.19		0.26	2.36	0.62	3.9
A,R)	(12.9)	(-2.2)	(-2.2)	(2.07)	(-1.4)					
IO=f(T,X,	8.31	-0.71	-3.90	0.92		-0.37	0.24	2.40	0.65	3.6
A,PM)	(12.8)	(-2.0)	(-1.9)	(2.65)		(-1.1)				
IO=f(T,X,A,	8.17	-0.52	-4.25	0.70	-0.18	-0.33	0.25	2.46	0.65	3.3
R,PM)	(12.5)	(-1.3)	(-2.1)	(1.84)	(-1.3)	(-1.0)				

* (t-statistic in parenthesis), all variables scaled in logarithms, and R^2 is adjusted.

The American flow (1952-1987) to manufacturing (regression 1, page 8), surprisingly, could not be explained by the regressors and has not been included in the table. There were no *t*-statistic values for the regressors above 1.1 and no *f*-statistic above 2.2 or an adjusted R^2 above 0.12. In contrast, the American direct investment flow to the total economy (regression 3) had significant *t*-statistics values for each of the five regressors. In a similiar vein, the results for regression 2 for the other industries obtained significance for all except the interest rate and import price deflator variables, Table 1, rows 10, 11 and 12.

Tariffs and the interest rate gap had a negative effect. While the US direct position abroad attracted American direct investments to Australia, US interest rates did not. (See Table 1 rows 4 and 5 for 'total' and rows 10 and 11, for 'other'.)

If investors' reactions in other markets[1] towards tariffs and import prices are similar to their reactions in the Australian market, then the (expected) income from the market growth variable is the crucial Australian variable (inside Australia) attracting investors, during the time period of the regression.

The correlation and covariance effects that interest rates have on the other regressors can be seen in Table 2. Tariffs are closely correlated with the US direct position abroad variable (0.96), the import price deflator (0.92) and the latter two with each other (0.86). In the same table, a negative correlation can be seen between interest rates and the income ratio (-0.41) as well as between the import price deflator and the income ratio (-0.20). After the 1974 oil shock, the correlation relationship between the income variable and American direct investments to other industries became most prominent. (See Graph 1, page 18) The correlation between the interest rate gap variable and the income variable was also prominent (see Graph 2). Although a significant dissimilarity in this relationship occurred in the early 1950s and the mid-1980s.

1. See Lewis, (1938) Chapter XIV, pages 292-313, and Kindleberger (1970) pages 31-32 for the differences in patterns of direct foreign investment.

Table 2: EXPLANATORY VARIABLES
Covariance\Correlation Matrix

	T	A_i	PM_{t-1}	R_t	X
T	1.06	[0.96	0.92	0.39	-0.19
A_i	0.84	0.72	[0.86	0.24	-0.05
PM_{t-1}	0.48	0.13	0.25	[0.44	-0.20
R_t	0.24	0.36	0.13	0.36	[-0.41

Variable List: (See page 8)

The correlation that existed between the Australian tariffs variable and import price deflator with the US position abroad variable cannot be over emphasised. These trade-barrier (regressors) are geometrically and functionally (Table 2) interrelated[1]. The covariance relationship values, from 0.48 for tariffs and the import price deflator to 0.84 for tariffs and US position abroad, implied the regressors moved together, confirming Robertson's statement that the Australian tariff wall was used as a means for adjusting capital and that the government used tariffs as a means to pick and choose American direct investment.

> "In practice, a number of obstacles were erected that effectively blocked many U.S. initiatives, whilst at the same time the Australian government was attempting with a considerable degree of success to channel available U.S. funds into areas of high Australian priority. Restrictions were exceptionally severe under Labor down to late 1949, but even the relative loosening of regulations during the early Menzies years left the government in firm control of U.S. direct investment."[2]

Market forces in Australia were not permitted to indicate the place of investment for direct investment as had happened in Canada, although the potential income from Australian market growth was the source of investment encouragement as contended in the previous work of Kindleberger and Ohlin.

1. The regression results are dependent on their specification, a caveat recognized by Goldberg, Lunn, Pugel, Scaperlanda & Balough.
2. P. Robertson, page 160.

Market imperfections between the source and the target country are also possible motives for direct investment. The tariff wall would not (and possibly could not) prevent financial investments due to local market imperfections, knowledge of which, that would be passed on by the local managers. One such market imperfection, the interest-rate gap, could attract investment and affect the other four determinants, see Table 2.

When the five determinants are regressed separately with total investments and other investments and, they are added one by one starting with tariffs, a Frisch confluence analysis[1] method (Table 1) helped determined the variables multicollinearity.

The coefficients for the (total investments) constant regressions improved when the variables for tariffs, income and the US position abroad were added individually and when the interest-rate gap variable and the import price deflator were added in combination. The constant standard errors for the regressions grew from 0.59 to 0.73 on the adding of the income variable with the tariffs variable. However, the standard errors improved (or numerically less) with the addition of the variables - US position abroad, the interest-rate gap, the import price deflator and when the interest-rate gap and import price deflator were added in combination.

Among the *t*-statistics of each regressor, the interest-rate gap variable enhanced the result of tariffs from -2.8 to -5.4 when it was added. Nevertheless, the same action caused the *t*-statistic value for the US position abroad variable to decline from 4.7 to 3.3. The standard error for tariffs weakened (marginally) from 0.09 to 0.38 on addition of all variables. With the addition of the explanatory variables, the R^2, Durbin-Watson (dw) statistic and the *(t)* and *(f)* statistic improved continually with the following exceptions; for R^2 and the *f*-statistic the addition of the import price deflator, and the addition of the interest-rate gap variable significantly elevated the value of dw, while the income variable lowered the *t*-statistic when added to tariffs only. At any rate, on the next addition of the variable US position abroad, the *t*-statistic substantially improved.

1. Koutsoyiannis, page 241.

The changes which occurred to the Australian trade-barrier variables - tariffs, import price deflator as well as the income from profits are as important in determining the amount of total US direct investment coming to Australia, as the growth of the US position abroad variable. In Table 1, the multicollinearity results disclosed that the five regressors move in the same direction. They move together in a new direction when the American-Australian interest-rate gap intercepts the regressors. Taken together, the two axioms display a tariff wall which discriminates against American direct investment.

Turning to an analysis of relationships between US direct investment to the mineral and finance industries, the discussion of the previous axioms also holds true. The coefficients for the (other investments) constant regressions behaved in a similiar fashion as the coefficients for (total investments). When the interest-rate gap variable was added as the fourth variable, the value for the coefficients declined from 8.10 to 7.97 but resumed their upward march on the addition of the import price deflator and when the four regressors were combined with interest rates. This time there was no interuption in the standard error values which grew from 0.45 to 0.65.

Besides the growth of the other sectors in the Australian economy and the stagnation of manufacturing, there were two other events that occurred in the mid 1970s that explains the shift in US direct investments to the mineral and finance sectors. There was a large increase in the international prices of crude oil and there was a, once only, 25% reduction in Australian tariffs. A subsequent price increase in Australian export coal soon made this energy export the largest money spinner for the economy. Thus US direct investments to the other industry sectors followed closely the income from growth (Graph 1).

Regression numbers 2 and 3 (page 8) for the (other) and (total) US direct investment in Australian manufacturing confirmed the tariff motive, while regression 1 on US direct investment to Australian manufacturing did not support Brash. Similiarly, these two models justify US direct investment to Australia quite well in terms of an

American diversification of funds and Australian current profitability. The last motive for investment was found elsewhere significant for 90 per cent[1] of Australian aggregate investment.

3.1 Previous Empirical Results:

There has been a number of articles by scholars using similar methods in this study to derive the empirical results. The results of an earlier article by Scaperlanda and Mauer was debated by Goldberg and Lunn. Lunn accepted the tariff proposition with the proviso that the data[2] "is too weak to permit strong policy statements from being made". This was a statement of some significance since an effort was made in the subsequent article by Scaperlanda and Balough to improve the quality of the tariff data or variable and therefore the empirical results of the regressions. Lunn had an 'alternative specification' $(K^{*}-K)$ in his model[3], a variable that measures the difference in desired capital stock and actual capital stock. Then Lunn, in a subsequent article, drops his dummy variable that failed to capture the effects of the American capital controls programme. Whereas the variable was found by Lunn to be ineffective, it was kept in the basic model of Scaperlanda and Balough. In my study, neither the capital stock variable or the capital control dummy were considered appropriate to the Australian investment area. A dummy relating to the 1974 oil price shock did not achieve the results expected for periphery investment areas.

Quality data on direct investments to Australia were, until recently, non-existent from Australian source material. Other data limitations that have been found are explained in Section 2.2. For example, the exchange rate and two proxy variables used in an effort to measure the difference in technology between the two countries was ineffective.

1. McKibbin, W.J. and Siegloff, E.S. "A Note on Aggregate Investment in Australia", *The Economic Record*, September 1988.
2. Lunn, 1980, page 93.
3. Ibid, 1983, page 391.

A possible explanation would lie in the fact that the exchange rate was stable until the mid 1980s and any technology transfer would have been completed in the American ancillary manufacturing firms by the late 1950s.

The lack of analogous American quarterly data, however, prevents an adequate examination and confirmation of the last statement. These statistics would have allowed comparisons to be made of the results in the first half of the regression time period with the results in the second half. In graphs 1 and 2, a possible (investment motive) shift can be detected in the correlated relationships among four of the regressors in the two separate halves of the regression time period.

4. Conclusions:

A previous analysis of factors or determinants motivating direct American investment in Australia has been descriptive in form. This study provides a more comprehensive appraisal of these investment determinants.

The factors that motivated the significant postwar American direct investment to Australia are evaluated over a longer time period 1952-87 than previously. The trade and tariff hypotheses of Kindleberger, Ohlin and Vernon on investment along with the market size and growth hypotheses of Scaperlanda and Mauer are tested. Two of these variables were found to be dynamic motives. US equity capital flow into Australia is shown to depend on the desire for diversification of funds by American investors, pages 11 and 13, and the potential return on money (income) from vertical direct investment.

The Australian tariff wall was constructed to manipulate US equity investment into 'suitable' areas of the Australian economy. It was found to be a barrier to total American-Australia direct investment and to US equity investment in the mining and finance industries.

Data Appendix

American Data

United States Manufacturing Direct Investment Net Capital Flow to Australia: millions $US, end of year. Source; US Department of Commerce, *Survey of Current Business*, August 1988 and earlier issues, Washington D.C.

United States Total Direct Investment Net Capital Flow to Australia: millions $US, end of year. Source; US Department of Commerce, *Survey of Current Business*, August 1988 and earlier issues, Washington D.C.

US Direct Position Abroad: book value, billions $US, end of year. Source; U.S. Department of Commerce, *Survey of Current Business*, August 1988 and earlier issues, Washington D.C.

Australian Data

Australian Custom Duties on Merchandise Imports: millions $A, fiscal year. Source; Australian Bureau of Statistics, *Taxation Revenue*, Catalogue number 5506.0, v.a.r., Canberra.

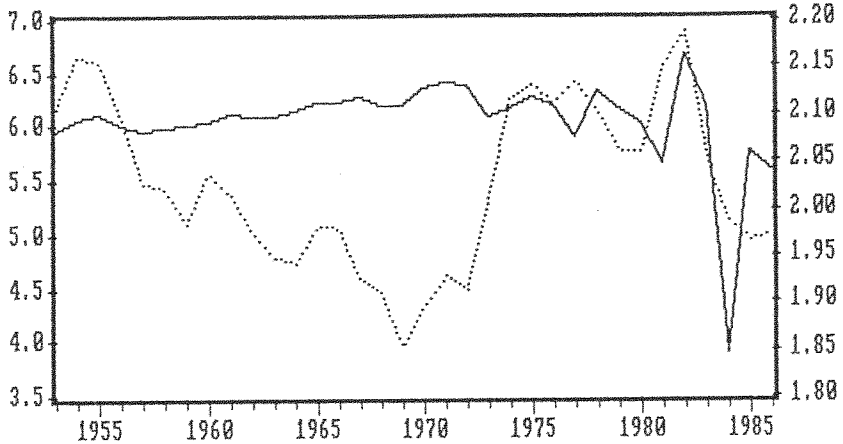
Ratio of Australian Gross Operating Surplus of Corporate Trading Enterprises to Australian Gross Domestic Product: per cent, fiscal year. Source; Reserve Bank of Australia Occasional Paper No. 8A, *Australian Economic Statistics 1949-50 to 1986-87: I Tables*, Feb. 1988, Sydney.

Australian Imports of Goods and Services Deflator:1984-1985=100, FY Sources: 1969-70 to 1985-86 from Australian Bureau of Statistics, *Quarterly Estimates of National Income and Expenditure*, Catalogue number 5206.0, v.a.r., Canberra. 1959-60 to 1969-70 was spliced using the same source. 1952-53 to 1959-60 was spliced from M.W. Butlin "A Preliminary Annual Database 1900/01 to 1973/74", Reserve Bank of Australia Research Discussion Paper 7701, May 1977, Sydney.

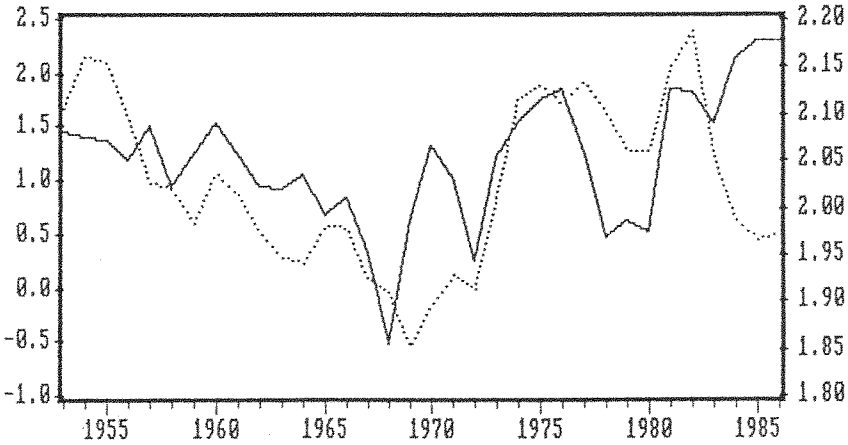
Other Data

Interest rate difference of Australian short term government bonds less United States short term treasury bills, per cent per annum, Source; International Monetary Fund, *International Financial Statistics*, 1989 and other Yearbooks, Washington D.C.

Graph 1: Net Capital Flow to Australia of United States Other Direct Investment and Australian Income Ratio



Graph 2: Australian-American Interest Rate Difference and Australian Income Ratio



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