

# Some Problems in Interpreting Citation Practices in the Economic Record 1925-1946

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## I Introduction

This paper raises some problems of interpretation in the use of citation analysis as a research tool in the history of Australasian economic thought. We examine the *Economic Record* during the Copland editorship with a view to assessing the adequacy of citation analysis in providing meaningful data on the transmission of ideas and status relationship within the Australasian economics community.

Douglas Copland's editorship resulted in a journal with a clear and different "personality" from contemporary economics journals.<sup>1</sup> Indeed, the *Economic Record* during this period (1925-1946) provided a framework for the dissemination and debate of indigenous policy issues and was often the vessel that brought uniquely Australasian contributions into the economics world.<sup>2</sup> The approach in this paper is to analyse systematically the footnote references and bibliographies of articles and notes in the *Economic Record* for the years 1925-1946 (the Copland editorship). Three questions are posed:<sup>3</sup>

1. Does the pattern of citations over time in the *Economic Record* differ significantly from that in other economics journals?
2. Which economists had the greatest impact on Australian and New Zealand economists during the interwar and wartime years?
3. What distinctive features can we note of Australasian economics as identified by citation practice?

Section II of the paper describes the methodology used in the study; Section III provides evidence of citation practices that answers tentatively the questions posed, and Section IV presents concluding remarks on interpreting citation data.

## II Methodology

A set of referenced or cited articles has been created by examining all issues of the *Economic Record* December 1925 to December 1946 inclusive. The criteria used for inclusion in the referenced set was as follows:

- (i) We include all articles and notes in the *Economic Record*. Book reviews contained clearly in the book review section of the journal were excluded although article length reviews in the article section of the journal were counted as articles. Obituaries were excluded. Supplements issued by the *Economic Record* were not part of the sample.
- (ii) The unit of citation was the author-work: a citation must be to an author's specific work in the text. The mere mention of a name without a reference to a work or a quote from a work would not count. Self citations and in-text citations are not counted. Each separate work by a given author is counted only once even if that work is cited several times for different reasons. Separate parts of the same article are counted as separate articles if they appear in separate issues of the journal.

- (iii) Reference to data sources such as citations of political speeches, quotes in newspapers, references to legal decisions, reports and publications of state government agencies and unpublished papers were excluded.

The data bank thus assembled allows us to construct tables in Section III by sorting the referenced set by various criteria and counting the number of citations and citations per article.

### III Empirical Evidence

#### Citation Practices

Citation practices in economics journals before about the 1950s were very different from journal literature citation practices of today. Articles on policy issues included numerous references to reports of state and government commissions, judicial opinions, political speeches and newspaper articles which have been excluded from the present study because they do not shed light on the transmission of ideas. Table 1 summarizes the changes in citation practice over the sample period. Journal articles in the *Economic Record* during the Copland editorship were literary in style, with few formal citations and with little attempt to establish work within a body of literature.<sup>4</sup> One can note two changes in citation practice, even in this relatively short sample period. First, cites per article increased between the sub-periods 1925-29 and 1940-46 (from 1.4 cites per article "adjusted" average to 2.5 cites per article average)<sup>5</sup>. Second, the percentage of articles with no cites decreased from a sub-period average of 67.9% in 1925-29 to 49.4% in 1940-46. Both these results suggest that a transition to a more formal

TABLE 1

#### Measures of Changing Citation Practice in the Economic Record 1925-46

Issues	No. pages	No. cites	Cites per page	Cites per Article	% articles w/o cites
1925	121	6	0.05	0.40	80.00
1926	196	73	0.37	4.06	66.67
1927	271	64	0.24	2.78	60.87
1928	247	30	0.12	1.25	66.67
1929	302	34	0.11	1.31	65.39
1930	256	26	0.10	1.04	68.00
1931	274	54	0.20	1.93	53.57
1932	271	45	0.17	1.45	61.29
1933	258	30	0.12	1.03	68.97
1934	225	42	0.19	1.83	52.17
1935	226	26	0.12	1.13	56.52
1936	243	43	0.18	1.65	46.15
1937	206	57	0.28	2.19	42.30
1938	203	36	0.18	1.29	57.12
1939	204	49	0.24	1.48	51.52
1940	227	47	0.21	1.96	50.00
1941	225	78	0.35	3.39	39.13
1942	178	40	0.22	2.22	66.67
1943	185	36	0.19	2.00	44.44
1944	180	24	0.13	1.60	73.33
1945	216	57	0.26	3.00	47.37
1946	238	66	0.28	3.30	25.00

standard of scholarship was taking place in the economics community; the increasing number of younger Australasian economists publishing in the *Economic Record* adopted a more formal, "international" style of journal article writing.<sup>6</sup>

How do these results compare with international citation practices? We use data from Biddle's (forthcoming) survey of major international journals to compare citation practices between predominately Australasian authors and an international mode (see table 2).<sup>7</sup> The policy focus of the *Economic Record* seems to have had a discernible effect on the citation practice of Australasian authors, who tended to cite authorities of any type (economist or other) far less than their international colleagues.<sup>8</sup> However, the fall in the percentage of articles with no cites noted above is consistent with overseas trends. Both Biddle and Stigler and Freidland report similar falls in their surveys of international journals; the economics literature in Australasia and elsewhere was becoming more specialised and interdependent.<sup>9</sup>

### Who Were Cited?

A master list of cited economists is provided in table 3 and, along with table 4, allows some assessment of the transmission of ideas and the status relationship within the Australasian economics community. Attention to domestic policy issues within the pages of the journal is reflected in the large number of citations to more eminent Australasian economists - Benham and Bridgen on tariffs and the standard of living, Copland on monetary theory in the Australian context, Colin Clark on national income and Walker on wartime economics. However, given the wide range of subject matter published in the *Economic Record* it is not surprising to find that Australasian authors drew on a variety of foreign economists and other sources - indeed, citation data highlights the internationalisation of Australasian economics (in ideational pedigree rather than subject matter) during the interwar period. With regard to the international transmission of ideas two points can be noted. First, British economists, and "Cambridge school" economists in particular, dominated citations to foreign economists.<sup>11</sup> Keynes, Pigou and Marshall from Cambridge, and Cannan and Hayek from the London School of Economics (LSE), were important intellectual sources. Second, exogenous shocks to citation practice via the receipt of new publications are evident in the increased citation ranking of certain foreign economists; Keynes's *Treatise on Money* and *General Theory*, and Pigou's *Public Finance* and his new edition of *The Economics of Welfare* (1932) are examples of books that were utilised immediately by the economics community. This change in the frequency of citation per author is shown in changes in the relative ranking by five yearly period (see table 4). Keynes's liberal monetary writings of the 1920s had less impact on Australasian authors than did his later work. Clark's national income research remained influential from the late 1930s while Walker's wartime economics provided a framework for discussion of Australian wartime economic policy. Australasian economists' interest in contemporary debate on the more theoretical aspects of economics can be seen in the increase in citations in the 1940-46 sub-period to Keynes, Pigou, Kaldor, Hicks and Lange - the Cambridge controversies over employment, interest and price flexibility in the late 1930s were keenly watched from the Antipodean sidelines.

Data in tables 3 and 4 also permit some understanding of the status relationship within the Australasian economics community. The prominence of Copland, Belshaw, Walker, Clark, Bridgen and Fisher indicates a "self-feeding" process similar to that identified in analysis of the British economics profession and suggests isolation in interests or approaches.<sup>13</sup> The tendency to reference fellow Australasian economists with as great or greater frequency as foreign

TABLE 2

*Comparison of Measures of Changing Citation Practice:  
The Economic Record and International Journals*<sup>10</sup>

Year	Cites per Page		Cites per Article	
	Economic Record	Inter'l	Economic Record	Inter'l
1928	0.12	0.33	1.25	5.72
1930	0.10	0.37	1.04	5.58
1932	0.17	0.67	1.45	7.95
1936	0.18	0.39	1.65	5.00
1940	0.21	0.38	1.96	4.93
1944	0.13	0.51	1.60	7.09

TABLE 3

*Approximately 20 Most Frequently Cited Economists 1925-49  
(number of cites)*

1.	J.M. Keynes	(37)
2.	D.B. Copland	(29)
3.	A.C. Pigou	(26)
4 <sup>=</sup>	H. Belshaw	(19)
4 <sup>=</sup>	E.R. Walker	(19)
6.	C. Clark	(17)
7 <sup>=</sup>	J.B. Bridgen	(14)
7 <sup>=</sup>	A. Marshall	(14)
9.	A.G.B. Fisher	(11)
10 <sup>=</sup>	E. Cannan	(9)
10 <sup>=</sup>	F. Hayek	(9)
10 <sup>=</sup>	N. Kaldor	(9)
13 <sup>=</sup>	J.R. Hicks	(8)
13 <sup>=</sup>	A.H. Tocker	(8)
13 <sup>=</sup>	H.L. Wise	(8)
16 <sup>=</sup>	W. Beveridge	(7)
16 <sup>=</sup>	R.C. Mills	(7)
18 <sup>=</sup>	F.C. Benham	(6)
18 <sup>=</sup>	L.F. Giblin	(6)
18 <sup>=</sup>	O. Lange	(6)
18 <sup>=</sup>	E.P. Neale	(6)
18 <sup>=</sup>	L. Robbins	(6)

TABLE 4  
*Most Frequently Cited Economists by Five Yearly Period*  
*(number of cites)*<sup>12</sup>

1925-29	1930-34	1935-39	1940-46 (a)
E. Cannan (7)	D. Copland (15)	J.M. Keynes (10)	J.M. Keynes (19)
A. Marshall (7)	J.M. Keynes (6)	H. Belshaw (9)	E.R. Walker (17)
F.C. Benham (6)	E. Lederer (5)	C. Clark (8)	A.C. Pigou (12)
A.C. Pigou (5)	G.L. Wood (5)	A.H. Tocker (8)	C. Clark (9)
W. Beveridge (3)	J.B. Bridgen (4)	D.B. Copland (6)	N. Kaldor (9)
T. Coghlan (3)	L.F. Giblin (4)	A.C. Pigou (6)	D.B. Copland (8)
H. Dalton (3)	F. Hayek (4)	J.B. Bridgen (5)	A.G.B. Fisher (8)
C.H. Wickens (3)	A. Marshall (4)	W.H. Cocker (4)	J.R. Hicks (8)
	E.O. Shann (4)	W. Duncan (4)	W.L. Wise (8)
	A.G.B. Fisher (3)	E.P. Neale (4)	H. Belshaw (6)
	A.C. Pigou (3)	J. Stamp (4)	O. Lange (6)
		F.B. Stephens (4)	R.C. Mills (5)
		D.O. Williams (4)	W.B. Sutch (5)

(a) seven year sample.

TABLE 5  
*Citations to "Foreign" Economists*  
*Rank Ordering by Citation Count: Comparison of the*  
*Economic Record and International Journals*

<i>circa 1930</i>	Economic Record - 1929-31	Quandt - 1930
A.C. Pigou	1	4
J.M. Keynes	2	1
A. Smith	2	--
F.W. Taussig	2	4
E. Cannan	5	--
H. Dalton	5	--
F. Hayek	5	--
A. Marshall	5	1
D.H. Robertson	5	--
<i>circa 1940</i>	Economic Record - 1939-41	Quandt - 1940
J.M. Keynes	1	2
A.C. Pigou	2	--
J.R. Hicks	3	1
P.H. Douglas	4	13
B. Ohlin	4	--
D.H. Robertson	4	--
T. Balogh	7	16
F. Hayek	7	3
F. Knight	7	4
L. Robbins	7	--

economists is explained by the *Economic Record's* and, as editor, Copland's strong desire to publish specialised articles on indigenous topics.

Finally, to what degree were the economists cited in the *Economic Record* different from those cited in the international literature? Table 5 compares rank ordering of citations to "foreign" economists in the *Economic Record* with international journals (as surveyed by Quandt 1976) at two "turn of the decade" data points.<sup>14</sup> The top three most frequently cited foreign economists (apart from Smith) in the *Economic Record* in 1930 were also in the top echelons of international rankings and overall the two sets of rankings have four economists in common. Citations for *circa* 1940 show an increase in similarities between the two sets of rankings; a result that suggests that some Australasian economists were increasingly aware of current trends in the international literature.<sup>15</sup> The remanence of the Cambridge-LSE "influence" can be seen in the continued importance to Australasians of Pigou, Robertson and Robbins despite these economists falling from international prominence.

### Professionalisation and Internationalisation

One can conclude from analysis of changing citation practices and of who was cited that, despite a relatively high level of self referencing, the Australasian economics community was becoming more international in focus during the Copland editorship. In this section we examine the data in the referenced set in more detail. We distinguish between article and book citations by age (in order to assess the Australasian reliance on recent versus "more established" research) and examine the inter-relationship between Australasian economics and the international economics community (as evidenced by self referencing and citations to international journals).

The referenced set has been analysed in terms of cites to books and articles. An increase in cites to articles over time could be interpreted as (i) an increasing interest in current issues in the discipline (in either the local or international context) which are more readily published in journals, and/or (ii) an increasing willingness to communicate to a community of scholars (predominately economists) rather than to a broader audience (more easily captured in a book publication).<sup>16</sup> Figure 1 highlights the variability of cites to books versus articles and reflects the diverse range of subjects published in the *Economic Record* during this period. A slight increase in cites to articles over time is identifiable as Australasian economists cited more often controversies or theoretical papers of particular interest to specialist economists published in their own journal or international journals.

The apparent topicality of articles rather than books is not borne out, however, by analysis of the age of citations. A sample of four years of the referenced set (1930, 1935, 1940 and 1945) reported in table 6 shows the average age and standard deviations of cited articles and books. The differences in average age of books and articles was very little in 1930, 1935 and 1940.<sup>17</sup>

Attention to the problems of wartime administration and economic policy in 1940 is reflected in citations to books averaging only 2.3 years old and articles averaging 1.5 years old. The apparent topicality of books may reflect Australasian authors' receptiveness to new ideas in whatever form available - to the seminal contributions in book form in the 1930s (for example, Keynes's *Treatise on Money* and *General Theory*, J. Hicks's *Value and Capital*) or to topics of over-riding concern to the international and local economics professions (for example, books on wartime economics).

TABLE 6

## Age of Citations

	1930	1935	1940	1945
Number of Citations to:				
books	15	10	30	20
articles	4	14	15	34
Age of Citations (yrs)				
Average				
books	5.5	3.8	2.3	10.3
articles	6.3	5.7	1.5	6.2
Standard Deviation (yrs)				
books	7.1	2.0	3.5	6.2
articles	6.1	10.2	2.0	3.1

Citations to articles have been analysed further by tabulating the percentage of references in the *Economic Record* to itself (self-feeding) and other economics journals.<sup>18</sup> The amount of tabular material is too much to reproduce here - we provide biannual data and aggregate cross reference results (see table 7). The first general observation is that citations to other journals (whether economics, physical science or social science journals) decline; from an average of 38.8% of total journal cites between 1925-29 to an average of 12.2% of total journal cites between 1940-46. A closer examination of the composition of other journals shows that economists' references were to a wide variety of physical and social science literature. This included references to the statistics journals of the Royal Statistical Society and the American Statistical Society, to less cited economics journals such as the *Revue d'Economie Politique*, *Oxford Economic Papers* and *The Manchester School*, as well as to political science journals (for example, *Political Science Quarterly*, *Political Quarterly*) and physical science literature (for example, *Journal of Mineral Agriculture*) (see appendix 2).

The decline in referencing to other journals implies that economists increasingly cited a scholarly literature published in a "core" number of economics journals and provides further evidence of a transition to a more professional economics community. Second, the high ratio of self-feeding reflects the Australasian applied, policy related contents of the *Economic Record* identified in subject classification studies.<sup>19</sup> This finding is also in line with results for surveys of international journals; for example, Quandt reports that "[s]elf-references [references in a journal to an article in the same journal] decline proportionately by 1920, although they account in each journal for the single largest percentage of group references. With relatively few exceptions, it continues to be generally true that self-references constitute the single largest percentage of group references".<sup>20</sup> Finally, cross referencing patterns provide further evidence that the Australasian economics community was internationalist in focus (in ideational pedigree rather than subject matter) during this period. Loose categorisation of journals shows that "older" British journals (E, EJ) dominate cites to foreign journals (19.3% of total journal cites) and this data accords with research that shows that the theoretical antecedents of much of Australasian economics can be located in Cambridge and English classical political economy.<sup>21</sup> However, cites to "older" American journals (AER,

FIGURE 1  
Citations to Articles versus Books  
1925-1946

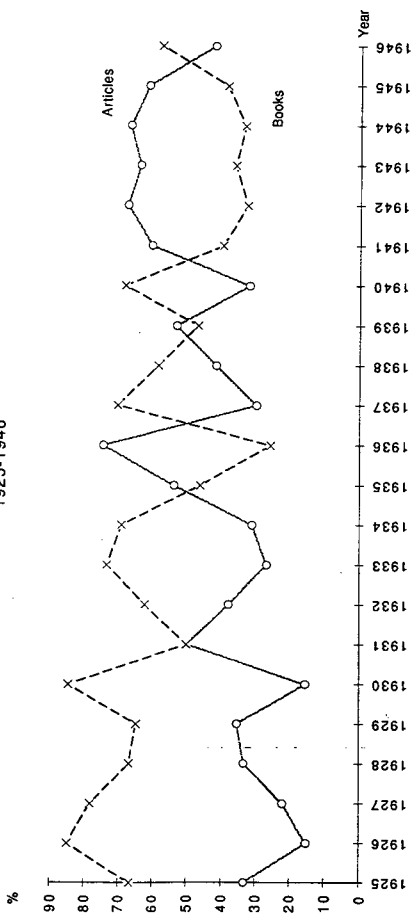




TABLE 7  
Cross Reference Patterns (%) 1925-46

Year	ER	EJ	AER	JPE	E	BM	QJE	J Farm Econ	Can J Econ	RESTAT	Other
1926	16.2	*	*	9.1	9.1	*	*	*	*	9.1	54.5
1928	10.0	20.0	*	*	10.0	*	10.0	*	*	*	14.3
1930	50.0	*	25.0	*	*	*	*	*	*	*	25.0
1932	23.5	11.8	*	*	*	*	*	*	*	*	64.7
1934	23.1	7.7	7.7	*	*	*	7.7	*	*	7.7	46.1
1936	90.6	3.1	*	*	*	*	*	*	*	*	6.3
1938	73.3	6.7	*	6.7	6.7	*	*	*	*	*	6.7
1940	46.7	26.7	6.7	6.7	*	*	*	*	*	*	13.3
1942	81.5	*	3.7	*	3.7	*	*	*	*	7.4	3.7
1944	31.2	*	*	18.8	*	*	6.3	31.2	*	*	12.5
1946	53.6	14.3	*	*	3.6	3.6	*	3.6	*	*	21.4
<b>Aggregate Results</b>											
1925-46	46.3	15.7	2.7	2.4	3.6	1.2	3.2	1.5	0.7	1.5	20.6

JPE, QJE)(8.3% of total journal cites) and "newer specialist" journals (EM, RESTAT, Journal of Farm Economics)(4.2% of total journal cites) shows that some Australasian economists were conscious of contemporaneous developments in several sub-fields of the economics discipline.

The conclusion reached above that the interwar Australasian economics community became increasingly internationalist can be contrasted with the recent claims by Groenewegen and McFarlane that Australian economics since the 1960s has become "Americanized".<sup>22</sup> While these commentators do not provide quantitative evidence in support of this claim, it is not clear that data on more recent citation practices by Australian economists could be used to support their argument. One problem with citation analysis is that it provides "ambiguous" information on the influence of particular writers and ideas. For example, one conclusion from our citation analysis is that interwar Australasian economics was "Anglicized". British, in particular Cambridge, economists were the most cited international authors. However, citation data does not address the nature of the Anglo influence - to what extent did Australasian economists adopt the framework or methods of research of British economists? The extent of British and American (or other) influences on Australian and New Zealand economists during the interwar period must be determined on a case by case basis (by individual and/or theme) with reference to the economic-theoretic foundations of domestic economists' work.

#### IV Concluding Remarks

A survey of the citation practices of authors in the *Economic Record* during the Copland editorship (1925-1946) reveals the following insights into the nature of the Australasian economics literature.

- (i) the increase in cites per article and decline in percentage of articles without cites indicates that many economists adopted a more formal style of article writing. However, the concentration on economic policy in the Copland-edited journal led to lower levels of citing than the international mode.
- (ii) the interwar period was the beginning of a specialist economics community in Australia and New Zealand. Self-feeding and author citation data shows that Australasian economists were cited as often, if not more often, than foreign economists as articles in the *Economic Record* addressed indigenous issues.
- (iii) Australasian economists drew intellectual inspiration from a wide variety of foreign economists in both article and book form (we find no discernible difference in the age of cites to books or articles). We have shown that Keynes, Pigou, Marshall, Cannan and Hayek were the most cited economists, although cross reference data indicates the extent of the inter-relationship between Australasian and international economics. One problem with this data is that we do not know the extent to which "most cited" reveals the "most influential" economists. Citation analysis does not provide information on whether Australian or New Zealand economists adopted the theoretical framework of international writers.

This last issue highlights some of the problems in using citation practices as a measure of influence. Citations tell us little about the method of research used by Australasian economists - information that is crucial if we are to substantiate claims of Anglicization or

Americanization. Historians of economics examining the theoretical antecedents of Australasian economics must examine some of the following issues with respect to the local journal literature: what distribution of articles in the *Economic Record* used empirical data? focused on policy problems? addressed theoretical issues? were articles accompanied or unaccompanied by a formal theoretical framework? did authors use mathematical operations or econometric techniques? It is only by answering these questions can we better understand the nature of Australasian economics and the economists' receptiveness to international ideas, whether British, American or from other sources.

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## Notes

- <sup>1</sup> Perlman (1977, p. 224).
- <sup>2</sup> The reference to New Zealand is deliberate. The early years of economics in Australia and New Zealand were closely connected. Copland (1951, p. 14) strongly supported the inclusion of New Zealand economists in the society and journal and argued that the early success of the Economic Society of Australia and New Zealand "was in part due to the association between Australia and New Zealand". Data presented in this paper shed light on the relationship between Australian and New Zealand economists during the early years of, what one could term, the "Australasian" economics community (see also Fleming 1994a, pp. 45-56).
- <sup>3</sup> Previous studies of the Australian economics profession that use quantitative data include Butlin's (1966) analysis of authorship of *Economic Record* articles, and Perlman's (1977), Corden's (1986) contents analyses of the *Economic Record*, and Susan Horne (1983). On citation practices in economics see, for example, Quandt (1976) and Stigler and Freidland (1975, 1979), and on problems in the citation approach see Stigler and Freidland (1975, pp. 485-490).
- <sup>4</sup> A perusal of the first and then most current issues of the *Economic Record* will show there have been changes in page size and format. Page size and format did not change during the sample period examined in this paper.
- <sup>5</sup> The data in table 1 has been adjusted for 1926 and 1927. In these years two articles by J.B. Condliffe were published that cited a total of 51 "other" references (for a note on the categorisation of cites by nationality see note 21) and has been treated as unrepresentative of overall citation practices. The adjusted figures used in calculating the period average are: 1926 - 0.19 cites per page and 2.11 cites per article; and 1927 - 0.18 cites per page and 2.09 cites per article.
- <sup>6</sup> See Stigler and Freidland (1979, p. 13).
- <sup>7</sup> Biddle (forthcoming, p. 37) analyses changing citation practices in seven international economics journals; *American Economic Review* (AER), *Econometrica* (EM), *Economica* (E), *Economic Journal* (EJ), *Journal of Political Economy* (JPE), *Quarterly Journal of Economics* (QJE), and *Review of Economic Statistics* (RESTAT).
- <sup>8</sup> On the policy focus of the *Economic Record* during this period see Perlman (1977).
- <sup>9</sup> Biddle (forthcoming, p. 7) and Stigler and Freidland (1979, p. 13).
- <sup>10</sup> International data from Biddle (forthcoming, table 1).
- <sup>11</sup> The Cambridge school of economics is well documented (see, for example, Bigg 1990, Bridel 1987, Collard 1990, Eshag 1963, Maloney 1985) and included economists such as Marshall, Pigou, Keynes, R.G. Hawtrey, F. Lavington and D.H. Robertson (see Bigg 1990, pp. 13-16; Collard 1990, pp. 166-172, 179-190).
- <sup>12</sup> Economists also cited in more than one year were (in alphabetical order): (1925-29) H. Belshaw, A.L. Bowley, J.B. Bridgen, L.F. Giblin and J.M. Keynes (2 cites); (1930-34) H. Belshaw, T. Coghlan, J.B. Condliffe, R.C. Mills, D.H. Robertson, A. Smith and R. Wilson (2 cites); (1935-39) J.G. Crawford, R.I. Downing, R.F. Harrod, F. Hayek and J.O. Shearer (3 cites); J.D. Black, E. Cannan, B. Ohlin, L. Robbins and E.R. Walker (2 cites);

- (1940-46) W. Beveridge, F.H. Knight, J.A. Maxwell and L. Robbins (4 cites); J.B. Bridgen, J.G. Crawford, H.D. Dickinson, P.H. Douglas, M. Kalecki, A. Marshall, J. Robinson and T.W. Schultz (3 cites); N. Buchanan, G. Harberter, F. Hayek, A.P. Learner, E.P. Neale, W.S. Salant, H. Valentine, J. Viner and J. Williams (2 cites).
- <sup>13</sup> Bordo and Landau (1979, p. 251) found that American and British authors in the postwar period cited "their 'own kind' more heavily than they cite[d] all authors, but British authors cite[d] themselves twice as heavily as they cite[d] all authors, while the Americans less than 50 percent more". The extent of self-feeding is addressed further in our analysis of cross referencing patterns. On self-feeding in economics journals see Eagly (1975, p. 882).
- <sup>14</sup> Quandt (1976) surveys the following economics journals; AER, EM, E, EJ, JPE, QJE, RESTAT, and Southern Economic Journal. In order to gain a more representative sample of Australasian citing practices we use three years around Quandt's "turn of the decade" data points. Note that Quandt (*ibid*, p. 753 note 7) finds negligible sample variability at years around his data points.
- <sup>15</sup> Data on the nationality of citations in appendix 1 shows that the cites to foreign economists was variable but increased throughout the period. The decline in cites to other sources suggests an increasing focus on economics topics.
- <sup>16</sup> Stigler and Freidland (1979, pp. 3-8) analyse cites to books and articles for a sample set from the American Economic Association Index of Economic Journals and found that citations to articles increased between 1886-1925 and 1925-1969.
- <sup>17</sup> A similar finding can be noted for a sample of international journals (Stigler and Freidland 1979, pp. 4-5).
- <sup>18</sup> Note that self cites are not a component of the referenced set so the level of self-feeding is understated in the following analysis.
- <sup>19</sup> See, for example, Perlman (1977) and Corden (1986).
- <sup>20</sup> Quandt (1976, p. 751).
- <sup>21</sup> For example, Harper (1989), Manger (1981) and Fleming (1994b).
- <sup>22</sup> Groenewegen and McFarlane (1990, pp. 232-238).
- <sup>23</sup> Citations have been categorised into Australasian, Foreign and Other on the basis of authorship. The difficulties of categorising authors are well discussed in Groenewegen and McFarlane (1990, pp. 6-7). Adopted residence of author combined with place of publication of major work eliminates problems associated with focusing on place of birth alone. Thus, in this sample we treat Clark and Heaton (for example) as Australasian economists. Other sources are determined as follows - if the article or book could be identified as dealing in a major way with subject areas other than economics (such as political science or sociology) these were deemed other.

## References

- Biddle, J., 1996, 'The Sources and Extent of Wesley Mitchell's Reputation: An Application of Citation Analysis to the Journal Literature of the Early 20th Century', *History of Political Economy*, forthcoming, Fall.
- Bigg, R.J., 1990, *Cambridge and the Monetary Theory of Production*, London, MacMillan.
- Bordo, M.D. and Landau, D., 1979, 'The Pattern of Citations in Economic Theory 1945-68: An Exploration Towards a Quantitative History of Thought', *History of Political Economy*, 11 (2), pp. 240-253.
- Bridel, P., 1987, *Cambridge Monetary Thought: The Development of Saving-Investment Analysis from Marshall to Keynes*; London, MacMillan.
- Butlin, S.J., 1966, 'The Hundredth Record', *Economic Record*, 42 (100) pp. 508-519.
- Collard, D., 1990, 'Cambridge after Marshall', in Whitaker, J.K. (ed), *Centenary Essays on Alfred Marshall*, Cambridge, Cambridge University Press, pp. 164-192.
- Copland, D.B., 1951, 'Development of Economic Thought in Australia, 1924-1950', in *Inflation and Expansion: Essays on the Australian Economy*, Melbourne, F.W. Cheshire, pp. 9-29.
- Corden, M., 1986, 'The Rule of Technique: The Economic Record in Recent Years', in Butlin, N.G., Fitzgerald, V.W., and Scott, R.H. (eds) *The Australian Economist 1888-1898*, Canberra, Australian National University Press, pp. xlii-xlv.
- Eagly, R.V., 1975, 'Economics Journals as a Communications Network', *Journal of Economic Literature*, 13 (3), pp. 878-888.

- Eshag, E., 1963, *From Marshall to Keynes: An Essay on the Monetary Theory of the Cambridge School*, London, Basil Blackwell.
- Fleming, G.A., 1994a, 'Economic Thought and Policy Advice in New Zealand: Economists and the Agricultural Sector circa 1918-1939', PhD Thesis in Economics, University of Auckland.
- \_\_\_\_\_, 1994b, 'Canterbury Economists and the Market for Agricultural Finance during the 1920s', *New Zealand Economic Papers*, 28 (2), pp. 181-194.
- Groenewegen, P. and McFarlane B., 1990, *A History of Australian Economic Thought*, London and New York, Routledge.
- Harper, M., 1989, 'The Writing of the Bridgen Report', *Australian National University Working Papers in Economic History*, January, Number 121.
- Horne, S.L., 1983, 'The Statistical Examination of Australian Economics and the Role of Scholarly Journals' BA (Hons) Thesis, University of Wollongong.
- Maloney, J., 1985, *Marshall, Orthodoxy and the Professionalisation of Economics*, Cambridge, Cambridge University Press.
- Manger, G.J., 1981, 'The Australian Case for Protection Reconsidered', *Australian Economic Papers*, 20 (December), pp. 193-204.
- Perlman, M., 1977, 'The Editing of the *Economic Record* 1925-1975', in Nieuwenhuysen, J.P. and Drake, P.J. (eds) *Australian Economic Policy*, Victoria, Melbourne University Press, pp. 218-230.
- Quandt, R.E., 1976, 'Some Quantitative Aspects of the Economics Journal Literature', *Journal of Political Economy*, 84 (4), pp. 741-755.
- Stigler, G. and Freidland, C., 1975, 'The Citation Practices of Doctorates in Economics', *Journal of Political Economy*, 83 (3), pp. 477-507.
- \_\_\_\_\_, 1979, 'The Pattern of Citation Practices in Economics', *History of Political Economy*, 11 (1), pp. 1-20.

**Appendix 1**  
*Changes in the Nationality of Citations 1925-46*<sup>23</sup>

