An Econometric Analysis of the Australian Country Party, 1922-1928

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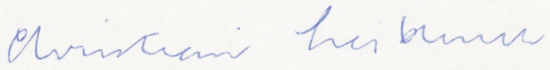
Declaration

Except where otherwise indicated
this thesis is my own work.



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Four Canadians influenced my decision to undertake this research. Drs. Carmen Miller and John Herd Thompson of McGill University convinced me that the politics of the Canadian Prairies -- and, by implication, the politics of other agrarian regions -- merit analysis. Dr. Jerome H. Black, also of McGill, impressed upon me the need to formulate precise problems and questions for research, to remain skeptical with respect to unsubstantiated assertions and to confront refutable propositions with suitable data. Finally, Principal David C. Smith of Queen's University demonstrated to me that economics is distinguished not only by its subject matter but also by its methodology, and suggested that this methodology and its associated research techniques may be as applicable to the analysis of political phenomena as to the analysis of economic phenomena.

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Abstract

This study identifies the formation, in the years immediately following the First World War, of agrarian parties in Australia, Canada and New Zealand as a relevant and unresolved problem for comparative political science research. It constructs a formal theory of agrarian party formation, electoral support and dissolution, assembles a set of electoral, census and agricultural economic data, specifies a set of statistical models and estimates these models' parameters at the Australian (Commonwealth) elections of 1922, 1925 and 1928.

Its results are consistent with its principal hypothesis: the formation and electoral support, in the years immediately following the First World War, of agrarian parties such as the Australian Country Party was a consequence of (1) maladjustments in primary producers' output of agricultural and pastoral commodities and (2) the collapse, between 1921 and 1922, in the price of many agricultural and pastoral commodities below the average variable cost of production. The recovery of commodity prices after 1922, together with producers' adjustment of their average variable cost of commodity production, weakened the Country Party's electoral support and thereby engendered its partial dissolution.

This study thus tentatively resolves this problem for research. It also contributes to a greater understanding of major and non-major political parties, party systems and voter alignments, and the relationship between economic conditions and electoral behaviour.

. . . when you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind.

-- Lord Kelvin, Popular Lectures and Addresses, London, 1889, vol. 1, p. 73.

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Part I

Chapter 1
The Problem For Research

1.1. Political Parties, Voters and Elections

Political parties have long been among the most persistently and intensively analysed political phenomena -- indeed, they figured prominently in the first works of modern political science (von Beyme, 1985p.1). Nonetheless, for many years studies of political parties lacked an "explicitly theoretical foundation" and did not provide a valid description of the functions of political parties (Crotty, 1970p.269); (Daalder, 1983p.10); (Duverger, 1954p.xiii); (Roberts, 1978p.419). Because "almost everything called a party in any Western democratic nation [could] be so regarded" (Epstein, 1967p.9), analyses of political parties were notable neither for their collection of reliable and comparable data nor for their contribution to an understanding of the wider political system (McDonald, 1955); (Neumann, 1956p.395-421).

In this respect, Sartori's *Parties and Party Systems: A Framework for Analysis* is a landmark study (Sartori, 1976). Sartori clarifies many conceptual difficulties and thereby makes an important contribution to a theory of parties and party systems. Sartori argues that parties organise the legislature's business and thereby facilitate *responsible* government (Sartori, 1976p.27). This term, broadly interpreted, conveys the notions of executive accountability to a legislature and collective responsibility for government decision-making: in return for the constitutional authority to govern, the executive must submit its actions to legislative scrutiny and criticism (American Political Science Association, 1950); (Ranney, 1954). Parties structure opinion in the legislature, engender coherent debate and thus help to render the executive accountable for its actions (Pomper, 1971); (Pomper, 1980); (Everson, 1980); (Sorauf, 1980); (Sartori, 1976p.19); (Schattschneider, 1942p.208); (Beer, 1982).

At the same time, however, parties' activities extend far beyond the confines of the legislature. A government responsible to Parliament becomes, with the extension of the suffrage, a government responsive to voters. Accordingly, parties organise the mass electorate and thereby constitute a *sine qua non* of electoral democracy. Parties solicit and articulate the public's wants and concerns, aggregate these preferences into policy alternatives and, if elected, undertake to implement them as policy measures. Parties structure communication between governors and the governed and thus facilitate *responsive* government. Sartori, for example, argues that "parties are the central intermediate and intermediary structures between society and government" (Sartori, 1976p.ix) and that they "forcefully convey to the authorities the demands of the public as a whole" (Sartori, 1976pp.65-66). Similarly, Key argues that "parties are the basic instruments for the translation of mass preferences into public policy" (Key, 1964p.433); (Finer, 1949p.274-282); (Dahl, 1967p.243); (Neumann, 1956p.397); (Lipson, 1959); (Lipson, 1964); (Ranney and Kendall, 1956p.85); (Schattschneider, 1942p.35)].

The attention accorded to parties also has normative underpinnings. Political scientists' professional

commitment to parties, which takes the form of a strong consensus that parties are desirable and probably essential in democratic politics, has spurred party research (Epstein, 1983p.127). Eldersveld, for example, contends that "intellectually, we have become committed to the position in the twentieth century that parties are central to the [political] system" (Eldersveld, 1964p.20). Similarly, Pomper argues that "we must either acknowledge the mutual reliance of our parties and our democracy -- or lose both" (Pomper, 1980p.5). Clearly, therefore, powerful inducements -- both objective and normative -- encourage the analysis of political parties.

In modern democracies, parties and elections are inextricably intertwined. In consequence, so too is the study of parties, elections and voter behaviour (Harrop and Miller, 1987); (Budge and Farlie, 1977); (Budge, 1983); (Katz, 1980). As parties' electoral activities have increased in importance relative to their activities in the legislature, the objective and normative justifications for the study of parties has been pitched more in electoral than in institutional terms. It is therefore not surprising that analysts of voter behaviour have uncovered most about the party-in-the-electorate (Epstein, 1983p.140). Early studies (Lazarsfeld, Berelson and Gaudet, 1948); (Campbell, Gurin and Miller, 1954); (Berelson, Lazarsfeld and McPhee, 1954) analysed the individual's decision to vote and his vote choice, and culminated with the construction of a causal configuration (the "funnel of causality") of the antecedents underlying individual vote choice (Campbell, Converse, Miller and Stokes, 1960). One of these studies' central findings relates directly to parties: party identification is a major determinant of voter behaviour (Campbell, Converse, Miller and Stokes, 1960p.120-167); (Budge, Crewe and Farlie, 1976); (Butler and Stokes, 1974); (Crewe, Sarlvik and Alt, 1977); (Fiorina, 1976); (Jackson, 1975); (Sarlvik and Crewe, 1983); (Shaffer, 1972); (Shaffer, 1976).

Subsequent work "shifts the terms of reference from the individual voter to the mass electorate and from the individual vote to the collective electoral decision" (Campbell, Miller and Stokes, 1966p.ix). This research examines not only the behaviour of individual voters; it also seeks to illuminate the means by which voters' collective decisions influence the party system (Clubb, Flanigan and Zingale, 1980); (Key, 1966); (McAllister and Rose, 1984); (Miller, 1977); (Nie, Verba and Petrocik, 1979pp.47-73); (Niemi and Weisberg, 1976pp.299-332); (Rose and McAllister, 1986). These works relate data to theory in a systematic manner, incorporate advances in research methodology and analytic techniques, and thereby extend knowledge of voter and party behaviour. They demonstrate that analysis of the mass electorate can yield valuable insights into patterns of party competition. In sum, therefore,

> the substantive findings produced by party research since World War II reflect both its strength as a rapidly maturing area of research, perhaps the most so in the discipline, and its weaknesses as an area of research in which a variety of questions remain unresolved. Hence, as is invariably true in fields of knowledge that are rapidly progressing, two somewhat contradictory statements apply. Our knowledge is substantially improved; yet puzzling questions of great importance still exist (Cooper and Maisel, 1978p.16); (Daalder, 1983pp.1-27).

Section 1.2 defines the terms "major" party and "non-major" party (also known as "minor" parties or "third" parties). It argues that the analysis of non-major parties, which is often considered to be unremunerative or is dismissed out of hand by political scientists, is a relevant and important exercise. In particular, it argues that the normative and substantive reasons which make the analysis of major parties a relevant exercise also make the analysis of non-major parties a relevant exercise. Section 1.2 therefore argues an analysis of a non-major party might also contribute to a greater understanding of parties, voters and the party system. Section 1.3 argues that a particular type of non-major party, the agrarian party, is a particularly suitable candidate for analysis.

1.2. Major Parties, Non-Major Parties, Minor Parties and Third Parties

Most comparative studies -- particularly cross-national comparative studies -- of political parties analyse "major" parties. They say little about "non-major" parties [see, for example, (Lane and Ersson, 1987); (Epstein, 1967); (Riggs, 1968); (Janda, 1970); (Day and Degenhardt, 1980); (von Beyme, 1985)]. Similarly, seminal works on voting ignore non-major parties [see, for example, (Lazarsfeld, Berelson and Gaudet, 1948); (Berelson, Lazarsfeld and McPhee, 1954); (Campbell, Converse, Miller and Stokes, 1960); (Campbell, Miller and Stokes, 1966); (Nie, Verba and Petrocik, 1979)]. They focus upon the voter's choice between major parties, not upon his choice between major and non-major parties. In consequence, little research -- and almost no explicitly theoretical research -- has been directed towards non-major parties:[1]

> there has been no shortage of historical accounts of non-major party activity. The problem, though, is that scholars have generally examined one non-major party movement at a time. As a result, we are left with a different explanation (or sometimes more than one explanation) for each non-major party. There is no theory of non-major party voting that can be applied across instances or can be used to predict when the two-party system is likely to deteriorate and non-major parties flourish (Rosenstone, Behr and Lazarus, 1984p.5) [see, however, (Pinard, 1975); (Mazmanian, 1974); (Hauss and Rayside, 1978); (Studlar and McAllister, 1987)].

Normative preconceptions, as well as analytical expedience, may justify this practice. The paucity of attention accorded to non-major parties may be a partial consequence of the normative prescriptions inherent in many analyses of political parties. The two-party system is widely accepted as an ideal in works that stress parties' activities in the legislature. Where two parties structure the vote, clear winners commanding majority support emerge from elections and resultant (single-party) governments cannot evade responsibility for their actions. Conversely, where power is dispersed among party coalitions, stable government becomes more problematic (Riker, 1962) and party responsibility becomes more difficult to assign (Key, 1950); (Key, 1964p.334); (Epstein, 1983pp.139-140). Dodd summarises the perception that a two-party system is conducive to stability, that a multi-party system is conducive to instability -- and therefore that a two-party system is preferable to a multi-party system (i.e., a party system without non-major parties):

> governments in multi-party parliaments must be minority cabinets, coalition cabinets, or both; by their very nature, minority cabinets and coalition cabinets are quite transient; [as a result], multi-party systems are undesirable since they produce transient governments" (Dodd, 1976p.10).

The paucity of attention directed at non-major parties is also a consequence of the ambiguity associated with the terms "major," "non-major," "minor" and "third" party. The major parties in most party systems are easily -- indeed, intuitively -- identifiable: major parties possess a substantial and stable partisan following, receive the vast majority of ballots cast at elections, win elections and form governments. As a rule, therefore, a political party is a major party if it contests most constituencies and holds one of the two largest blocs of seats in the parliament (Rosenstone, Behr and Lazarus, 1984p.9). According to this definition, each party system has two -- and no party system has more than two -- major parties; all other parties are non-major parties:

> If [following (Sartori, 1976p.65)] a political party is defined as any group seeking to elect government office-holders under a given label, then a [non-major] party is simply a political party which offers candidates to challenge the nominees of the two major parties (Fisher, 1974p.6-7).

By definition, non-major parties have a small and sporadic following, receive a relatively small fraction of the total votes cast at elections and elect few Members of Parliament.

The term non-major party encompasses two terms, "third party" and "minor party," which many studies use interchangeably (Mazmanian, 1974p.1-6); (Ranney and Kendall, 1956p.422); (Rosenstone, Behr and Lazarus, 1984pp.9-12). No generally accepted set of criteria distinguish third parties from minor parties

(Rose and Urwin, 1970p.290). Nonetheless, the terms refer to two specific entities: some non-major parties ("significant" non-major parties) influence patterns of voter and party behaviour at elections; other non-major parties ("insignificant" non-major parties) do not.

Party strength in the parliament and in the electorate is the most frequently cited criterion of non-major party significance. The parliamentary significance of a non-major party has two attributes. (1) A non-major party is a relevant parliamentary actor, no matter how small it is, "if it finds itself in a position to determine over time, or at some point in time, at least one of the possible governmental majorities" (Sartori, 1976p.123). Conversely, a non-major party is irrelevant if "it is never needed or put to use for any feasible coalition majority" (Sartori, 1976p.123); (Key, 1964pp.279-280); (McKean, 1949pp.423-424); (Schattschneider, 1942pp.75-83). (2) A non-major party is a relevant parliamentary actor "whenever its existence, or appearance, affects the tactics of [major] party competition" (Sartori, 1976p.123). The parliamentary significance of a non-major party is thus not only a function of the percentage of seats it holds in the parliament. It is also a function of its relationship with the major parties.

Non-major parties' electoral significance also has two attributes. (1) Electoral significance is assessed in terms of the number of votes won at elections. A non-major party is a significant entity at elections when its electoral support surpasses a particular numeric threshold. Chambers, for example, contends that the non-major parties in the United States which received a percentage of the total vote larger than the overall average for all non-major parties since 1828 (i.e., 5.2 percent of the total votes cast) are significant non-major parties (Chambers, 1968); (Rose and Urwin, 1970p.290). According to this criterion, three non-major parties have, in the twentieth century, been significant entities at American presidential elections (the "Bull Moose" party in 1912, the Progressive Party in 1924 and the American Independent Party in 1968).

Problems accompany the use of this criterion of significance. Most importantly, "the designation of any general numerical formula to separate non-major parties as important or unimportant is purely arbitrary. Chambers's average of 5.2 percent, for example, omits such parties as the Liberal Republicans of 1872 or the Dixiecrats of 1948 -- parties which most analysts include in discussions of non-major parties" (Fisher, 1974pp.30-31); (Mazmanian, 1974p.4). This criterion is also incomplete. Assessment of the significance of a non-major party must consider not only the number of votes and seats that it wins, but also its influence on voter behaviour and major party competition (Rose, 1974p.484); (Sartori, 1976p.190, 217-221).

(2) Non-major parties' electoral significance encompasses far more than the capacity to attract votes: if it consists in a protest against the insufficiently-responsive leaders and policies of the major parties, the formation of a new (non-major) party may be a symptom of a partisan re-alignment (Burnham and Sprague, 1970); (Converse and Dupeux, 1962). Citizens do not often vote contrary to their party identification. Still less frequently do they change their party identification. In certain periods, however, a new issue or cleavage emerges; if it is sufficiently salient, this issue or cleavage may re-align voters' loyalties to parties (Key, 1955); (Sellers, 1965); (Pomper, 1967); (Burnham, 1970). Under these conditions, voters may abandon an existing party and turn to a new party (Weisberg and Rusk, 1970); (Rusk and Weisberg, 1972); (Crewe, Sarlvik and Alt, 1977). To the extent that they influence patterns of electoral competition (i.e., force a change in major parties' electoral appeals and a re-alignment in the pattern and distribution of partisan support in the electorate) non-major parties are significant entities at elections (Key, 1964pp.278-81); (Alford, 1963pp.303-305); (Bone, 1965p.651); (Downs, 1957pp.127-128); (Rossiter, 1964p.16).

For these reasons, some non-major parties "must be regarded as integral elements of the two-party system" (Key, 1964p.279). Not only may they "break the two-party pattern of competition in a nation by winning or threatening to win enough offices to influence [but not directly control] the government" (Epstein, 1967p.64); they may also exert a "longrun influence on the composition, leadership and doctrines of the major parties" (Janda, 1970p.50) and serve as "safety valves" which stabilise the party system (Ranney and Kendall, 1956pp.455-458, 505). Non-major parties with such attributes ("significant" non-major parties) may be termed "third parties."[2] Non-major parties without such attributes ("insignificant" non-major parties) may be labelled "minor parties." Clearly, therefore, "third parties" merit careful analysis.

The assessment of a non-major party's electoral significance (i.e., the designation of a non-major party, in electoral terms, as a third party or a minor party) requires that the causes of its formation, the correlates of its electoral support and its impact upon the party system be investigated. If, for example, the formation and electoral support of a non-major party represents no more than an indistinct and ephemeral protest, the possibility of realignment within the party system is negligible; conversely, if its support is attitudinally distinct, the potential for a fundamental realignment of voters and parties exists (Studlar and McAllister, 1987p.39). What, then, underlies the emergence of non-major parties? When is their formation most likely to occur? What kinds of conflicts, which major parties cannot manage, structure these parties' electoral support? Responses to such questions may, as much as studies of major parties, bear considerable relevance for an understanding of voters, major parties and party systems.

1.3. Agrarian, Farmer and Peasant Parties

Key classifies non-major parties in terms of longevity (Key, 1964pp.255,278-80). *Doctrinal* parties are distinguished by their permanence and by their emphasis on (usually socialist or Marxist) ideology. *Transient* parties arise suddenly (in response to conflicts which major parties are unable to contain) and quickly disintegrate. Doctrinal and transient parties play different roles in the party system. Ideological beliefs isolate doctrinal parties from the political mainstream. In consequence, these parties generally exert only a minimal influence upon voters and major parties. Doctrinal parties, in other words, are usually minor parties. Conversely, transient non-major parties may, under certain conditions, influence voter behaviour and major party competition. For this reason, some transient parties are third parties. Key's insight thus suggests that analysis be directed at transient non-major parties.

Transient non-major parties are, in terms of programme and electoral support, frequently agrarian parties. Agrarian parties, however, have been the subject of almost no rigorous analysis:[3]

> although few have investigated the [farmers'] revolts without being intrigued by their particularities [i.e., by agrarian parties' abrupt formation and, in most instances, equally rapid dissolution], we know of no case in which [these peculiarities] have been subjected to explanation (Campbell, Converse, Miller and Stokes, 1960p.434).

This is in part because the conceptual and definitional difficulties that long hindered the analysis of major parties continue to afflict the study of non-major (and therefore agrarian) parties. In consequence, the agrarian party has no recognised definition. Indeed, only Urwin has attempted to operationalise the concept embodied in this term:

> Agrarian parties can be regarded as those which demonstrably obtain the vast majority of their support from the countryside, specifically claim in their programmes and other pronouncements to represent agrarian interests, and/or simply include in their title some term as "agrarian," "peasant" or "farmer" (Urwin, 1980p.165).

Tables 1-1, 1-2, and 1-3 list political parties in Western Europe, Eastern Europe, North America and

Table 1-1: Agrarian Party Formation, Western Europe

Country	Party Name	Date of Formation**
Denmark	Farmers' Party	1924
	Agrarian Party	1934
Finland	Agrarian Union	1906
	Finnish Smallholders' Party	1929
	Finnish Small Farmers' Party	1959
	Rural Party	1962
France	Agrarian Party	1928
Iceland	Progressive Party	1916
	Farmers' Party	1933
	Farmers' Party	1933
Ireland	Farmers' Party	1923
	National Farmers and Ratepayer's League	1933
	Party of the Soil	1938
Netherlands	Farmers' League	1918
	National Party of Farmers, Horticulturalists and the Middle Class	1933
Norway	Agrarian Party	1920
Sweden	Farmers' Party	1921
Switzerland	Farmers, Traders and Citizens	1920

** Refers to the first election at which the party presented candidates.

Source: Urwin (1980:167-168), McHale and Skowronski (1983:1233-1235).

Oceania which, according to Urwin's definition, are agrarian parties.. These tables indicate that most (sixty-one percent) agrarian parties were formed between 1918 and 1925. Seventy-five percent of the Australian and New Zealand parties, sixty-four percent of the Canadian parties, fifty-nine percent of the European parties and fifty percent of the American parties were formed during these years. The table thus indicates that most agrarian parties on these continents arose concurrently.

In contrast, other parties which may be grouped on the basis of name, programme, electoral support and international association (i.e., religious, socialist and ethnic minority parties) did not arise concurrently. Figure 1-1 plots the proportion of agrarian, religious, socialist and ethnic minority parties in Europe, North America and Oceania which were formed at each ten-year interval between 1870 and 1970.[4] It indicates that forty-nine percent of the agrarian parties were formed between 1920 and 1929 but that no more than twenty-two percent of the religious, socialist or ethnic minority parties were formed during any particular decade. Figure 1-1 thus confirms that agrarian party formation was concentrated in the years immediately following the First World War and that the extent of agrarian party formation in these years (relative to the formation of religious, socialist and ethnic minority parties) is remarkable.

No less remarkable than the concurrent formation of agrarian parties in Europe, North America and Oceania is the absence of any analysis of this phenomenon. More generally, despite the fact that durable alignments of parties and voters were forged in the years immediately following the First World War

Table 1-2: Agrarian Party Formation, Eastern Europe

Country	Party Name	Date of Formation**
Albania	Agrarian Democrat	1918
Austria	Farmers' Union	1925
Bulgaria	National Agrarian Union	1879
	Agrarian Party	1931
Czechoslovakia	German League of Farmers	1920
	Czech Agrarian Party	1918
	Slovak National Republicans and Peasants	1918
	Republican Party of Farmers and Peasants	1922
	Smallholders	1923
	Landlords' Party	1923
	Agrarian Union	1917
Estonia	Farmers Party	1921
	Smallholders' Group	1923
	Homesteaders Party	1923
Hungary	Christian Smallholder	1923
Latvia	Peasants' Union	1917
	Smallholders	1925
	Agrarian Party of the Landless	1920
Lithuania	Peasant Union	1919
	Farmers' Union	1920
	Farmers' Party	1925
Poland	Polish Peasant Party	1903
	Ukrainian Peasant	1920
	Piast	1913
Rumania	Peasants' Party	1919
	National Peasant	1926
	Ploughmen's Front	1933
Yugoslavia	Serb Agrarian	1918
	Slovene Agrarian	1924

** Refers to the first election at which the party presented candidates.

Source: Urwin (1980), McHale and Skowronski (1983:1232-1235).

(Lipset and Rokkan, 1967p.50); (Rose and Urwin, 1970), "very little attention has been paid to the 1920s and 1930s as a critical period for the formation and stabilisation (or its absence) of party systems" (Urwin, 1973pp.183-184). Accordingly, no discussion -- let alone explanation -- of the simultaneous rise of agrarian parties on these three continents has been undertaken.[5]

Urwin's definition (Urwin, 1980p.165) highlights a specific point in time at which agrarian party formation was concentrated and thereby uncovers an unresolved problem for political science research. At the same time, however, this definition is ambiguous. When applied to Europe, North America and Oceania, it encompasses at least two fundamentally different types of political organisation. Indeed, Urwin acknowledges that "differences in the 1920s between the political systems of Western Europe, such as Britain, and some Eastern European countries, such as Rumania, were as great as those today

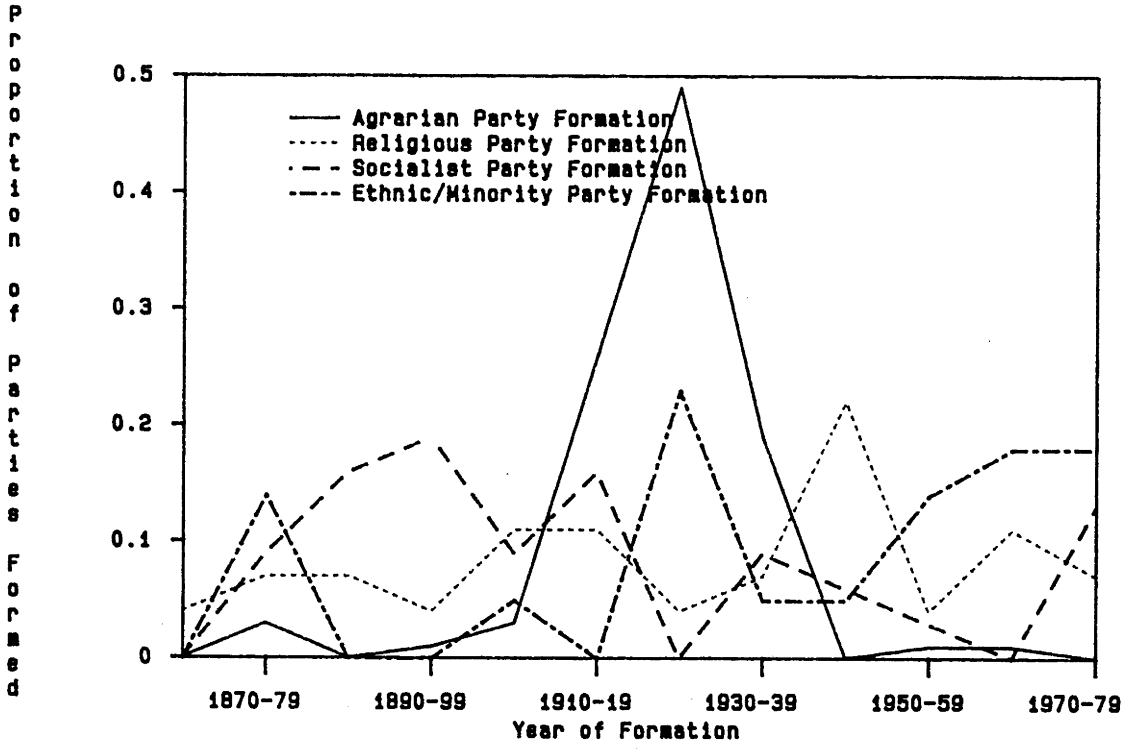
Table 1-3: Agrarian Party Formation, Australia, Canada, New Zealand and the United States

Country	Party Name	Date of Formation**
Australia (Commonwealth)		
	Country Party	1922
Queensland	Country Party	1920
New South Wales	Progressive Party	1919
Victoria	Victorian Farmers' Union	1917
South Australia	Progressive Country Party	1918
Western Australia	Country Party	1914
Tasmania	Country Party	1920
Canada (Dominion)		
	Progressive Party	1921
	Co-operative Commonwealth Federation	1935
	Social Credit	1935
New Brunswick	Progressive Party	1920
Prince Edward I.	Progressive Party	1921
Nova Scotia	United Farmers of Nova Scotia	1919
Quebec	Fermiers Unis du Quebec	1919
Ontario	United Farmers of Ontario	1919
Manitoba	United Farmers of Manitoba	1922
Saskatchewan	United Farmers of Canada, (Saskatchewan Section)	1921
	Co-operative Commonwealth Federation	1932
	Social Credit	1935
Alberta	United Farmers of Alberta	1921
	Social Credit	1935
New Zealand (Dominion)		
	Country Party	1925
United States (Federal)		
	Greenback	1876
	Populist	1892
	Farmer-Labor	1920
	Progressive	1924

** Refers to the first election at which the party presented candidates.

Sources: Hughes (1974), Smith (1980), Rosenstone et al (1984)

Figure 1-1: Agrarian, Religious, Socialist and Ethnic Minority Party Formation, Europe, North America and Oceania, 1870-1970



between Western democratic systems and non-Western countries. [For this reason], it is important to ask whether the concept of political party as used in the Western context is appropriate for a study of parties in Eastern Europe" (Urwin, 1973p.186).

Are the "agrarian parties" of Europe, North America and Oceania sufficiently similar that they may be subjected to comparative analysis? The analysis undertaken in subsections 1.3.1 and 1.3.2 suggests that they are not. These subsections classify rural political organisations along two dimensions. Insights contributed by Sartori (Sartori, 1976) differentiate agrarian *parties* from agrarian *factions*. Works in rural sociology distinguish the *peasant* from the *farmer*. The term "agrarian party" thus refers to a political organisation that is found only in a small (and readily comparable) number of countries. The analysis undertaken in these sections finds that only in Australia, Canada, New Zealand and the United States have unambiguously *agrarian (farmers') parties* appeared. The rural political organisations of Eastern Europe may be more precisely termed *peasant factions*, and the rural political organisations of Western Europe possess traits characteristic of both *peasant parties* and *agrarian parties*. An analysis of agrarian parties thus refers to an analysis of farmers' parties in Australia, Canada, New Zealand and the United States.

1.3.1. Agrarian Parties and Agrarian Factions

Sartori distinguishes political parties from political factions (Sartori, 1976pp.3-29):[6] Sartori applies the term "party" exclusively to political organisations in pluralistic (and hence democratic) polities. He applies the term "faction" to political organisations in non-democratic or pre-democratic polities, or in polities in which the legitimacy of constitutional arrangements is not widely accepted [see also (Huntington, 1968); (LaPalombara and Weiner, 1966); (Almond and Verba, 1963)]. The formation of factions precedes the formation of parties, and under certain conditions parties may relapse into factions.

Sartori argues that three types (or levels) of consensus exist within democracies (Sartori, 1987pp.1-38); see also (Easton, 1965ch.18); (Lijphart, 1968); (Neubauer, 1967). The existence of parties (as opposed to factions) is associated with the presence of these three levels of consensus. (1) Parties are found in polities where *community level* consensus (with respect to the principle of limited majority rule) exists. Such consensus is not an absolute pre-requisite to the existence of democracy (and parties) (Lipset, 1959); (McClosky, 1964); (Pye, 1971). Unless a political system can create this consensus, however, democracy and the party system will be fragile (Sani and Sartori, 1982); (Sartori, 1987pp.88-91):

> The substantive point is, then, that no alteration in power is conceivable as a practical rule of the game until the public and the private well-being are disconnected. Unless there is sufficient separation of the various spheres of life -- religion, politics and wealth -- and a sufficient protection for individuals as such, the stakes of political controversy are too high for politicians to surrender power according to the rules of a competitive party system (Sartori, 1976pp.17, 131-201); (Almond and Verba, 1963).

Factional politics (not party politics) prevails where there is no community-level consensus.

(2) Parties can exist only when *regime-level* consensus (an acceptance of the state's physical boundaries and constitutional arrangements -- particularly the rules that regulate the exercise of power and the resolution of conflict) exists. If this consensus is absent, political debate gravitates around fundamental questions which threaten the survival of the regime. Nie and Verba, for example, observe that "other cleavages may emerge and other problems may be successfully tackled as long as these central questions are not asked: the experience of several European countries suggests that once thay are raised, the party system will fail to function satisfactorily until they are resolved" (Nie and Verba, 1975p.533). It is for this reason that political parties took no part in Western European or American nation-building. They appeared only when consitutional rule had been fully accepted (LaPalombara and Weiner, 1966); (Daalder, 1966); (Rokkan, 1966); (Rokkan, 1970); (Lipset and Rokkan, 1967).

(3) Community-level and regime-level consensus restrict the scope of disagreement to questions (such as the programmes and the personnel of government) which are amenable to resolution in parliaments and at elections. Parties facilitate this type of consensus (*policy-level* consensus). Indeed, factions coalesce into parties in response to the need, concomitant with the democratisation of politics, to express and to implement policy-level consensus -- i.e., to convey forcefully to authorities the demands of the public as a whole (Sartori, 1976p.27); (Dahl, 1967).

These three criteria differentiate the political organisations listed in Tables 1-1, 1-2 and 1-3. (1) With respect to community-level consensus, the principle of limited majority rule had, by 1918, been long affirmed and observed in Australia, Canada, New Zealand, the United States and most of Western Europe. In Eastern Europe, however, this constitutional principle failed to establish itself: between 1919 and 1940 authoritarian or dictatorial regimes seized power in all Eastern European states (Janos, 1970); (Macartney and Palmer, 1962); (Seton-Watson, 1964); (Tipton and Aldrich, 1987pp.266-297).

(2) Regime-level consensus, firmly established in Western Europe, Australia, Canada, New Zealand and the United States, was, during the inter-war years, conspicuous by its absence in Eastern Europe. As a result, these countries' political cleavages differed significantly. In the West, the widespread acceptance of constitutional arrangements removed "regime-level" questions from political discourse. Industrialisation and its consequences -- which were largely questions of economic growth and the distribution of its benefits -- informed political debate in these countries, and mobilised economic (labour, business and agricultural) interests (Apter, 1965); (Bendix, 1964); (Daalder, 1966); (Eisenstadt, 1966); (Rokkan, 1970). In Eastern Europe, however, the imperfect establishment of national states, together with the incomplete acceptance of these states' constitutional arrangements, left unresolved questions (religious, ethnic and linguistic) which pertained to the very nature of the national regimes. In consequence, political con-

troversy in these countries frequently ended in secession and civil war (Deutsch, 1961); (Carsten, 1972); (Newman, 1970).

(3) Finally, the point in time at which political participation was diffused to large segments of society differentiates Eastern Europe from Western countries. Manhood suffrage was extended gradually in the West, and was an accomplished fact before 1914. In contrast, it arrived abruptly (in the immediate postwar years) in Eastern Europe (Carstairs, 1980); (Rokkan, 1970).

The Eastern European agrarian "parties" listed in Table 1-2 might for these three reasons be more accurately labelled agrarian cliques or factions. Until 1918 the parliamentary basis for political parties in Eastern Europe was almost wholly absent, and was only imperfectly present after that date. The societal pluralism required for party competition never established itself in the region. In consequence, the democratic political institutions which were established after 1918 could not sustain political parties. Societal conditions engendered political organisation along factional lines. It therefore comes as little surprise that the formation of most of Eastern Europe's political organisations -- including agrarian political organisations -- dates from the years immediately following the First World War. The appearance of these factions -- including rural factions -- in Eastern Europe after 1918 was concomitant with the introduction of mass elections in the region (Urwin, 1980).

1.3.2. Peasants and Farmers

Urwin's definition of the agrarian party (Urwin, 1980p.165) does not emphasise the distinction between the agrarian party and the agrarian faction.[7] Nor does it emphasise the distinction between peasants and farmers. These terms lack consistent and uncontested definitions (Berger, 1972); (Paige, 1975). Nonetheless, patterns of land ownership and the degree of exposure to market (economic) stimuli best differentiate these concepts. The term *farmer*, generally speaking, refers to an independent (land-owning) cultivator whose resource inputs and commodity output is, respectively, procured from and consigned to the market. In contrast, the term *peasant* refers to the subsistence cultivator with hereditary obligations (often of a vestigial feudal nature) to a rural patrimonial elite (Chayanov, 1966); (Franklin, 1969); (Nash, 1966); (Warriner, 1964).

In the years immediately following the First World War, most of Eastern Europe's population was employed in agriculture. As a rule, production for domestic consumption prevailed over production for the market (Franklin, 1969). Control and ownership of land typically rested with an absentee aristocracy which derived the major portion of its income from obligations extracted from cultivators (Zagoroff, Vegh and Bilimovic, 1955). Cultivation in Eastern Europe, in short, was undertaken by peasants. In Western Europe, cultivation was more market-oriented and was undertaken, generally speaking, by land-owning entrepreneurs (Gerschenkron, 1965); (Linz, 1976); (Tracy, 1964). Nonetheless, market forces had not completely penetrated agricultural production, and as a result a complex variety of "market" and "domestic subsistence" arrangements existed side by side (Urwin, 1980p.14); (Linz, 1976).

In contrast to their complexity in Europe, agrarian social structures in Australia, Canada, New Zealand and the United States were models of simplicity. Conspicuous by their absence were the most notable features of the rural social structure in Europe: an established landed elite and peasantry (Denoon, 1983p.37). Private ownership of land was established at an early juncture and agricultural production was oriented overwhelmingly towards the market (Fitzpatrick, 1969pp.71-102); (Dalziel, 1981); (Fowke, 1946); (Fowke, 1957).

The distinction between parties and factions and between farmers and peasants yields a more precise definition of the term "agrarian party". Institutional (constitutional) arrangements, together with patterns of land ownership and market relationships, distinguished the *peasant factions* of Eastern Europe from the *peasant and farmers'* parties of Western Europe and the unambiguously *farmers' (agrarian) parties* of Australia, Canada, New Zealand and the United States. Following (Sartori, 1976p.64) a farmers' (agrarian) party may thus be defined as any political group whose appeals are directed primarily to farm owner-entrepreneurs, whose presence is restricted largely to districts in which farm owner-entrepreneurs are concentrated and whose electoral support is composed disproportionately of farm owner-entrepreneurs "that presents at elections, and is capable of placing through elections, candidates for public office".

The analysis undertaken in sections 1.1-1.3 thus identifies a relevant problem for comparative political science research. Section 1.1 noted that, as a consequence of its importance to responsible and responsive government, as well as to voter behaviour and elections, the political party merits continued and sustained analysis. Section 1.2 argued that, for precisely the same reasons, the non-major party also merits analysis. It also argued that knowledge of political parties will remain incomplete until a greater understanding of the reasons for its emergence, electoral support and dissolution (as well as of its impact on voter behaviour and major party competition) is obtained.

Section 1.3 noted that one type of non-major party, the agrarian party, has emerged only in Australia, Canada, New Zealand and the United States. It also drew attention to the simultaneous formation, in the years immediately following the First World War, of agrarian parties in these countries and to the absence of any recognition of this striking phenomenon. An analysis of the formation, electoral support and dissolution, in the years immediately following the First World War, of agrarian parties in Australia, Canada and New Zealand has thus not been undertaken. Accordingly, this study attempts to explain the formation, pattern of electoral support and partial dissolution of agrarian parties in these countries at this point in time.

Section 1.4 sets out the framework that guides this analysis. It argues that agricultural economic links with the United Kingdom clearly distinguish these three countries from other countries (including the United States); that in the 1920s this relationship underwent changes of an unprecedented nature, and therefore that an analysis of these economic changes might be able to account for the appearance and disappearance of agrarian parties in these three countries. Questions for empirical investigation that arise from this problem for research and analytical framework are set out in section 1.5. Section 1.6 sets out an empirical setting in which an investigation of these questions for research might begin.

1.4. The Comparative Framework: The British Dominions

The simultaneous formation of agrarian parties in Australia, Canada and New Zealand suggests that common stimuli may underlie electoral behaviour in rural districts. Systematic forces, in other words, seemed to engender the concurrent formation, in the years immediately following the First World War, of agrarian parties in these three countries.

For two reasons, few countries are more amenable to comparative analysis than Australia, Canada and New Zealand. Most obviously, they are former British possessions, constituted integral elements of the British Empire, attained legislative, executive and judicial autonomy under British guidance and tutelage and are populated largely by persons of British ancestry (Lipson, 1959); (Lipson, 1964); (Brady, 1947);

(Corry, 1946); (Miller, 1966a). Economic arrangements also make these countries readily comparable. Australia, Canada and New Zealand are "regions of recent settlement" whose formation and character is a direct consequence of European (particularly British) settlement and investment in the nineteenth century. (Nurkse, 1954); (Denoon, 1983); (Denoon, 1979); (Fogarty, 1981); (Wynn, 1982); (Drummond, 1985); (McCarthy, 1973); (Hartz, 1964); (Woodward, 1977).

Settler societies share two principal attributes. (1) The distribution of factor endowments (resources employed in production) in such societies is skewed heavily in favour of land (natural resources), so that capital and labour are relatively scarce. Patterns of comparative advantage thus dictate that they specialise in the export of primary commodities. They also encourage the importation of the capital, labour and technology (Watkins, 1963); (Pomfret, 1981).

(2) Growing European demand for primary products provided the initial impetus for settler societies' economic development. In particular, settler societies were profoundly influenced by the emergence, in the nineteenth century, of the United Kingdom as the world's principal trading nation. Each undertook a massive commitment to export-led primary production targetted on the British market. With respect to trade in agricultural commodities, the United Kingdom was the world's principal importer of foodstuffs from the mid-nineteenth century until well after the First World War (Court, 1954); (Nurkse, 1954); (Malenbaum, 1953); (Brown, 1965), and during these years Australia, Canada and New Zealand were important suppliers of agricultural commodities to Britain (United Kingdom, 1925); (United Kingdom, 1929).

Table 1-4 quantifies this relationship. Included in the table are measures of each of the principal agricultural exports of Australia, Canada, New Zealand and the United States (relative to each country's total exports of agricultural commodities), the proportion of each commodity exported from each country to Great Britain, and the proportion of each of these countries' exports to total British import requirements. Distinctions emerge between the United States and the British Dominions and between each Dominion and the United Kingdom.

A first set of points distinguishes the United States from the British Dominions. During these years, the United States exported a wider range of rural commodities than did the British Dominions. Columns (2) and (5) indicate that America's four most important rural commodities accounted for only one-half of its total rural exports, and that the Dominions' principal rural commodities constituted three-fourths of their total rural exports. The United States was thus less reliant upon particular export commodities than were the Dominions.

American rural exports were also directed less exclusively towards the British market than were the Dominions' rural exports. Only one-quarter to one-third of American rural exports (except tobacco) were consigned to the United Kingdom. In contrast, two-thirds or more of the Dominions' exports were sent to Britain. Moreover, the relative importance of the British market for the United States declined slightly during the decade. This trend is most apparent for meat, is moderate in extent for cotton and relatively slight for wheat. Tobacco is the only exception to this tendency. For the Dominions, however, Britain maintained its importance (or, indeed, grew in importance) as a destination for rural exports (Drummond, 1972); (Drummond, 1974).

A second set of points underscores the British Dominions' common traits (in terms of primary production). The years immediately following the First World War witnessed, in Australia, Canada and New Zealand, an increased concentration in the production of what Fogarty calls "superstaples" -- com-

Table 1-4: Rural Exports, Australia, Canada, New Zealand and United States: Primary Export Commodities and the British Market, 1919-23, 1924-28

	(1)	(2)	(3)	(4)	(5)	(6)
1. Australia						
Wool	***	20.47	60.45	33.68	52.60	32.93
Wheat	17.74	21.40	40.77	12.99	16.76	38.74
Butter	22.89	8.73	88.08	12.79	7.52	82.43
Meat	8.57	4.70	91.33	4.62	4.89	65.88
2. Canada						
Grain and Flour	23.97	63.33	56.44	26.61	63.82	64.62
All Grains	26.02	50.29	59.95	29.27	53.17	71.03
Wheat	13.35	45.48	57.90	33.44	46.91	72.28
Flour	19.56	11.00	46.44	20.76	9.47	31.36
Oats	28.23	2.67	62.93	23.46	1.82	48.48
Meat	7.68	5.39	79.95	4.30	3.99	73.29
Cheese	32.19	4.61	93.29	34.48	3.45	89.84
3. New Zealand						
Wool	***	30.94	92.11	26.85	76.08	21.81
Meat	13.29	20.00	92.61	17.46	97.25	10.72
Butter	18.69	14.60	94.19	23.09	87.31	20.92
Cheese	47.60	13.10	98.91	13.56	99.26	49.15
4. United States						
Cotton	65.08	22.76	29.10	48.77	37.44	21.68
Wheat	30.05	14.63	18.36	28.99	11.77	17.54
Meat	22.04	6.67	48.08	10.32	3.95	19.30
Tobacco	80.79	5.53	52.63	75.91	5.76	50.78

Figures cited refer to percentages of values (in constant [1913] Sterling) of commodities imported into the United Kingdom,

Where

(1) = Percentage of total British imports of the commodity from the country in question, (for the period 1919-1923).
(2) = Percentage of the country's total rural exports, (1919-1923).
(3) = Percentage of the commodity exported to Britain, (1919-1923).
(4) = (1), for the period 1924-1928.
(5) = (2), for the period 1924-1928.
(6) = (3), for the period 1924-1928.

*** Indicates that data not available.

Source: Australia (1920-1940); Canada (1920-1940); New Zealand (1920-1940); United Kingdom (1923, 1928); United States (1920-1940).

modities in whose production these countries were world leaders (Fogarty, 1985p.22). In Australia, for example, the export of wool and to some extent meat increased in importance relative to wheat and butter. In Canada the export of wheat increased in relative importance. New Zealand increased its concentration on the export of butter and cheese.

A third set of points distinguishes the United Kingdom from its Dominions. Figures in columns (1) and (6) indicate that Britain imported foodstuffs from a wide range of countries. Its reliance upon any particular country, including the three Empire countries, was thus relatively low. For the Dominions, however, the British agricultural connection was vital, and in many instances was increasing in importance. For each commodity, Britain's purchases from a given country were considerably less than the extent of that country's export of that commodity to Britain.

Generally speaking, economic conditions in the years immediately following the First World War have not received attention commensurate with that given to the war years or the Great Depression (Dowie, 1975). Nonetheless, economic historians agree that primary production underwent momentous economic changes during the 1920s. Unprecedented economic problems emerged during these years, and the difficulties which were present in 1914 were exacerbated after the war. In particular, Svennilson characterises this decade as a period of structural transition in the world economy (Svennilson, 1954). Most importantly, rates of economic growth declined appreciably from levels attained in the years 1896-1914 (Aldcroft, 1977p.288). Further (and partly because the war disrupted trade patterns and monetary arrangements), world trade failed to regain its pre-war momentum (Kenwood, 1971). The years 1920-21 witnessed a depression more extensive than any which preceded it and more severe (though not as prolonged) as the downturn of 1929-32 (Pilgrim, 1974). In this decade appeared new technologies that necessitated painful tranfers of resources from declining to expanding sectors (Landes, 1969). Finally, the 1920s confirmed the economic decline of Western Europe (particularly the United Kingdom) relative to the United States, and, indeed, marked America's rise to a position economic pre-eminence (Pollard, 1973).

Since foodstuffs constituted nearly 40 percent of the volume of world trade during the 1920s (Aldcroft, 1977p.219), problems of adjustment were particularly acute for exporters of agricultural and pastoral commodities. At the same time, primary producers' terms of trade deteriorated precipitously. Contemporary observers interpreted price declines and accumulations of stocks as symptoms of overproduction [see, for example, (Neumark, 1934)]. More recent research questions the validity of the oversupply hypothesis and points to change in market demand for primary commodities as the factor most responsible for agrarian distress in this decade [see, for example, (Lee, 1969); (Johnson, 1985)]. These changes were commodity-specific: a decline in population growth and changes in dietary patterns in consuming countries lowered the demand for staples such as wheat; conversely, these dietary changes increased the demand for fruits, vegetables and dairy products. Regardless of their cause, however, it is clear that unprecedented economic developments which first made themselves felt in the years immediately following the First World War necessitated extensive adjustments of resource inputs and commodity outputs in agriculture (Schultz, 1945); (Schultz, 1953); (Heady, 1965).

Pressures for agricultural adjustment in response to these developments weighed most heavily upon countries whose primary commodities figured prominently in international trade and whose commercial links with Europe (particularly Great Britain) were extensive. Table 1-4 indicates that Australia, Canada and New Zealand conform closely to these criteria. The Dominions of the second British Empire thus constitute, in agricultural economic terms, a distinct group amenable to comparative analysis. The impor-

tance of the British market for primary producers in Australia, Canada and New Zealand suggests that common features that may underlie patterns of agrarian politics in these countries. If similar agricultural and pastoral economic stimuli influenced rural districts in these countries, and if these stimuli can be related to the particularities of agrarian party formation, then the use of a framework that analyses these stimuli is warranted.[8] Agrarian parties in Australia, Canada and New Zealand might therefore be seen as local responses to more universal economic phenomena.

1.5. Questions For Empirical Investigation

Implicit in the problem for research and framework for comparative analysis set out in sections 1.1-1.4 are two sets of research questions.

1. A first set of questions investigates the causes of agrarian party formation and dissolution:
   - Why did agrarian parties form in the British Dominions in the years immediately following the First World War?
   - Why has one agrarian party (the Australian Country Party) maintained a continuous existence since its formation, while others (such as the Canadian Progressive Party and the New Zealand Country Party) quickly disappeared?
   - Why have agrarian parties been particularly long-lived in particular states/provinces (such as Alberta, Saskatchewan, New South Wales and Victoria) and not in others (such as Tasmania, South Australia and Canada's Maritime Provinces, Quebec and British Columbia)?
   - To what extent can economic (as opposed to occupational, territorial or religious) variables account for emergence and dissolution of agrarian parties?
2. A second set of research questions investigates agrarian parties' electoral support and specifies more precisely the relationship between economic stimuli and agrarian political behaviour:
   - Given conditions conducive to agrarian party formation, who is most likely to vote for these parties?
   - To what extent do economic (as opposed to occupational and religious) variables underlie agrarian parties' electoral base?

1.6. The Empirical Focus

Sections 1.1-1.4 drew attention to the absence of, and to the benefits which might arise from, an analysis of agrarian parties in Australia, Canada and New Zealand. This study has a less ambitious but more manageable focus. It attempts to explain the formation, electoral support and partial dissolution of the Australian Country Party at the Commonwealth elections of 1922, 1925 and 1928.

For four reasons, the Australian Country Party merits analysis. (1) Longevity distinguishes the Country Party from agrarian parties in Canada, New Zealand, the United States and Western Europe. In these countries, agrarian parties (like most non-major parties) have not been long-lived. The New Zealand Country Party, the Canadian Progressive Party and the American agrarian parties quickly disintegrated. The Agrarian Parties of Norway, Sweden and Finland, as well as the Social Credit and Co-operative Commonwealth Federation in Canada, gradually lost their agrarian *raison d'etre* (Elder and Gooderham, 1978); (Young, 1969); (Zakuta, 1964). Only in Australia does an agrarian party continue to exist. The Australian Country Party, in other words, is the last remaining agrarian party in an advanced industrial democracy.[9] Its longevity -- and hence its formation and electoral support -- demand explanation:

> the Australian Country Party resembles much more the farmers' movements of the New World than it does the peasant parties of the Old, but unlike the former it has survived as an independent political party. Why it has been able to do so, and how long it can continue to do so, are perhaps the most important questions to ask about the party (Aitkin, 1980p.415); see also (Epstein, 1977p.11).

(2) Legislative behaviour distinguishes the Country Party from agrarian parties in Canada, New Zealand, the United States and Western Europe. Australia is the only Western democracy in which a non-major party has entered into a permanent (electoral and parliamentary) coalition, while in government and opposition, with a major party. This anomalous arrangement demands explanation (Duverger, 1954p.294).

(3) The Country Party is at the centre of an ongoing debate in Australian political studies. In particular, the role and significance of the Country Party in the Australian party system has engendered considerable disagreement. Classification of the Australian party system as a two-party system or as a multi-party system has proved difficult largely because the role and significance of the Country Party in that system remain unresolved (Hughes, 1985p.35); (Coleman, 1963p.13); (Starr, Richmond and Maddox, 1978p.318). Many works argue that the Australian party system is essentially bi-partite (Blondel, 1968pp.184-185); (Crisp, 1965p.192); (Graham, 1966p.196); (Maddox, 1985p.257); (Overacker, 1952p.237); (Webb, 1954p.86). Other works note the presence of important aspects of tri-partitism (Barbalet, 1975); (Duverger, 1954pp.218,235); (Jupp, 1964pp.8-11,23); (Lipson, 1953pp.338-339); (Miller, 1966bp.63); (Sartori, 1976p.185). In addition, Davies posits a "two-and-one-half" party system (Davies, 1971p.127); Lipson concludes that the Australian party system is a "trio in form but a duo in function" (Lipson, 1959p.17); (Lipson, 1964p.334), and Aitkin and Kahan identify a "stable four-party system" (Aitkin and Kahan, 1974p.444); see also (Aitkin, 1980p.415).

These distinctions are important. Central features of party politics in Australia become clear only when it is recognised that a two-party (or three-party) system exists (Barbalet, 1975p.3). The anomalous features that the Country Party lends to the Australian party system have received extensive comment. The causes which underlie these features have elicited no sustained analysis. Hence,

> whether or not one accords to the Country Party the status of a major [sic] national third party, there is no justification for the common practice of almost entirely ignoring it (Mayer, 1956pp.265-266). Research on it, especially on its role in the nineteen-twenties, would [therefore] be of special relevance (Mayer, 1956p.266).

(4) More generally, Australia provides an ideal setting for an investigation of the relationship between economic stimuli and electoral behaviour -- particularly the relationship between agricultural economic stimuli and electoral behaviour in rural districts. In linguistic, ethnic and cultural terms Australia is a relatively homogenous country. As a result, few non-economic cleavages attenuate the impact of material interests on political conflict. Indeed, Lord Bryce points out that "Australia is the country in which material interests have most successfully occupied the attention of the people and dominated their politics, [and thus] affords excellent opportunities for estimating the influence [exerted by] such interests" [quoted in (Kemp, 1978p.12); see also (Lipson, 1959p.30)]. An analysis of the Australian Country Party might therefore contribute to a more complete understanding of the impact of economic stimuli on voter and party behaviour.

1.7. Summary

This chapter identifies the concurrent formation, in the years immediately following the First World War, of agrarian parties in Australia, Canada and New Zealand as a relevant problem for comparative political science research. The chapters which follow attempt to resolve this problem. In particular, they attempt to explain the formation, electoral support and partial dissolution of the Australian Country Party in the years 1922-1928.

This study's limited empirical focus cannot conclusively resolve this larger problem for research. Nonetheless, its findings are consistent with its principal hypothesis: the formation and electoral support, in the years immediately following the First World War, of agrarian parties in Australia, Canada and New Zealand was the consequence of (1) resource maladjustments in agriculture and (2) the collapse, between 1921 and 1922, in the price of many agricultural and pastoral commodities below the average variable cost of production. Conversely, successful adjustment to market conditions hindered agrarian party formation, attenuated agrarian party electoral support and precipitated agrarian party dissolution.

The chapters which follow justify and elaborate this hypothesis. Chapter 2 assesses studies of Australian, Canadian and New Zealand agrarian parties. It concludes that, for methodological and substantive reasons, these studies cannot resolve the questions for empirical investigation formulated in section 1.5. At the same time, it suggests that an analysis of the economic antecedents of voter and party behaviour in rural areas (i.e., an econometric analysis of agrarian party formation, electoral support and dissolution) may resolve these questions.

Part II undertakes such an analysis (with particular reference to the Australian Country Party at the Commonwealth elections of 1922, 1925 and 1928). Chapter 3 provides the analysis with a methodological and a theoretical base; Chapter 4 provides it with an empirical base; Chapters 5 and 6 confront these propositions and techniques with data. Part III (Chapter 7) discusses the utility of this study's methodology and techniques and the significance of its findings for an understanding of the behaviour of major parties, non-major parties and voters.

Chapter 2
Previous Work

Chapter 1 identified the formation, electoral support and dissolution, in the years immediately following the First World War, of agrarian political parties in Australia, Canada and New Zealand as a relevant problem for comparative political science research. This chapter assesses major studies of agrarian parties in these countries. It argues that these studies do not resolve (indeed, that they do not address) the problem for research set out in Chapter 1: their scope is not comparative, their assertions are not consistent with the findings of contemporary political science research, and, most importantly, methodological, conceptual and logical difficulties undermine their conclusions. This chapter therefore argues that the problem for research set out in Chapter 1 has not yet been resolved.

At the same time, this assessment re-inforces the contention that an analysis of the economic antecedents of party and voter behaviour in rural districts may resolve this problem for research -- and may thereby contribute to a more complete understanding of major and non-major parties, voter behaviour and the party system. This chapter thus justifies an *econometric* analysis of the formation, electoral support and dissolution of agrarian parties in Australia, Canada and New Zealand. Section 2.1 examines previous works' methodological base. Section 2.2 analyses the class and territorial, ideological and organisational interpretations of agrarian parties in these countries.

2.1. Methodology

Studies of political phenomena generally utilise one of two types of explanation (Dray, 1974pp.66-89); (Moon, 1982pp.150-155). (1) Theoretical explanations assert that political behaviour does not vary randomly or capriciously[see, for example, (Campbell, Converse, Miller and Stokes, 1960p.8-37)]. Theories (general or abstract statements that relate observable events to one another) represent this uniformity (Riker and Ordeshook, 1973). Theoretical explanations thus account for empirical phenomena by relating them to inter-connected sets of general propositions (Pratt, 1978pp.69-77); (Papineau, 1978pp.19-50); (Ryan, 1970pp.46-100); (Hempel, 1965); (Popper, 1957); (Nagel, 1961).

(2) "Intentionalist" (also known as "interpretive" or "historical") explanations do not utilise general or abstract statements (and thereby eschew theories). They explain phenomena by relating them to details specific to the case at hand (Butler, 1958p.19); (Butler, 1955p.98); (Crick, 1959). Because events occur in different temporal and cultural contexts, and because unique personalities shape these events -- in short, because individual events are *sui generis* -- generalisation and abstraction is impossible (Martin, 1977); (Louch, 1966); (Winch, 1958); (Moon, 1982); (Carr, 1961).

Both models of explanation produce legitimate forms of knowledge (Dray, 1974pp.68-69); (Nicholson, 1983pp.49-64; 183-204). Nonetheless, they differ in important respects (Appendix B analyses each in greater detail).

The methodology of the most significant studies of agrarian parties in Australia, Canada and New Zealand (Aitkin, 1972); (Aitkin, 1980); (Ellis, 1958); (Ellis, 1963); (Graham, 1963); (Graham, 1964); (Graham, 1966); (Lipset, 1950); (Macpherson, 1953); (Morton, 1950) is far more "intentionalist" than "theoretical." With the partial exception of Graham (Graham, 1966pp.1-28), each work analyses a single party within a single country. None subsumes these parties under a generalisation or set of generalisations: Verrall, Ward and Hay, for example, conclude that the Australian Country Party's electoral support "can often only be satisfactorally explained in terms which are historically random and particular. The party attracted initial allegiance only because of specific historical circumstances peculiar to individual regions" (Verrall, Ward and Hay, 1985p.8); see also (Hughes, 1985p.53); (Cribb, 1979p.96); (Morton, 1950p.xi). Each study, in short, considers its subject matter to be *sui generis*. It is at least in part for this reason that at present there exists no theory of agrarian party formation, electoral support and dissolution in these countries.

These studies typically consider agrarian party formation to be a consequence of conscious and intended action, and describe (re-enact) agrarian party formation, electoral support and dissolution in terms recognisable to (and used by) contemporary observers. For this reason, these studies do not investigate these parties' less visible antecedents. Graham, for example, observes that because the farmer was "unable to comprehend the complex machinery of the economic system which appeared to be working against him, the farmer would focus on the symbols of his oppression [sic] -- the railroads, the banks, the grain elevator companies -- and fight to break them. Indeed, the very intensity with which farmers focussed their hatred on the railroads, for example, blinded them to the other economic problems which they faced" (Graham, 1966p.17); see also (Lipset, 1950pp.9,58). This observation applies as much to these studies of agrarian parties as to farmers in these countries.

These studies do not attempt to separate agrarian party leaders' and journalists' rhetoric and special-interest group pleading from their other motives. As a result, they do not challenge contemporary actors' assertions and do not define the important but inherently ambiguous terms employed by these observers (e.g., "exploitation," "country-mindedness," "class" and "class consciousness" and "region").

These studies rely almost exclusively upon textual evidence -- most notably upon impressionistic accounts in farm journals, contemporary newspapers and the agrarian party's records [see in particular (Morton, 1950pp.300-310)]. With the partial exception of Lipset (Lipset, 1950), none uses quantitative evidence or bases its inferences upon statistical techniques. Moreover, none justifies the selection (or omission) of particular pieces of evidence or seems to be aware of the inferential difficulties that accompany an uncritical use of such evidence. Generally speaking, these studies do not critically evaluate the evidence upon which their assertions are based. For this reason, Clubb's criticism of intentionalist studies applies to these works: "when subjected to critical assessment [they] often appear biased, outmoded and untenable in the light of contemporary social science" (Clubb, 1977p.672).[10]

These studies' methodological foundation, in short, is weak. This result is consistent with Moon's observation that the interpretive explanation is an inadequate basis for political inquiry (Moon, 1982p.151). In methodological terms, therefore, these studies cannot resolve the problem for comparative research formulated in Chapter 1. This problem for research can be resolved only by going beyond the intentionalist model and constructing explanations that are essentially theoretical in form (see also the argument set out in Appendix B).

2.2. Interpretation

Political sociology is a field of political science which analyses the impact of patterns of social stratification upon political behaviour (Sartori, 1969pp.69-70); (Janowitz, 1968pp.298-299). Studies of agrarian parties in Australia, Canada and New Zealand are, in substantive terms, exercises in political sociology.[11] These studies consider agrarian party formation to be a consequence of a class or a centre-periphery (i.e., a territorial) cleavage, and assert that the "exploitation" of primary producers (as either a class or a sectional entity, by rival classes or regions) engendered the formation of agrarian parties. They also contend that these parties' fortunes are a function of a class or a sectional self-consciousness (ideology), the cohesion of party organisation and the ability of a leadership elite to mobilise support.

The agrarian party, in short, is considered to be a class, sectional or ideological phenomenon. Other (i.e., economic) antecedents of agrarian party formation, electoral support and dissolution are analysed only to the extent that they bolster this conclusion.

These studies' contentions are in important respects questionable. Popper argues that "intentionalist" studies are not, strictly speaking, refutable since the data which would be required in order to corroborate or reject their assertions do not exist (Popper, 1963). Nor are their assertions consistent with the results of contemporary political science research. Finally, conceptual shortcomings limit their utility and they are, in important respects, factually inaccurate. For substantive as well as methodological reasons, therefore, these interpretations cannot resolve the problem for research set out in Chapter 1. The assessment undertaken in this section, however, indicates that an investigation of the role of economic conditions upon voter behaviour in rural districts may resolve this problem for research.

2.2.1. Class and Territorial Cleavages

Analysts agree that the agrarian party is a consequence of a social cleavage (a politically salient pattern of social stratification). Uncertainty exists, however, with respect to the type of cleavage that underlies agrarian party formation. One interpretation asserts that the agrarian party is a consequence of a class cleavage -- a conflict between an "exploited" class of farmers and their "class enemies" (business, railway, banking and manufacturing interests).

Lipset, for example, analyses "the conditions under which class-conscious protest movements arise, as well as the factors that account for their success and failure" (Lipset, 1950p.3). Lipset contends that "the history of [North] American political class consciousness is primarily a chronicle of agrarian upheaval" (Lipset, 1950p.3); that "the development of economic class consciousness on the [Canadian] Prairies dates from the first large-scale settlement at the turn of the century" (Lipset, 1950p.38); that "a common economic class situation led to heightened consciousness, sharpened class attitudes [and] agrarian class unity" (Lipset, 1950p.48) and that "the same factors that led Saskatchewan farmers to organise as a class for economic reform led to early support for direct political action [e.g., agrarian party formation]" (Lipset, 1950p.52).

Lipset thus concludes that

> the period 1900-1930 witnessed the creation of a powerful organised, class-conscious agrarian movement in Saskatchewan. [Farmers] became convinced that they were exploited by "vested interests" [and] developed a hostile attitude to big business; as a result, a large proportion of farmers supported an agrarian socialist programme designed to eliminate private profit by government or co-operative action before an explicitly socialist party [the Co-operative Commonwealth Federation] had appeared on the scene (Lipset, 1950p.71).

Similarly,

> the Saskatchewan CCF is a "class" party in the objective sense since it reflects the aspirations of a class created by constrained economic forces. The Depression made it the political voice of angry, exploited rural Saskatchewan (Lipset, 1950p.153).

Conversely, Lipset asserts that "the Progressive Party leadership had never been converted to the necessity of [creating] a class party" (Lipset, 1950p.58), and therefore that "the Progressive movement failed largely because it was more a product of immediate discontent than of long run crisis; it was not the expression of a self-conscious class demanding deep-rooted change" (Lipset, 1950p.60).

Where territorial (regional) sentiments command strong loyalties, the class cleavage may not be the most important political cleavage. To the extent that ethnic, religious, economic -- and, indeed, class -- homogeneity exists within a region, a territorial (e.g., a rural-urban) cleavage may supercede the class cleavage (Alford, 1963p.35); (Lipset and Rokkan, 1967). Accordingly, other studies argue that both class and territorial cleavages underlay agrarian party formation. In particular, these studies assert that the agrarian party represents the revolt of a "colonial" or otherwise "exploited" hinterland against a metropolitan, urban centre.

Macpherson is the most influential proponent of the class-and-territorial interpretation of the agrarian party (Macpherson, 1953); more generally, see (Hechter, 1975). Macpherson characterises self-employed, small-scale entrepreneurs who employ little or no labour (i.e., farmers and small businessmen) as a "petit-bourgeois" class. Because a majority of its population were farmers (and many others were small businessmen), Macpherson argues that society in the province of Alberta (and, by extension, in the neighbouring provinces of Saskatchewan and Manitoba) was essentially "petit-bourgeois" in outlook. Alberta possessed neither a classless nor a one-class social structure. Rather, before the Second World War it possessed "a relatively homogenous class composition" (Macpherson, 1953p.10); see also (Graham, 1966pp.14-15).

Further, Macpherson draws upon a very extensive and influential literature [see in particular (Fowke, 1946); (Fowke, 1957); (Phillips, 1978)] in order to argue that the Prairie West in general and Alberta in particular was a "quasi-colonial" appendage of Canada's Eastern provinces (i.e., Ontario and Quebec):

> It has become a commonplace of Canadian economic history that the main economic policies of the Dominion Government toward the Canadian West ever since Confederation, and even before, have been designed in the interests of Eastern [Canadian] capital (Macpherson, 1953p.6).

Thus,

> The dominance, in the opening up and development of the prairies, of federal policies and the interests of Eastern capital, is sufficient evidence of the colonial nature of the Western economy in its formative years (Macpherson, 1953p.7).

Agrarian party formation is the consequence of the "exploitation" of this regionally-concentrated "petit-bourgeoisie." The sudden and overwhelming electoral victories of the United Farmers of Alberta (in 1921) and Social Credit (in 1935) represented "the radicalism of a quasi-colonial society of independent producers in rebellion against Eastern imperialism" (Macpherson, 1953p.220).

Morton's account of the Progressive Party relies upon similar arguments (Morton, 1950). Morton asserts that "the Western Provinces are a federal [i.e., a Dominion Government] creation; their basic social and political pattern had been shaped by old Canadian colonisation" (Morton, 1950p.5). As the their development accelerated, "sectional discord developed beneath the surface" (Morton, 1950p.6). Specifically, "the unequal incidence of the National Policy on the West engendered sectional disabilities and sharpened sectional tempers. Such handicaps were endurable in times of prosperity; but when such conditions no longer obtained, the West was left in such a weakened state that its only recourse lay in political action" (Morton, 1950p:6). As a result, Morton asserts that the early years of the twentieth

century witnessed, in the Prairie West, the "development of a distinct section acutely aware of its particular interests and increasingly conscious of its weakness" (Morton, 1950p.8). For these reasons, Morton concludes that "the great agrarian revolt of 1921 in Canada [was] a class and sectional protest against the two-party system and the national policies associated with the traditional parties" (Morton, 1950pp.xi,75,195).

Graham provides the seminal account of agrarian party formation in Australia and New Zealand (Graham, 1963); (Graham, 1966); see also (Ellis, 1958); (Ellis, 1963). Graham accepts the validity of class and sectional interpretations of agrarian party formation in North America. The appearance of agrarian movements in the United States between 1870 and 1914 was "essentially a protest movement of pioneering wheat farm communities against their exploitation by various sections of organised capital: the railway and elevator companies that fixed charges, the bankers who lent and then foreclosed" (Graham, 1966p.4); see also (Verrall, Ward and Hay, 1985p.17). Reviewing studies of Canadian agrarian parties, Graham asserts that "[in order to] succeed in politics, farmers needed to develop a feeling of class solidarity, an awareness of the true interests of their class, and a determination to use whatever political methods were best-suited for furthering those interests" (Graham, 1966p.17).

Graham also contends that Australian agrarian parties are related to the agrarian parties of the Canadian Prairies and American mid-West (Graham, 1966p.1). For this reason, Graham applies North American interpretations of agrarian party formation to Australia. In particular, he asserts that "agrarian insecurity existed almost to the same extent in Australia [as in Canada], but was more frequently a product of small farmers' experience of harsh treatment at the hands of pastoralists and bankers" (Graham, 1966pp.11, 27-28). Conversely, "nothing like [this] sense of injustice existed amongst New Zealand dairy farmers. In the period from 1890 to 1912 the Liberal Party took good account of small farmers' demands; in later decades, first the Reform Party and then the National Party, despite their connections with urban interests, made it their careful business to cater for the farming electorate. New Zealand farmers have never lacked a political champion" (Graham, 1963p.196). In consequence, New Zealand primary producers "[were] never a neglected group; nor [were] they ever forced, as were farmers in Australia, to form a sectional party to express their grievances" (Graham, 1963p.175).

The "class" interpretation of agrarian party formation in Australia, Canada and New Zealand is seriously flawed. Most importantly, it is not refutable. The assertions of political sociologists notwithstanding, the extent to which farmers were class conscious actors, as well as the extent to which class consciousness influenced agrarian political behaviour, cannot be ascertained. The data required to validate these assertions (sample survey data of rural voters' subjective class consciousness in the period immediately following the First World War) do not exist. In their absence, these assertions remain unsubstantiated.

At the same time, the "class" interpretation seems to over-estimate farmers' class homogeneity. Farmers have never fit unambiguously into any single class category. As a result, "to employ the phraseology of class politics unreservedly to the political preferences of farmers is to invite ambiguity" (Urwin, 1980p.131). To the extent that they expand the base of their operations, hire labour and buy machinery, farmers are "employers" and "capitalists" (Mooney, 1983); (Mumey, 1967); (Buttell and Newby, 1980); (Lawrence, 1980); (Nankivell, 1979). To the extent that they must supplement farm income by selling their own labour, farmers are "employees" (Patterson, 1971); (Steeves, 1972); (Steeves, 1980). It is thus difficult and potentially misleading to apply class terminology to primary producers:

> united petit-bourgeois action is rare, even when attention is restricted to the agrarian sector. In Alberta and Saskatchewan, the "vigorous consciousness of common interests" to which Macpherson (Macpherson, 1953p.226) refers was not experienced by all farmers, and it is doubtful whether "agrarian class unity was

> emerging out of economic conflict" (Lipset, 1950p.69) to the extent that we can talk about united class action (Sinclair, 1977p.81).

With respect to primary producers' subjective class identification, findings suggest that farmers identify not with a single class but with a range of classes -- or with no class at all:

> when a large number of people occupy a similar [objective] class position it does not follow that they will be [subjectively] conscious of their class identification and act in terms of it. The petit-bourgeoisie has seldom done so. Indeed, different strata of the class have frequently been in conflict with each other. For a class to exist as an active force there must be a communal sentiment and an organization to bring people in similar circumstances together. This has rarely been the case in Western Canada (Sinclair, 1977p.80).

Because farm work combines manual and managerial labour, farmers' subjective class identification incorporates dissonant elements. As managers, farmers control their own labour (as well as the labour of others); as manual labourers, farmers undertake arduous and hazardous tasks. This inconsistency of objective class engenders inconsistency of subjective class identification. Farmers, in short, identify with both the working and proprietory classes (Larson, Gillespie and Buttell, 1983).

These findings underscore the difficulty of applying class terminology to farmers. The "class" interpretation of agrarian party formation is insufficiently cognizant of farmers' diverse objective class categorisations and subjective class identifications. For these reasons, its conclusions are questionable:

> the use of the concept of class is a function of conditions prevailing among sociologists as a group rather than of conditions characteristic of the society, or of science, and from [a] strictly scientific point of view we ought to revert to simpler concepts . . . the concept of class has perhaps caused as much confusion as [clarity] (Rose, 1958p.69); more generally, see (Converse, 1964p.260); (Sartori, 1962pp.23-24); (Campbell, Converse, Miller and Stokes, 1960p.404).

The "territorial" interpretation of agrarian party formation is also seriously flawed. It too is not refutable, suffers from conceptual shortcomings and is inconsistent with the results of contemporary political science research. Three conditions must be met in order to justify the claim that territorial cleavages are politically salient (Mathews, 1980). It is necessary to demonstrate that (1) regional divisions actually exist, that (2) these objective differences engender distinct regional loyalties and (3) that these loyalties influence political behaviour [see, for example, (Elkins and Simeon, 1980)].

With respect to Mathews' first criterion, the discovery of regional differences does not explain regional differences:

> We need to be a good deal more systematic both in how we conceive of the phenomenon of "regionalism" and in how we describe its dimensions and effects. We must first recognise that in no sense is it an explanatory variable: by itself it doesn't explain anything; nothing happens because of regionalism. If we find differences of any sort among regions, it remains for us to find out why they exist; "regionalism" is not an answer. In this sense regions are simply containers whose contents may or may not differ (Simeon, 1979p.298); see also (Jaensch, 1983p.58); (Lipson, 1964p.325).

Political conflict, whatever its cause, is likely to acquire at least some territorial colouration -- even though it may bear little relation to territorial concerns (Gibbins, 1980p.159).

The absence of relevant data precludes an investigation of the presence of Mathews' second and third criteria for politically salient territorial cleavage. It is reasonably certain, however, that the "exploitation" of the rural periphery by urban centres neither informed rural voters' regional loyalties nor influenced their political behaviour. The claim that rural peripheries are "exploited" by urban centres is logically and conceptually untenable. Norrie considers regional economic discrimination to exist if economic distortions are clearly initiated by government (or government institutions), and if the removal of these distortions provides unambiguous benefit to the region (Norrie, 1976pp.211-212). Given these criteria, the economic grievances cited by the agrarian party literature stem from dissatisfaction with market resource allocation (i.e., the inevitable fate of small and isolated regions in a market economy) rather than from discriminatory government policies (Norrie, 1974); (Norrie, 1976); (Norrie, 1978).

Studies of agrarian parties assert, without evidence, that tariffs have disproportionately harmful effects upon rural districts (Macpherson, 1953p.7). In particular, they assert that (1) tariffs retard rural economic development and diversification (and thereby encourage the concentration of manufacturing in major metropolitan centres), and that (2) tariffs transfer resources (labour and capital) from rural to urban regions, de-industrialise rural regions (and thereby benefit industrial centres at the expense of rural districts).

Norrie's analysis of these assertions merits quotation at length:

> [Argument (1)], of course, is patently false. The tariffs merely shifted the best (i.e. least cost) plant location for servicing the Canadian market from the developing industrial areas in the US to the best site in Canada behind the tariff wall. For a combination of historical, geographical and economic reasons, eastern Canada was the logical place for this industry. Granted the East may have been artificially industrialised by the tariff, but, if so, at the expense of the US rather than of western Canada. In the absence of the tariff the West would have had no more, and probably even less, manufacturing than she did experience (Norrie, 1978p.23).

"The correct response to these assertions", in other words,

> is that the industrial structure of the [Prairie] West derives from its geographical isolation, relative lateness of settlement and small and diffused population base. Profit-maximizing industries locate where the sum of materials acquisition, production and distribution costs is minimized. Since distribution costs are minimized by locating close to the major markets for the product there is a tendency for industry to agglomerate around already established population centres (Norrie, 1976p.213).

With respect to the second assertion,

> if one means by this that the very existence of tariffs leads to regional disparities in industrialization then it is true only to the extent that the tariff has induced more manufacturers to locate in Ontario and Quebec than might have in the absence of the tariff. But the claim is not true if by it is meant that the West has less industry because of the Canadian protective system (Norrie, 1976pp.213-214); see also (Norrie, 1974pp.460-461).

These studies also contend, without evidence, that (3) rural districts faced unnecessarily high transport costs [see, for example, (Lipset, 1950pp.4-10); (Morton, 1950p.7)]. Norrie finds, however, that even when freight rates accurately reflect the cost of transporting goods, isolated (hinterland) regions in market economies absorb transport costs on both imports and exports (Norrie, 1976p.214).

Accounts of agrarian party formation assert, without evidence, that (4) commercial banks transfer savings from the hinterland to urban centres (with the result that the hinterland's development potential is reduced), and that they foreclose in times of economic adversity (thus imparting a discriminatory burden upon farmers). These actions reflect no more than the rational (profit-maximising) behaviour of firms. Lending institutions re-allocate resources from areas of low return to areas where risk-adjusted returns are greater (Norrie, 1976p.215); for a similar argument applied to futures markets, see (Pashigian, 1988).

Norrie thus concludes that agrarian grievances are actually demands for market intervention: "the real dissatisfaction is with the market economy rather than with discriminatory acts by the federal government or eastern-based companies. It is obvious that these types of proposals are actually demands to counteract decisions made in the market rather than to offset regionally discriminatory behaviour by private institutions or the federal government" (Norrie, 1976p.216).

These shortcomings of "class" and "territorial" interpretations of agrarian parties have important consequences. Most fundamentally, they indicate that an analysis of agrarian parties must make no assertions regarding objective class homogeneity, subjective class consciousness and regional (territorial) identity in rural districts. They also underscore the potential utility of investigating the effects of market relationships on political behaviour in rural districts.

2.2.2. Ideology

Very closely related to subjective regional identification in rural districts is the ideology of agrarianism. Ideologies are explicitly formulated systems of belief which exhibit a high degree of internal coherence (systematisation) and focus attention around one or a few central propositions (Shils, 1968pp.66-69); (Geertz, 1964pp.47-76); (Plamenatz, 1971p.16). Nonetheless, ideologies are extremely nebulous phenomena: "[their] nature cannot be captured in definitions" (Scarbrough, 1984p.22); "no fewer than two dozen quite different definitions of the concept exist" (Putnam, 1971p.651), and, at the same time, "there exist no criteria for their comparison, evaluation or use" (Bennett, 1977pp.465-466).

It is not surprising, then, that beyond an acknowledged set of beliefs related to rural living, the ideology of agrarianism lacks a single (or simple) definition.[12] Nor is it surprising that studies of agrarian parties leave the term undefined. Nonetheless, agrarianism has been cited as an important cause of agrarian party formation. Aitkin, for example, argues that "the New South Wales Country Party is built upon an ideology that grew out of the experiences of farmers and townsmen in the second half of the nineteenth century, and which flourishes still" (Aitkin, 1972p.315). This ideology was well-established by 1910 (Aitkin, 1972p.8), "provided the impetus for the Country Party's thrust into Parliamentary politics" (Aitkin, 1972p.4), and changed only slightly between 1910 and 1960 (Aitkin, 1972p.17); see also (Lucy, 1985p.74). In short, "the Country Party supported an ideology, made it its own, and established it as a principal theme in Australian politics. [Without this ideology, the Country Party] might have collapsed" (Aitkin, 1972p.1); see also (Graham, 1966pp.39-40 and 139); (Jaensch, 1983pp.177-179); (Emy, 1974p.437).

Conversely, "early [North American] agrarian movements lacked staying power; no sooner had they made their initial impact in the political system than they would lose direction and go to pieces. Their failure was a reflection of doctrinal weakness. Their political and economic ideas were unsophisticated and unsystematic, with the result that their action was ill-directed" (Graham, 1966p.17 and 296). Similarly, Lipset argues that "the lack of a long-term programme for social change accounted in part, for the failure of Populism [in the United States] to become a permanent radical protest movement" (Lipset, 1950p.9) and Morton observes that the Canadian Progressive movement "failed to develop a sound basis in doctrine" (Morton, 1950p.268) and that it entered politics "with fundamental doctrinal questions still unresolved" (Morton, 1950p.95).

For five reasons, the "ideological" interpretation of agrarian party formation is seriously flawed. (1) Like the "class" and "territorial" interpretation, it is not refutable: the data required to validate or falsify its assertions (sample survey data which measure the ideological beliefs of rural voters in the years immediately following the First World War) do not exist. In the absence of appropriate data, these contentions remain unsubstantiated. (2) Even if suitable data were made available, a test of the "ideological" interpretation would confront severe operational difficulties. Because the definition and measurement (indeed, the existence) of ideology are disputed, some studies find far more ideological voting than others (Niemi and Weisberg, 1976pp.79-83); (Achen, 1975); (Petrocik, 1980); (Converse and Markus, 1979); (Abramson, 1983); (Field and Anderson, 1969); (Pierce, 1970); (Scarbrough, 1984).

(3) Analyses of the relationship between ideology and voter behaviour flatly contradict the assertions of the "ideological" interpretation of agrarian party formation. These studies find that voters make little use of -- indeed, often do not understand -- the simplest ideological terms; that they hold illogical, inconsistent (and hence unstructured) beliefs, and, in many cases, that they have no views (to say nothing of

ideological views) whatever. Campbell et al, for example, investigate the extent to which voters use ideological concepts (Campbell, Converse, Miller and Stokes, 1960pp.188-216). They find that only 3.5 percent of voters describe politics primarily in terms of ideological concepts, and that only 11.5 percent of voters show any evidence of ideological thinking. They conclude that "the concepts important to ideological analysis are important only for that small segment of the population equipped to approach political decisions at a [conceptually] rarified level" (Campbell, Converse, Miller and Stokes, 1960pp.192-193); see also (Converse, 1964); (Butler and Stokes, 1974); (Klingemann, 1979); (Kinder, 983b).

Moreover, the extent to which voters recognise even the simplest ideological concepts is limited. Most studies find that the comprehension of these terms is confined to a minority (approximately 25 percent) of voters (Campbell, Converse, Miller and Stokes, 1960); (Converse, 1964); (Butler and Stokes, 1974); (Klingemann, 1979).

Converse considers the possibility that (a) voters cannot articulate the manner in which their beliefs are organised (despite the fact that these beliefs are ideologically-structured) and that (b) voters organise their beliefs in a manner different from political scientists' perceptions (i.e., in terms other than a liberal-conservative continuum) (Converse, 1964). Accordingly, Converse investigates the extent to which a voter's attitude with respect to one issue is related to his attitude on a related issue (the extent to which voters' attitudes form an overall system of belief) [see also (Campbell, Converse, Miller and Stokes, 1960pp.192-193)]. Converse finds that, at a given point in time, voters' attitudes are inconsistent and conform to no discernible pattern; over time, a voter's response to an identical question varies greatly (particularly with respect to the most ideological questions), and in many instances is random in nature (Converse, 1964).

That other studies (Alt, 1983); (Sarlvik and Crewe, 1983); (Robertson, 1984); (Harrop, 1979); (Scarbrough, 1984) show that there is some degree of structure to the electorate's attitudes does not invalidate Converse's principal empirical result -- that this structure is not strong enough to justify the conclusion that voters possess structured belief systems (Converse, 1964). In sum, therefore,

> well-developed and structured ideologies, derived from basic principles and exercising a powerful constraint on individual voters' attitudes, remain absent from the political thinking of the great masses of voters in Western democracies (Harrop and Miller, 1987pp.124-125).

(4) The conclusion that voters do not possess a structured system of belief need not apply to all voters. Evidence suggests, however, that it applies most unambiguously to farmers. Studies of the ideological base of farmers' political attitudes uncover "a paucity of anything resembling ideological comprehension in rural areas" (Campbell, Converse, Miller and Stokes, 1960p.437); see also (Bone and Ranney, 1963p.45); (Flanigan, 1972p.54); (Milbraith, 1965pp.128-130); (Lewis-Beck, 1977p.555).

(5) Several studies investigate the extent to which farmers subscribe to the tenets of agrarianism (Craig and Phillips, 1983); (Flinn and Johnson, 1974); (Rohrer, 1969); (Carlson and McLeod, 1978); (Smith, 1982). These studies indicate that most farmers in Australia and the United States subscribe to these tenets. Less clear, however, is the contention that the sum of these attributes constitutes an ideology. Rather, these diffuse elements make agrarianism "practically a general cultural phenomenon" (Buttell and Flinn, 1975). Even less clear is the relationship of agrarian attitudes to voter behaviour. For this reason, "any attempt to derive specific policy preferences or programmes from its tenets is not likely to be successful" (Singer and de Sousa, 1983p.304); see also (Campbell, Converse, Miller and Stokes, 1960p.403); (Urwin, 1980pp.88-89).

Two conclusions emerge from the analysis undertaken in this section. The assertions of the

"ideological" interpretation are not refutable and are therefore unsubstantiated. Because the bulk of empirical research contradicts its assertions, this interpretation is implausible.

2.2.3. Party Organisation

The formation, electoral support and dissolution of agrarian parties in Australia, Canada and New Zealand has been attributed to the efficacy of agrarian party organisation. The Australian literature in particular attributes agrarian party formation and electoral support to organisational acumen. Graham, for example, asserts that "the Country Party movement can be explained as an outcome of the progressive development of organisational, leadership and political techniques in the years after 1870" (Graham, 1966p.94) and that "Country Parties were the latest in a series of political experiments dating back to the Land Leagues and Land Reform Associations" (Graham, 1966p.139); (Verrall, Ward and Hay, 1985p.18). Aitkin concludes that "organisation was vital in the party's survival, and gave it a previously-lacking resilience" (Aitkin, 1972p.316). Conversely, "the real reason [for the demise of the Canadian Progressive Party] was its lack of organisation: the party boasted no firmly-grounded organisation, no well-informed rank-and-file" (Graham, 1966p.28, 24, 295); (Morton, 1950p.165).

These assertions are consistent with McAllister's argument that "while exogenous factors create a political environment conducive to electoral mobilisation by minority nationalist groups [in the United Kingdom] there is also an important endogenous (organisational) variable: for successful electoral mobilisation to take place, the [non-major parties] themselves must adopt the structure and policies to facilitate [electoral mobilisation]" (McAllister, 1981p.252). Hauss and Rayside, however, contest this argument:

> We expected that one facilitating factor [of non-major party formation] -- a party's organisational base -- would prove to be extremely important. We felt that a party that could draw on an existing network of support through unions or other interest groups or which could quickly put together such a network on its own would do extremely well. This has not proved to be the case. At least initial success is not dependent on organisational support (Hauss and Rayside, 1978p.52).

Nonetheless, McAllister correctly observes that "traditionally, political science has concentrated upon the *exogenous* factors conducive to electoral success; it has rarely examined the endogenous [internal and organisational] factors which result in electoral success" (McAllister, 1981p.237). Studies of agrarian parties must therefore analyse endogenous factors (such as agrarian party elites' decision to nominate candidates in particular constituencies) as well as the exogenous factors which influence these candidates' electoral support. A more complete understanding of agrarian party formation, survival and dissolution, in other words, requires an analysis of the party's mass (electoral) and elite (organisational) base.[13]

2.2.4. The Volatile Economy

Australian, Canadian and New Zealand studies of agrarian parties devote relatively little attention to the economic antecedents of agrarian party formation, electoral support and dissolution (or, more generally, to the economic antecedents of party and voter behaviour in rural areas). These studies consider the agrarian party to be a class, sectional or ideological phenomenon. Economic conditions may exacerbate these cleavages but need not be analysed in detail.[14] At the same time, however, American studies identify economic conditions in their own right as an important antecedent of rural voter behaviour and as a catalyst of agrarian party formation, electoral support and dissolution. Campbell et al, for example, assert that "if one dominant character of farmers' political behaviour is its variability, a second that has received much attention is its economic sensitivity" (Campbell, Converse, Miller and Stokes, 1960p.416); see also (Higgs, 1971pp.102-103); (North, 1974pp.134-136); (Parker, 1972p.407); (McGuire, 1981); (McGuire, 1982); (Lewis, 1982); (Mayhew, 1972); (Williams, 1981).[15]

Other studies suggest that the relationship between economic stimuli and electoral behaviour may be strongest among farmers and in rural districts. Rosenstone et al, for example, find that economic adversity influences neither voter behaviour nor non-major party formation -- except among farmers and in rural districts (Rosenstone, Behr and Lazarus, 1984p.165). For this reason,

> the phrase "entrepreneurial radicalism," coined by (Hofstadter, 1955p.59) to describe the American experience, seems to be the most succinct description of the style of [agrarian] political behaviour which is almost solely concerned with economic satisfaction within a system of private ownership (Urwin, 1980p.158).

These studies consider the most visible agricultural economic indicator -- commodity price -- to be the major antecedent of agrarian party formation, electoral support and dissolution. These studies hypothesise that an abrupt decline in the price of a commodity decreases farm income and thereby (indirectly) engenders agrarian party formation [see in particular (McGuire, 1981); (McGuire, 1982); see also (Graham, 1966p.13); (Morton, 1950p.6-37); (Lipset, 1950pp.25-29). Conversely, a recovery in the commodity's price attenuates these cleavages and engenders agrarian party dissolution (Morton, 1950p.266).

These studies also suggest that farmers respond to economic stimuli in an individualistic (but not idiosyncratic) manner, and that farmers "are fragmented into interests that are independent or even at times conflicting, based on special crop problems and the like" (Campbell, Converse, Miller and Stokes, 1960p.404); see also (Lipset, 1950pp.5-7); (Hicks, 1933). Moreover, "the status polarisation of the farm community as a function of both stable and short-term differences in economic fortunes illustrates with great clarity the folly of treating the "farm vote" as unitary. The farmer responds to his own economic situation, with little reference to the manner in which [other] farmers are faring" (Campbell, Converse, Miller and Stokes, 1960p.420).

These economic studies "advance our understanding of the economic determinants of agrarian protest" (McGuire, 1981p.848). At the same time, however, the hypotheses which underlie these studies are incomplete. They do not precisely specify the manner in which a change in the price of a particular commodity influences the income of a producer of that particular commodity [see, for example, (Percy, Norrie and Johnston, 1982)]. Nor do they identify the other economic variables which influence primary producers' income -- and which thereby engender agrarian party formation, electoral support and dissolution. Commodity price is an important -- in the short term, perhaps the most important -- determinant of a primary producer's income. By no means, however, is it the sole determinant of his income. Also important are less visible indicators (such as the composition of inputs into agricultural production, the efficiency of resource use in agriculture, the composition of commodity output and consumers' demand for these commodities) which, singly and in combination, determine primary producers' incomes (Johnson, 1985); (Heady, 1965); (Schultz, 1945); (Schultz, 1953).

Two conclusions emerge from the analysis undertaken in this section. (1) Of all the studies assessed in this chapter, studies of agrarian parties' economic antecedents [particularly (McGuire, 1981); (McGuire, 1982); (Lewis, 1982)] are the only studies which rigorously (and successfully) confront refutable propositions with empirical data. Of all the studies assessed in this chapter, in other words, these economic studies are the most methodologically and substantively sound. An analysis of the problem for research set out in Chapter 1 should therefore attempt to emulate such studies.

(2) An understanding of the economic determinants of agrarian party formation, electoral support and dissolution requires that the effects of a more complete set of economic variables (particularly the composition of resource inputs, commodity output and the size and productivity of agricultural and

pastoral holdings) be investigated. An analysis of the problem for research set out in Chapter 1 must therefore build upon and extend beyond these economic studies.

2.3. A New Look at an Unresolved Problem for Research

Two conclusions emerge from the assessment undertaken in this chapter. (1) The assertion that Australian, Canadian and New Zealand agrarian parties were a consequence of a class or a territorial identity, an ideological consciousness or organisational cohesion is, in several respects, questionable. These interpretations are not refutable and thus cannot resolve the problem for comparative research formulated in Chapter 1. The resolution of this problem for research requires, in terms of methodology, an explicitly theoretical (and clearly refutable) analysis (see also Appendix B).

(2) These assertions do not correspond with the results of contemporary political science research. The resolution of this problem thus requires, in substantive terms, that attention be directed away from notions of class, territory and ideology, and that it be focussed upon the impact of agricultural economic conditions on rural party and voter behaviour. Primary producers must not be considered to be an homogenous group. Rather, they must be considered to be an atomised set of actors. Analysis must also be directed at the behaviour of both masses (voters) and elites (agrarian party leaders). Finally, a more complete set of economic variables (including the the composition of inputs into agricultural production, the efficiency of resource use in agriculture, the composition of commodity output and consumers' demand for these commodities) must be incorporated into the analysis.

In short, the assessment undertaken in this chapter justifies an econometric analysis of the formation, electoral support and dissolution, in the years immediately following the First World War, of agrarian parties in Australia, Canada and New Zealand. Part II undertakes such an analysis (with particular reference to the Australian Country Party at the Commonwealth elections of 1922, 1925 and 1928).

Part II

Chapter 1 identified the formation and partial dissolution, in the years immediately following the First World War, of agrarian political parties in Australia, Canada and New Zealand as a relevant problem for research. Chapter 2 argued that existing (class, centre-periphery, ideological and organisational) interpretations of agrarian parties in these countries do not resolve this problem for research, but that an analysis of the economic antecedents of rural electoral behaviour may do so. These chapters thus indicate that an analysis of the economic antecedents of voter and party behaviour in rural constituencies may contribute to a more complete understanding of voters, major and non-major parties and elections.

Part I, in other words, underscored the potential utility of an *econometric* analysis, focussed upon the years immediately following the First World War, of the formation, electoral support and dissolution of agrarian parties in Australia, Canada and New Zealand. Econometrics is most frequently defined as the application of statistical techniques to the analysis of economic phenomena (Hendry, 1980); (Johnston, 1984pp.1-6); (Kelejian and Oates, 1981pp.1-6); (Pindyck and Rubinfeld, 1985pp.xiii-xv); (Wonnacott and Wonnacott, 1979pp.3-5). In practice, an econometric analysis encompasses several distinct activities. Accordingly, so too must an econometric analysis of agrarian party formation, electoral support and dissolution.

First and foremost, such an analysis is an exercise in economic analysis: it utilises economic theory in order to resolve the problem for research identified in Chapter 1. It is also an exercise in mathematical analysis: it expresses theoretical relationships in mathematical terms in order to make them more amenable to empirical investigation. It is partly an exercise in empirical research: it collects appropriate data and relates theoretical variables to observable variables. Finally, it is partly an exercise in applied statistics: it specifies appropriate statistical models and estimates behavioural relationships.

Part II undertakes such an analysis (with particular reference to the Australian Country Party at the Commonwealth elections of 1922, 1925 and 1928). Chapter 3 sets out an economic theory of agrarian party formation, electoral support and dissolution. Chapter 4 describes the (Australian) data and specifies the statistical models that are required in order to evaluate this theory's hypotheses. Chapters 5 and 6 confront this theory's hypotheses with these data: Chapter 5 analyses the Country Party's formation and

partial dissolution at these elections; Chapter 6 analyses the Country Party's electoral support at these elections.

ADDENDUM:

"* indicates that t < 1.96", which appears in the tables in Chapters 5 and 6, should read "* indicates that 1.96 < t < 2.32".

Chapter 3
Theory

Part I identified the formation, in the years immediately following the First World War, of agrarian parties in Australia, Canada and New Zealand as a relevant and unresolved problem for comparative research. It also observed that non-major and agrarian parties have been the subject of almost no explicitly theoretical research. Section 3.1 constructs a formal theory of non-major party formation, electoral support and dissolution. Section 3.2 extends this theory in order to account for the formation, electoral support and dissolution of agrarian parties in Australia, Canada and New Zealand.

3.1. A General Theory of Non-Major Party Formation, Electoral Support and Dissolution

Three studies advance explicit hypotheses with respect to non-major party formation and electoral support (Rosenstone, Behr and Lazarus, 1984); (Pinard, 1975); (Mazmanian, 1974).[16] These and other studies (Asher, 1980p.189); (Burnham, 1970); (Soares and Hamblin, 1967) advance three hypotheses. (1) The formation and electoral support of non-major parties is a consequence of voter dissatisfaction with major parties. Rosenstone et al, for example, hypothesise that "as the proportion of voters who are distanced from the major party candidates grows, not only does the number of people who abandon the major parties go up, but so does the probability that [non-major party] candidates will emerge with positions that meet the concerns of estranged voters" (Rosenstone, Behr and Lazarus, 1984p.127). Consequently, partisan loyalty (party identification) to a major party inhibits non-major party formation and electoral support:

> the stronger a citizen's attachment to a major party, the more apt he is to interpret events in ways consistent with the outlook of this party and therefore the more difficult it will be for him to cast a non-major party ballot. By the same token, the more loyal a voter is to the [two-party] political system, the more likely she will continue to look exclusively to the major parties for solutions. Conversely, non-major party voting should be easier for a citizen who has a weak attachment to [a major party and the two-party system (Rosenstone, Behr and Lazarus, 1984p.144).

(2) These and other studies hypothesise that an issue(s) which is ignored, obfuscated or mismanaged by the major parties -- particularly an economic issue(s) whose salience attains crisis proportions -- causes non-major party formation and electoral support (Page and Brody, 1972); (Converse, Rusk and Wolfe, 1969p.225); (Hesseltine, 1962p.13); (Greer, 1949p.187); (Schmidt, 1960p.242); (Heberle, 1970); (Key, 1964p.255-278). Mazmanian, for example, argues that "the leading pre-condition [for non-major party formation] is severe political crisis" (Mazmanian, 1974p.27), that "no significant [non-major] party has appeared at a time other than one of crisis" (Mazmanian, 1974p.71) and in particular that "the depression stage of the economic cycle has often been described as the crucial cause of [non-major party formation]" (Mazmanian, 1974p.137); (Rosenstone, Behr and Lazarus, 1984pp.134-138).

(3) Mazmanian suggests that non-major party formation is associated with low voter turnout at elec-

tions: "although [non-major] parties may activate some voters, the overall level of voter participation across the nation declines when they appear" (Mazmanian, 1974p.77); see also (Riker and Ordeshook, 1968). In isolation (and under most circumstances), voter dissatisfaction with major parties need produce no more than passive abstention from electoral competition. Highly salient issues transform this passive abstention into active electoral protest (Mazmanian, 1974pp.77-78). For this reason, a negative relationship is hypothesised to exist between non-major party formation and voter participation at elections.

3.1.1. Initial Conditions

The ultimate goal of a positive science is to develop theories which yield valid and meaningful (i.e., not truistic or tautological) predictions about phenomena that have not yet been observed (Blaug, 1986); (Davis, 1969); (Hanushek and Jackson, 1977pp.1-15); (Nicholson, 1983). Positive economics, for example, consists in "a body of tentatively accepted generalisations about economic phenomena that can be used to predict the consequences of changes in circumstances" (Friedman, 1953p.39); see also (Lipsey, 1966pp.1-21). A meaningful scientific theory typically asserts that certain things cause (and that all other things do not cause) a particular phenomenon or set of phenomena. It is frequently convenient to analyse this phenomenon or set of phenomena *as if* it occurred in a highly abstract world which contains only theoretically-relevant variables (Friedman, 1953pp.39-40). When attempting to analyse a complex problem, in other words, it is often a good strategy to refrain from attacking the problem directly; rather, it is often a good idea to construct an artificial situation that is amenable to systematic analysis. One can often gain insight into the real problem by solving the artificial problem (Davis, 1969p.26). A small number of "initial conditions" simplify theoretical analyses and specify the circumstances under which they are expected to be valid. Four initial conditions, each of which is implicit in the conjectures set out in section 3.1, facilitate the analysis of non-major party formation, electoral support and dissolution. (Appendix C discusses and justifies this study's "instrumentalist" methodology in detail).

IC.1 (Institutional Arrangements): Liberal democratic institutional arrangements and procedures govern the conduct of elections: all adults are fully enfranchised; elections occur at regular intervals; ballots are cast without coercion and carry equal weight; party competition proceeds unhindered and electoral results are respected (Harrop and Miller, 1987); (Dahl, 1966); (Dahl, 1967); (Dahl and Tufte, 1973); (Sartori, 1987).

IC.2 (Voter Behaviour): (1) Voters are rational (goal-directed) actors (Robertson, 1976p.20); (Goldberg, 1969). Specifically, voter preferences are determined by the same influences which affect consumer tastes in the economic theory of demand: like consumers, voters maximise the expected satisfaction (utility) obtained from alternate "firms" (parties) and vote for the party which provides the greatest utility from government activity (Riker and Ordeshook, 1973pp.8-44); (Riker and Ordeshook, 1968). Voters act as if they are cognizant of their (subjectively-determined) self-interest; they evaluate parties and programmes competing for their support in terms of this self-interest and cast ballots on the basis of this self-interest (Downs, 1957); (Enelow and Hinich, 1984p.3); (Robertson, 1976pp.197-200).

(2) The greater is the salience (importance) of a particular issue(s), the greater is voter turnout at elections.

IC.3 (Party Behaviour): Parties are goal-directed (rational) actors. They never seek office as a means of carrying out particular policies. Rather, their only goal is to reap the rewards of holding office (Downs, 1957p.28) and they are as indifferent to the policies they espouse as to the welfare of the citizens whose votes they solicit. For this reason, they are prepared to advocate any policy that will help them win office (Hartley and Tisdell, 1981pp.45-67); (Buchanan, 1978); (Schumpeter, 1950p.285).

IC.4 (The Interaction Between Voters and Parties):

- **IC4.1:** The mass electorate's preferences with respect to particular issues, together with the salience (importance) of these issues, are the sole determinants of a political party's policy positions: no other actor (pressure group, government bureau, etc) influences a party's policies.
- **IC4.2:** Electoral laws (i.e., the laws that govern the process by which electoral preferences are articulated) greatly influence the process by which popular votes are translated into parliamentary representation (Rae, 1971p.14); they do *not*, however, influence voter or party behaviour at elections.[17]

- **IC4.3:** (a) Parties always respond to changes in voter preferences and issue salience. (b) they do not, however, necessarily respond satisfactorily to changes in voter preferences and issue salience.

It follows from these initial conditions that voter dissatisfaction with the major parties, together with issue salience, are the sole determinants of non-major party formation and electoral support. If the salience of an issue(s) is low, and if voters are dissatisfied with the policies of one or both of the major parties, voters will abstain from electoral competition. If, however, the salience of an issue(s) is great and if voters are dissatisfied with the policies of one or both of the major parties, voters will consider voting for a non-major party -- and "political entrepreneurs" will therefore stand as non-major party candidates (i.e., non-major party formations results).

Non-major party formation and dissolution thus refer to the extent to which non-major party candidates contest elections. An increase in the number of constituencies that the non-major party's candidates contest (regardless of its percentage share of the total vote within these constituencies) constitutes non-major party formation. The greater the number of constituencies which a non-major party contests from one election to another, the greater is non-major party formation at the latter election. Conversely, a decrease in the number of constituencies which a non-major party's candidates contests constitutes non-major party dissolution. The greater the decrease in the number of constituencies which a non-major party contests from one election to another, the greater is non-major party dissolution at the latter election.

IC.1-IC.4 can be expressed mathematically. Following Riker and Ordeshook (Riker and Ordeshook, 1973pp.310-322), let

1. $x = (x_1, x_2, \ldots, x_n)$ represent a citizen's most preferred outcome for each of n issues, where x_i represents his preference with respect to issue i.
2. $\theta = (\theta_1, \theta_2, \ldots, \theta_n)$ represent a citizen's estimate of party 1's position for each of n issues, where θ_i represents the citizen's estimate of party 1's position with respect to issue i (where party 1 is a major party).
3. $\psi = (\psi_1, \psi_2, \ldots, \psi_n)$ represent a citizen's estimate of party 2's position for each of n issues, where ψ_i represents the citizen's estimate of party 2's position with respect to issue i (where party 2 is a major party).
4. $(x_i - \theta_i)^2$ represents the disparity between the citizen's preference with respect to issue i and his perception of party 1's position with respect to this issue -- in short, the citizen's dissatisfaction (with respect to issue i) with the position of party 1.
5. $(x_i - \psi_i)^2$ represents the disparity between the citizen's preference with respect to issue i and his perception of party 2's position with respect to this issue -- in short, the citizen's dissatisfaction (with respect to issue i) with the position of party 2.
6. ϕ_i represents the importance (salience) of issue i to the citizen.
7. Citizens satisfied with one of the two major parties will behave in the following manner: If
   $$\phi_i(x_i - \theta_i)^2 < \phi_i(x_i - \psi_i)^2$$
   they will vote for party 1; if
   $$\phi_i(x_i - \psi_i)^2 < \phi_i(x_i - \theta_i)^2$$
   they will vote for party 2.
8. Clearly, however, not all citizens are satisfied with one or the other of the major parties. Nor do all citizens vote. Thus, let $\Delta(y)$ represent the change between election k and election k-1 in the number constituencies contested by non-major party candidates (or, equivalently, the change in non-major party support as a percentage of total votes cast in the constituency between k and k-1).
9. α represents the percentage of the total electorate without a partisan identification with one

of the major parties -- and hence the percentage of the total electorate that is most prepared, when dissatisfied with one or both of the major parties, to consider a non-major party as an alternative to a major party ($0 \leq \alpha \leq 1$).

10. λ represents, among α, the durability of the conversion from a major party to a non-major party ($0 \leq \lambda \leq 1$).

11. γ represents, among α, the strength of the conversion from a major party to a non-major party ($0 \leq \gamma \leq 1$).

12. r(k) represent voter turnout at election k. Specifically,
    a. Voter turnout at elections increases (decreases) as the utility associated with one party becomes more (less) distinguishable from the utility associated with the other party. Voter participation (abstention), in short, is a function of the perceived presence (lack) of choice between parties (Downs, 1957pp.270-276); (Berelson, Lazarsfeld and McPhee, 1954pp.314-315); (Enelow and Hinich, 1984p.90); (Brody and Page, 1973pp.2-3); (Ordeshook, 1970p.52). Hence,

$$r(k) = + f|(x_i - \theta_i)^2 - (x_i - \psi_i)^2|.$$

    b. Voter abstention is not merely a function of apathy, indifference or satisfaction with the status quo; it is also a function of dissatisfaction with the status quo -- i.e., of "disgust with the alternatives proffered by the major parties" (Converse, 1966p.24); see also (Brody and Page, 1973pp.2-3); (Riker and Ordeshook, 1973). Hence,

$$r(k) = - f[(x_i - \theta_i)^2, (x_i - \psi_i)^2].$$

    c. The greater the salience of issue i, the greater the voter turnout at elections. Hence,

$$r(k) = + f[\phi_i].$$

3.1.2. Formalisation

The hypotheses which were summarised in section 3.1 related the formation of non-major parties to (1) voter dissatisfaction with major parties, (2) the salience to voters of the issues responsible for this dissatisfaction, and (3) voter turnout at elections. Equations (3.1) and (3.2) use the terms set out in section 3.1.1 in order to express these three hypotheses formally:[18]

$$\Delta y(k) = |(x_i - \theta_i)^2 - (x_i - \psi_i)^2|(k) + \phi_i(k) + \alpha y(k-1) - r(k) \qquad k = 0, 1, 2 \ldots \quad (3.1)$$

$$r(k) = \gamma y(k-1) + \lambda r(k-1) \qquad k = 0, 1, 2 \ldots \quad (3.2)$$

This linear, first-order system of difference equations expresses an output (the change in the number of constituencies with non-major party candidates/non-major party support as a percentage of total votes cast between time k and time k-1) as a function of two exogenous inputs (voter dissatisfaction with major parties and an economic issue whose salience attains crisis proportions), a past output, an endogenous variable (voter turnout at election k) and a series of constants (α, γ, λ).[19] In order to make these relationships clearer, equation (3.1) may be re-written:

$$\Delta y(k) = u_1(k) + u_2(k) + \alpha y(k-1) - r(k) \qquad k = 0, 1, 2, \ldots \quad (3.3)$$

where the u terms represent the system's inputs:

$$u_1(k) = |(x_i - \theta_i)^2 - (x_i - \psi_i)^2|$$

$$u_2(k) = \phi_i.$$

Substituting y(k) - y(k-1) for Δ y(k) and re-arranging the terms of equation (3.3) gives

$$y(k) - y(k-1) = u_1(k) + u_2(k) + \alpha y(k-1) - r(k)$$

$$y(k) = u_1(k) + u_2(k) + y(k-1) + \alpha y(k-1) - r(k)$$

$$y(k) = u_1(k) + u_2(k) + (1 + \alpha) y(k-1) - r(k)$$

$k = 0, 1, 2 \ldots$ (3.4)

The terms of equation (3.4) can be re-arranged in order to obtain an expression for r(k-1) in terms of y and u:

$$-y(k-1) + u_1(k-1) + u_2(k-1) + (1 + \alpha)y(k-2) = r(k-1)$$

$k = 0, 1, 2 \ldots$ (3.5)

The terms of equation (3.5) can be substituted into equation (3.2):

$$r(k) = \gamma y(k-1) + \lambda[-y(k-1) + u_1(k-1) + u_2(k-1) + (1 + \alpha)y(k-2)]$$

$$r(k) = \gamma y(k-1) - \lambda y(k-1) - \lambda u_1(k-1) - \lambda u_2(k-1) + \lambda(1 + \alpha)y(k-2)$$

$$r(k) = (\gamma - \lambda)y(k-1) + \lambda(1 + \alpha)y(k-2) + \lambda u_1(k-1) + \lambda u_2(k-1)$$

$k = 0, 1, 2 \ldots$ (3.6)

Equation (3.6) can be substituted into equation (3.4):

$$y(k) = u_1(k) + u_2(k) + (1 + \alpha)y(k-1) - (\gamma-\lambda)y(k-1) - \lambda(1 + \alpha)y(k-2) - \lambda u_1(k-1) - \lambda u_2(k-1)$$

$k = 0, 1, 2 \ldots$ (3.7)

Equation (3.7) can be re-written:

$$y(k) = u_1(k) + u_2(k) - \lambda u_1(k-1) - \lambda u_2(k-1) + (1 + \alpha - \gamma + \lambda)y(k-1) - \lambda(1 + \alpha)y(k-2)$$

$k = 0, 1, 2 \ldots$ (3.8)

Equation (3.8) is a second-order linear difference equation written in terms of the system's inputs, u_1 and u_2, and its output, y. It is in all respects equivalent to equations (3.1) and (3.2). Equation (3.8) can be solved by means of a z-transform and an inverse z-transform (Boynton, 1980pp.59-90). As a first step, the system's outputs and inputs must be segregated:

$$y(k) - (1+\alpha-\gamma+\lambda)y(k-1) + \lambda(1+\alpha)y(k-2) = u_1 + u_2 - \lambda u_1(k-1) - \lambda u_2(k-1)$$

$k = 0, 1, 2 \ldots$ (3.9)

The z-transform of the output sequence of equation (3.9) yields

$$Z[y(k) - (1+\alpha-\gamma+\lambda)y(k-1) + \lambda(1+\alpha)y(k-2)]$$

$$= Y(z) - (1+\alpha-\gamma+\lambda)z^{-1}Y(z) + \lambda(1+\alpha)z^{-2}Y(z) \quad (3.10)$$

$$= [1 - (1+\alpha-\gamma+\lambda)z^{-1} + \lambda(1+\alpha)z^{-2}]Y(z) \quad (3.11)$$

(where Y(z) represents the z-transform of y(k)).

The z-transform of the input sequence of equation (3.9) yields

$$Z[u_1(k) + u_2(k) - \lambda u_1(k-1) - \lambda u_2(k-1)]$$

$$= U_1(z) + U_2(z) - \lambda u_1 z^{-1}U_1(z) - \lambda u_2 z^{-1}U_2(z)$$

$$= (1 - \lambda z^{-1})U_1(z) + (1 - \lambda z^{-1})U_2(z)$$

$$= 1 - \lambda z^{-1}[U_1(z) + U_2(z)] \quad (3.12)$$

(where $U_1(z)$ and $U_2(z)$ represent the z-transform of $u_1(z)$ and $u_2(z)$).

Recombining equations (3.11) and (3.12) gives

$$[1 - (1+\alpha-\gamma+\lambda)z^{-1} + \lambda(1+\alpha)z^{-2}]Y(z) = (1 - \lambda z^{-1})[U_1(z) + U_2(z)] \quad (3.13)$$

Dividing both sides by $1 - (1+\alpha-\gamma+\lambda)z^{-1} + \lambda(1+\alpha)z^{-2}$ gives

$$Y(z) = \frac{1-\lambda z^{-1}}{1-(1+\alpha-\gamma+\lambda)z^{-1} + \lambda(1+\alpha)z^{-2}} [U_1(z)+U_2(z)].$$

(3.14)

Multiplying (3.14) through by z^2 gives the solution to equations (3.1) and (3.2):

$$Y(z) = \frac{z}{z^2-(1+\alpha-\gamma+\lambda)z+\lambda(1+\alpha)} [U_1(z)+U_2(z)].$$

(3.15)

3.1.3. Analysis

Equation (3.15) describes the manner in which the system's inputs (dissatisfaction with major parties and issue salience) are transformed into an output (non-major party formation and non-major party electoral support). The system's response characteristics can be obtained when numeric values are assigned to its constants and the characteristics of its input terms are specifies. Accordingly, let

α=.1
γ=.2
λ=.2

$$U_1(k)=\begin{cases} 0 & \text{if } k=0 \\ 1 & \text{for all other k} \end{cases}$$
$$U_2(k)=\begin{cases} 0 & \text{if } k=0 \\ 1 & \text{for all other k} \end{cases}$$

(3.16)

Equation (3.16) indicates that partisan attachment to major parties is great (ninety percent of voters identify with one of the major parties) and that the strength and durability of any change in vote choice from the major parties to a non-major party is relatively low (.2, where $0 \leq \gamma \leq 1$ and $0 \leq \lambda \leq 1$). Further, equation (3.16) indicates that $U_1(k)$ and $U_2(k)$ are step inputs -- in other words, that voter dissatisfaction with major parties and the salience of a particular issue i is initially absent (k=0) and subsequently present ($k > 0$) and constant at the value of $U_1 = U_2 = 1$.

Secondly, let

α=.2
γ=.4
λ=.4

$$U_1(k)=\begin{cases} 0 & \text{if } k=0 \\ 1 & \text{for all other k} \end{cases}$$

$$U_2(k)=\begin{cases} 0 & \text{if } k=0 \\ 1 & \text{for all other k} \end{cases}$$

(3.17)

Equation (3.17) indicates that partisan attachment to major parties is low relative to equation (3.16) (with only eighty percent of voters identifying with one of the major parties) and that the strength and durability of any change in vote choice from the major parties to a non-major party is high relative to equation (3.16). Again, issue salience and voter dissatisfaction with the major parties is absent at k=0 and present (at the constant level of $U_1 = U_2 = 1$) at k>0.

Equation (3.18) gives the response characteristics of equation (3.15) under the conditions set out in equation (3.16). Equation (3.19) gives the response characteristics of equation (3.15) under the conditions set out in equation (3.17). (Appendix D sets out these mathematical derivations).

$$Y(k) = -18.42(.84)^k + 1.29(.27)^k + 16.70(1)^k$$

$k = 0, 1, 2, \ldots$ (3.18)

$$Y(k) = 15.0(.6)^k - 40.00(.8)^k + 25.00(1)^k \qquad k = 0, 1, 2, \ldots \quad (3.19)$$

Figure 3-1: Non-Major Party Formation and Electoral Support in Response to Two Unit Step Inputs

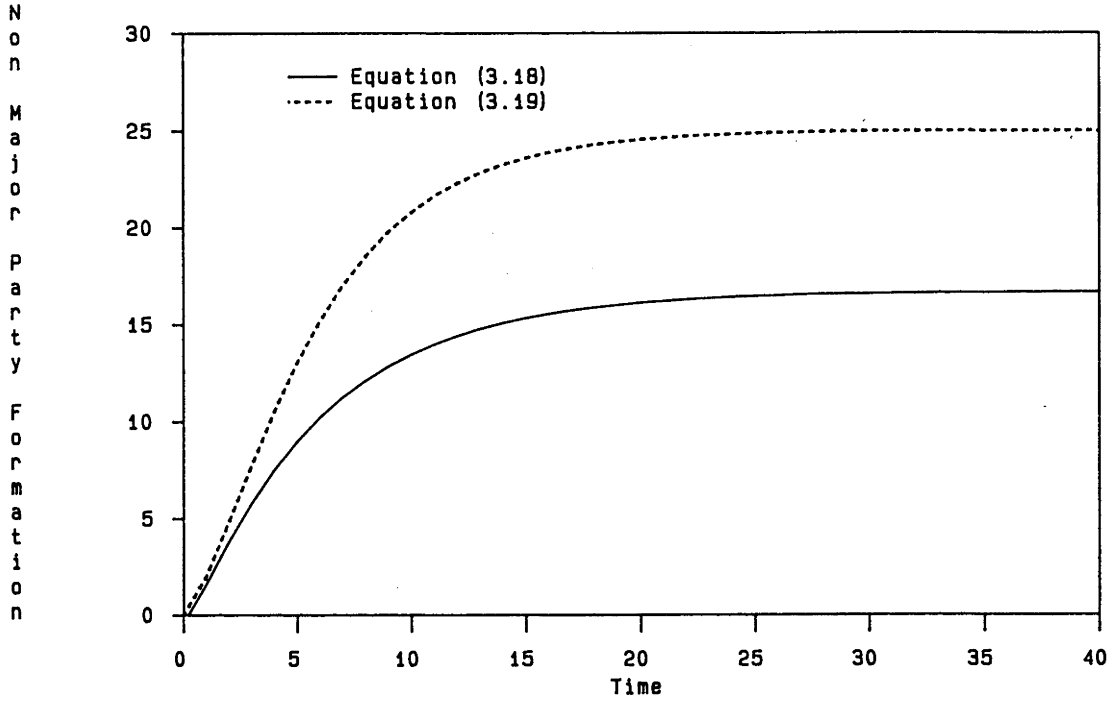


Figure 3-1 plots equations (3.18) and (3.19). In each case, non-major party formation and electoral support is nil at k=0, increases rapidly at 0<k<10, and stabilises at k>10. Given the conditions set out in equations (3.16) and (3.17), the non-major party exists indefinitely. Figure 3-1 also indicates that the lower the level of partisan identification with major parties, and the stronger and the more durable the response to the non-major party, the greater is non-major party formation and support: for all k, equation (3.19) > (3.18).

The indefinite presence of voter dissatisfaction with major parties and issue salience thus cause the indefinite presence of non-major party formation and support. However, equation (3.15) indicates that non-major party longevity does not require sustained levels of both inputs. Let

α=.1
γ=.2
λ=.2

$$U_1(k) = \begin{cases} 0 & \text{if } k=0 \\ 1 & \text{for all other k} \end{cases}$$

$$U_2(k) = \begin{cases} 1 & \text{if } k=0 \\ 0 & \text{for all other k} \end{cases} \qquad (3.20)$$

With respect to the values of the constants, equations (3.16) and (3.20) are identical. With respect to the second input term, however, equations (3.16) and (3.20) differ. $U_1(k)$ (voter dissatisfaction with major parties) remains a step input -- absent at k=0 and present at a constant level at k>0. $U_2(k)$ (issue salience), however, is a Kronecker Delta input -- present at k=0 and absent at k>0. Equation (3.20) thus describes a

situation in which the partisan attachment to the major parties is relatively high, the response to non-major parties is relatively low, voter dissatisfaction with major parties is continuously present at k=0 but issue salience is absent after k=0.

Secondly, let

α=.2
γ=.4
λ=.4

$$U_1(k)=\begin{cases}0 & \text{if } k=0\\ 1 & \text{for all other k}\end{cases}$$

$$U_2(k)=\begin{cases}1 & \text{if } k=0\\ 0 & \text{for all other k}\end{cases}$$

(3.21)

With respect to the values of constant terms, equations (3.21) and (3.17) are identical. With respect to input terms, equations (3.21) and (3.20) are identical. Equation (3.21) thus describes a situation in which partisan attachment to the major parties is relatively low, the response to major parties is relatively high, voter dissatisfaction with the major parties is present at k>0 and issue salience is absent at k>0.

Equation (3.22) gives the response characteristics of equation (3.15) to the conditions described in equation (3.20). Equation (3.23) gives the response characteristics of equation (3.15) to the conditions described in equation (3.21).

$$Y(k) = -7.46(.84)^k - 1.09(.27)^k + 8.56(1)^k \qquad k=0, 1, 2, \ldots \text{ (3.22)}$$

$$Y(k) = 2.50(.6)^k - 15.00(.8)^k + 12.50(1)^k \qquad k=0, 1, 2, \ldots \text{ (3.23)}$$

Figure 3-2: Non-Major Party Formation and Electoral Support in Response to One Unit Step and One Kronecker Delta Input

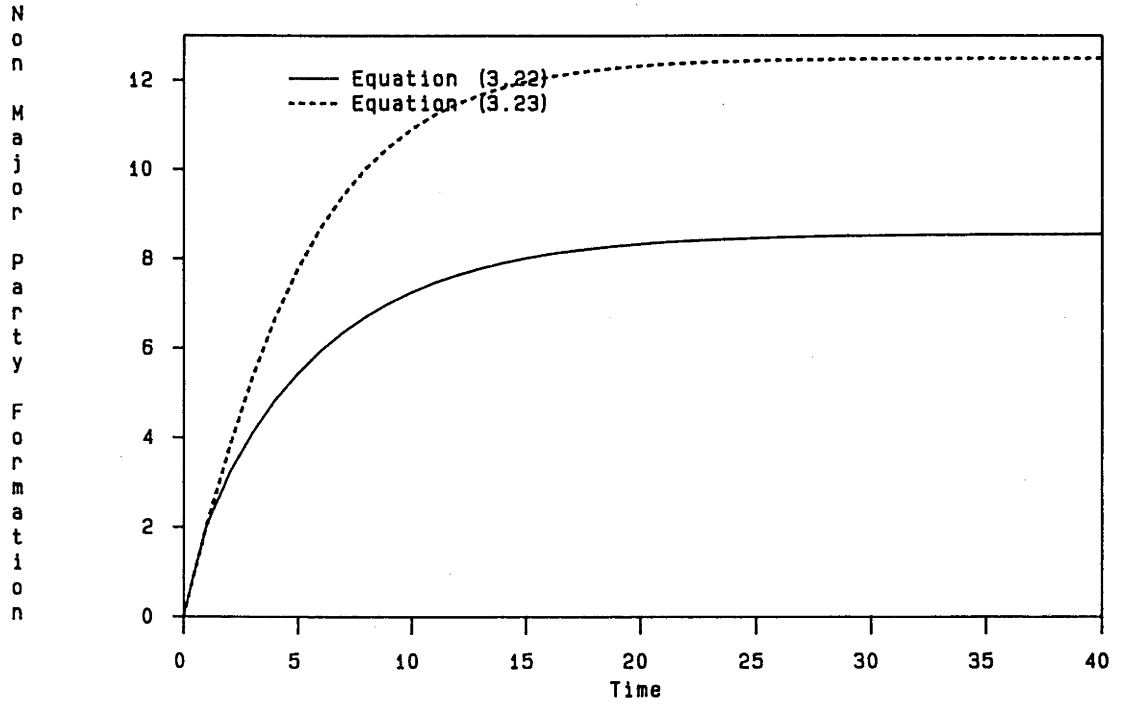


Figure 3-2 plots equations (3.22) and (3.23). As in Figure 3-1, non-major party formation and support is 0 at k=0, increases rapidly at 0<k<10, and stabilises at k>10. As in Figure 3-1, a relatively low level of partisan attachment to the major parties, together with a relatively strong and durable response to the non-major party, is associated with higher levels of non-major party formation support: for all k, (3.23) > (3.22). At the same time, however, Figure 3-2 conveys new information. Most importantly, as long as voter dissatisfaction with the major parties remains unabated -- even if the salience of the issue which engenders this dissatisfaction quickly dissipates -- the non-major party continues to exist indefinitely. However, the number of constituencies in which non-major party candidates are present, as well as the non-major party's percentage share of the total vote in these constituencies, is lower when the non-major party is sustained only by voter dissatisfaction with major parties than when it is is sustained by both voter dissatisfaction and issue salience: for all k, (3.22) < (3.18) and (3.23) < (3.19). Studies of non-major parties [i.e., (Rosenstone, Behr and Lazarus, 1984); (Pinard, 1975); (Mazmanian, 1974) anticipate neither of these findings.

Nor do these studies do not explicitly address the process of non-major party dissolution. Equation (3.15), however, provides insight into this process. Let

α=.1
γ=.2
λ=.2

$$U_1(k)=\begin{cases}1 & \text{if } k=0\\ 0 & \text{for all other k}\end{cases}$$

$$U_2(k)=\begin{cases}1 & \text{if } k=0\\ 0 & \text{for all other k}\end{cases}$$

(3.24)

and let

α=.2
γ=.4
λ=.4

$$U_1(k)=\begin{cases}1 & \text{if } k=0\\ 0 & \text{for all other k}\end{cases}$$

$$U_2(k)=\begin{cases}1 & \text{if } k=0\\ 0 & \text{for all other k}\end{cases}$$

(3.25)

In terms of the value of its constants, equation (3.24) is equivalent to equations (3.16) and (3.20) -- the partisan attachment to the major parties is relatively strong and the strength and durability of any change in vote choice towards a non-major party is relatively low. In terms of the value of its constants, equation (3.25) is equivalent to equations (3.17) and (3.21) -- the partisan attachment to major parties is relatively weak and the strength and durability of any change in vote choice towards a non-major party is relatively great. Input terms, however, distinguish equations (3.24) and (3.25) -- both describe situations in which issue salience and voter dissatisfaction with major parties is initially (at k=0) present and subsequently (at k>0) absent.

Equation (3.26) gives the response characteristics of equation (3.15) to the conditions specified in equation (3.24); equation (3.27) gives the response characteristics of equation (3.15) to the conditions specified in equation (3.25).

$$Y(k) = 3.51(.84)^k - 3.51(.27)^k \qquad k=0,1,2,...(3.26)$$

$$Y(k) = -10.00(.6)^k + 10.00(.8)^k \qquad k=0,1,2,...(3.27)$$

Figure 3-3: Non-Major Party Formation, Electoral Support and Dissolution in Response to Two Kronecker Delta Inputs

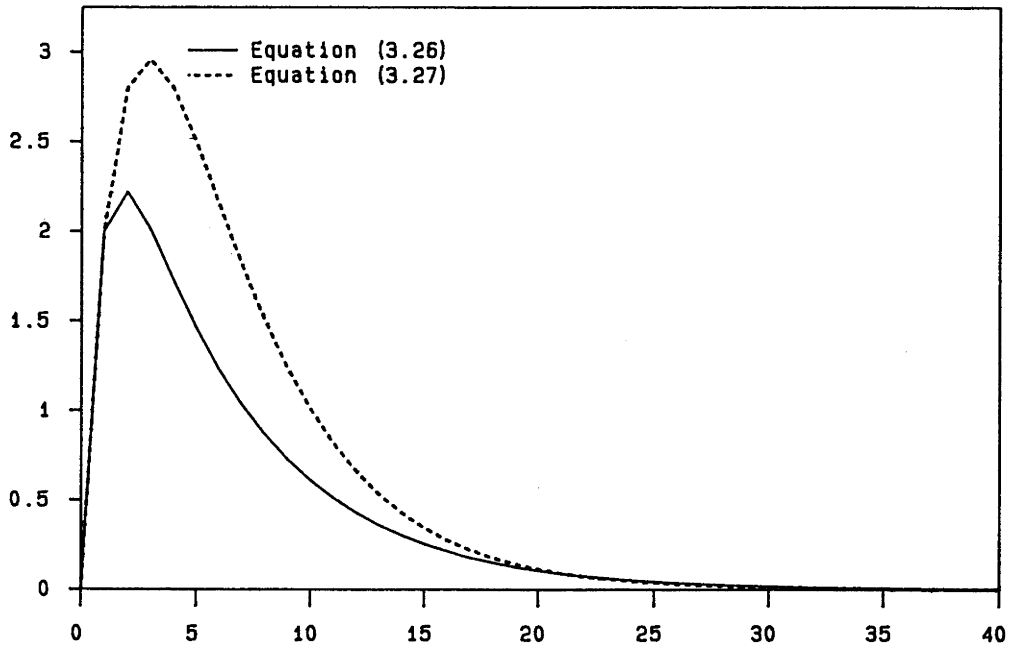


Figure 3-3 plots equations (3.26) and (3.27). Each equation indicates that non-major party formation and support is nil at k=0, increases rapidly at $0 \leq k \leq 4$, and declines (somewhat less rapidly) at k>4. Figure 3-3, in short, indicates that if issue salience and voter dissatisfaction with major parties disappears, so too does the non-major party and its electoral support. Once again, however, the lower the level of attachment to the major parties, and the stronger and more durable the response to the non-major parties, the greater is non-major party formation and support: for all k, equation (3.21) > (3.24). Non-major party dissolution is therefore contingent upon the disappearance, not merely the attenuation, of voter dissatisfaction with major parties. Again, studies of non-major parties (Rosenstone, Behr and Lazarus, 1984); (Pinard, 1975); (Mazmanian, 1974) do not anticipate this result.

3.1.4. Hypotheses

A more complete and more precise set of hypotheses emerges from this formalisation and analysis:

- The simultaneous appearance of both voter dissatisfaction with major parties and an economic issue whose salience attains crisis proportions causes non-major party formation and non-major party electoral support.
- Factors which are unrelated to voter dissatisfaction with major parties and this salient issue are unrelated to non-major party formation and electoral support.
- The non-major party's electoral support is drawn from voters who are dissatisfied with one or the other or both of the major parties. Initially, at k=0 (i.e., in the absence of a non-major party alternative), dissatisfied voters abstain from electoral participation; subsequently, at k>0 (given the presence of a non-major party alternative), dissatisfied voters support the non-major party. A negative relationship therefore exists between voter turnout at election and non-major party support is negative.

- The continued presence over time of both voter dissatisfaction with major parties and an economic issue whose salience attains crisis proportions causes the non-major party to exist indefinitely.
- In the event that voter dissatisfaction with major parties continues and the salience of the economic issue disappears, the non-major party will continue to exist and to receive electoral support. The number of constituencies in which it fields candidates, as well as its electoral support in these constituencies, will be lower than if both voter dissatisfaction with the major parties and the crisis-laden issue continue to exist.
- If both voter dissatisfaction with the major parties and the issue whose salience attains crisis proportions disappear, the non-major party ceases to receive electoral support and therefore ceases to field candidates.

3.2. Agrarian Party Formation, Electoral Support and Dissolution

Section 3.1 analysed the relationship between voter dissatisfaction with major parties, an economic issue whose salience attains crisis proportions and the formation, electoral support and dissolution of non-major parties. This section applies this theory to a specific set of events -- the formation, in the years immediately after the First World War, of agrarian parties in Australia, Canada and New Zealand; the rapid dissolution, in these years, of the Canadian Progressive Party and the New Zealand Country Party; and the continued presence, to this day (although with a different name) of the Australian Country Party. Section 3.2.1 adds to IC.1-IC.4 two further initial conditions that specify economic behaviour and market structure in rural districts. Section 3.2.2 specifies the economic antecedents of rural voter dissatisfaction with major parties. Section 3.2.3 specifies the issue most directly responsible for agrarian party formation, electoral support and dissolution.

3.2.1. Further Initial Conditions

IC.1-IC.4 set out decision-rules which govern voter and party behaviour. IC.5 sets out the decision-rule that governs the economic behaviour of primary producers:

> **IC.5 (Economic Behaviour):** The primary producer is an income maximiser who, *ceteris paribus,* prefers a higher money income to a lower money income. An increase in income increases the primary producer's utility (satisfaction) and a decrease in income decreases his utility. For this reason, primary producers attempt to maximise the income that they obtain from commodity production.

IC.6 specifies the structure of agricultural commodity markets:

> **IC.6 (Market Structure):** Agricultural commodity markets are perfectly competitive markets (for an extended discussion, see (Stigler, 1957pp.1-17):
>
> 1. Agricultural commodity producers are price-takers (i.e., no single commodity producer is able to influence the price of any commodity), and no actor (producer, government, party, etc) is able to influence consumer demand for agricultural commodities. The demand for agricultural commodities, in other words, is completely exogenous.
> 2. The output of any given commodity producer is in all respects identical to the output of all other producers.
> 3. Primary producers possess perfect and complete knowledge of input costs and commodity prices.

3.2.2. The Economic Antecedents of Rural Voter Dissatisfaction

The income received by agricultural commodity producers depends upon the total amount of money that consumers spend on agricultural commodities. A decrease in consumer expenditure on a particular commodity, for example, usually causes a decrease in the income of the producers of that commodity (Lipsey, 1966p.116). The total amount of money that consumers spend on an agricultural commodity depends,

among other things, upon the price of that commodity and consumers' disposable income. For this reason, changes in consumer disposable income and in the price of agricultural commodities are important determinants of the incomes of primary producers. The elasticity of demand, η, measures this relationship. Price elasticity of demand refers to the percentage change in quantity demanded that is induced by a percentage change in price (holding income constant). Expressed more formally,

$$\eta \equiv \frac{\Delta q/q}{\Delta p/p} \tag{3.27}$$

Similarly, income elasticity of demand refers to the percentage change in quantity demanded that is caused by a percentage change in disposable income (holding commodity price constant). Expressed more formally,

$$\eta \equiv \frac{\Delta q/q}{\Delta y/y} \tag{3.28}$$

(for an overview of these concepts, see (Bodenhorn, 1968pp.543-545). If a commodity's income elasticity of demand is negative, consumers purchase less of a commodity as their income increases. If this income elasticity is positive (but less than unity), consumers purchase more of the commodity as their income increases, but spend a smaller proportion of their income on the commodity. If this income elasticity of demand is positive (and greater than unity) consumers spend a higher proportion of their increased income on the commodity.

With respect to the price elasticity of demand, the terms of equation (3.27) can be re-arranged to yield

$$\eta \equiv \frac{\Delta q}{q} \times \frac{p}{\Delta p} \equiv \frac{\Delta q}{\Delta p} \times \frac{p}{q} \tag{3.29}$$

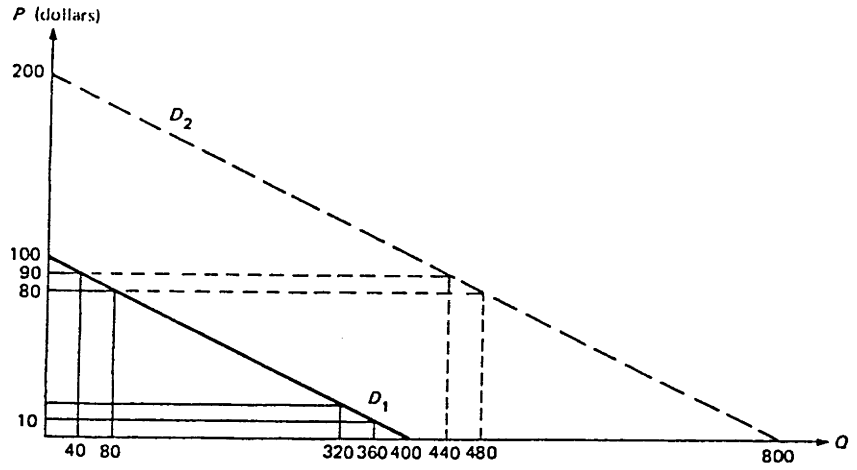
Equation (3.29) indicates that the price elasticity of demand consists in two distinct terms. The ratio of the change in quantity to the change in price, $\frac{\Delta q}{\Delta p}$, is related to the slope of the demand curve. The second term, $\frac{p}{q}$, is related to the point on the demand curve at which elasticity is estimated (Drummond, 1976pp.140-150).

Figure 3-4 depicts the linear demand curve D_1. At all points along the curve, a ten-unit decrease in price augments quantity demanded by 40 units. The slope of the curve, $\frac{\Delta p}{\Delta q}$, is therefore -10/40, or -.25. Because a constant (unit) change in price is associated with a constant (unit) change in quantity demanded at every point along the curve, D_1 has a constant slope. Price elasticity of demand, however, does not remain constant. If price decreases from 90 to 80 units, price changes by [(-10/85)100], or by -11.8 percent. Quantity demanded increases by [(40/60)100], or by 66.6 percent. The price elasticity of demand, therefore, is 66.6/-11.8, or -5.6. This elasticity obtains only at this point on D_1. If price declines from 20 to 10, for example, prices changes by [(-10/15)100], or by 66.6 percent, quantity demanded increases by [(40/340)100], or 11.8 percent, and the elasticity of demand is 11.8/-66.6, or -0.177.

By definition, therefore, price elasticity of demand cannot remain constant at different points along a linear demand curve. Although the numerator of each price-ratio calculation (as well as the numerator of each quantity-ratio calculation) remains constant, the denominator changes. Percentage changes in price grow steadily larger as the absolute level of price declines. Similarly, percentage changes in quantity demanded grow steadily smaller as quantity demanded increases in absolute magnitude. More formally,

Generalisation 1: The elasticity of a downward-sloping linear demand curve varies from ∞ at the vertical (price) axis to zero at the horizontal (quantity) axis (Lipsey, 1966p.123).

Figure 3-4: Price Elasticity and the Slope of a Straight-Line Demand Curve



Source: Drummond (1976:150).

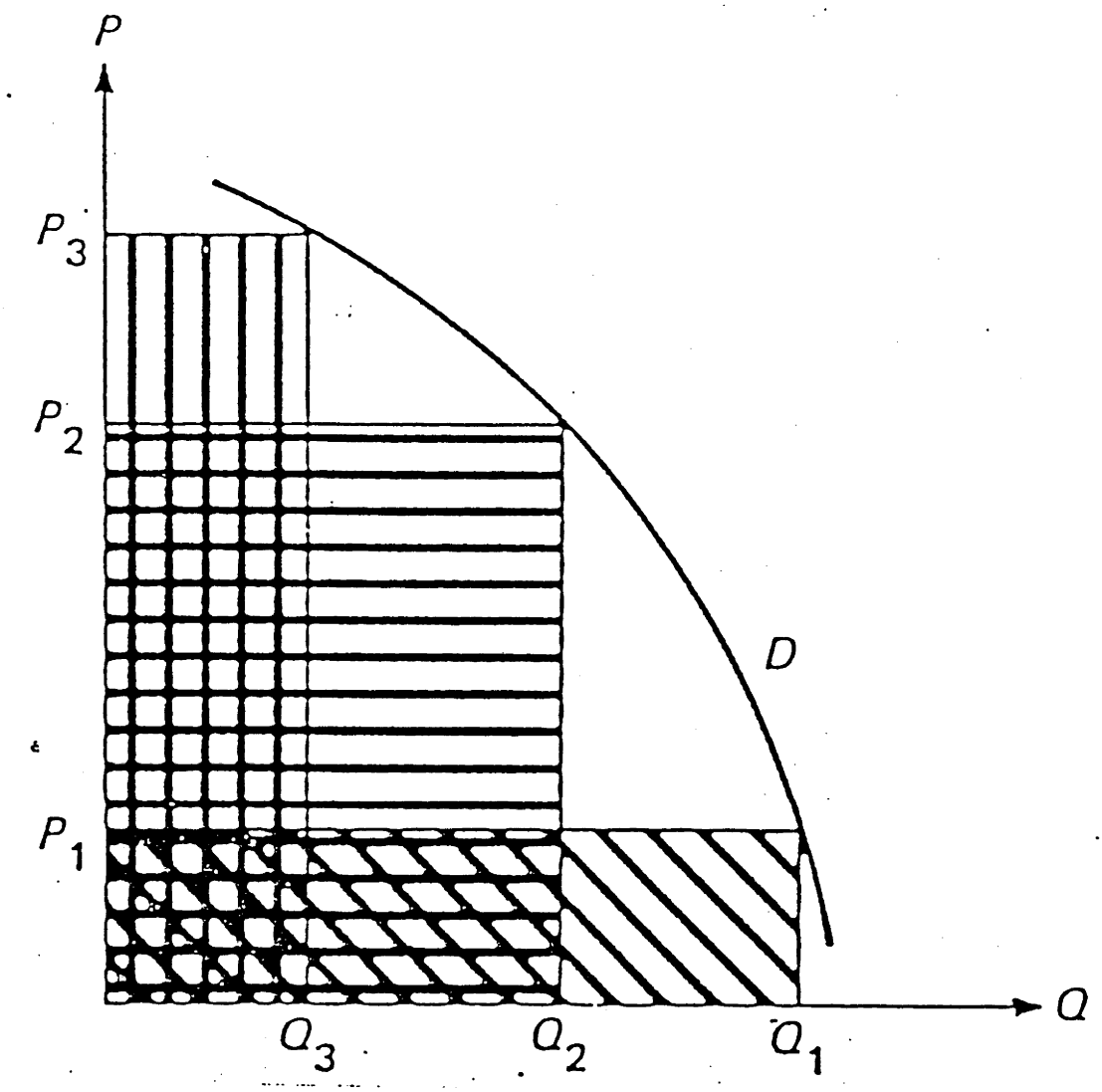
It follows that parallel shifts of a straight-line demand curve decrease the price elasticity of demand (at each price) when the curve shifts outward, and increase the price elasticity of demand when the curve shifts inward. Figure 3-4 also illustrates this result. The demand curves D_1 and D_2 are parallel. The slope of each, therefore, is identical. Price elasticities at comparable ranges of each curve, however, differ: for D_2, if price decreases from 90 to 80 units, price continues to change by [(-10/85)100], or by -11.8 percent. Quantity demanded, however, changes by [(40/460)100], or by 8.7 percent, so that the price elasticity of demand is 8.7/-11.8, or -0.739 -- compared to -5.3 in D_1. Hence,

> **Generalisation 2:** Given two downward-sloping linear demand curves with the same slope, the one farther from the origin is less elastic at each price than the one closer to the origin (Lipsey, 1966p.123).

The magnitude of η falls into one of three categories (Ferguson, 1972pp.99-100). If $\eta > 1$, demand is elastic, and a given percentage change in price induces a greater percentage change in quantity demanded. A small change in price will thus cause a much more significant change in quantity demanded. If $\eta = 1$, demand has unit (or unitary) elasticity, meaning that a given percentage change in price induces an equivalent percentage change in quantity demanded. If $\eta < 1$, demand is inelastic, and a given percentage change in price induces a smaller percentage change in quantity demanded. Even a relatively large price change will thus induce only a small change in quantity demanded.

The price elasticity of demand indicates how total revenue (i.e., income) received from the sale of a commodity changes in response to a change in price. Figure 3-5 illustrates this relationship. Total revenue (income) from the sale of a commodity at any price p_i corresponds to the area p_iq_i under the demand curve. Total revenue received from the sale of the commodity at price p_1, for example, is p_1q_1. Total revenue changes in response to a change in price. In the elastic portion of the demand curve, a decrease in price is associated with an increase in total revenue (the area of $p_3q_3 < p_2q_2$). In the inelastic

Figure 3-5: Total Revenue and the Price Elasticity of a Straight-Line Demand Curve



portion of the demand curve, however, a decrease in price is associated with a decline in total revenue ($p_1q_1 < p_2q_2$). Total revenue is thus maximised at the price at which $\eta = 1$. Hence,

Generalisation 3:

1. If $|\eta| > 1$, a decrease in price induces an increase in quantity demanded that is sufficient to increase the total revenue (income) received from the sale of a commodity. Conversely, an increase in price induces a decrease in quantity demanded that is sufficient to decrease the total revenue (income) received from the sale of a commodity.
2. If $|\eta| = 1$, a change in price induces a change in quantity demanded; the extent of this change, however, does not alter the total revenue (income) obtained from the sale of the commodity.
3. If $|\eta| < 1$, a decrease in price induces such a small increase in quantity demanded that the total revenue (income) received from the sale of the commodity decreases. Conversely, an increase in price induces such a small decrease in quantity demanded that the total revenue (income) received from the sale of the commodity increases.

Table 3-1: The Characteristics of the Per Capita Demand Function, Sugar, United States, 1875-1936

Year	*Price (Cents) (Deflated)*	*Per Capita Consumption (Lbs)*	Price Elasticity (at $\bar{p}$)	R^2
1875-1895	-2.2758 (0.7297)	0.7900 (0.2123)	-0.3970 (0.1580)	.9526
1896-1914	-4.4810 (0.7719)	1.0558 (0.1623)	-0.3613 (0.0780)	.9876
1921-1929	-7.0589 (1.7108)	0.0969 (0.0337)	-0.3060 (0.1038)	.9448
1922-1936	-6.0294 (1.3334)	-0.4217 (.2685)	-.2416 (.0964)	.9145

N.B.: Figures in parentheses are standard errors.

Source: Schultz (1957:177-233)

Table 3-1, which sets out the parameters of demand for sugar between 1875 and 1936, corroborates these results. The figures in column 2 (price in cents) measure the slope of the demand curve for sugar at selected sub-periods. They indicate that between 1875 and 1895 a decline of one cent in the real (deflated) price of sugar, other things being equal, was associated with an increase of 2.2758 pounds in annual per capita consumption. But other things did not remain equal. Most notably, the demand curve did not remain stationary. The figures in column 3 (per capita consumption) estimate the rate at which demand shifted over time. Between 1875 and 1895 per capita quantity demanded increased (as a result of changes in taste and other factors) at the rate of .7900 pounds per annum. Consumers, in short, demanded greater amounts of sugar at the same (deflated) price, or were willing to pay a higher price for an equivalent quantity demanded. Finally, the figures in column 4 (which estimate this commodity's price elasticity of demand at the mean price within each sub-period) indicate that (holding the position of the demand curve constant) a one percent decrease in price is associated with an increase of .3970 percent in quantity demanded.

Table 3-1 indicates that the demand for sugar changed in important respects after 1895. (1) The slope of the demand curve increased: a decrease of one (deflated) cent per pound in the price of sugar, other things

being equal, was associated with an increase of 4.4810 pounds (1896-1914) and 7.0589 pounds (1921-1929) in annual per capita consumption. (2) Demand continued to expand until the eve of the First World War; thereafter, annual per capita consumption reached its apex, and the curve remained virtually stationary. Indeed, it began to shift downward during the 1920s. This development suggests that, in the years immediately following the First World War,

> the average consumer no longer bought increased quantities of sugar from one year to the next [even if price remained constant], and that producers could no longer count on an increased per capita consumption unless prices were reduced or unless new uses for sugar were found. This fact loomed large behind many of the difficulties which confronted producers since the [First World] War. (Schultz, 1957pp.229-230).

Table 3-2: Elasticities of Demand at Selected Points on the Demand Curve, Sugar, 1875-1895

	Elasticity at Price:		
Year	5.718	8.319	11.566
1875	-.26	-.43	-.72
1885	-.22	-.36	-.59
1895	-.20	-.31	-.49

Source: Schultz (1957:177-233)

Table 3-2, which lists price elasticities of demand for sugar, sets out the consequences of changes in consumer demand upon producers' incomes. Listed in the table are price elasticities of demand for sugar at the lowest observed price (5.718 cents per pound), the mean price (8.319 cents per pound) and the highest observed price (11.566 cents per pound) between 1875 and 1895. These figures are consistent with the expectations of micro-economic theory. Movement along the demand curve, from a higher to a lower price (i.e., reading from right to left across the table) reduces price elasticity of demand. Further, an upward shift of demand to a higher quantity demanded at the same price (i.e., reading down the table) also attenuates the price elasticity of demand. Both results indicate that the demand for this commodity was inelastic and that it grew more inelastic over time.

Three results emerge from an analysis of Tables 3-1 and 3-2. First, between 1875 and 1936 a decrease in the price of sugar decreased the incomes sugar producers. Secondly, as time passed an equivalent percentage decrease in the price of this commodity caused an ever-greater percentage decrease in the incomes of sugar producers. Finally, and most importantly, this phenomenon became particularly marked in the years immediately following the First World War.

Chapter 1 observed that in these years (1) producers of primary commodities faced unprecedented economic difficulties; that (2) these difficulties were particularly acute for countries whose primary commodities figured prominently in international trade and whose principal export market was the United Kingdom, and therefore that (3) pressure to adjust primary production to new market conditions was particularly acute in Australia, Canada and New Zealand. Chapter 1 therefore suggested that the common pattern of agrarian politics in Britain's Dominions in these years might have stemmed the pattern of primary commodity consumption in Britain (and that agrarian party formation and electoral support in these countries was a local response to more universal economic phenomena).

Table 3-3 sets out characteristics of primary commodity consumption in Britain between 1921 and

Table 3-3: Selected Price and Income Elasticities, United Kingdom, 1921-1935

Commodity	Elasticity (Income)	Elasticity (Price)
Bread (Wheat)	-0.05(± 0.04)	-0.08(± 0.07)
Mutton, Lamb (Imported)	0.70(± 0.12)	-0.70(± 0.43)
Beef (Imported)	0.34(± 0.06)	-0.46(± 0.45)
Vegetables	0.93(± 0.14)	-0.96(± 0.41)
Apples	1.33(± 0.21)	-1.16(± 0.69)
Oranges	0.92(± 0.17)	-0.93(± 0.29)

Source: Stone (1954:322-327).

1935. Listed in the table are price- and income-elasticities for three groups of commodities (grains, meats and fruits and vegetables). It demonstrates that these commodities' price and income elasticities of demand varied considerably -- and therefore that, depending on the composition of his output, the impact of a decline in commodity price upon a producers' income also varied considerably. In terms of its income elasticity of demand, grain was an inferior good: during these years an increase of one percent in disposable income in Britain was associated with a decrease of 0.150 percent in the quantity demanded of this commodity. Conversely, fruits and vegetables were normal or superior goods: during the inter-war years British consumers demanded more fruits and vegetables in response to an increase in disposable income [see also (Wold and Jureen, 1952); (Fox, 1958)]. Changes in quantity demanded (induced by an increase in disposable income) thus exerted a harsh impact upon grain growers and a favourable impact upon fruit and vegetable growers.

Price elasticities of demand re-inforce this result. Demand for grain and beef was most inelastic. A decrease in grain and beef prices therefore had adverse consequence for grain and beef producers' incomes. Conversely, demand for other commodities, such as fruits and vegetables, mutton and dairy products, was far more price elastic. In consequence, a reduction in the price of these commodities had a negligible or a beneficial impact upon the producers of these commodities. Indeed, a decline in fruit prices augments the income of fruit growers. An identical (percentage) decrease in the price of grain and beef and fruits and vegetables thus exerted an opposite impact upon the income of producers of these two groups of commodities.

Hypotheses

The analysis undertaken in this section indicates that an equivalent change in the price of two primary commodities may bear an opposite impact upon the income of a primary producer. The direction and magnitude of the resultant change in his income depends upon the direction and magnitude of each commodity's price elasticity of demand and upon the importance of each commodity relative to his total commodity output. *Ceteris paribus*, a decrease in the price of a price-inelastic commodity decreases the incomes of producers of that commodity. The greater the extent to which a commodity producer produces price-inelastic commodities, the more his income decreases in response to a decline in the price of such a commodity. Conversely, a decrease in the price of a price-elastic commodity increases the incomes of producers of that commodity. The greater the extent to a commodity producer produces price-elastic commodities, the more his income increases in response to a decrease in the price of such a commodity.

IC.5-IC.6 indicated that a decrease in the price of one or more commodities and a decrease in consumers' disposable income causes economic dissatisfaction among primary producers. It follows from IC.5-IC.6 that parties cannot alleviate or rectify this dissatisfaction, and from IC.3 that parties will ignore or obfuscate primary producers' economic dissatisfaction. Following IC.2, primary producers' dissatisfaction with their income is readily transformed into voter dissatisfaction with the major parties.

If non-major party formation and electoral support is caused by voter dissatisfaction with major parties (Rosenstone, Behr and Lazarus, 1984); (Pinard, 1975); (Mazmanian, 1974), then agrarian party formation and electoral support is caused by the rural voter dissatisfaction which is engendered by a decline in the price of price-inelastic agricultural commodities:

- In any given rural locality, the greater the extent to which primary producers' income declines in response to a decline in commodity price (i.e., the greater the production of price-inelastic agricultural commodities), the greater the voter dissatisfaction with major parties, the greater the likelihood (given the presence of an economic issue whose salience attains crisis proportions) that an agrarian party candidate will appear in the locality and the greater the agrarian party's percentage share of the locality's total vote.
- Voter dissatisfaction with major parties is most pronounced among the producers of price-inelastic commodities. The presence of agrarian party candidates and the percentage share of the agrarian party vote is therefore most closely associated with the production of price-inelastic commodities (most notably grain and beef).
- Voter dissatisfaction with major parties is absent among the producers of price elastic commodities. The presence of agrarian party candidates and the percentage share of the agrarian party vote is negatively associated with the production of price-elastic commodities (most notably fruits and vegetables, dairy products and sheep).

3.2.3. Economic Adjustment and Agrarian Voter Dissatisfaction

Consumer demand for agricultural commodities is not the sole determinant of a primary producer's income. Nor is a reduction in consumer expenditure on agricultural commodities the only force which exerts downward pressure upon a primary producer's income. Adjustments undertaken by commodity producers in response to changes in commodity price and consumer demand for agricultural commodities are also important determinants of farm income. Optimal adjustment to changes in consumer demand maximises the total revenue obtained from production, minimises the total costs of production and thereby maximises the profit (income) derived from production. Sub-optimal adjustment to changes in consumer demand neither maximises total revenue nor minimises total cost -- and thereby maintains or re-inforces downward pressure on income. In order to maximise total revenue, producers must optimally adjust the quantity and the composition of output. In order to minimise total costs, they must adjust the composition and quantity of resources (land, capital and labour) employed in production.

Maximisation of total revenue requires that the quantity of output be set at a level where the marginal cost of production is equal to the marginal revenue obtained from production (Due and Clower, 1961pp.185-195); (Ferguson and Gould, 1975p.231). Figure 3-6 illustrates this result. Given price conditions represented by $\bar{p}$ and cost conditions represented by MC, the profit-maximising short-run equilibrium obtains at E, which corresponds to $\bar{q}$ units of output. At levels of output less than $\bar{q}$ (e.g., q_e), marginal revenue (q_eB) exceeds marginal cost (q_eA). A marginal increase in output therefore increases total revenue more than total cost and thereby increases profit. As long as marginal revenue exceeds marginal cost, an increase in output increases profit. Conversely, at levels of output greater than $\bar{q}$ (e.g., q_u, marginal cost (q_uF) exceeds marginal revenue (q_uC). An increase in output increases total cost more than total revenue and thereby decreases profit. As long as marginal cost exceeds marginal revenue, an increase in output decreases profit.

Figure 3-6: The Optimum Level of Commodity Output

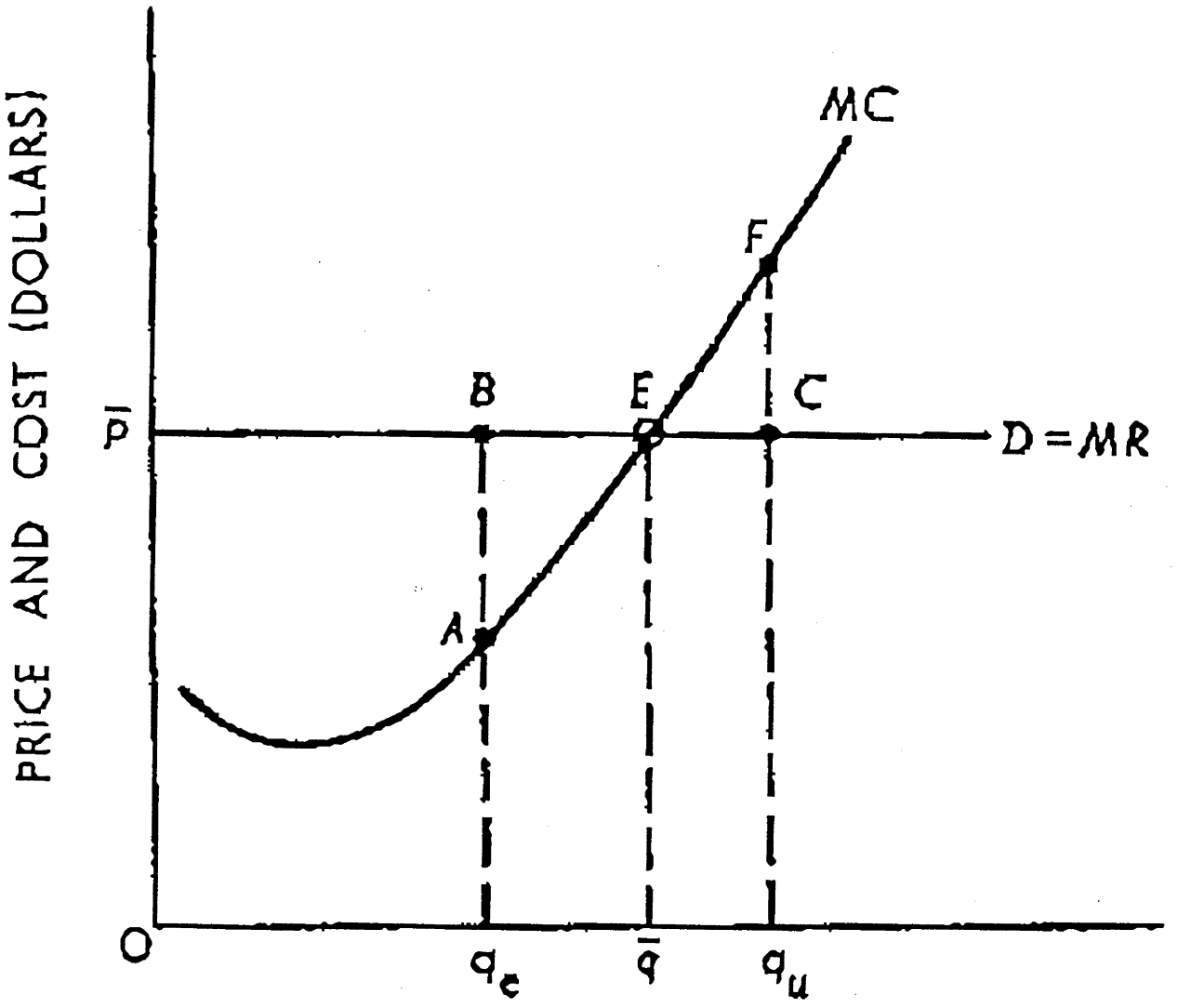
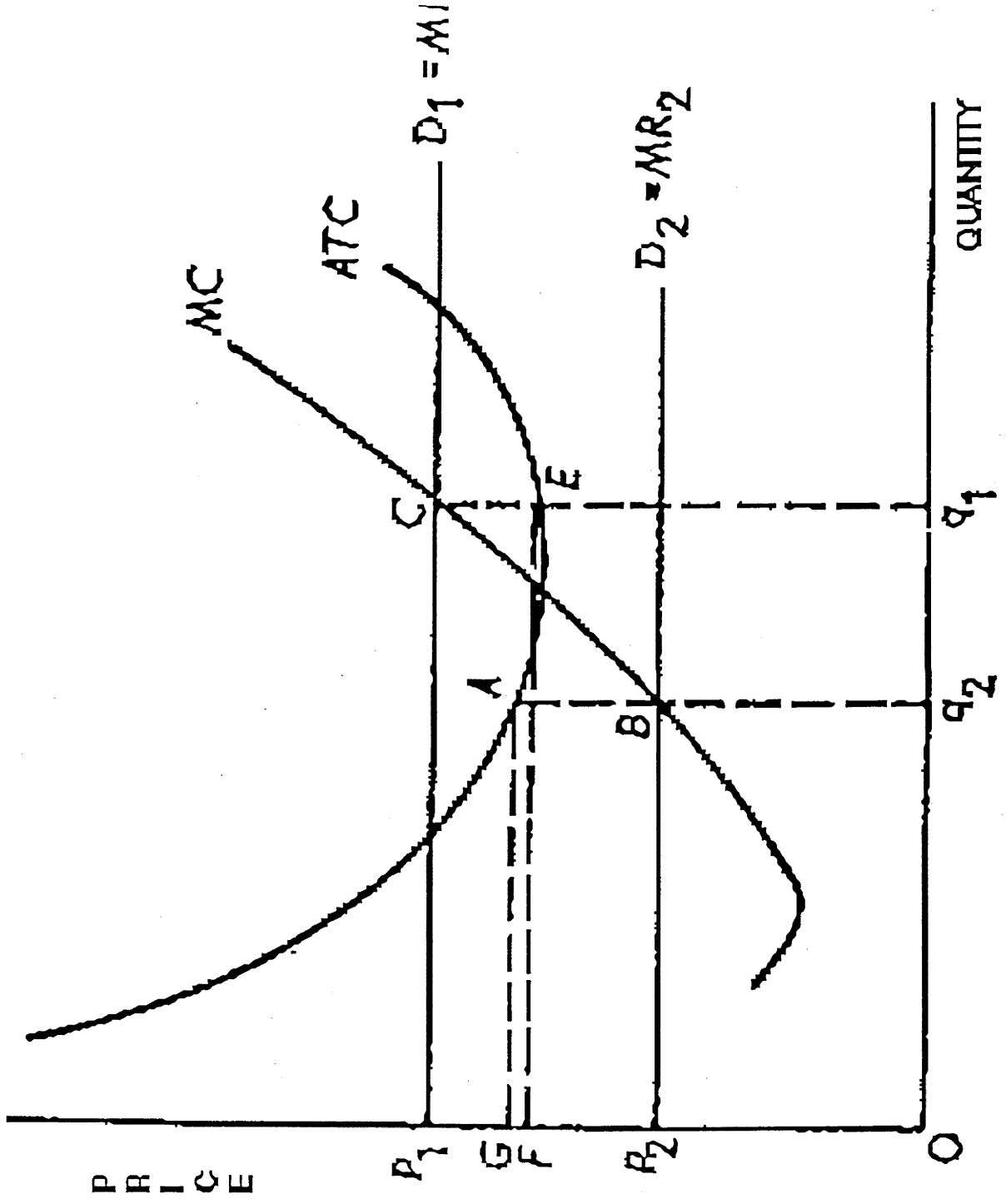


Figure 3-7: Producer Income at the Optimum Level of Commodity Output



At this optimum level of output, the numeric difference between commodity price and average total (unit) cost determines the absolute magnitude of profit or loss. If price is greater than the unit cost of production, a short-run profit results. If unit cost exceeds price, a short-run loss is incurred (Ferguson, 1972p.266). Figure 3-7 illustrates two aspects of this relationship. (1) (Within the inelastic portion of the demand curve) a decline in commodity price decreases producers' total revenue and thereby decreases their margin of profit. At price p_1, for example, short-run equilibrium obtains at q_1 units of output. At this level of output, total revenue is equal to the area of the rectangle Oq_1Cp_1 and total cost is equal to Oq_1EF. Profit (the excess of total revenue over total cost) is therefore equal to $CEFp_1$. At price p_2, short-run equilibrium obtains at q_2 units of output. Here, cost (Oq_2AG) exceeds revenue (Oq_2Bp_2) and a loss of p_2GAB is incurred. For this reason, a decline in total revenue in response to a decline in commodity price provides an incentive to adjust the composition of commodity output away from price-inelastic commodities and towards price-elastic commodities.

(2) A decrease in the marginal cost of agricultural production also increases producers' total revenue and thereby increases the profitability of their operations. Under price conditions represented by p_1, for example, the lower the marginal cost and average total cost of production the smaller the area of Oq_1EF and the larger the area of $CEFp_1$. Clearly, therefore, there exists an incentive to decrease the marginal cost of commodity production.

Primary producers can decrease the marginal cost of production by adjusting (1) the composition and (2) the quantity of the inputs (land, capital and labour) employed in production. Adjustment (1) requires that more productive (and/or less expensive) inputs be substituted for less productive (and/or dearer) inputs. Typically, and throughout most of the twentieth century, this adjustment has entailed mechanisation -- the substitution of capital for labour (Schultz, 1945); (Schultz, 1953); (Heady, 1965). Adjustment (2) requires that greater quantities of capital and labour be applied to fixed quantities of land.

Hypotheses

This section indicates that adjustments undertaken by primary producers in response to changes in commodity price and the demand for particular agricultural commodities are also important determinants of income. Initial conditions suggest that sub-optimal adjustment in response to price changes engenders economic dissatisfaction among producers and that economic dissatisfaction is transformed into rural voter dissatisfaction -- and that, given an economic issue whose salience attains crisis proportions, it is transformed into agrarian party formation and electoral support. This study therefore hypothesises that

- The less primary producers in a rural district can adjust the composition of output from price- and income-inelastic to price- and income-elastic commodities, the less income they receive from the sale of their output, the greater their economic dissatisfaction, the greater their dissatisfaction with major parties -- and hence the more conducive the district to agrarian party formation and agrarian party electoral support.
- The less primary producers in a rural district can (in response to a decrease in commodity price) decrease the output of price-inelastic commodities and increase the output of price-elastic commodities, the less income they receive from the sale of their output, the greater their economic dissatisfaction, the greater their dissatisfaction with major parties -- and hence the more conducive the district to agrarian party formation and agrarian party electoral support.
- The more (less) primary producers in a rural district can reduce the amount of labour and increase the amount of capital (machinery) employed in production, the more (less) income they receive from the sale of their output, the less (greater) their economic dissatisfaction, the less (greater) their dissatisfaction with major parties -- and hence the less (more) conducive the district to agrarian party formation and electoral support. A negative relationship thus exists between mechanisation and agrarian party formation and agrarian party electoral support.

3.2.4. The Commodity Price Collapse of 1921-1922

Section 3.1 hypothesised that non-major party formation and electoral support is a function of two inputs: (1) voter dissatisfaction with major parties and (2) an economic issue whose salience to voters attains crisis proportions. Section 3.2.2 defined rural voter dissatisfaction with major parties in terms of the response of producers' incomes to changes in commodity price. It implicitly identified the level of commodity price as the economic issue which engenders agrarian party formation and electoral support. This section specifies the conditions under which the salience of the level of commodity price to rural voters attains crisis proportions.

Figure 3-7 demonstrated that a commodity producer's profit or loss is equal (at the equilibrium level of output) to the numeric difference between commodity price and the average total (unit) cost of production. If commodity price is greater than the unit cost of production, a short-term profit obtains; if unit cost exceeds price, a short-term loss is incurred. Figure 3-8 extends and elaborates this analysis. It indicates that, given certain adverse price conditions, the producer loses less by continuing production than by ceasing production. Specifically, as long as total revenue exceeds total variable cost (as distinguished from total fixed cost) at the equilibrium level of output, losses are minimised by continuing production (Ferguson and Gould, 1975p.234).

At price p_1, for example, short-term equilibrium obtains at B, which corresponds to q_1 units of output. Here, the producer loses AB dollars per unit of output; nonetheless, average variable costs of production are met -- indeed, because the average variable cost of variable inputs is q_1C dollars per unit, and the price of output is q_1B dollars per unit, an excess of BC dollars per unit emerges from production. This excess can be applied to fixed costs. As a result, not all of the fixed costs (q_1C) are lost, as would result if production were halted. The total loss sustained is therefore smaller than that associated with nil output. At price p_2, however, average variable exceeds marginal revenue. Here, producers lose not only fixed costs: they also lose EF dollars per unit in variable cost. Thus, when commodity price falls below the average variable cost of commodity production, short-term equilibrium output is nil (i.e., income-maximising commodity producers cease production).

Producers must either subsist on past earnings or transfer resources out of agriculture when agricultural commodity prices decline below the average variable cost of production. It is thus under these circumstances that the political salience of agricultural commodity prices attains crisis proportions: it is under these circumstances, in other words, that rural economic dissatisfaction, rural voter dissatisfaction with major parties -- and hence agrarian party formation and electoral support -- occurs.

Figure 3-9 plots Australian and Canadian price indices for the commodities hypothesised in section 3.2.2 to be associated most closely with agrarian party formation and electoral support.[20] It indicates that the price of agricultural commodities was most likely to decline below the average variable cost of production (and therefore that the price of price-inelastic commodities was most likely to be a salient political issue) in the years immediately after the First World War. Between 1919 and 1921, the price index of Canadian wheat declined 65.82 percent (from 3485 to 1191); between 1920 and 1922, the price index of Australian meat declined 45.50 percent (from 3279 to 1787) and that of Australian wheat fell 28.02 percent (from 2480 to 1758). The price of these commodities fell more precipitously in these years than during the depths of the Great Depression. Between 1929 and 1931, the price index of Canadian wheat fell 63.80 percent (from 1544 to 559); that of Australian meat fell by 32.86 percent (from 2246 to 1508) and that of Australian wheat fell by 20.80 percent (from 1803 to 1428). This study therefore

Figure 3-8: Commodity Price and the Average Variable Cost of Production

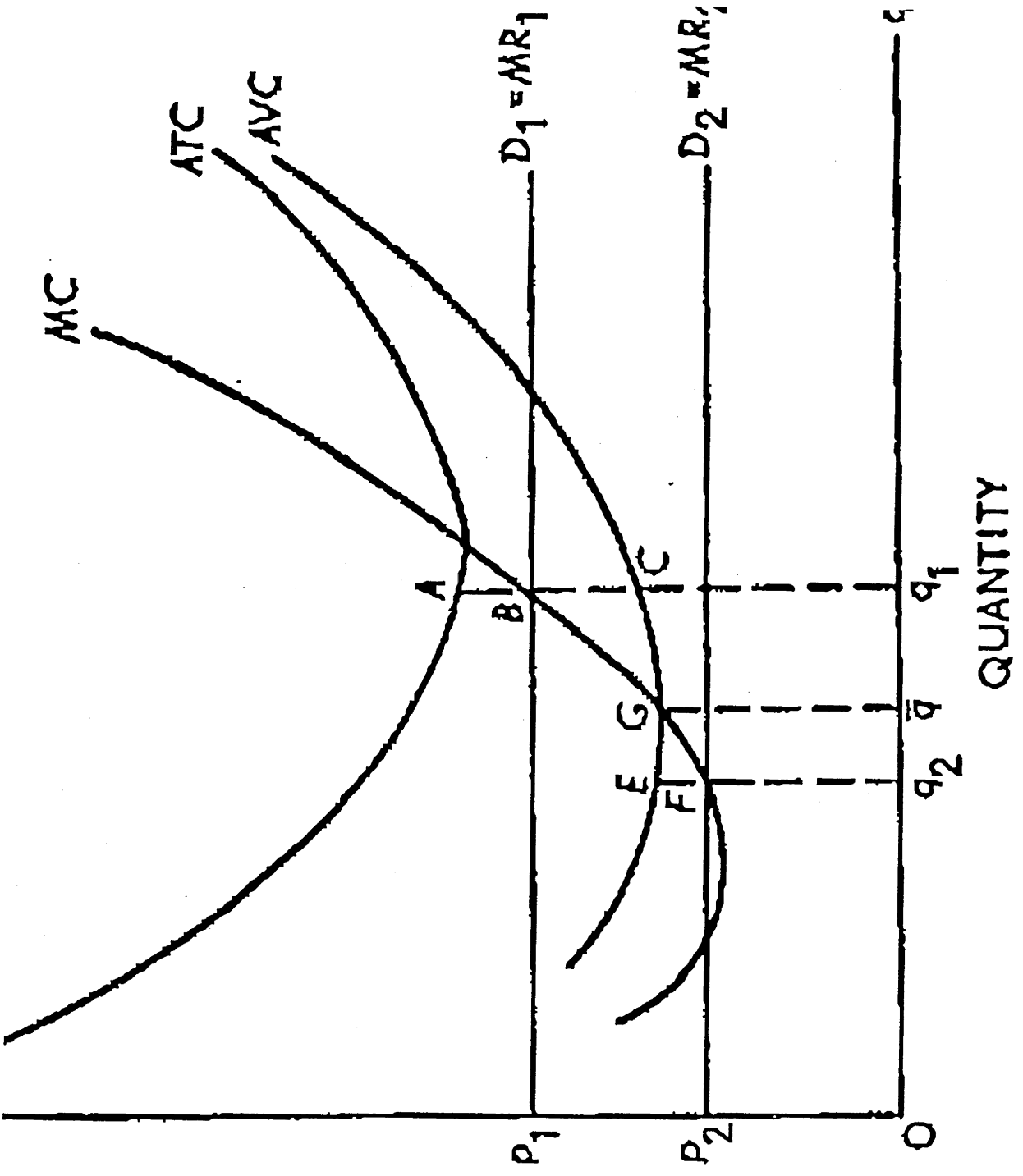
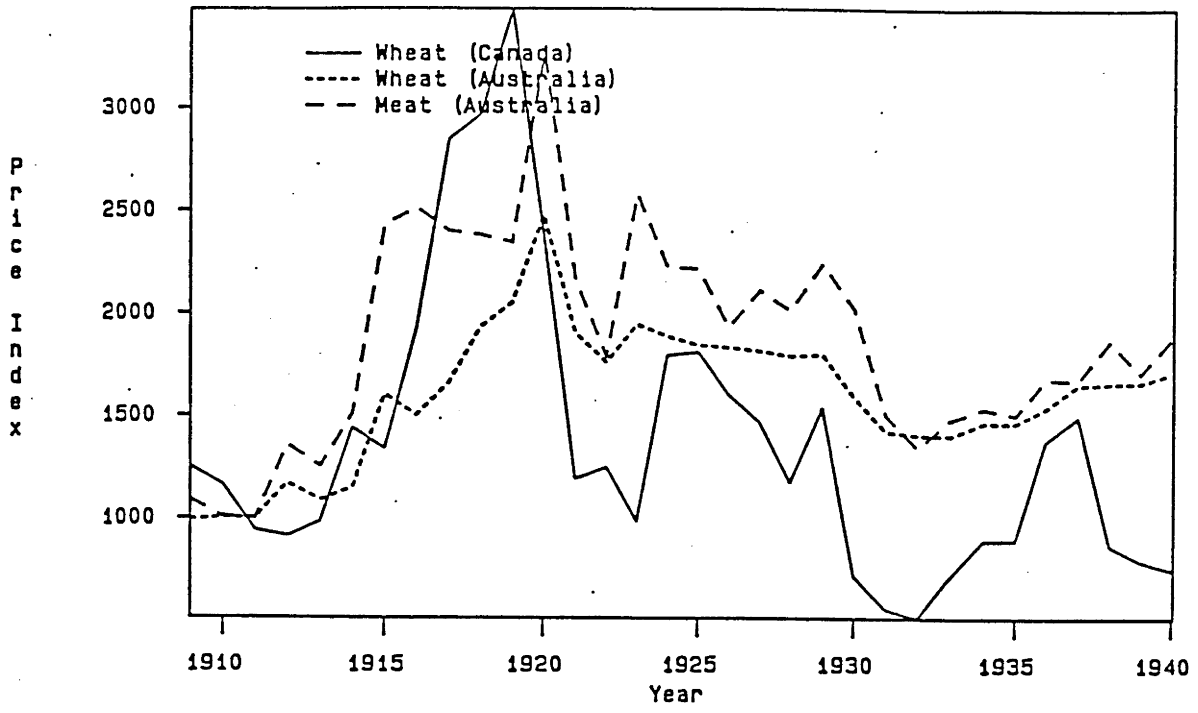


Figure 3-9: Australian and Canadian Price Indices, Wheat and Meat, 1910-1940



Source: Australia (1920-1940); Canada (1920-1940).

hypothesises that agricultural commodity prices declined below the average variable cost of production (and therefore that conditions were conducive to agrarian party formation and electoral support) during these years.

Hypotheses

The hypotheses set out in section 3.1 may, following the analyses undertaken in section 3.2, be more precisely specified:

- The simultaneous appearance of a decrease in producer income in response to a decrease in commodity price and a decrease in commodity price below the average variable cost of production causes agrarian party formation and agrarian party electoral support.
- The agrarian party is an economic entity: non-economic variables, such as religious and occupational variables, are unrelated to agrarian party formation and agrarian party electoral support.
- Following equations (3.22) and (3.23) and Figure 3-2, a subsequent recovery of commodity price above the average variable cost of production, together with the continued presence of rural voter dissatisfaction with major parties, reduces (but does not eliminate) the number of constituencies with an agrarian party candidate and the agrarian party's percentage share of the total vote.
- Following equations (3.24) and (3.25) and Figure 3-3, a subsequent recovery of commodity price above the average variable cost of production, together with the disappearance of rural voter dissatisfaction with major parties, causes agrarian party dissolution.

3.3. Summary

"Instrumentalist" theories are judged according to the extent to which they satisfy the purpose(s) for which they are designed and whether they perform better than alternate theories (see Appendix C). "All theories, by their very nature, are no more than approximations of the phenomena under consideration; being approximations, they are obviously false in some absolute sense. The relevant question, however, addresses the extent to which [a theory] is a good enough approximation to be useful for the purpose for which it was designed" (Davis, 1969p.31); (Friedman, 1953). The theory which was formulated in this chapter attempts to account for the formation, in the years immediately following the First World War, of agrarian parties in Australia, Canada and New Zealand; the rapid dissolution, in these years, of the Canadian Progressive Party and the New Zealand Country Party; and the continued presence, to this day (although with a different name) of the Australian Country Party. This theory attempts, in other words, to resolve the problem for research formulated in Chapter 1.

For this purpose, this theory is more suitable than the interpretations assessed in Chapter 2. It specifies the *timing* of agrarian party formation and *source* of agrarian party electoral support and dissolution in greater detail than competing interpretations. Most importantly, by hypothesising that agrarian party formation, electoral support and dissolution is a logical consequence of rational behaviour in political and economic markets, it possesses what, according to Davis, is "the first essential for every useful theory. It is capable of being [empirically] contradicted. Not all theories have this attribute" (Davis, 1969p.23).

Chapter 4 describes the research techniques and data which are required in order to corroborate this theory's propositions.

Chapter 4
Data and Research Techniques

Chapter 3 set out a theory of non-major and agrarian party formation, electoral support and dissolution. This theory, which analysed the impact of agricultural economic stimuli upon voter behaviour in rural areas, relates closely to a major concern of current research in political science: the imputed relationship between economic stimuli and voter behaviour has, in recent years, spawned a large number of "econometric" analyses of voter behaviour. These analyses pose important questions and produce suggestive (if partial and limited) results. In consequence, "it is widely accepted that the economy does influence voting. [However], there is far less certainty concerning the degree, constancy or nature of this influence" (Monroe, 1979p.156).

This chapter evaluates these econometric studies. In so doing, it identifies the data, statistical models and estimation techniques which are required in order to evaluate this study's empirical propositions.

4.1. Econometric Analyses of Voter Behaviour

Econometric analyses of voter behaviour construct, estimate and evaluate statistical models of the relationship between economic conditions and voter behaviour. The notion that economic conditions influence voting invites a wide range of potential research hypotheses (Frey and Schneider, 1978). However, as a result of the influence of Goodhart and Bhansali, Kramer and Mueller -- the first systematic econometric analyses of electoral behaviour -- -- the focus of inquiry has narrowed considerably (Goodhart and Bhansali, 1970); (Kramer, 1971); (Mueller, 1970). Accordingly, this literature tests the hypothesis that when economic conditions improve (deteriorate), voters give greater (less) electoral support to the incumbent party (Paldham, 1981pp.183-184); (Budge, 1983pp.1-7); (Lewis-Beck, 1984); (Frey and Schneider, 1982); (Kiewiet and Rivers, 1984p.370).[21]

4.1.1. Initial Conditions

Two sets of contentions underlie this hypothesis. (1) These studies typically argue that personal economic self-interest is an important determinant of voter behaviour and therefore that changes in personal economic well-being influence vote choice (Kramer, 1971); (Hibbs, 1977); (Hibbs, 1979); (Weatherford, 1983); (Feldman, 1984). These studies contend, in other words, that voters are rational actors,[22] that each major party is equally susceptible to the electoral effects of fluctuations in economic conditions, and that there are no sub-national (local, provincial or regional) variations in economic conditions. They also contend that the influence of economic conditions on voter behaviour is continuous over time, that their magnitude is constant and that their impact is felt equally by all voters (Kramer, 1983).

(2) In particular, these studies argue that personal economic well-being is influenced first and foremost by the government's (incumbent party's) economic policies, that the government's *macro*-economic policies bear most directly upon personal economic well-being and that voters respond to short-term fluctuations in leading macro-economic indicators (income, inflation and unemployment) (Hibbs, 1987); (Whiteley, 1984); (Whiteley, 1986); (Pissarides, 1980).[23] The government's macro-economic policies, in other words, determine levels of income, inflation and unemployment and for this reason voters hold the government responsible for these conditions (Paldham, 1981p.183). These studies therefore test the hypothesis that an increase in inflation and unemployment (or a decrease in real income) prompts a decline in the incumbent party's electoral support and an increase in the opposition's electoral support, and that a decrease in inflation and unemployment (or an increase in real income) causes an increase in the incumbent's electoral support (Arcelus and Meltzer, 1975p.1232).

A very different set of initial conditions underlies the propositions set out in Chapter 3. This study hypothesises that personal economic well-being in rural areas is not influenced by the incumbent party's macro-economic policies; rather, it is influenced first and foremost by *micro*-economic developments which major parties can neither control nor influence. Further, under normal circumstances rural voters choose between the two major parties; however, when adverse economic conditions engender dissatisfaction with one or the other (or both) of the major parties, rural voters choose between their "most favoured" major party and a non-major party alternative.

This study also hypothesises that voters in rural areas respond to both long-term and short-term changes in micro-economic conditions (i.e., to changes in both consumer demand for agricultural commodities and to reductions in commodity prices below the average variable cost of production). Finally, it hypothesises that the influence of agricultural economic stimuli on electoral behaviour in rural districts is sporadic (discontinuous), that its magnitude is variable and that its impact is not felt equally by all primary producers.

4.1.2. The Model

Most econometric analyses construct an additive and linear model of voter behaviour.[24] The incumbent party's percentage share of the vote is represented by the function

$$Y_t=\beta_0+\beta_1 T+\delta_t(\beta_2+\beta_3\overline{Y}_t+\beta_4 p_t+\beta_5(U_t)+\beta_6 V^p+\varepsilon. \qquad t=0,1,2,3,\ldots \quad (4.1)$$

where

- Y_t represents the incumbent party's percentage share of the major party (or, in some studies, total) vote in congressional/parliamentary elections held at time t. (Econometric studies of electoral behaviour thus ignore the impact of economic conditions on non-major party formation, electoral support and dissolution).[25]
- β_0 is a constant which represents the incumbent's "normal" vote (the "baseline" vote around which short-run forces, such as economic conditions, cause the observed vote to fluctuate) (Tufte, 1975pp.812-26).
- T represents the effect of time (the temporal change in the electorate's partisan preferences, net of economic influences) (Fair, 1978); (Fair, 1982); (Fair, 1988).
- δ_t is an incumbency index (in American studies, $\delta_t = 1$ if the President is a Republican and $\delta_t = -1$ if the President is a Democrat) (Bloom and Price, 1975p.1244).
- β_2 is a constant that represents the institutional (dis)advantage of incumbency.
- $\overline{Y}_t$ is a measure of per capita personal income (real or deflated).

- p_t is a measure of the price level (consumer cost-of-living index).
- U_t is a measure of unemployment (as a fraction of the civilian labour force).
- V^2 represents the "coat-tail" effect of the President's popularity on the vote of his party's congressional candidates (Goodhart and Bhansali, 1970); (Kramer, 1971).
- ε is a normally-distributed stochastic error term and
- the β_k are coefficients estimated from a set of data.

4.1.3. Data

The initial conditions set out in section 2.1, together with the specification of Equation (4.1), heavily influence the choice of data employed in econometric analyses of voter behaviour. Macro-level variables require macro-level data: because Equation (4.1) relates macro-economic conditions (which are assumed not to vary sub-nationally) to electoral outcomes, econometric estimates of voter behaviour are derived from nationwide aggregates of income, inflation, unemployment and the incumbent party vote (Weatherford, 1983p.158). With only three exceptions (Owens, 1984); (Owens and Olson, 1980); (Owens and Wade, 1988), all Anglo-American studies use national-level economic data as independent variables and nationally-aggregated electoral data (or a national sample of public opinion) as the dependent variable.

Despite the fact that American congressional elections are intensely local in character (Mayhew, 1974); (Fenno, 1978); (Fiorina, 1978); (Mann, 1978); (Mann and Wolfinger, 1980), and that, in the United Kingdom, local and regional economic conditions vary substantially with respect to unemployment, inflation and real income (Madgewick and Rose, 1982); (McAllister and Rose, 1984); (Yantek, 1985), econometric studies analyse a general election involving hundreds of actual (constituency) elections as if it were a single national election (Owens and Wade, 1988p.31). These analyses thereby submerge sub-national variations in economic conditions and electoral support in order to capture the effect of the government's macro-economic policy on voting.

The estimation of Equation (4.1) also requires time-series data. By definition, macro-economic conditions do not vary at a single point in time; rather, they vary over time. For this reason, econometric analyses of electoral behaviour are most frequently longitudinal analyses (analyses of aggregate economic conditions and national electoral outcomes over a long series of elections). Kramer, for example, analyses thirty-one of the thirty-five bi-annual United States House of Representatives elections between 1896 and 1964 (Kramer, 1971); Mueller analyses monthly observations of presidential popularity in the United States from 1945 to 1969 (Mueller, 1970), and Goodhart and Bhansali analyse a monthly popularity series for parties and party leadership in the United Kingdom from 1947 to 1968 (Goodhart and Bhansali, 1970).

4.1.4. Findings

Econometric analyses of voter behaviour produce contradictory results.[26] Some find unemployment, others inflation, some both (and others neither) as significant determinants of voter behaviour [for a review of findings, see (Budge, 1983pp.7-10); (Kiewiet and Rivers, 1984pp.375f)]. Some studies seem to provide strong evidence that voters respond to changes in economic conditions. Kramer's seminal analysis, for example, concludes that short-term fluctuations in macro-economic indicators are "important influences on [American] congressional elections, with economic upturns helping congressional can-

didates of the incumbent party and economic decline benefitting the opposition" (Kramer, 1971pp.140-141). Similarly, the findings of Goodman and Kramer are

> broadly (though not completely) consistent with the notion that the electorate punishes the party in power according to its economic performance. To be sure, there is still substantial uncertainty about the detailed nature and magnitude of these effects; but on the basic question of whether such effects exist, it seems to us that the answer is clear: they do (Goodman and Kramer, 1975p.1264)[27]

Reviewing more recent works, Kiewiet and Rivers conclude that

> the electoral fortunes of the incumbent president and congressional candidates of his party, as well as the president's approval rating, are influenced by fluctuations in employment, prices and real output. Beyond documenting common sense, we now have a rough sense, at least, of the magnitude of the effects of real income fluctuations on voting (Kiewiet and Rivers, 1984p.374).

Other studies contest this conclusion. Arcelus and Meltzer, for example, find that

> with the possible exception of inflation, aggregate economic variables affect neither the participation rate in congressional elections nor the relative strength of the two major parties. There is very little evidence that an incumbent president can affect the composition of the congress by measures that have short-term effects on unemployment or real income (Arcelus and Meltzer, 1975p.1238).[28]

Similarly, one of the most rigorous British studies concludes that

> even during the period of unprecedented economic strife presided over by the Thatcher government, the state of the economy was not a systematic influence upon the public's rating of the government (Yantek, 1985p.482).

4.1.5. Assessment

Two sets of difficulties seem to produce these contradictory findings. First, and most importantly, these studies' theoretical foundations are weak:

> [They] offer many speculations but little theory (beyond the observation, agreed upon by all, that general economic conditions might somehow have an effect on some elections) that suggest specific hypotheses about which economic variables should be important or what kinds of time perspectives voters might use in evaluating the pre-election performance of the economy (Tufte, 1975p.816).

In consequence, the initial conditions which underlie these analyses are imprecise and possibly erroneous. For example, evidence does not (without careful qualification) sustain the contention that economic self-interest is an important determinant of vote choice at elections. In particular, (1) personal economic well-being does not *continuously* influence voter behaviour. Voting in response to economic conditions is most prevalent during periods of deep recession or depression: "in bad times the economy becomes a salient issue, whereas in good times it diminishes in importance relative to other determinants of voting behaviour" (Bloom and Price, 1975p.1244); see also (Mueller, 1970); (Alt, 1983pp.152-155).

The results of econometric analyses of voter behaviour may therefore depend upon the period of time under examination. Changes in the time-series change the results of the analysis. Stigler, for example, finds that "a single change of coverage of one year [the omission of a single observation from the time-series] reduces [the magnitude of] a regression coefficient by three fourths and deprives it of statistical reliability" (Stigler, 1973p.164). Radcliff demonstrates most clearly that the relationship between economic conditions and voting is time-dependent (Radcliff, 1988) [see also (Fiorina, 1978); (Kiewiet, 1983); (Weatherford, 1983); (Owens and Olson, 1980); (Atesoglu and Congleton, 1982). Specifically, the impact of short-term economic fluctuations on voting in congressional elections has decreased dramatically over time, such that economic conditions are no longer major determinants of House elections. Given this result,

> the solution to the puzzle of why [econometric studies] find incompatible results seems clear. Aggregate studies produce significant results because they are longitudinal in nature. A sufficient portion of the time-series -- the early part -- is affected by economic conditions, which makes the entire series appear to be so affected. Individual-level studies done in the latter half of the postwar period find little or no effect because the phenomenon [of economic voting] has subsided (Radcliff, 1988p.450).

(2) Voters do not automatically attribute changes in their economic fortunes to the economic policies of the incumbent party (or even to the state of the economy). Under normal circumstances, voters attribute their improved fortunes to personal initiative. For this reason, voter behaviour will normally be independent of personal economic conditions (Kinder and Mebane, 983a); (Brody and Sniderman, 1977); (Sniderman and Brody, 1977); (Feldman, 1984). Voters attribute their personal economic well-being to the incumbent party's economic policies only when they perceive government economic policy to be the major determinant of their well-being -- i.e., when they identify (and hence blame) the government's economic policies as responsible for their hardship. Once this connection is made, changes in economic well-being exert a powerful influence on vote choice (Feldman, 1982); (Feldman, 1984).

(3) It is not apparent that voters should respond solely to *short-term fluctuations* in economic conditions. By restricting attention to short-term fluctuations, these studies "may ignore [other] important economic influences [i.e., long-term trends] which are perhaps more subtle and more constant but are nevertheless real" (Monroe, 1979p.156); (Stigler, 1973pp.164-167); (Bloom and Price, 1975p.1250); (Ireland, 1973p.179). In particular, "any attempt to measure the impact of current economic circumstances on voting must recognise that long-term [non-economic] predispositions heavily influence voter behaviour" (Owens and Wade, 1988p.36); (Bellucci, 1984p.388). Because they do not analyse these predispositions, econometric studies probably over-estimate the effect of current economic conditions on vote choice (Owens and Wade, 1988p.37). Clearly, therefore, measures of occupation, religion and territoriality -- long recognised as the most fundamental cleavages dividing Western electorates (Lane and Ersson, 1987) -- must be incorporated into econometric analyses of voter behaviour. Inclusion of such variables provides a baseline against which the independent effects of economic conditions on voter behaviour may be assessed.

(4) It is not apparent that voters should respond first and foremost to short-term fluctuations in *leading macro-economic indicators* (such as unemployment and inflation). Studies of the political effects of unemployment indicate that joblessness engenders political apathy and loss of self-esteem rather than political activism (Pinard, 1975); (Schlozman and Verba, 1977); (Stigler, 1973p.162). Dissatisfaction with the incumbent's macro-economic policies need not lead automatically (or even primarily) to an increase in the opposition's electoral support: macro-economic indicators affect voter turnout (the decision whether to vote) rather than vote choice (the decision for whom to vote) (Arcelus and Meltzer, 1975); (Monroe, 1979p.168); (Toinet, 1984). Arcelus and Bloom and Price confirm this result: the major effect of fluctuations in aggregate economic conditions is a change in electoral participation rather than a shift in votes between the two major parties (Arcelus and Meltzer, 1975); (Bloom and Price, 1975). Measures of electoral participation must therefore be incorporated into econometric analyses of voter behaviour.

(5) The results of econometric analyses of voter behaviour also depend upon the operationalisation (definition and measurement) of the dependent variable and independent variables, the specification of the relationship between the dependent variable and the independent variables and the data employed in the analysis. These studies focus on United States House of Representatives (not Senate or Presidential) elections[29] and define the incumbent party in the House of Representatives as the party which controls the Presidency. However, determination of incumbency (and hence responsibility) in American politics is not a straighforward matter, since it is possible for one party to control either or both houses of Congress whilst the other party controls the presidency. Clearly, therefore, the same economic conditions cannot explain both a solid Democratic congressional victory and a Republican presidential landslide (Okun, 1973p.173).[30] Voters' difficulty in ascertaining "incumbency" might therefore provide a partial account of the unstable and contradictory nature of these studies' findings.

Indeed, "the American case is [inherently] contaminated as a best test of economic voting" (Owens and Wade, 1988p.33). Relative to British parties, American parties are ideologically heterogeneous, decentralised and undisciplined. These characteristics decrease the extent to which American parties can implement -- and can be held responsible for -- economic policies. So too does the American constitution's separation of executive and legislative authority. Not surprisingly, therefore, because Senators are held more responsible for policy performance than are members of the House of Representatives (Erikson, 1971); (Fenno, 1978), and because issues (economic and non-economic) are more salient in Senate elections than in House of Representatives elections (Hinckley, 1980); (Abramowitz, 1980), economic voting is more likely to occur in Senate elections than in House of Representatives elections (Kuklinski and West, 1981); (Wright and Berkman, 1986); (Abramowitz, 1988).

Generally, political systems in which parties are disciplined and cohesive, in which executive and legislative authority is fused -- and therefore in which the incumbent party directly controls economic policy -- should provide the clearest test of the presence of economic voting. Australia, Britain, Canada and New Zealand meet these criteria more than the United States, and for this reason may be more appropriate settings for econometric analyses of voter behaviour.

The results of econometric analyses are not robust against changes in the definition of independent variables. No consensus has emerged with respect to the definition of these variables: some studies measure levels of personal income, inflation and unemployment; others measure rates of change in these variables over time. Each construction yields different results (Okun, 1973p.173). Moreover, small changes in variable definition engender large changes in results. Most notably, results are sensitive to changes in lag structure: Stigler for example, by measuring changes in income, inflation and unemployment over a two-year rather than a one-year period, finds that seemingly strong relationships disappear or change direction (Stigler, 1973p.185).

Collinearity among the independent variables engenders similar difficulties. The correlation between annual percentage changes in real GNP and annual changes in the unemployment rates was, between 1948 and 1971, approximately -0.9. As a result, it is virtually impossible to distinguish the independent effects of these variables on voter behaviour: "anything can happen when both an unemployment and a real income variable [are incorporated into the model]," and "unstable coefficients are to be expected" (Okun, 1973p.174). Similarly, high levels of inflation are historically infrequent and are largely associated with the occurrence of wars, that high peacetime inflation rates are a recent phenomenon, and that unemployment rates are correlated with real income. For these reasons, "it is unlikely that aggregate time-series can provide meaningful estimates of the relative impact on voting behaviour of inflation and unemployment" (Bloom and Price, 1975pp.1251-1252). Owens and Wade is the only study which recognises and remedies the problems caused by collinear variables (Owens and Wade, 1988).

These studies' contradictory results may be a consequence of model mis-specification. The linear combination of inflation, unemployment and real income may relate inconsistently to voter behaviour because the functional form of this relationship is, in fact, non-linear. Paldham notes that "many theorists, when [selecting a model specification], just choose one with no reference, and no obvious relation, to the findings of [this] literature. The elements entering into this choice must be some mixture of introspection, the clear blue sky, considerations of formal convenience, and a certain *tradition*" (Paldham, 1981p.189); (Goodman and Kramer, 1975p.1257); (Achen, 1982p.11). As a result, "resultant estimates are likely to be unstable" (Paldham, 1981p.183).

The contradictory results of econometric analyses of voter behaviour may stem from the use of nation-

wide aggregates of economic conditions and electoral results. These data combine local observations with respect to these variables into summary measures (arithmetic means). The greater the extent to which local conditions diverge from the nationwide arithmetic mean, the less representative of local conditions is the nationwide mean -- and hence the more misleading are the results of analyses based upon this data (Johnson, 1985). Nationally aggregated data, in short, hide variations observed at the sub-national level. Accordingly,

> further progress is unlikely to come by continued use of the same type of data in traditional ways. More promising will be efforts to identify new sources and types of data that are potentially informative about outstanding theoretical issues (Kiewiet and Rivers, 1984p.387).

It is for this reason that several studies[31] suggest that econometric analyses of electoral behaviour be replicated with more disaggregated data, and that Owens and Wade analyse the 1983 British election with disaggregated (constituency-level) data (Owens and Wade, 1988). They find that

> a research design focussing upon a large number of real constituency elections and local economic conditions provides a more reliable understanding of the relationship between economic condition and voting than models that rely upon a small number of hypothetical elections and highly aggregated national economic statistics (Owens and Wade, 1988p.32).

Finally, these contradictory results may also stem from problems inherent in the use of statistical time-series. Three problems accompany the use of such data. (1) the number of observations in the series is small [generally, $n < 35$; for (Tufte, 1975), $n = 8$]: although unbiased and consistent regression coefficients emerge from the analyses of short time-series, the generation of coefficients with small standard errors (and therefore the discovery of statistically significant relationships) is difficult. (2) These time-series extend over such a long period of time (generally the years 1896-ca.1970) that the stability of the relationship between economic stimuli and voter response becomes questionable (Kiewiet and Rivers, 1984p.372). The twentieth century has seen vast change in the structure of the economy (and hence in the causes of inflation and unemployment) and in the pervasiveness of government policy (and hence in the willingness and ability of governments to set and enforce macro-economic targets). (3) Use of data for this period ignores the fact that conscious and effective macro-economic policy dates, in most Western countries, only from the late 1930s.

4.2. The Econometric Analysis of Agrarian Party Formation

The assessment undertaken in section 4.1.5 has two implications for an econometric analysis of formation, electoral support and dissolution, in the years immediately following the First World War, of agrarian parties in Australia, Canada and New Zealand. (1) The empirical propositions set out in Chapter 3 are consistent with the findings of econometric analyses of voter behaviour. Personal economic self-interest (and a change in personal economic well-being) is not always an important determinant of voter behaviour at elections; rather, as this study's propositions hypothesise, its influence is sporadic, its magnitude is variable and its impact is not felt equally by all voters. In short, the initial conditions set out in Chapter 3 seem, *a priori*, to produce reasonable empirical propositions. (2) This assessment indicates that an analysis of the influence of micro-economic stimuli upon rural voter behaviour necessitates disaggregated cross-sectional data and careful attention to model specification (the inclusion of non-economic -- occupational, religious and territorial -- variables, collinearity among independent variables, and the model's functional form).

An econometric analysis of agrarian party formation, electoral support and dissolution thus entails the construction, estimation and evaluation of two sets of equations. The first set of equations analyses agrarian party formation and dissolution. These equations relate agrarian party elites' decision to present candidates in particular electorates to non-economic (occupational, religious and territorial) variables and

to the economic characteristics of agricultural and pastoral production. These equations attempt to indicate why the agrarian party contests electorate y (but not electorate z) at time t_1 and why it did (or did not) contest this electorate at time t_0. These equations, in short, attempt to respond to the first question for empirical research set out in Chapter 1.

The second set of equations analyses agrarian party electoral support. These equations relate (1) the decision to vote and (2) the decision to vote for the agrarian party to non-economic variables and to the economic characteristics of agricultural production. These equations attempt to indicate (given the presence of an agrarian party candidate in electorate y at time t_0) why voters in this electorate vote for the agrarian party candidate, and why voters in this electorate maintain or abandon their preference for the agrarian party candidate at t_1. These equations, in short, attempt to respond to the second question for empirical research set out in Chapter 1.

4.2.1. Data and Variables

Studies of electoral behaviour typically rely upon one of two types of data. Aggregate-level data, such as the data used by most econometric analyses of voter behaviour, consist in distributions of entire populations grouped according to some criterion (such as geographic proximity). Individual-level data, which are usually derived from sample surveys, consist in "facts specifically and directly known about [and derived directly from] individuals" (Ranney, 1962p.91).

Unlike survey data, aggregate-level data are readily and widely available. Most Western democratic nations have, since the nineteenth century, published electoral returns and conducted censuses. As a result, these countries possess immense bodies of aggregate-level data. Because survey data in these countries are generally available only for the period after 1960, any econometric analysis of agrarian party formation, electoral support and dissolution in Australia, Canada and New Zealand must rely upon aggregate-level data.

Section 4.1.5 emphasised that the estimation of the effects of economic stimuli upon voter behaviour necessitates disaggregated cross-sectional data. Analysis of the relationship between agricultural economic stimuli and rural voter behaviour makes the need for disaggregated data even more acute.[32] Accordingly, an econometric analysis of agrarian party formation, electoral support and dissolution demands agricultural economic, electoral and census data measured at the local level. Australia is well-endowed with such data. (1) Accounts of local patterns of agricultural production for the years 1922-1928 are readily available in the Statistical Registrars published by each Australian state (except Victoria);[33] (2) The Commonwealth Electoral Department collected detailed statistics of voter turnout and party support at the local (subdivision) level (Australia, 1923); (Australia, 1926); (Australia, 1929). (3) The Census of the Commonwealth, 1921 sets out religious and occupational statistics for the years immediately following the First World War (Australia, 1921). Measures of agricultural economic, electoral and census variables thus exist for 492 common units (electoral subdivisions) across Australia.[34] It is upon these units that the analysis is based. Table 4-1 shows the number of subdivisions in each state for which data are available.[35] Table 4-2 describes the variables constructed from these data.[36]

Table 4-1: The Data Set: Summary Description

State	Number of Observations
New South Wales	254
Victoria	0**
Queensland	100
South Australia	57
Western Australia	37
Tasmania	44
Australia	492

****Suitable data not available.**

4.2.2. Model Specification

The computation of valid quantitative estimates of behavioural relationships requires (1) well-specified statistical models and (2) appropriate estimators (Hanushek and Jackson, 1977pp.80-86). This section specifies two econometric models of agrarian party formation, electoral support and dissolution, and sets out criteria by which these models may be assessed. Section 4.2.3 sets out appropriate means by which these models' parameters may be estimated.

Perfectly-specified statistical models are linear in the coefficients and in the error term; they include all relevant (and exclude all irrelevant) independent variables; they reflect the true functional form (linear, additive, multiplicative, exponential, etc) of the relationship between the dependent variable and the independent variables; the expected value of their residual (disturbance) term is zero; the residual term for any one observation is independent of the residual term for other observations (no autocorrelation); the variance of the residual term is constant (homoskedastic), normally-distributed and uncorrelated with any independent variable and no two of its independent variables are perfectly correlated (perfectly collinear) (Kennedy, 1985pp.40-48); (Pindyck and Rubinfeld, 1985pp.128-134); (Johnston, 1984pp.259-267); (Wonnacott and Wonnacott, 1979pp.413-419).

In practice, statistical models are never perfectly specified (Achen, 1983pp.83-84); (Irwin and Lichtman, 1976pp.422-423); (Hanushek, Jackson and Kain, 1974p.99); (Studenmund and Cassidy, 1987pp.120-178). For this reason, all statistical models violate of one or more of these conditions. Depending upon the extent to which these conditions are violated, statistical model mis-specification (also known as specification bias or specification error) may yield misleading or incorrect estimates of behavioural relationships.

Some works indicate that (regardless of the specification of the statistical model) aggregate-level data (such as the data described in Table 4-2) produce misleading or incorrect estimates of the behaviour of individuals. In particular, Robinson argues that these data cannot be used to study the behaviour of individuals (Robinson, 1950pp.351-357). Robinson finds that bivariate product-moment correlation coefficients (r's) computed with aggregate-level data bear no consistent relationship to bivariate r's computed with individual-level data and that, therefore, analysis based upon aggregate-level data may lead to misleading or erroneous conclusions. Accordingly, individual-level data are unambiguously better than aggregate data because attempts to make inferences with aggregate-level data succumb to an "ecological fallacy" [see also (Alker, 1969pp.69-86); (Goodman, 1959); (Hammond, 1973); (Stokes, 1969)]. Indeed,

Table 4-2: Variable Descriptions

Variable	Type*	Description
Dependent Variables		
CPcand	b	CPcand = 1 if there is a Country Party candidate in the subdivision; otherwise, CPcand = 0.
NPcand	b	NPcand = 1 if there is a National Party candidate in the subdivision; otherwise, NPcand = 0.
ALPCand	b	ALPcand = 1 if there is a Labor Party candidate in the subdivision; otherwise, ALPcand = 0.
Turnout	c	The percentage of registered voters that cast ballots in the subdivision.
CPVote	c	Country Party support as a percentage of total votes cast in the subdivision.
NPVote	c	National Party support as a percentage of total votes cast in the subdivision.
ALPVote	c	Australian Labor Party Support as a percentage of total votes cast in the subdivision.
Independent Variables		
Anglican	c	Anglicans as a percentage of the subdivision's total population.
Business	c	Percentage of the workforce in the subdivision in tertiary occupations.
Catholic	c	Roman Catholics as a percentage of the subdivision's total population.
Cattle	c	Average number of beef cattle per farm in the subdivision (logarithm).
Dairy	c	Average number of dairy cattle per farm in the subdivision (New South Wales only) (logarithm)
Farmer	c	Percentage of the workforce in the subdivision which own farms.
Fruit Acreage	c	The average number of acres of all fruits and vegetables per farm in the subdivision (logarithm)
Grain Acreage	c	The average number of acres of grain (wheat, oats, and barley) per farm in the subdivision (logarithm).
Grazier	c	Percentage of the workforce in the subdivision which own stations.
Labour	c	Percentage of the workforce in the subdivision employed in secondary industry.
Mechanisation	c	Average number of horses per farm in the subdivision (logarithm).
Sheep	c	Average number of sheep per farm in the subdivision (logarithm).
State	b	Dummy measure of territoriality: State = 1 if the subdivision is in New South Wales; otherwise, State = 0.

* Where b indicates a binary (dichotomous) variable and c indicates a continuous variable.

> the glastly results all too common in working with aggregate voting data are well documented, and the "ecological fallacy" has destroyed the credibility of many well-intentioned projects. Indeed, skepticism about aggregate data is so widespread that the quantitative historical research once so common in the discipline has very nearly disappeared (Achen, 1983pp.70-71).

More recent studies reject Robinson's conclusions. The "ecological fallacy" results from an incorrect model specification and from improper statistical methods rather than from the use of inappropriate (aggregate-level) data (Hanushek, Jackson and Kain, 1974p.92); (Irwin and Lichtman, 1976); (Langbein and Lichtman, 1976); (Broder and Lichtman, 1983); (Jones, 1972); (Lichtman, 1974); (Kousser, 1973). The mere existence of individual-level data does not guarantee accurate estimates of individual behaviour (Kramer, 1983). Regardless of the type of data employed, mis-specified statistical models bias estimates of individual behaviour and correctly-specified models yield valid estimates of individual behaviour. A re-analysis of Robinson's (1950) own data demonstrates this result (Hanushek, Jackson and Kain, 1974).

These studies also indicate that Robinson does not distinguish between specification bias and aggregation bias. Aggregation bias is the difference between the expected value of a statistical relationship estimated with individual-level data and the expected value of the same relationship estimated with aggregate-level data (Irwin and Lichtman, 1976p.411). It is a type of specification bias which results from the process of grouping individuals into units of aggregation. Aggregation bias disappears when statistical models are correctly specified. Regardless of the criterion by which individuals are grouped, well-specified models yield valid inferences about the behaviour of individuals (Irwin and Lichtman, 1976); (Hanushek, Jackson and Kain, 1974); (Blalock, 1964pp.103-112); (Shively, 1969).

Two implications for an econometric analysis of agrarian party formation, electoral support and dissolution emerge from these studies. First, if they are used in conjunction with a well-specified statistical model, aggregate-level data (such as the data described in Table 4-2) yield valid estimates of individual behaviour. Indeed, such estimates are far more valid than estimates derived from an incorrectly-specified statistical model using individual-level data (Irwin and Lichtman, 1976p.433); (Kramer, 1983); (Johnston, 1984pp.259-261). Secondly, multivariate statistical models yield more valid estimates of individual behaviour than bivariate product-moment correlation coefficients (King, 1987); (Kousser, 1973); (Jones, 1972); (Lichtman, 1974). In particular, analyses of voter behaviour which rely upon bivariate correlations produce unreliable results (Kousser, 1976).

Clearly, therefore, quantitative analysis of the behaviour of rural voters requires multivariate statistical models. Equally clearly, these models must be carefully specified: they must include as many relevant explanatory (independent) variables as possible, and must approximate the true functional form of the relationship between the dependent and independent variables. Table 4-2 set out a more complete set of explanatory variables (agricultural economic, occupational, religious, territorial and political) than other econometric studies of voter behaviour; to the extent that these variables constitute a complete list of the determinants of rural voter behaviour, statistical models incorporating these variables will be well-specified.

Specification of the functional form of the relationship between the dependent variable and each independent variable is less straightforward. Like most theories, Chapter 3 does not specify the functional form of the causal relationship among variables; in general, any attempt to do so would necessarily result in over-simplified and erroneous explanations (Achen, 1982pp.13-15); (Johnston, 1984pp.500-502). This poses difficulties for the verification of theoretical propositions, since alternate model specifications can suggest very different forms of voter behaviour.

Previous research, however, suggests that two functional forms are appropriate for statistical models of agrarian party formation, electoral support and dissolution. Soares and Hamblin argue that the non-major party's electoral support is a consequence of feelings of frustration with the *status quo* and that the intensity of this frustration increases as an exponential function of the economic and social stimuli acting upon the voter; accordingly, they find that a multiplicative and exponential model specification provides a better representation than a linear and additive model specification of the social and economic influences on the vote for non-major party candidates (Soares and Hamblin, 1967pp.1053-1065).[37]

Further, Burnham and Sprague find that linear and additive models best portray vote choice during periods of electoral stability, that non-linear and multiplicative specifications will best characterise voter behaviour during periods of crisis, that linear and additive models best represent the influence of social and economic variables on the major party vote and that non-linear and multiplicative functional forms best fit patterns of non-major party support (Burnham and Sprague, 1970pp.471-490). They interpret this result to mean that non-major parties reflect alienation from the broad consensus forged by the major parties and thus that the non-major party vote represents "an act of aggressive alienation against the leaders, parties and policies associated with the established political order" (Burnham and Sprague, 1970p.488).

Given these results, one of two statistical models may be appropriate representations of agrarian party formation, electoral support and dissolution. Each model incorporates the independent variables set out in Table 4-2. However, the functional form of these models differs. The first model's functional form is linear and additive:

$$Y_i = \alpha + \beta_i X_{1i} + \beta_2 X_{2i} + \ldots + \beta_k X_{ki} + \varepsilon_i \qquad i = 1, 2 \ldots n \text{ (Model 1)}$$

The second model's functional form (the Cobb-Douglas production function) is exponential and multiplicative:

$$Y_i = \alpha(X_{1i}^{\beta 1})(X_{2i}^{\beta 2})(X_{ki}^{\beta k})\varepsilon_i \qquad i = 1, 2 \ldots n \text{ (Model 2)}$$

where

- Y_i is the model's dependent variable (CPcand, NPcand and ALPcand for analyses of agrarian party formation and dissolution; CPVote, NPVote and ALPVote for analyses of agrarian party electoral support) [see also (Firebaugh, 1988)];
- α is a constant (intercept) term;
- β_k is the coefficient of the *k*th independent variable;
- X_{ij} is the *i*th observation on the *j*th independent variable set out in Table 4-2;
- ε_i is a randomly distributed residual (disturbance) term with constant variance.

The functional form of Model (2) is not linear. However, transformation of this model in terms of logarithms yields a linear equation that meets classical conditions. Following Kruskal (Kruskal, 1968p.189), this logarithmic transformation takes the form

$$\ln Y_i = \beta_0 + \beta_1 \ln[(X_{1i})] + \beta_2[\ln(X_{2i})] + \ldots + \beta_k[\ln(X_{ki})] + \varepsilon_i \qquad i = 1, \ldots n \text{ (Model 2)}$$

Caution must accompany the interpretation of these models' parameters. The coefficients of Model (1) represent the absolute change in Y_i that is associated, on average, with a unit change in an X_{ij}. In Model (1), then,

$$\beta_k = \frac{\Delta y_i}{\Delta X_{ij}}$$

The coefficients of Model (2) indicate that the effect upon Y_i of a given change in an X_i varies according to the magnitude of the X_i (i.e., that their relationship is non-linear). For every one percent change in X_i, in other words, Y_i changes by β_k percent (Hanushek and Jackson, 1977p.97):

$$\beta_k = \frac{\Delta Y_i / Y_i}{\Delta X_{ij} / X_{ij}}$$

The coefficients of Model (2) are thus constant elasticities (Johnston, 1984pp.65-66).

The coefficients of Model (2) also indicate that the change in Y_i that is associated with a change in an X_i varies according to the magnitude of the *other* X_i (i.e., that their relationship is multiplicative). Conversely, in Model (1) the marginal effect of a change in the value of any X_i on Y_i is independent of the effect of the other X_i (i.e., their relationship is additive) (Hanushek and Jackson, 1977pp.97-99).

In the absence of perfectly-specified statistical models, an econometric analyses of voter behaviour requires criteria by which these models may be assessed. The most commonly used statistic, R^2, is not appropriate for this purpose. R^2 can only provide a meaningful comparison of models with identical dependent variables (King, 1987p.675); (Seidman, 1976); clearly, however, because Models (1) and (2) address different sources of variation (Y_i and $\ln Y_i$ respectively), their R^2 are not commensurate (Hanushek and Jackson, 1977pp.100-101). Moreover, R^2 is only of limited value because it gives only an indirect indication of proper specification (the predictive power of the equation) (Theil, 1971p.542).

The residual variance criterion is the most important criterion by which alternate model specifications may be assessed (Johnston, 1984pp.504-510). Accordingly, the relative validity of Models (1) and (2) may be assessed in terms of the extent to which the variance the disturbance term is constant (homoskedastic), normally-distributed and correlated with one or more independent variables. Accordingly, the analysis of party formation and dissolution set out in Chapter 5 reports likelihood-ratio tests, Maddala's R^2, Cragg-Uhler's R^2, McFadden's R^2 and Chow's R^2 (Chow, 1983). The analysis of party electoral support set out in Chapter 6 reports statistics devised by Jarque and Bera in order to assess the homoskedasticity of the models' residuals; it performs Chi-square goodness-of-fit tests and computes coefficients of skewness and kurtosis in order to assess the normality of the models' residuals (Jarque and Bera, 1980pp.255-259); (Klein, 1974p.368); (Smillie, 1966p.95); and it computes correlation matrices in order to assess the collinearity of the models' independent variables. (All calculations are carried out with SHAZAM (White, 1978)).

4.2.3. Model Estimation

Given this study's data and its statistical models, there exists a large number of ways in which behavioural relationships might be estimated. The Gauss-Markov Theorem proves that (if a model is perfectly specified) the Ordinary Least Squares (OLS) estimator is the Best Linear Unbiased Estimator (BLUE). The OLS estimator is "best" in the sense that the sampling distribution of its B_k have the smallest variance; it is "unbiased" in the sense that the sampling distribution of each B_k is centred on the true value of B_k (Johnston, 1984pp.171-174). Because it possesses these desirable statistical properties, the OLS estimator is the most frequently used estimator of the separate effects of independent variables upon a dependent variable.

However, because statistical models are never perfectly specified (in other words, because one or more classical conditions are always violated) the OLS estimator is not always an appropriate estimator of behavioural relationships. For every analysis, therefore, an appropriate estimator (OLS or other) must be chosen.

For two reasons, the OLS estimator is an inappropriate estimator of models of agrarian party formation

and dissolution. (1) The OLS estimator incorrectly assumes that there is a linear relationship between the model's dichotomous dependent variable and its independent variables. This implies, for example, that an increase in the value of an independent variable is associated with an increase in the probability that a Country Party candidate will stand for election -- regardless of the value of that independent variable. In practice, this assumption frequently produces nonsensical results (such as probabilities less than zero and greater than one) (Hanushek and Jackson, 1977ch 7).

(2) Aldrich and Nelson demonstrate that such models' residuals are inherently heteroskedastic (Aldrich and Nelson, 1984pp.1-20). As a result, OLS estimates are not "best" estimates (in the sense that in the sense that the sampling distribution of its B_k have the smallest variance). In consequence, they may seriously mis-estimate the effects of independent variables and may invalidate statistical inferences (t-tests, F-tests and confidence intervals). Probit and logit estimators, which are designed especially for statistical models with dichotomous dependent variables, resolve these difficulties (Pindyck and Rubinfeld, 1985) and are thus the most appropriate estimators of models of agrarian party formation and dissolution.

Similarly, the OLS estimator is not (because its residuals will be heteroskedastic) an appropriate estimator of models of agrarian party electoral support. Heteroskedasticity is frequently encountered in cross-sectional analyses in which (1) observations are drawn from aggregate units whose size and population differ considerably, (2) there is a wide disparity between the largest and the smallest observed values of an independent variable, and (3) the dependent variable is a proportion. The greater the extent to which each condition obtains, the greater is the likelihood that disturbance terms will have non-constant variance (i.e., will be heteroskedastic) (Studenmund and Cassidy, 1987pp.244-263); (Hanushek and Jackson, 1977pp.141-150).

As a result, the Ordinary Least Squares estimator, though unbiased, is no longer the Best (in the sense that its variance is minimised) Linear Unbiased Estimator (BLUE). It is possible, however (by taking into account the expected variance of the disturbance term), to generalise the OLS estimator. Weighting the dependent variable and all independent variables by a constant, Z_i, that is proportional to the variance of the disturbance term yields a specification that satisfies classical conditions (see Appendix E). For this reason, the GLS (Generalised Least Squares) estimator is preferred to the OLS estimator and is a more appropriate estimator of models of agrarian party electoral support.

4.3. Summary

Econometric analyses of electoral behaviour are distinguished both by their subject matter and by their analytic techniques. In terms of subject matter, these studies may be summarised by the dictum "when you think politics, think elections; when you think elections, think economics" (Tufte, 1978p.65). In terms of method, they attempt (through the use of techniques of econometric research) to quantify the hypothesised relationship between economic conditions and electoral behaviour.

This study's theoretical propositions relate closely to these studies' subject matter. At the same time, its propositions and research design differ in important respects from most econometric analyses of electoral behaviour. This study investigates the impact of *micro*-economic developments upon *rural* electoral behaviour; it analyses far more competitive elections (n=492), using more finely-disaggregated data, than most econometric analyses (where, generally, $n > 35$); it analyses a particular point in time and uses more appropriately-specified statistical models and estimators, together with a more complete array of diagnostic statistics, than most other studies.

Chapters 5 and 6 report the results of an econometric analysis of the formation, electoral support and partial dissolution, in the years 1922-1928, of the Australian Country Party. Chapter 5 utilises probit and logit estimators and Models (1) and (2) in order to analyse agrarian party formation and dissolution (as represented by the distribution of Country Party candidates at the Commonwealth elections of 1922, 1925 and 1928). Chapter 6 utilises the Generalised Least Squares estimator and Models (1) and (2) in order to analyse the Country Party's electoral support at these elections.

Chapter 5

Agrarian Party Formation and Dissolution (Party Behaviour)

Chapter 3 hypothesised that the formation of non-major parties (including agrarian parties such as the Australian Country Party) is a consequence of voter dissatisfaction with major parties and an economic issue(s) whose salience attains crisis proportions. It defined non-major party formation and dissolution as a function of the extent to which the non-major party's candidates contest elections. An increase in the number of constituencies in which the non-major party's candidates are present (regardless of their percentage share of the vote in these constituencies) constitutes non-major party formation; the greater the increase (from one election to another) in the number of constituencies in which a non-major party's candidates are present, the greater is non-major party formation. Conversely, a decrease in the number of constituencies in which the non-major party's candidates are present constitutes non-major party dissolution; the greater the decrease (from one election to another) in the number of constituencies in which a non-major party's candidates are present, the greater is non-major party dissolution.

More specifically, Chapter 3 hypothesised that the agricultural and pastoral economic stimuli which influence the electoral behaviour of rural voters also influence the electoral behaviour of agrarian party leaders. These leaders respond to a decrease in agricultural commodity prices below the average variable cost of production by fielding agrarian party candidates in the constituencies where voter dissatisfaction with major parties is greatest.

This chapter evaluates these hypotheses. It uses probit and logit estimators and Models (1) and (2) in order to determine whether (as well as the extent to which) agricultural and pastoral economic stimuli influenced Country Party leaders' decision to contest (or, alternatively, not contest) a given constituency. Its results are consistent with the hypothesis that these economic stimuli were the most important influence upon this decision.

5.1. The 1922 Commonwealth Election

A short summary of Australian political development after 1910 places the 1922 election in context. By 1910, following the fusion of the Free Traders and the Protectionists, two political parties (the Liberal Party and the Australian Labor Party) dominated Australian parliaments and elections (Loveday, Martin and Parker, 1977). Two events soon upset this nascent two-party system. First, in 1916 disagreement with respect to military conscription split the Australian Labor Party. The Prime Minister, four Ministers and twenty-four Members of Parliament left the ALP, formed a minority "National Labor" government (sustained by the Liberals) and in 1917 merged with the Liberals (forming the Nationalist Party). Second, "the appearance and consolidation of the Australian Country Party was the most striking political development within the Commonwealth parliament between the split of the Labor Party and its return to

power in 1929" (Alexander, 1967:59). The presence of Australian Country Party candidates, as opposed to Australian "country party" candidates, commenced at the 1922 election. Unlike the 1919 election (at which rural "country party" conducted unco-ordinated campaigns under a variety of labels, often with help from the Nationalist Party), Country Party candidates formed an independent and cohesive bloc at this election (Hughes, 1985p.36); (Hughes and Graham, 1974pp.320-325); (Page, 1963pp.62-85); (Graham, 1966pp.166-167 and 325).

The 1922 election was thus contested by two major parties (the Nationalist Party and the Australian Labor Party), a non-major party (the Australian Country Party) and several independent candidates. The Prime Minister's allegedly autocratic style, "fig-leaf socialism" and "theatrical posturing" were the campaign's most notable features (Fitzhardinge, 1979pp.509-510). Its results were a debacle for the Nationalist Party: five of its Ministers were defeated, its leader was "discredited" and the Country Party gained the balance of power in the House of Representatives (Page, 1963pp.86-87). In consequence, the Nationalist Party changed leaders and a Nationalist Party-Country Party coalition government took office.

Table 5-1: Non-Metropolitan Electoral Subdivisions With Country Party, Nationalist Party and Australian Labor Party Candidates, Commonwealth Election, 1922

	Country Party		Nationalist Party		Labor Party	
	Number	(%)	Number	(%)	Number	(%)
New South Wales	156	(61.4)	229	(90.2)	215	(84.7)
Queensland	76	(76.0)	54	(54.0)	100	(100.0)
South Australia	30	(52.6)	19	(33.3)	38	(66.7)
Western Australia	9	(24.3)	32	(86.5)	23	(62.1)
Tasmania	37	(84.7)	44	(100.0)	31	(70.5)
Australia	308	(62.6)	378	(76.8)	407	(82.7)

N.B.: Figures refer to House of Representatives elections.

Table 5-1 reports (1) the number of non-metropolitan electoral subdivisions in which Country Party, Nationalist Party and Australian Labor Party candidates were present in House of Representatives elections, and (2) the percentage of non-metropolitan electoral subdivisions in which these parties' House of Representatives candidates were present. (The analysis in this chapter excludes Senate elections because Australian Senators are elected from state-wide, not local, constituencies). It indicates that (with the exception of Australian Labor Party candidates in Queensland and Nationalist Party candidates in Tasmania) these parties' candidates were not present in every non-metropolitan electoral subdivision. ALP and Nationalist Party candidates were present in the greatest number of electoral subdivisions. At the same time, however, Country Party candidates were present in more than one-half of each state's electoral subdivisions (except in Western Australia) -- indeed, in Queensland and South Australia they were present in more electoral subdivisions than were Nationalist Party candidates. Clearly, therefore, agrarian party formation was appreciable at this election.

Table 5-2 sets out determinants of Country Party formation and dissolution (i.e., the presence or absence of a Country Party candidate in an electoral subdivision) in House of Representatives elections.[38] Five of

Table 5-2: Country Party Formation and Dissolution, Commonwealth Election, 1922

	Australia	NSW	OtherStates
Estimator	logit	probit	logit
Model	(1)	(1)	(1)
N	492	254	238
Independent Variables:			
Religion			
Anglican	2.65(0.42)	-0.29(0.07)	-0.53(0.08)
Occupation			
Farmer	-0.65(0.02)	7.00(0.10)	1.99(0.09)
Grazier	-1.39(0.49)	-19.16(0.15)*	-1.01(0.03)
Labour	-14.20(0.82)***	-14.04(0.93)**	0.09(0.01)
Business	7.11(0.52)***	9.85(0.55)**	0.68(0.07)
Land Utilisation			
Grain Acreage	0.16(0.09)*	0.52(0.43)***	-0.40(0.20)***
Fruit Acreage	-0.11(0.02)	-0.18(0.03)	-0.06(0.01)
Sheep	0.01(0.02)	-0.23(0.43)**	0.11(0.13)
Cattle	0.35(0.40)**	0.79(1.23)***	0.09(0.10)
Mechanisation	-0.49(0.36)***	-0.64(0.69)**	-0.24(0.17)
Dairy		-0.33(0.14)	
Voter Turnout	0.06(0.01)	2.90(0.79)*	-3.54(0.74)*
State (Dummy)	0.31(0.05)		

N.B.: The dependent variable is CPCAND22
Figures within parentheses are elasticities (computed at the independent variable's mean).

* indicates that t < 1.96
** indicates that 2.32 < t < 2.58
*** indicates that t > 2.58

this table's relationships merit attention.[39] (1) Agricultural and pastoral economic variables (such as the Cattle, Grain Acreage and Mechanisation variables) are more powerful predictors of Country Party formation and dissolution than agricultural and pastoral occupational variables (such as the Farmer and Grazier variables). Indeed, at this election occupational status as a farmer or a grazier was not associated with the presence or absence of Country Party candidates (the grazier variable in New South Wales is an exception). The economic attributes of agricultural and pastoral production, however, related strongly to the presence of Country Party candidates. (2) Country Party formation was associated with the production of price- and income-inelastic commodities (such as grain and beef cattle) and Country Party dissolution was associated with the production of price- and income-elastic commodities (such as fruits and vegetables and sheep/wool). (3) At this election Country Party formation was associated with the presence of rural businessmen and professionals, and Country Party dissolution was associated with the presence of workers in secondary industry. (4) The Anglican variable was not associated with the presence or absence of a Country Party candidate in an electoral subdivision. (5) The presence or absence of Country Party candidates was not related to voter turnout at this election. Nor was it more marked in New South Wales than in other states.

A much stronger pattern of results appears in New South Wales. Again, agricultural and pastoral economic variables were more powerful predictors of Country Party formation and dissolution than agricultural and pastoral occupational variables; the Anglican variable was unrelated to Country Party formation or dissolution; Country Party formation was associated with the production of price- and income-inelastic commodities; Country Party dissolution was associated with mechanisation and the production of price- and income-elastic commodities (including dairy products). In each instance, the coefficients of these variables were greater for New South Wales electoral subdivisions than for electoral subdivisions across Australia.

Conversely, a much weaker pattern of results emerges in states other than New South Wales. Country Party formation and dissolution were related to neither agricultural and pastoral economic variables (except Grain Acreage) nor to agricultural and pastoral occupational variables. At this election, in other words, neither occupational status as a farmer or a grazier nor the economic attributes of primary production (except Grain Acreage) were associated with Country Party formation and dissolution. Nor, indeed, were the Anglican, Business and Labour variables. Only the Voter Turnout variable uncovers a strong relationship: in these states, the presence of a Country Party candidate in an electoral subdivision was associated with low levels of voter turnout.

Two results emerge from Table 5-2. First, at this election Country Party formation in New South Wales and states other than New South Wales rested upon very different foundations. In particular, Country Party formation in states other than New South Wales lacked all of the underpinnings that it possessed in New South Wales. The coefficients of the Business, Cattle and Grain Acreage variables in these states are much smaller, their standard errors much larger (and, for the Grain Acreage variable, the sign of the coefficient is reversed) than their counterparts in New South Wales. At this election, in other words, Country Party formation corresponded much less clearly to the hypothesised determinants of voter dissatisfaction with major parties in these states than in New South Wales.

Secondly, at this election the Business, Cattle and Grain Acreage variables are most strongly associated with Country Party formation. Conversely, the Labour, Mechanisation and Sheep variables are most strongly associated with Country Party dissolution. Moreover, the effect upon Country Party formation and dissolution of a one-percent change in the value of the Cattle, Grain Acreage and Mechanisation

variables (cf. the elasticity of the coefficient of these variables) was greater than an equivalent percentage change in the value of the Business, Farmer, Grazier variables. At this election, therefore, these agricultural and pastoral economic variables were more important determinants of Country Party formation and dissolution than occupational variables.

This result, together with the observation that Country Party formation and dissolution at this election was unrelated to the Anglican variable, is consistent with the hypothesis that (given a decrease in agricultural commodity prices below the average variable cost of commodity production) the economic attributes of agricultural and pastoral production engender voter dissatisfaction with the major parties, and that this dissatisfaction is the most important catalyst of agrarian party support and dissolution.

Table 5-3 sets out, for comparative purposes, determinants of Nationalist Party formation and dissolution (the presence or absence of a Nationalist Party candidate in an electoral subdivision in House of Representatives elections). The table indicates that occupational and religious variables (particularly Anglican and Business) are more important determinants of Nationalist Party formation and dissolution than agricultural and pastoral economic variables. Only two economic variables, Grain Acreage and Sheep, were consistently associated with the presence or absence of Nationalist Party candidates, and there existed no clear relationship between the production of price- and income-(in)elastic commodities and Nationalist Party formation and dissolution. Further, in New South Wales the Voter Turnout variable is a strong determinant of Nationalist Party formation. Its coefficient indicates that high levels of voter participation at this election were associated with the presence of Nationalist Party candidates.

The results set out in Tables 5-2 and 5-3 are thus consistent with the hypothesis that the combined impact of voter dissatisfaction with major parties (which, in turn, is engendered by the production of price- and income-inelastic commodities) and an issue whose salience attains crisis proportions (a decline in commodity price below the average variable cost of production) engenders agrarian party formation. Agricultural and pastoral economic variables, together with the Business variable, were the strongest determinants of Country Party formation and dissolution at this election; conversely, occupational and religious variables were the strongest determinants of Nationalist Party formation and dissolution at this election.

5.2. The 1925 Commonwealth Election

The Country Party's leader in the Commonwealth Parliament observed that between 1922 and 1925 "a deep fission in political thinking developed between the Government and the Labor Opposition. Labor's position had moved steadily to the left since the [National Labor] breakaway in the First World War. Their policies conflicted with Nationalist Party and Country Party doctrine in vital matters, including the free enterprise system" (Page, 1963p.171). Moreover, "the deep infection of Communist doctrine in the Labour movement was having severe repercussions on the industrial front. The Government faced strikes which threatened to undermine the process of democratic government and to disrupt the country's economic development" (Page, 1963p.172); (Graham, 1966p.232). The Government thus "chose to fight this election almost entirely on the issue of "law and order" and the "Menace from Moscow"; it was the first of the full-scale "Red Scare" campaigns that were to be frequent during the next forty years" (Fitzhardinge, 1979p.545).

Table 5-4 reports (1) the number of non-metropolitan electoral subdivisions in which Country Party, Nationalist Party and Australian Labor Party candidates were present at this election, and (2) the percent-

Table 5-3: Nationalist Party Formation and Dissolution, Commonwealth Election, 1922

	Australia	NSW	OtherStates
Estimator	probit	probit	logit
Model	(2)	(2)	(1)
N	492	254	238
Independent Variables:			
Religion			
Anglican	1.96(0.48)***	-1.68(0.13)	8.55(1.08)***
Occupation			
Farmer	0.02(0.02)	-0.02(0.01)	-1.41(0.05)
Grazier	-0.15(0.19)*	0.00(0.00)	-2.85(0.07)
Labour	-0.01(0.01)	1.90(0.38)**	-1.92(0.11)
Business	-0.52(0.34)*	-1.77(0.39)**	-0.36(0.03)
Land Utilisation			
Grain Acreage	0.11(0.05)*	0.18(0.03)*	0.23(0.09)*
Fruit Acreage	0.03(0.00)	0.17(0.00)	-0.16(0.03)
Sheep	-0.15(0.16)***	-0.11(0.04)	-0.46(0.45)***
Cattle	0.03(0.03)	0.05(0.01)	0.19(0.19)
Mechanisation	0.02(0.01)	-0.42(0.09)	-0.25(0.02)
Dairy		0.11(0.02)	
Voter Turnout	2.03(0.34)***	3.86(0.24)***	1.72(0.29)
State (Dummy)	0.95(0.14)***		
(Constant)	1.72(0.51)**	3.46(0.33)	-2.34(0.63)

N.B.: The dependent variable is NPCAND22.
Figures within parentheses are point elasticities (measured at the independent variable's mean).

* indicates that $t < 1.96$
** indicates that $2.32 < t < 2.58$
*** indicates that $t > 2.58$

Table 5-4: Non-Metropolitan Electoral Subdivisions With Country Party, Nationalist Party and Australian Labor Party Candidates, Commonwealth Election, 1925

	Country Party		Nationalist Party		Labor Party	
	Number	(%)	Number	(%)	Number	(%)
New South Wales	103	(40.6)	207	(81.5)	254	(100.0)
Queensland	38	(38.0)	40	(40.0)	78	(78.0)
South Australia	0	(0.0)	57	(100.0)	57	(100.0)
Western Australia	14	(37.8)	23	(62.2)	37	(100.0)
Tasmania	13	(29.6)	44	(100.0)	44	(100.0)
Australia	168	(34.2)	371	(74.4)	469	(95.3)

N.B.: Figures refer to House of Representatives elections.

age of total non-metropolitan electoral subdivisions in which these parties' candidates were present. It indicates that Australian Labor party candidates were present in 15.2 percent more electoral subdivisions in 1925 than in 1922. ALP formation was particularly marked in New South Wales, where the number of subdivisions with ALP candidates increased by 18.1 percent at this election. The number of subdivisions in other states with ALP candidates increased by 12.5 percent. As a result, Australian Labor Party candidates were present in almost all (95.3 percent) of Australia's non-metropolitan electoral subdivisions at this election.

Conversely, Nationalist Party and Country Party candidates were present in fewer electoral subdivisions at this election than at the 1922 election. For each party, sub-national distinctions appear. Across Australia, for example, the number of electoral subdivisions with Nationalist Party candidates declined very slightly (by 1.9 percent) between the 1922 election and the 1925 election. In New South Wales this number decreased by 9.6 percent; in states other than New South Wales, however, it increased by 10.1 percent. At this election, therefore, Nationalist Party dissolution occurred in New South Wales and Nationalist Party formation took place in states other than New South Wales.

The percentage change in the number of electoral subdivisions in which Country Party candidates were present was much greater than the percentage change in the number of electoral subdivisions in which Australian Labor Party or Nationalist Party candidates were present. At the 1925 election, the Country Party's House of Representatives candidates were present in 168 electoral subdivisions. Across Australia, therefore, Country Party candidates were present in 45.5 percent fewer electoral subdivisions in 1925 than in 1922. Moreover, Country Party dissolution took place in all states. Country Party dissolution was less marked in New South Wales (where the party's candidates were present in 34.6 percent fewer subdivisions in 1925 than in 1922) than in states other than New South Wales (where its candidates were present in 57.2 percent fewer subdivisions at this election). In consequence, only in New South Wales were Country Party candidates present in more than 40 percent of a state's electoral subdivisions. This result is consistent with the differential (New South Wales versus. states other than New South Wales) pattern of results observed at the 1922 election.

Clearly, if the number of constituencies in which a party's candidates are present is a valid indicator of

that party's vigour, then the Country Party was much weaker in 1925 than in 1922. Particularly at this election, however, this inference may not be valid. Between the 1922 election and the 1925 election the Country Party entered into an electoral alliance with the Nationalist Party [for a detailed discussion of this alliance, see (Graham, 1966); (Page, 1963Appendix 6)]. In some House of Representatives elections, the two parties agreed that they would accord one another electoral preserves, within which they would not compete for votes. In other House of Representatives elections (and in Senate elections), each party urged its supporters to give their second preference vote to the other party.

Between the 1922 election and the 1925 election Country Party and Nationalist Party leaders thus restricted their respective parties' electoral manoeuvrability (the freedom to present candidates in any and all constituencies) in return for greater electoral security (in some constituencies, the status as the sole non-Labor party; in other constituencies, the recipient of the other party's second preference votes). It follows from the initial conditions specified in Chapter 3 that in such circumstances each party would attempt (subject to the bargaining strength of the other party) to negotiate an agreement that would permit it to direct organisational resources away from constituencies in which electoral returns were least attractive and to concentrate them in constituencies in which electoral returns were most attractive. Accordingly, the decline between 1922 and 1925 in the number of constituencies in which Country Party candidates were present may constitute a rationalisation or a re-allocation (not necessarily an erosion) of the party's organisational resources.

Table 5-5, which sets out determinants of Country Party formation and dissolution, indicates that the Country Party's organisational resources were both eroded and re-allocated at this election. In New South Wales, the Country Party consolidated the strengths observed at the 1922 election. Agricultural and pastoral economic variables (particularly the Cattle, Grain Acreage and Mechanisation variables) remained much more powerful determinants of Country Party formation and dissolution than agricultural and pastoral occupational variables (such as the Farmer and Grazier variables). Indeed, the magnitude of the coefficients of all occupational variables drops precipitously (and their standard errors increase) at this election: unlike the 1922 election, at which three of the four occupational variables were associated with the presence or absence of a Country Party candidate in an electoral subdivision, at the 1925 election only the Business variable showed such a relationship. (At both elections, the presence of businessmen and professionals in an electoral subdivision is strongly associated with Country Party formation in that subdivision).

Conversely, the relationship between the economic attributes of agricultural and pastoral production and the presence of Country Party candidates increased markedly at this election. The elasticity of the coefficient of the Grain Acreage variable increases from 0.43(1922) to 1.21(1925); the elasticity of the coefficient of the Cattle variable increases from 1.23(1922) to 5.53(1925), and the elasticity of the coefficient of the Mechanisation variable increases from 0.69(1922) to 3.71(1925). These results, together with the large standard errors of the coefficients of the Fruit Acreage, Sheep and Dairy variables, indicate that in New South Wales electoral subdivisions a much stronger relationship existed between the production of price- and income-inelastic commodities and Country Party formation (and the production of price- and income-elastic commodities and Country Party dissolution) at the 1925 election than at the 1922 election. In New South Wales, in other words, the allocation of the Country Party's candidates seemed to respond more clearly to the hypothesised determinants of voter dissatisfaction with the major parties in 1925 than in 1922. This result suggests that (in organisational terms at least) in constituencies contested at both elections the Country Party seemed to be a stronger entity in 1925 than in 1922.

Table 5-5: Country Party Formation and Dissolution, Commonwealth Election, 1925

	Australia	NSW	OtherStates
Estimator	logit	logit	probit
Model	(1)	(2)	(2)
N	492	254	238
Independent Variables:			
Religion			
Anglican	1.82(0.61)	-4.87(3.16)**	1.99(3.01)**
Occupation			
Farmer	2.77(0.17)	0.23(0.75)	-0.09(0.40)
Grazier	-10.80(0.32)**	0.04(0.17)	-0.02(0.13)
Labour	-8.97(1.01)*	-0.27(0.45)	0.11(0.42)
Business	5.68(0.74)**	3.14(5.85)**	-0.52(2.15)
Land Utilisation			
Grain Acreage	0.37(0.59)***	1.03(1.21)***	-0.24(1.22)*
Fruit Acreage	-0.36(0.22)**	0.04(0.01)	-0.10(0.26)
Sheep	0.04(0.11)	-0.03(0.09)	0.57(3.94)***
Cattle	0.63(1.24)***	2.41(5.53)***	-1.34(6.25)***
Mechanisation	-1.23(2.06)***	-2.13(3.71)**	0.62(2.67)*
Dairy		0.26(0.33)	
Voter Turnout	-7.07(4.21)**	-3.22(0.56)	-0.35(0.12)
State (Dummy)	0.38(0.15)		
(Constant)	4.77(3.49)*		

N.B.: The dependent variable is CPCAND25.
Figures within parentheses are point elasticities (measured at the independent variable's mean).

* indicates that t < 1.96
** indicates that 2.32 < t < 2.58
*** indicates that t > 2.58

A very different pattern of results appears in states other than New South Wales. As in 1922, none of the four occupational variables was associated with the presence or absence of a Country Party candidate in one of these state's electoral subdivisions. The Anglican variable, however, became a powerful determinant of Country Party formation. As in New South Wales electoral subdivisions at this election, the coefficients of several agricultural and pastoral economic variables (e.g., Grain Acreage, Cattle, Sheep and Mechanisation) increased markedly in magnitude at this election. However, the direction of these variables' coefficients is the opposite of that observed in New South Wales, and directly contradicts theoretical expectations. In these states a relationship existed between the production of price-elastic commodities and Country Party formation and the production of price-inelastic commodities and Country Party dissolution. In these states, in other words, the allocation of the Country Party's candidates did not correspond with the hypothesised determinants voter dissatisfaction with the major parties.

Table 5-6, which sets out determinants of Nationalist Party formation and dissolution at this election, helps to resolve this anomaly. In New South Wales electoral subdivisions the coefficient of the Labour variable is no longer associated with Nationalist Party formation. Further, the coefficient of the Grain Acreage variable changes direction (from 0.18 in 1922 to -0.30 in 1925) as does the coefficient of the Cattle variable (from 0.05 in 1922 to -0.64 in 1925). At the 1925 election, therefore, these agricultural and pastoral variable were associated with the departure of Nationalist Party candidates from New South Wales electoral subdivisions.

The elasticity of the coefficients of the Grain Acreage and Cattle variables remained constant or increased markedly in magnitude in states other than New South Wales. (The elasticity of the coefficient of the Grain Acreage variable was 0.09 in 1922 and 0.08 in 1925, and the elasticity of the coefficient of the Cattle variable increased from 0.19 in 1922 to 0.38 in 1925). In these states, however, these variables were associated with the presence -- not the absence -- of Nationalist Party candidates in electoral subdivisions. Finally, the relationship between Nationalist Party formation and dissolution and the Mechanisation and variable increased in magnitude (the elasticity of the coefficient of the Mechanisation variable increased from 0.02 in 1922 to 0.29 in 1925), and was associated with the absence of Nationalist Party candidates from electoral subdivisions. In these states, then, the agricultural and pastoral economic determinants of Nationalist Party formation and dissolution are stronger than the corresponding determinants of Country Party formation and dissolution. In short, the determinants of Nationalist Party formation and dissolution in these states closely resemble the determinants of Country Party formation and dissolution in New South Wales.

Table 5-4 indicated that at the 1925 election (1) Nationalist Party dissolution occurred in the state in which the determinants of Country Party formation and dissolution in 1922 were strongest (i.e., in New South Wales), and that (2) Nationalist Party formation occurred in the states in which the determinants of Country Party formation and dissolution in 1922 were weakest (i.e., in states other than New South Wales). Table 5-4 thus indicated that at the 1925 election the Nationalist Party directed organisational resources away from constituencies in which the Country Party responded most clearly to voter dissatisfaction with the major parties and directed organisational resources towards constituencies in which the Country Party responded least clearly to to voter dissatisfaction with the major parties.

Tables 5-5 and 5-6 corroborate this result. In states other than New South Wales the Nationalist Party responded to voter dissatisfaction with major parties by directing organisational resources towards constituencies in which voter dissatisfaction with the major parties was greatest. It was for this reason that the determinants of Country Party formation and dissolution in New South Wales and the determinants of Nationalist Party formation and dissolution in states other than New South Wales are similar.

Table 5-6: Nationalist Party Formation and Dissolution, Commonwealth Election, 1925

	Australia	NSW	OtherStates
Estimator	probit	logit	probit
Model	(1)	(2)	(2)
N	492	254	238
Independent Variables:			
Religion			
Anglican	-2.31(0.32)*	-1.39(0.13)	-2.40(0.09)**
Occupation			
Farmer	0.00(0.00)	-4.09(0.02)	0.20(0.02)
Grazier	4.11(0.05)*	9.71(0.03)	-0.01(0.01)
Labour	9.37(0.44)***	8.63(0.24)	0.63(0.06)
Business	-4.78(0.26)***	-4.56(0.10)	0.05(0.01)
Land Utilisation			
Grain Acreage	-0.05(0.03)	-0.30(0.09)**	0.60(0.08)***
Fruit Acreage	0.16(0.04)	-0.09(0.01)	0.05(0.01)
Sheep	-0.03(0.03)	0.01(0.01)	-0.61(0.11)**
Cattle	0.16(0.13)	-0.64(0.37)**	3.24(0.38)***
Mechanisation	0.03(0.02)	0.44(0.19)	-2.68(0.29)***
Dairy		0.05(0.02)	
Voter Turnout	1.81(0.45)	-0.68(0.11)	0.52(0.01)
State (Dummy)	0.07(0.01)		
(Constant)	-0.67(0.20)	3.07(0.64)	0.70(0.03)

N.B.: The dependent variable is NPCAND25.
Figures within parentheses are point elasticities (computed at the independent variable's mean).

* indicates that t < 1.96
** indicates that 2.32 < t < 2.58
*** indicates that t > 2.58

Two results emerge from an analysis of Country Party and Nationalist Party formation and dissolution at this election. First, the determinants of Country Party formation and dissolution in New South Wales are consistent with theoretical expectations (and corroborates the results observed at the 1922 election). In this state, agricultural and pastoral economic variables, together with the Business variable, were the most powerful determinants of the presence or absence of a Country Party candidate in an electoral subdivision.

Second, results in states other than New South Wales illuminate an important (and hitherto unrecognised) aspect of the Country Party-Nationalist Party electoral coalition. Country Party dissolution between 1922 and 1925 was most prevalent in the constituencies in which the Country Party responded least clearly to the hypothesised determinants of voter dissatisfaction with the major parties in 1922 (i.e., in non-New South Wales constituencies). It was in these constituencies that Nationalist Party formation was most prevalent in 1925, and in which the Nationalist Party responded most clearly to the hypothesised determinants of voter dissatisfaction with the major parties. The Country Party-Nationalist Party electoral alliance thus permitted the Country Party to concentrate resources in the constituencies in which it responded best to voter dissatisfaction (i.e., New South Wales constituencies). At the same time, it permitted the Nationalist Party to concentrate resources in constituencies in which the Country Party responded relatively poorly to voter dissatisfaction with the major parties (i.e., in non-New South Wales constituencies). This electoral alliance, in other words, facilitated a more efficient allocation of the non-Labor parties' electoral resources.

5.3. The 1928 Commonwealth Election

At the 1928 election the Nationalist Party-Country Party coalition government repeated the strategy which proved to be successful at the 1925 election: "the Government's election programme was again based almost entirely on the issue of industrial peace. We sought a further mandate to impose law and order on the trade unions" (Page, 1963p.177). Similarly, a former Nationalist Party leader and Prime Minister "represented the election as a conflict between two sets of principles; on the one hand liberty, equality before the law and the participation of all in law-making; on the other, oppression, dictatorship and lawlessness" (Fitzhardinge, 1979p.568).

Table 5-7 sets out, in each state and across Australia, (1) the number of non-metropolitan electoral subdivisions in which Country Party, Nationalist Party and Australian Labor Party candidates were present at this election, and (2) the percentage of total non-metropolitan electoral subdivisions in which these parties' candidates were present. It indicates that Australian Labor Party candidates present in 32.7 percent fewer electoral divisions in 1928 than in 1925. ALP dissolution was particularly marked in states other than New South Wales, where the number of electoral subdivisions with Labor party candidates decreased by 49.1 percent between 1925 and 1928. (The number of electoral subdivisions in New South Wales with ALP candidates decreased by 25.7 percent). As a result, in no state were Australian Labor Party candidates present in more than 75 percent of electoral subdivisions.

Nationalist Party and Country Party dissolution was less pronounced than Australian Labor Party dissolution at this election. Across Australia, Nationalist Party candidates were present in 21.6 percent fewer electoral subdivisions in 1928 than in 1925. (They were present in 22.7 percent fewer electoral subdivisions in New South Wales and 20.1 percent fewer electoral subdivisions in states other than New South Wales).

Table 5-7: Non-Metropolitan Electoral Subdivisions With Country Party, Nationalist Party and Australian Labor Party Candidates, Commonwealth Election, 1928

	Country Party		Nationalist Party		Labor Party	
	Number	(%)	Number	(%)	Number	(%)
New South Wales	85	(33.5)	160	(63.0)	189	(74.4)
Queensland	37	(37.0)	30	(30.0)	67	(67.0)
South Australia	30	(52.6)	57	(100.0)	27	(47.4)
Western Australia	9	(24.3)	0	(0.0)	9	(24.3)
Tasmania	0	(0.0)	44	(100.0)	7	(15.9)
Australia	161	(32.7)	291	(59.2)	299	(60.8)

N.B.: Figures refer to House of Representatives elections.

Country Party candidates were present in only 4.4 percent fewer electoral subdivisions at the 1928 election than at the 1925 election. As in 1925, sub-national distinctions in Country Party formation and dissolution continued to appear in 1928. At this election Country Party candidates were present in 17.5 percent fewer electoral subdivisions in New South Wales, but were present in 13.9 percent more electoral subdivisions in states other than New South Wales. At the 1928 election, in other words, Country Party dissolution occurred in New South Wales and Country Party formation occurred in states other than New South Wales.

Table 5-8 sets out determinants of Country Party formation and dissolution (i.e., determinants of the presence or absence of a Country Party candidate in an electoral subdivision) at this election. In New South Wales, agricultural and pastoral economic variables (such as Cattle, Grain Acreage, Mechanisation and Sheep) remained more powerful predictors of Country Party formation and dissolution than agricultural and pastoral occupational variables (such as Farmer and Grazier). In this state, in other words, occupational status as a farmer or a grazier continued to be unassociated with the presence of a Country Party candidate in an electoral subdivision; the economic attributes of agricultural and pastoral production, however, were strong predictors of such a relationship. This finding corroborates the results observed at the 1922 and the 1925 election.

Similarly, Country Party formation remained associated with the production of price- and income-inelastic commodities (such as grain and beef cattle) and Country Party dissolution remained associated with the production of price- and income-elastic commodities (such as fruits and vegetables and sheep/wool) as well as with farm mechanisation. Further, Country Party formation remained associated with the presence of rural businessmen and professionals, and Country Party dissolution remained associated with the presence of workers in secondary industry.

At the same time, the magnitude of the coefficients of agricultural and pastoral economic variables declined (in absolute terms and relative to the magnitude of the coefficients of occupational variables) between the 1925 election and the 1928 election. The coefficient of the Grain Acreage variable, for example, decreased from 1.03(1925) to 0.88(1928); the coefficient of the Cattle variable decreased from

Table 5-8: Country Party Formation and Dissolution, Commonwealth Election, 1928

	Australia	NSW	OtherStates
Estimator	probit	logit	logit
Model	(2)	(2)	(2)
N	492	254	238
Independent Variables:			
Religion			
Anglican	-1.00(0.81)***	-4.60(2.80)**	-0.61(0.29)
Occupation			
Farmer	0.19(0.64)**	0.01(0.04)	0.17(0.25)
Grazier	0.02(0.01)	0.37(1.35)	0.05(0.11)
Labour	-0.54(1.15)**	-0.32(0.51)	-0.55(0.68)
Business	0.83(1.91)***	3.28(5.72)**	0.75(2.15)
Land Utilisation			
Grain Acreage	0.13(0.21)***	0.88(0.93)***	-0.14(0.15)
Fruit Acreage	-0.08(0.04)	0.06(0.02)	-0.07(0.03)
Sheep	0.06(0.22)	-0.27(0.76)*	0.14(0.31)
Cattle	0.22(0.59)***	2.09(4.40)***	-0.19(0.28)
Mechanisation	-0.41(0.86)***	-0.55(0.87)	0.00(0.00)
Dairy		-0.37(0.98)	
Voter Turnout	0.22(0.04)	2.96(0.43)	1.41(0.14)
State (Dummy)	0.04(0.02)		

N.B.: The dependent variable is CPCAND28.
Figures within parentheses are point elasticities (computed at the independent variable's mean).

* indicates that t < 1.96
** indicates that 2.32 < t < 2.58
*** indicates that t > 2.58

2.41(1925) to 2.09(1928), and the coefficient of the Mechanisation variable decreased from -2.13(1925) to -0.55(1928). Conversely, the coefficients of the Anglican and Business variables remained almost unchanged between these elections. In New South Wales, therefore, the Country Party responded less clearly to voter dissatisfaction with the major parties in 1928 than in 1925 (although it responded more clearly to this dissatisfaction in 1928 than in 1922).

A much weaker pattern of results appears in states other than New South Wales. In these states, the coefficients of all variables decreased between 1925 and 1928. The elasticity of the coefficient of the Anglican variable decreased from 3.01(1925) to 0.29(1928); the elasticity of the coefficient of the Grain Acreage variable decreased from 1.22(1925) to 0.15(1928); the elasticity of the coefficient of the Cattle variable decreased from 6.25(1925) to 0.28(1928) and the elasticity of the coefficient of the Mechanisation variable decreased from 2.67(1925) to 0.00(1928). As a result, at this election none of the model's variables was associated with the presence or absence of a Country Party candidate in an electoral subdivision. Accordingly, the theoretically-anomalous results observed in these states at the 1925 election did not re-appear at the 1928 election. As in 1925, however, in these states the Country Party failed to allocate electoral and organisational resources in response to voter dissatisfaction with the major parties. The New South Wales versus non-New South Wales divergence that was observed at the 1922 and 1925 elections thus continues to appear at the 1928 election.

Conversely, the allocation of the Nationalist Party's candidates seemed to respond to voters who were satisfied with the major parties. Table 5-9 sets out determinants of Nationalist Party formation and dissolution at this election. It indicates that the coefficients of occupational variables declined in magnitude between 1925 and 1928. Across Australia, for example, the coefficient of the Anglican variable declined from -2.31(1925) to -0.96(1928); the coefficient of the Grazier variable declined from 4.11(1925) to 0.09(1928); the coefficient of the Labour variable declined from 9.37(1925) to 0.74(1928) and the coefficient of the Business variable declined from -4.78(1925) to -0.32(1928).

At the same time, the coefficients of agricultural and pastoral economic variables increased markedly at this election. The coefficient of the Grain Acreage variable, for example, increased from -0.05(1925) to -0.12(1928); the coefficient of the Fruit Acreage variable increased from 0.16(1925) to 0.29(1928); the coefficient of the Sheep variable increased from -0.03(1925) to 0.07(1928); the coefficient of the Cattle variable increased from 0.16(1925) to -0.25(1928) and the coefficient of the Dairy variable increased from 0.05(1925) to 0.90(1928). As a result -- and much more clearly than in 1922 or 1925 -- the production of price- and income-elastic commodities (fruits and vegetables, sheep/wool and dairy products) was associated with the presence of a Nationalist Party candidate in an electoral subdivision and the production of price- and income-inelastic commodities (grain and beef cattle) was associated with the absence of a Nationalist Party candidate from an electoral subdivision.

At this election, in other words, the agricultural and pastoral economic determinants of Nationalist Party formation and dissolution and the agricultural and pastoral economic determinants of Country Party formation and dissolution were polar opposites. Country Party candidates responded to voters who were dissatisfied with the major parties. Nationalist Party candidates responded to voters who remained satisfied with the major parties.

Table 5-9: Nationalist Party Formation and Dissolution, Commonwealth Election, 1928

	Australia	NSW	OtherStates
Estimator	probit	logit	probit
Model	(2)	(2)	(2)
N	492	254	238
Independent Variables:			
Religion			
Anglican	-0.96(0.42)**	2.18(0.50)	-1.28(0.53)**
Occupation			
Farmer	0.06(0.10)	0.33(0.39)	0.05(0.07)
Grazier	0.09(0.21)	0.05(0.06)	0.08(0.15)
Labour	0.74(0.84)***	1.01(0.61)	0.92(0.98)
Business	-0.32(0.39)	-0.46(0.30)	-0.50(0.56)
Land Utilisation			
Grain Acreage	-0.12(0.11)**	-0.62(0.25)***	0.00(0.00)
Fruit Acreage	0.29(0.08)***	0.17(0.02)	0.23(0.08)**
Sheep	0.07(0.15)**	0.55(0.58)***	0.00(0.00)
Cattle	-0.25(0.36)***	-1.73(1.39)***	-0.17(0.22)*
Mechanisation	0.03(0.03)	-0.55(0.33)	0.10(0.11)
Dairy		0.90(0.42)**	
Voter Turnout	3.00(0.29)**	-2.62(0.14)	3.96(0.33)**
State (Dummy)	0.08(0.02)		
(Constant)	-0.67(0.20)	7.85(2.32)	1.61(0.77)**

N.B.: The dependent variable is NPCAND28.
Figures within parentheses are point elasticities (computed at the independent variable's means).

* indicates that t < 1.96
** indicates thar 2.32 < t < 2.58
*** indicates that t > 2.58

5.4. Summary and Conclusion

Three results emerge from the analysis undertaken in this chapter. (1) At the 1922, 1925 and 1928 elections the agricultural and pastoral economic variables (together with the Business variable) were the most important determinants of Country Party formation and dissolution. This result is consistent with the hypothesis that the economic attributes of agricultural and pastoral production (and not occupational status as a farmer or a grazier) are the most important criteria which guide agrarian party leaders' decision to present candidates in particular constituencies.

(2) Between 1922 and 1928 the production of price- and income-inelastic commodities (particularly grain and beef cattle) was the most important determinant of Country Party formation and the production of price- and income-elastic commodities (particularly fruits and vegetables, sheep/wool and dairy products), together with farm mechanisation, was the most important determinant of Country Party dissolution. Conversely, the production of price- and income-inelastic commodities was associated with (but was not the most important determinant of) Nationalist Party dissolution, and the production of price- and income-elastic commodities was associated with (but was not the most important determinant of) Nationalist Party formation. This result is consistent with the hypothesis that Country Party formation (and Nationalist Party dissolution) was a consequence of voter dissatisfaction with the major parties, and that Nationalist Party formation (and Country Party dissolution) was a consequence of satisfaction with the major parties.

(3) This analysis indicates that the greater the extent to which agrarian party formation responds to the hypothesised determinants of voter dissatisfaction with the major parties, the longer-lived is the agrarian party. At the 1922, 1925 and 1928 elections the economic attributes of agricultural and pastoral production were stronger predictors of Country Party formation and dissolution in New South Wales than in states other than New South Wales. At none of these elections did Country Party formation correspond, in states other than New South Wales, to the hypothesised determinants of voter dissatisfaction with the non-major parties. This analysis thus suggests that it is at least in part for this reason that the Country Party proved to be a relatively durable entity in New South Wales and a relatively ephemeral entity in states other than New South Wales.

Chapter 6

Agrarian Party Electoral Support (Voter Behaviour)

Chapter 3 hypothesised that non-major parties' electoral support (including the electoral support of agrarian parties such as the Australian Country Party) is a consequence of voter dissatisfaction with the major parties and an economic issue(s) whose salience attains crisis proportions. It defined non-major party electoral support as the non-major party's percentage share of the total vote in constituencies in which its candidates are present.

More specifically, Chapter 3 hypothesised that agricultural and pastoral economic stimuli influence rural voter behaviour: given a decrease in primary commodity prices below the average variable cost of commodity production, the production of price- and income-inelastic engenders dissatisfaction with the major parties and (given the presence of an agrarian party candidate) electoral support for the agrarian party. Chapter 3 hypothesised that these two factors are the most important determinants of the agrarian party's electoral support. This chapter tests these hypotheses. It analyses, using the Generalised Least Squares estimator and Models (1) and (2), the extent to which agricultural and pastoral economic stimuli influenced rural voter behaviour at the Australian (Commonwealth) elections of 1922, 1925 and 1928. It concludes that these economic stimuli were the most important determinants of the Country Party's electoral support at these elections.

6.1. The 1922 Commonwealth Election

Electoral support for the Australian Country Party, as opposed to electoral support for an Australian "country party", commenced at the 1922 Commonwealth election. Unlike the 1919 election, at which rural "country party" candidates conducted unco-ordinated, independent campaigns under a variety of labels (often with help from the Nationalist Party), the Country Party contested the 1922 election as a cohesive party (Hughes, 1985p.36); (Hughes and Graham, 1974pp.320-325); (Graham, 1966pp.166-167); (Page, 1963p.62 and 85).

There is currently no study which analyses the extent to which members of particular religious denominations gave disproportionate electoral support to the Country Party. Several studies, however, discuss the party's economic and occupational base of support. Graham, for example, contends that grain growers (and particularly wheat growers) were the party's strongest base of support at these elections (Graham, 1966pp.21-22 and 27-28) and that dairy farmers and fruit and vegetable growers also supported the Country Party (Graham, 1966p.119). Alexander argues that "to some extent the Country Party provided a channel through which the old conservative pastoralist or squatter group might regain an active part in Australian politics," and that, generally speaking, the small "cocky" farmer also supported the Country Party (Alexander, 1967p.60); see also (Graham, 1966pp.21-28). Finally, Aitkin concludes that rural business interests were an important component of the party's electoral support (Aitkin, 1972).

Considered as a group, these studies seem to concur with contemporary observers' contention that the Country Party "included all classes of producers and consumers, farmers and city men, employers and workers" (Page, 1963p.77).

This study hypothesises that the Country Party received electoral support from much more specific strata of the rural electorate. It hypothesises that grain growers supported the Country Party and that fruit and vegetable growers, dairy farmers and graziers did not support the Country Party. It also hypothesises that producers which employed greater amounts of farm machinery rejected the Country Party; that producers of beef cattle (but not producers of sheep and wool) supported the Country Party; that the Country Party did not receive disproportionate support from members of any religious denomination; that a negative relationship exists between voter turnout and Country Party support and, most importantly (because agrarian party electoral support is hypothesised to be a consequence of voter dissatisfaction from major parties and the salience of agricultural commodity prices), that the Country Party's electoral support is best described with a multiplicative and exponential rather than with an additive and linear statistical model.

Table 6-1: Electoral Support, Commonwealth Election, 1922 (Summary Statistics)

	Country Party		Nationalist Party		Labor Party	
	Mean	s.d.*	Mean	s.d.*	Mean	s.d.*
House of Representatives**						
New South Wales	33.4	17.5	26.4	16.0	31.2	18.8
Queensland	32.5	16.9	14.9	19.7	48.5	15.0
South Australia	19.0	12.8	0.0	0.0	30.0	12.9
Western Australia	72.1	10.0	13.0	11.3	0.0	0.0
Tasmania	37.0	13.0	31.1	13.6	20.7	18.4
Australia	33.3	18.1	21.0	18.1	32.7	20.3
Senate***						
New South Wales	22.7	15.7	29.2	15.0	36.5	13.8
Queensland	13.4	8.9	31.0	9.6	41.6	11.8
South Australia	0.0	0.0	0.0	0.0	0.0	0.0
Western Australia	16.1	16.5	34.7	12.4	38.6	16.0
Tasmania	9.0	5.5	44.9	14.7	37.1	17.6
Australia	18.6	14.6	31.7	14.4	37.9	14.1

* s.d. indicates the mean's standard deviation.
** Figures refer to the percentage of the total vote in subdivisions with a Country Party candidate (House of Representatives).
*** Figures refer to the percentage of the total vote in subdivisions with a Country Party candidate (Senate).

Table 6-1 summarises the results of the 1922 Commonwealth election in electoral subdivisions contested by the Country Party. It indicates that in House of Representatives elections the Country Party's percentage share of the vote was generally greater than that received by the Nationalist Party and the

Australian Labor Party. Only in Western Australia, however, did it receive the support of a majority of electors. It also indicates that in Senate elections the major parties' percentage share of the vote was generally twice as great as the Country Party's share of the vote. Clearly, therefore, at this election the Country Party received considerable but not overwhelming support in the electoral subdivisions in which its candidates were present.

Table 6-2: Preferred Models of Electoral Support, Commonwealth Election, 1922

	House of Representatives		Senate	
	Turnout	Vote	Turnout	Vote
Country Party*				
Australia (All States)	(2)	(2)	(2)	(2)
New South Wales	(1)	(2)	(2)	(2)
Other States	(2)	(2)	(2)	(2)
Australian Labor Party***				
Australia (All States)	(1)	(1)	(2)	(1)
New South Wales	(1)	(1)	(1)	(1)
Other States	(2)	(1)	(1)	(1)
Nationalist Party**				
Australia (All States)	(1)	(1)	(2)	(1)
New South Wales	(1)	(1)	(1)	(1)
Other States	(1)	(1)	(2)	(1)

* In subelectorates contested by the Country Party
** In subelectorates contested by the Country Party and the National Party
*** In subelectorates contested by the Country Party and the Australian Labor Party

Table 6-2 summarises the results of model specification tests.[40] It indicates that in all states and in both House of Representatives and Senate elections, a multiplicative and exponential model (Model 2) provides a more adequate representation of the Country Party's electoral support than a linear and additive specification (Model 1). It also indicates that Model (1) represents the electoral support of the Nationalist Party and the Australian Labor Party more adequately than Model (2) (see section 4.2.2. for details of these model specifications). These findings replicate the observation made by Burnham and Sprague at the American presidential elections of 1968 (at which a non-major party candidate received thirteen percent of the national vote) (Burnham and Sprague, 1970). Because a multiplicative and exponential function is the general form of the relationship between the magnitude of voter dissatisfaction with the major parties and electoral behaviour, this result is consistent with the Sprague's hypothesis that the non-major party vote is an "act of positive or aggressive alienation" with the major parties (Burnham and Sprague, 1970p.1056).

Table 6-2 indicates that Country Party support at this election is statistically distinctive. If the Country Party's electoral support was indeed a consequence of voters' "aggressive hostility towards the leaders, parties and policies of the existing political order" (Burnham and Sprague, 1970), and if Model (2) taps

voter dissatisfaction with major parties, do the coefficients of this model reflect this dissatisfaction? Are the parameters of Country Party support distinct from the parameters of Nationalist Party and Australian Labor Party support? In short, is the Country Party's electoral support distinctive in substantive terms?

Table 6-3 reports estimated parameters of voter turnout and Country Party electoral support in subdivisions across Australia with Country Party candidates.[41] Each type of independent variable -- religious,[42] occupational, economic and political -- is a strong predictor of voter turnout. Two sets of relationships merit elaboration. (1) The tendency for graziers, rural businessmen and farmers to participate at elections differed markedly at this election: occupational status as a grazier and as a rural businessman facilitated electoral participation, and occupational status as a farmer discouraged electoral participation. At the same time, some agricultural and pastoral economic variables (such as the Grain Acreage, Cattle and Mechanisation variables) encouraged voter turnout. (2) Voter turnout was fifteen to twenty percent below the national average in New South Wales.

Most variables are also strong predictors of the Country Party's electoral support. Five relationships are particularly noteworthy. (1) At this election the Country Party had no religious base of support: the standard error of the Anglican variable (as well as alternate model specifications employing Methodist, Presbyterian and Roman Catholic variables) is large relative to the size of its coefficient. (2) At this election occupational status as a grazier was not related to the Country Party's electoral support. One of the economic measures of pastoral production, however, was a strong predictor of Country Party support: the greater the average size of herds of beef cattle (but not sheep) per farm, the greater the support for the Country Party.

(3) Occupational status as a farmer was associated with electoral support for the Country Party at this election. Nonetheless, the coefficients of economic measures of agricultural production (such as the Grain Acreage and Mechanisation variables) are larger than the coefficient of the Farmer variable. These economic variables are therefore stronger determinants of the Country Party vote than the Farmer variable. At this election, in other words, these economic attributes of agricultural production were stronger predictors of Country Party support than was occupational status as a farmer.

(4) In House of Representatives elections the coefficient of the Business variable is four times larger than the coefficient of the Farmer variable. It is also larger than the coefficients of the economic variables. This result indicates that rural businessmen constituted a bulwark of Country Party electoral support at this election. (5) The relationship between electoral participation and the Country Party's electoral support was strongly negative at this election. The coefficient of Voter Turnout (House of Representatives) indicates that the Country Party drew disproportionate support from districts with low levels of electoral participation. Indeed, this coefficient represents the strongest relationship in the table: a one percent decline in voter turnout in a subdivision was associated, on average, with an increase of 1.84 percent in the Country Party's share of the vote in that subdivision. This negative relationship also emerges in other coefficients. Farm owners, for example, were less likely to cast ballots but were disproportionately likely to vote for the Country Party; farm mechanisation encouraged electoral participation but reduced the Country Party vote; voter turnout was lowest in New South Wales whilst Country Party support was greatest in that state.

Table 6-4 reports estimated parameters of voter turnout and Country Party electoral support for electoral subdivisions in New South Wales that were contested by Country Party candidates at this election.[43] Four features distinguish the Country Party's electoral support in New South Wales from its electoral support across Australia. (1) Graziers in New South Wales rejected the Country Party. In both House of

Table 6-3: Country Party Electoral Support, All States, Commonwealth Election, 1922

	House of Representatives		Senate	
Variable	Turnout	Vote	Turnout	Vote
Religion				
Anglican	-.21***	.14	-.41***	-.37
Occupation				
Farmer	-.10***	.13**	-.06***	.24***
Grazier	.04***	.01	.04***	-.02
Labour	.05	-.79***	.07*	-.41***
Business	.10**	.52***	.12***	.32**
Land Utilisation				
Grain Acreage	.03***	.15***	.03***	.14***
Fruit Acreage	.01	-.25	-.01	-.02
Sheep	-.02***	.01	.02***	.01
Cattle	.06***	.42***	.05***	.28***
Mechanisation	.04*	-.40***	.04**	-.28***
Voter Turnout		-1.84***		-.26
State (Dummy)	-.15***	.20*	-.20***	.73***
(Constant)	-.55***	-3.15***	-.41***	-2.86***
Estimator	GLS	GLS	GLS	GLS
Model	(2)	(2)	(2)	(2)
N	313	313	435	435

N.B.: The dependent variables are CHRPC22, CSPC22 AND TOUT22
The coefficients of Model (2) are both unstandardised b's and constant elasticities.

* indicates that t < 1.96
** indicates that 2.32 < t < 2.58
*** indicates that t > 2.58

Table 6-4: Country Party Electoral Support, New South Wales, Commonwealth Election, 1922

	House of Representatives		Senate	
	Turnout	Vote	Turnout	Vote
Variable				
Religion				
Anglican	-.18**	-.22	-.02	.03
Occupation				
Farmer	-.55**	.11*	-.02	.13**
Grazier	.34	-.04**	.01	-.11**
Labour	.02	-.21	-.02	-.20**
Business	-.07	.61**	-.03	.61***
Land Utilisation				
Grain Acreage	-.01**	.22***	.01	.17***
Fruit Acreage	.01	-.11	-.05**	-.23***
Dairy	-.01	-.22**	.08***	-.19***
Sheep	.01	-.08**	.03***	-.05*
Cattle	-.04***	.74***	-.05**	.62***
Mechanisation	.05***	-.48**	.04**	-.25***
Voter Turnout		-2.07***		-.17**
(Constant)	.67***	-3.42***	-.78***	-2.12***
Model	(1)	(2)	(2)	(2)
Estimator	GLS	GLS	GLS	GLS
N	156	156	254	254

N.B.: The dependent variables are CHRPC22, CPSPC22 and TOUT22. The coefficients of Model (2) are both unstandardised b's and constant elasticities. The coefficients of Model (1) are unstandardised b's.

* indicates that t < 1.96
** indicates that 2.32 < t < 2.58
*** indicates that > 2.58

Representatives and Senate elections a strong negative relationship exists between the Grazier variable and the Country party vote. Occupational status as a grazier, in other words, was associated with electoral support for parties other than the Country Party. The Cattle variable, however, continues to be a strong predictor of the party's support. Indeed, the magnitude of its coefficient is much greater within New South Wales than across Australia. These results indicate that in New South Wales the economic attributes of pastoral production were more important determinants of the Country Party's electoral support than was occupational status as a grazier. They also indicate that pastoral economic variables were stronger determinants of the Country Party's electoral support in New South Wales than in other states.

(2) The coefficient of the Dairy variable indicates that, at least within New South Wales, an increase in the size of dairy herds per farm decreased the Country Party's electoral support. (3) Occupational status as a farmer in New South Wales was associated with electoral support for the Country Party. At the same time, agricultural economic variables (particularly Grain Acreage and Mechanisation) yield larger and more efficient coefficients than the Farmer variable. Like the Cattle measure, the magnitude of these variables is greater in New South Wales than across Australia. This result indicates that voting in response to agricultural economic conditions was more prevalent within this state than in other states.

(4) A strong relationship emerges between the Business variable and the Country Party's electoral support. The size of its coefficient relative to other coefficients indicates that rural businessmen were a bulwark of the Country Party vote in this state. (5) The negative relationship between electoral participation and Country Party support represents the strongest relationship in the table. Farm owners, for example, were less likely to vote but more likely to vote for the Country Party. Conversely, farm mechanisation encouraged voter turnout but discouraged Country Party electoral support. This relationship is stronger within New South Wales than across Australia (the magnitude of the coefficient of the Turnout variable, for example, increases from -1.84 to -2.07). Moreover, other sets of coefficients bear signs of this relationship: an increase in the value of the Grain Acreage and Cattle variables, for example, decrease voter turnout but increase Country Party support; increases in the Grazier, Dairy, Sheep and Fruit Acreage variables show the opposite tendency.

Country Party support in New South Wales and states other than New South Wales differed sharply at this election. Table 6-5 reports estimated parameters of voter turnout and the Country Party's electoral support in Queensland, South Australia, Western Australia and Tasmania.[44] Once again, five relationships are noteworthy. (1) In these states the Country Party had no religious base of support. (Indeed, in Senate elections the coefficient of the Anglican variable is strongly negative). (2) In these states (unlike New South Wales) occupational status as a grazier is associated with electoral support for the Country Party. At the same time, the magnitude of economic coefficients of pastoral production (particularly the coefficient of the Cattle variable), is much smaller in these states than in New South Wales. The pastoral bulwark of the Country Party support which is present in New South Wales is thus largely absent in other states.

(3) To a slightly greater extent than in New South Wales (particularly in Senate elections) occupational status as a farmer was associated with electoral support for the Country Party. Conversely, agricultural economic indicators yield much smaller coefficients (and hence suggest weaker links to the Country Party vote) in these states than in New South Wales. The party's agricultural economic bulwark was thus weaker in these states than in New South Wales. (4) Similarly, the relationship between the Business variable and Country Party support is much weaker in these states than in New South Wales. This result indicates that a third bulwark of the party's strength in New South Wales was much weaker in these other states.

Table 6-5: Country Party Electoral Support, Queensland, South Australia, Western Australia and Tasmania, Commonwealth Election, 1922

	House of Representatives		Senate	
Variable	Turnout	Vote	Turnout	Vote
Religion				
Anglican	-.35***	.35	-.45***	-.81**
Occupation				
Farmer	-.06***	.15**	-.04***	.28***
Grazier	.04**	.06	.04**	.11*
Labour	.01	-1.00***	.01	-.21
Business	.16	.51**	.17***	.11
Land Utilisation				
Grain Acreage	.02	.05**	.01	.10**
Fruit Acreage	.01	-.03	-.01	.11*
Sheep	-.03***	.04	-.04***	.01
Cattle	.11***	.19*	.08***	.05
Mechanisation	-.11***	-.18	-.07**	-.09
Voter Turnout		-1.14***		.02
(Constant)	-.51***	-2.60***	-.41***	-2.04***
Estimator	GLS	GLS	GLS	GLS
Model	(2)	(2)	(2)	(2)
N	157	157	181	181

N.B.: The dependent variables are CHRPC22, CSPC22 AND TOUT22
The coefficients of Model (2) are both unstandardised b's and constant elasticities.

* indicates that t < 1.96
** indicates that 2.32 < t < 2.58
*** t < 2.58

(5) The relationship between the Turnout variable and Country Party support is weaker in states other than New South Wales than in New South Wales (-1.14 versus -2.07). This result reflects the generally weaker pattern of results observed in these states. Moreover, this negative relationship is replicated in only one other pair of coefficients: as in New South Wales, farm owners were less likely to cast ballots but were more likely to vote for the Country Party.

Three results emerge from an analysis of Tables 6-3, 6-4 and 6-5. First, the Farmer, Business, Cattle and Grain Acreage variables were, across Australia, the most important determinants of the Country Party's electoral support at this election. Moreover, these agricultural economic variables were stronger predictors of the Country Party vote than was occupational status as a farmer. This result, together with the finding that the party has no religious base, is consistent with the hypothesis that agricultural and pastoral economic stimuli are the most important catalysts of the agrarian party's electoral support.

Second, at this election the Country Party's electoral support in New South Wales and states other than New South Wales rested upon similar but unequally-firm foundations. In states other than New South Wales the Country Party lacked at least two of the pillars of support that it possessed in New South Wales. In particular, the coefficients of the Grain Acreage and Cattle variables are smaller (and their standard errors are larger) than their counterparts in New South Wales. This observation also applies to the coefficient of the Business variable. The Country Party's electoral support was thus more tenuous (and hence the party itself was weaker) in these states than in New South Wales.

Finally, at this election the parameters of the Country Party's electoral support closely resemble the parameters of its formation and dissolution (which were reported in Chapter 5). A comparison of Tables 6-3, 6-4, 6-5 and 5-2 reveals that the same variables -- Grain Acreage, Cattle, Business and Mechanisation -- are most closely associated with the Country Party's formation and electoral support. This result is consistent with the hypothesis that agrarian party candidates appear in the constituencies in which voter dissatisfaction with the major parties is greatest and that voters in these constituencies who are most dissatisfied with the major parties vote for an agrarian party candidate.

The parameters of the electoral support of the Australian Labor Party and the Nationalist Party differ significantly from the parameters of the Country Party's electoral support. Table 6-6 reports the parameters of the Australian Labor Party vote in electoral subdivisions contested by the Country Party and the Australian Labor Party.[45] Five sets of relationships distinguish the ALP's electoral support from the Country Party's electoral support. (1) In all states and in both House of Representatives and Senate elections, the ALP (unlike the Country Party) had a very strong religious base of support. (The coefficients of the Catholic variable are among the largest coefficients in the table). (2) Occupational status as a grazier in New South Wales was associated with electoral support for the Labor Party. in other words, engendered support for the ALP. The economic attributes of pastoral production, however, did not engender support for this party: the coefficient of the Cattle variable is consistently (and strongly) negative, the direction of the coefficients of the Sheep and Dairy variables is negative (and their standard error is generally large). Measures of pastoral economic production, in other words, were determinants of of the Country Party's -- not of the Labor Party's -- electoral support.

(3) At this election farm owners rejected the ALP. The negative relationship between the Farmer variable and the Labor Party vote is, almost without exception, the strongest and most efficient in each equation. Further, measures of agricultural economic production (Grain Acreage, Fruit Acreage and Mechanisation) yield much more modest (and, with the exception of Mechanisation, negative) relationships. Clearly, therefore, the ALP (unlike the Country Party) lacked an agricultural (or agricultural

Table 6-6: Australian Labor Party Electoral Support, All States, Commonwealth Election, 1922

	House of Representatives			Senate		
Variable	Aust	NSW	Other	Aust	NSW	Other
Religion						
Catholic	.47***	.69***	.35*	.56***	.56***	.66***
Occupation						
Farmer	-.91***	-1.47***	-.96***	-.77***	-1.73***	-.66***
Grazier	.32*	1.90**	.19	.31*	1.61***	.12
Labour	.54**	-.15	.69**	.72***	.41***	.54**
Business	-.33**	.47	-.31*	-.44***	-.56**	-.32**
Land Utilisation						
Grain	-.02***	-.01	-.02*	-.01**	-.01	-.01*
Fruit	-.02***	-.02	-.03**	-.02**	.02	-.03**
Sheep	.01	-.01	.01	.01**	-.01	-.00
Cattle	-.06***	-.05**	-.03**	-.05***	-.05***	-.01
Dairy		.01			-.04***	
Mech'is'n	.07***	.03	.05**	.05***	.09***	.02
Turnout	.12	.74***	.07	.01	.13	-.22**
State	-.05**			-.10***		
(Constant)	.32***	.14	.44***	.35***	.26***	.43***
Estimator	GLS	GLS	GLS	GLS	GLS	GLS
Model	(1)	(1)	(1)	(1)	(1)	(1)
N	255	125	130	435	254	181

N.B.: The dependent variables are ALPHRPC22 and ALPSPC22.
The coefficients of Model (1) are unstandardised b's.

* indicates that t < 1.96
** indicates that 2.32 < t < 2.58
*** indicates that t > 2.58

economic) economic base of support at this election. (4) The magnitude of the relationship between the Business measure and the ALP vote, with one exception (the House of Representatives election in New South Wales), is strongly negative. This result indicates that the Labor Party, unlike the Country Party, lacked support from rural business interests. (5) little or no relationship emerges between electoral participation and ALP electoral support. Moreover (contrary to the result observed in Tables 6-3, 6-4, and 6-5), in all but one instance the coefficient of Turnout is positive.

Table 6-7 reports parameters of the Nationalist Party's electoral support in electoral subdivisions contested by the Nationalist Party and the Country Party.[46] It indicates that at this election the Nationalist Party lacked a readily identifiable electoral base. Like the Country Party, the Nationalist Party had no religious base of support at this election. The coefficient of the Anglican variable is negative in New South Wales (House of Representatives), and its standard error is large in other states. At this election occupational status as a grazier was not associated with electoral support for the Nationalist Party. (The coefficient of the Grazier variable is generally negative -- in one instance significantly so). Nor, for the most part, were measures of pastoral economic production associated with the Nationalist Party's electoral support: the coefficient of the Cattle variable is negative (or its standard error is large), and the coefficient of the Sheep variable gives mixed results. Only the coefficient of the Dairy variable provides unambiguously positive results. Primary producers with larger dairy herds supported the Nationalist Party. In all other respects, the Nationalist Party lacked a pastoral base of support.

At this election occupational status as a farmer was strongly associated with Nationalist Party support. Indeed, the coefficient of the Farmer variable is, without exception, the strongest predictor of the Nationalist Party's electoral support at this election. Measures of agricultural economic production (with the exception of the Fruit Acreage variable), however, are poor (and negative) predictors of the party's support. Clearly, therefore, the Nationalist Party lacked an agricultural economic base of support at this election. The coefficient of the Business variable is negative and thereby indicates that at this election the Nationalist Party did not receive disproportionate support from rural businessmen. Finally, no consistent relationship emerges between electoral participation and Nationalist Party electoral support. The sign and efficiency of the coefficient of the Voter Turnout variable is inconsistent: it is positive in the House of Representatives (strongly so in New South Wales) but negative in the Senate (strongly so in states other than New South Wales).

Two conclusions emerge from an analysis of the major parties' electoral support at this election. First, generally speaking (and unlike the pattern of results observed for Country Party), occupational and religious variables are the strongest and most efficient predictors of the major party vote (Farmer for the Nationalists, Labour and Roman Catholic for the ALP). Second, major parties (in contrast to the Country Party) lacked agricultural and pastoral economic underpinnings. Whilst the Grain Acreage, Cattle and Mechanisation variables were major determinants of the Country Party's electoral support, the Fruit Acreage and Dairy variables were only minor elements of Nationalist support, and the Mechanisation variable was an even more peripheral element of the Australian Labor Party's electoral support. These results are consistent with the hypothesis that (given a decrease in the price of agricultural commodities below the average variable cost of commodity production) production of price- and income-inelastic commodities engenders dissatisfaction with the major parties and electoral support for the agrarian party.

Summary of Findings -- 1922

Two principal findings emerge from the analysis undertaken in this section. First, these results are consistent with the hypothesis that the combined impact of voter dissatisfaction with major parties and an

Table 6-7: Nationalist Party Electoral Support, Commonwealth Election, 1922

	House of Representatives			Senate		
	Aust	NSW	Other	Aust	NSW	Other
Variable						
Religion						
Anglican	-.27**	-.24*	.01	.10	.05	.07
Occupation						
Farmer	.41*	.98*	.05	.38**	1.12***	.18*
Grazier	-.33	-.65	-.66	-.07	.42	-.27*
Labour	.12	-.41	-.03	.03	-.07	.06
Business	.06	-.86*	.23	-.10	-.18	-.04
Land Utilisation						
Grain	-.02*	-.01	.01	-.01**	-.01**	-.01
Fruit	.02*	.03*	.01	.03***	.02*	.02**
Sheep	-.01*	.01*	-.01	-.01***	.01*	-.01*
Cattle	.01	-.03	.03	.01	-.06***	.01
Dairy		.09***			.08***	
Mech'is'n	-.04*	-.11***	-.05*	-.02*	-.06***	-.01
Turnout	.18*	.12	.22	-.04	-.03	-.14*
State	.06*			-.02		
(Constant)	.33***	.60***	.19	.36***	.45***	.42***
Estimator	GLS	GLS	GLS	GLS	GLS	GLS
Model	(1)	(1)	(1)	(1)	(1)	(1)
N	215	139	76	435	254	181

N.B.: The dependent variables are NHRPC22 and NSPC22.
The coefficients of Model (1) are unstandardised b's.

* indicates that t < 1.96
** indicates that 2.32 < t < 2.58
*** indicates that t > 2.58

economic issue whose salience attains crisis proportions underlies the agrarian party's electoral support. Diagnostic statistics indicate that a multiplicative and exponential model (which taps the presence of dissatisfaction with major parties) provides a more adequate representation of the Country Party's electoral support than an additive and linear model (which does not tap this voter dissatisfaction). Conversely, in electoral subdivisions contested by the Country Party an additive and linear model provides a better representation of the major party vote than a multiplicative and exponential model. Following Burnham and Sprague and Soares and Hamblin, at this election the Country Party received disproportionate support from voters that were dissatisfied with one or both of the major parties (Burnham and Sprague, 1970); (Soares and Hamblin, 1967).

The coefficient of the Voter Turnout variable is also consistent with this hypothesis. At this election, an increase in voter turnout is weakly associated with an increase in the major parties' electoral support. Conversely, a decrease in voter turnout is very strongly associated with an increase in the Country Party's electoral support. The Country Party vote, in short, is greatest in electoral subdivisions where abstention is most marked. The coefficients of economic variables, particularly in New South Wales, are also consistent with this hypothesis. More extensive production of price- and income-inelastic commodities (i.e., an increase in in the value of the Grain Acreage and Cattle variables), for example, decreases voter turnout and increases the Country Party's electoral support. Conversely, more extensive production of price- and income-elastic commodities (i.e., an increase in the value of the Sheep, Dairy and Fruit Acreage variables) increases voter turnout and decreases the Country Party's electoral support. This pattern of results is consistent with the hypothesis that the dissatisfaction which underlay the Country Party vote at this election was primarily economic in nature and that it was engendered by the production of price- and income inelastic commodities. Not subject to dissatisfaction with the major parties, supporters of the Nationalist Party and ALP voted less strictly along "agricultural economic" lines: occupational and religious variables were the strongest predictors of these parties' rural electoral support.

A second set of findings follows directly from the first. The direction and magnitude of the parameters of Country Party support conform far more closely to this study's empirical propositions than to the assertions advanced by Graham and Alexander (Graham, 1966); (Alexander, 1967). As expected (and in agreement with Graham), grain growers were bulwarks of Country Party support at this election. Also as expected (but contrary to Graham's and Alexander's assertions) graziers, dairy farmers and fruit farmers rejected the Country Party. Further, this study correctly hypothesises that more mechanised producers, a group overlooked by Graham, rejected the Country Party. In sum, this study finds that at the 1922 election the Country Party's electoral support was distinctive in substantive as well as in statistical terms.

6.2. The 1925 Commonwealth Election

Two changes in institutional arrangements distinguish the 1925 election from the 1922 election. First, the Commonwealth Electoral Act of 1924 introduced compulsory voting in Commonwealth elections (Australia, 1924pp.2179-2182). Given the initial conditions set out in Chapter 3, such a change in electoral law will influence the Country Party's electoral support: to the extent that rural non-voters compulsorily (in response to legal requirements) rather than voluntarily (in response to issue salience and dissatisfaction with the major parties) join the active electorate, they will cast ballots for a pre-existing party -- and will thereby reduce the electoral support, relative to other parties, of the Country Party. Second, between 1922 and 1925 the Country Party adopted an explicitly anti-Labor Party and pro-Nationalist Party policy. Before the 1925 election the Country Party abandoned its "support for concessions" tactics in favour of a formal parliamentary and electoral coalition with the Nationalist Party.

Given this study's initial conditions, this electoral alliance will also influence the Country Party's electoral support: to the extent that erstwhile Nationalist Party supporters in subdivisions contested by the Country Party (and, as a result of the parties' electoral alliance, not contested by the Nationalist Party) heeded Nationalist Party leaders' instruction to vote for the Country Party, the Country Party's electoral support would resemble the Nationalist Party's electoral support and would thereby become less distinctive.

More favourable economic conditions also distinguish this election from the preceding election. In particular, the price of primary commodities rose between 1922 and 1925. The deflated price of wheat, for example, increased 21.1 percent (from 2.848 to 3.448 shillings per bushel). The salience of commodity prices as a political issue thus declined between these two elections. The propositions set out in Chapter 3 indicate that if rural voter dissatisfaction with the major parties also receded at this election then the Country Party's electoral base should weaken. Indeed, Graham contends that the 1925 elections constituted a turning point in the Country Party's electoral fortunes: "towards the end of the 1920s the Country Party was beginning to decline. Although it managed to recover the lost support during the highly charged politics of the early thirties, the period from about 1925 to 1929 was one in which the strategy of joining coalitions and forming electoral alliances with the Nationalists was proving inadequate in the face of rural discontent" (Graham, 1966p.232 and 267).

Table 6-8: Electoral Support, Commonwealth Election, 1925*
(Summary Statistics)

	Mean Vote (Percent)					
	Country Party		Nationalist Party		Labor Party	
	(1925)	(1922)	(1925)	(1922)	(1925)	(1922)
House of Representatives						
New South Wales	44.9	38.6	13.3	21.6	39.7	28.7
Queensland	46.9	33.5	0.0	12.9	50.0	50.0
South Australia	0.0	0.0	0.0	0.0	0.0	0.0
Western Australia	60.1	72.1	0.0	13.1	36.9	30.4
Australia	45.2	39.3	10.4	19.0	41.8	31.2
Senate						
New South Wales	20.6	22.7	30.7	29.2	41.3	36.5
Queensland	0.0	13.4	0.0	31.0	0.0	41.6
South Australia	7.5	0.0	32.3	0.0	33.5	0.0
Western Australia	20.8	16.1	28.2	34.7	41.6	38.6
Tasmania	0.0	9.0	0.0	44.9	0.0	37.1
Australia	18.5	18.6	30.7	31.7	40.1	38.0

* Figures refer to the percentage of the total vote in subdivisions with a Country Party candidate.

Table 6-8 reports the parties' percentage share of the total vote in electoral subdivisions contested by Country Party candidates at both elections. Although it no longer presented candidates in Queensland and Tasmania, the Country Party's electoral strength in Senate elections remained almost unchanged at

this election (it decreased by by 0.13 percentage points across Australia and by 2.15 percentage points in New South Wales). At the same time, however, the Country Party seemed to derive less benefit than the Australian Labor Party from Nationalist Party candidates' departure from House of Representatives elections: across Australia, the increase in the Australian Labor Party's percentage share of the total vote between 1922 and 1925 is twice as great as the increase in the Country Party's percentage share of the total vote. Indeed, in South Australia, Western Australia and Tasmania, the Country Party's percentage share of the total vote decreased between these elections. Only in Queensland did it grow more rapidly than the Australian Labor Party's percentage share of the total vote. Even in this state, however, the Country Party's percentage share of the total vote was much lower than the Australian Labor Party's percentage share of the total vote. In House of Representatives elections, therefore, the Country Party's electoral support (in aggregate terms at least) decreased between 1922 and 1925. This result indicates that the Country Party was a weaker entity at this election than at the preceding election.

Table 6-9: Preferred Models of Electoral Support, Commonwealth Election, 1925

	House of Representatives		Senate	
	Turnout	Vote	Turnout	Vote
Country Party				
Australia (All States)	(1)	(1)	(1)	(2)
New South Wales	(1)	(1)	(1)	(2)
Other States	(1)	(1)	(1)	(2)
Australian Labor Party*				
Australia (All States)	(1)	(1)	(1)	(2)
New South Wales	(1)	(2)	(1)	(2)
Other States	(1)	(1)	(1)	(2)
Nationalist Party**				
Australia (All States)	***	***	(1)	(1)
New South Wales	***	***	(1)	(1)
Other States	***	***	(1)	(1)

* In subelectorates contested by the Country Party and the Australian Labor Party
** In subelectorates contested by the Country Party and the National Party
*** Indicates that there are too few observations for an analysis

Table 6-9 summarises the results of model specification tests. It indicates that the Country Party's electoral support in House of Representatives elections weakened between 1922 and 1925. Specifically, it indicates (contrary to the results observed in 1922) that Model (1) provides a better representation of Country Party's electoral support in House of Representatives elections than Model (2). The table also indicates that the Country Party's electoral support in Senate and House of Representatives elections differed: as in 1922, Model (2) provides a more adequate representation of the Country Party vote (Senate) than Model (1). A comparison of Tables 6-2 and 6-9 therefore indicates that the Country Party's electoral base weakened in House of Representatives elections and remained unchanged in Senate elections.

Table 6-10: Country Party Electoral Support, (House of Representatives), Commonwealth Elections, 1925

	Voter Turnout			Vote		
	Aust	NSW	Other	Aust	NSW	Other
Variable						
Religion						
Anglican	.09	.14*	.08	.34	.99**	-.17
Occupation						
Farmer	-.01	-.02	-.14	.96***	1.21*	1.20**
Grazier	-.27*	-.56	-.20	-.76	-1.05	-.78
Labour	.11	.19	.13	-.77	-1.55	-.15
Business	-.01	-.15	-.01	.16	-1.10	-.11
Land Utilisation						
Grain Ac	-.01*	-.01	-.01	.02*	.01	.02
Fruit	.01	.01	.01	.02	-.01	.10*
Sheep	-.01**	-.01	-.01*	-.01	-.02	.01
Cattle	-.01	.01	-.01	.01	-.02	-.01
Dairy		.01*			.02	
Mech'is'n	.01	-.01*	.01	.03	.10	.02
Turnout				.06	.16	-.11
State	-.01			.03		
(Constant)	.79***	.78***	.79***	.33	.19	.65***
Estimator	GLS	GLS	GLS	GLS	GLS	GLS
Model	(1)	(1)	(1)	(1)	(1)	(1)
N	168	103	65	168	103	65

N.B.: The dependent variables are CHRPC25 and TOUT25. The coefficients of Model (1) are unstandardised b's.

* indicates that t < 1.96
** indicates that 2.32 < t < 2.58
*** indicates that > 2.58

Table 6-10 sets out parameters of voter turnout and Country Party electoral support in House of Representatives elections.[47] It confirms that the Country Party's electoral base in House of Representatives elections eroded between 1922 and 1925. Few independent variables are strong predictors of rural voter turnout at this election. Nonetheless, two sets of relationships merit elaboration. First, the propensity of farmers and rural businessmen to vote at elections changed between 1922 and 1925. Occupational status as a farmer was no longer discouraged electoral competition and occupational status as a rural businessman no longer facilitated electoral participation. Second, voter turnout in New South Wales and states other than New South Wales no longer differed significantly.

Similarly, most independent variables fail to structure the Country Party's electoral support. Four relationships highlight the erosion in the party's electoral base. (1) Although the Farmer variable continues to be a strong predictor of the Country Party's electoral support (indeed, its coefficient is the largest in all three equations), the Grain Acreage, Mechanisation and Cattle variables fail to structure its vote. At the 1925 election, in other words, occupational status as a farm owner -- not, as in 1922, the economic attributes of agricultural production -- was the chief attribute of the Country Party's electoral support.

(2) Rural businessmen were not (unlike the 1922 election) a bulwark of Country Party support. (Nationwide and in states other than New South Wales, the coefficient of Business is strongly negative; in New South Wales, its coefficient is positive but its standard error is large). (3) The relationship between electoral participation and Country Party support disappeared at this election. In contrast to the result obtained in 1922, the coefficient of Voter Turnout is positive and its standard error is large. Similarly, the coefficients of the Farmer, Grain Acreage and Mechanisation variables no longer reflect this negative relationship. Clearly, therefore, at this election the Country Party did not draw disproportionate support in House of Representatives elections from districts with low levels of voter turnout.

(4) Finally (as in 1922) in states other than New South Wales the Country Party remained without a religious base of support. The coefficient of the Anglican variable (as well as alternate model specifications employing Methodist, Presbyterian and Roman Catholic variables) fails to structure the party's vote. In New South Wales, however, the party did possess a religious base of support. The coefficient of the Anglican variable in this state indicates that an increase of one percentage point in the proportion of Anglicans in an electoral subdivision is associated, on average, with an increase of .99 percentage points in the Country Party's share of the total vote.

A very different pattern of results appears in Senate elections. Table 6-11 reports estimates of the parameters of electoral participation and the Country Party's electoral support in subdivisions contested by the Country Party's candidates in Senate elections.[48] Its results portray a far less electorally-debilitated party. Indeed, they replicate the results obtained in 1922. Four relationships are particularly noteworthy. (1) In all states the Country Party remained without a religious base of support (in each equation, the standard error of the Anglican variable is large relative to the size of its coefficient). (2) In New South Wales, economic attributes of agricultural production remained the most powerful predictors of the Country Party's electoral support. In states other than New South Wales the Grain Acreage and Mechanisation variables yield smaller coefficients -- and hence uncover weaker relationships to the Country Party vote -- than does the Farmer variable. In these states, therefore, occupational status as a farmer remained a more powerful predictor of the Country Party vote at this election than the economic measures of agricultural production.

(3) In Senate elections (New South Wales), rural businessmen continued to support the Country Party.

Table 6-11: Country Party Electoral Support, Senate, Commonwealth Election, 1925

	Voter Turnout			Vote		
	Aust	NSW	Other	Aust	NSW	Other
Variable						
Religion						
Anglican	-.06*	.03	-.12**	.06	-.25	.40**
Occupation						
Farmer	.02	.23	-.04	.20***	.16**	.30***
Grazier	-.46***	-.95***	-.44***	-.03	-.11	.02
Labour	-.03	-.03	-.02	-.40***	-.20	-.42**
Business	.13**	-.05	.16*	.11	.63***	-.18
Land Utilisation						
Grain Ac	-.01***	-.01***	-.01*	.16***	.20***	.09**
Fruit	.01*	.01	.01	-.04	-.22**	-.02
Sheep	-.01***	-.01***	-.01	-.01	-.02	-.03
Cattle	-.01*	-.01*	-.01	.28***	.36***	.11*
Dairy		.01			-.04	
Mech'is'n	.02***	.01	.01*	-.25***	-.30***	-.17**
Turnout				-1.60**	-1.52**	-1.42
State	-.01			.03		
(Constant)	-.41***	.83***	.86***	-2.79***	-1.89**	-2.26***
Estimator	GLS	GLS	GLS	GLS	GLS	GLS
Model	(1)	(1)	(1)	(2)	(2)	(2)
N	348	254	94	348	254	94

N.B.: The dependent variables are CSPC25 and TOUT25. The coefficients of Model (1) are unstandardised b's. The coefficients of Model (2) are both constant elasticities and unstandardised b's.

* indicates that $t < 1.96$
** indicates that $2.32 < t < 2.58$
*** indicates that $t > 2.58$

(4) The negative relationship between electoral participation and Country Party support obtained in 1922 re-appears in 1925. The Country Party's Senate candidates, in other words, continued to draw disproportionate support from districts with low levels of voter turnout. The coefficient of the Turnout variable, for example, remained the largest in each equation. As well, this relationship continues to emerge in other coefficients. Farm mechanisation encouraged voter turnout and reduced Country Party support, whilst more extensive production of grain and beef cattle reduced voter turnout and encouraged Country Party support. The coefficients of the Farmer variable, however, do not reflect this relationship: farm owners, whilst supporting the agrarian party, no longer eschewed electoral participation.

The electoral support of the Nationalist Party and of the Australian Labor Party changed little between 1922 and 1925. Occupational and religious (not economic) variables continued to underlay these parties' electoral support. Table 6-12 reports estimates of the parameters of the Nationalist Party's electoral support at this election.[49] Four of the table's relationships are particularly noteworthy. (1) Compared to the Country Party, the Nationalist Party possesses a relatively strong religious base of support. Across Australia, the coefficient of Anglican increases from .10 (1922) to .17 (1925), and in New South Wales from .05 (1922) to .53 (1925). In each instance, the standard error of the coefficient decreases markedly. (2) At neither election does the Grazier variable predict Nationalist Party support. The Cattle and Sheep variables, however, structure the party's vote. (3) Occupational status as a farmer continued to be associated with electoral support for the Nationalist Party: the coefficient of the Farmer variable remains the largest and most efficient coefficient in each equation. Conversely, the party continued to possess little or no agricultural economic base of support. The coefficients of these variables (with the exception of Mechanisation) are negative, and their impact (relative to that exerted upon the Country Party vote) is small. A change in the value of these variables, in other words, had less impact on the Nationalist Party's electoral support than on the Country Party's electoral support. This result indicates that agricultural and pastoral economic variables remained less important determinants of the Nationalist Party's electoral support than of the Country Party's electoral support.

(4) The relationship between electoral participation and the Nationalist Party's electoral support is positive or non-existent (the coefficients of the Anglican variable are the sole exception). The coefficient of the Turnout variable, for example, gives inconclusive results. Graziers eschewed electoral participation but did not lend disproportionate support to the Nationalist Party. Farm mechanisation engendered both electoral participation and Nationalist Party support, and increases in the value of the Grain Acreage, Cattle and Sheep variables attenuated both voter turnout and Nationalist Party support.

Table 6-13 reports estimates of the parameters of the electoral support (in electoral subdivisions contested by the Country Party and the Australian Labor Party) of the Australian Labor Party's candidates in House of Representatives and Senate elections.[50] Again, four relationships are particularly noteworthy. (1) In all states and in both House of Representatives and Senate elections, the ALP continued to possess a very strong religious base of support. Together with the Labour variable, the Roman Catholic variable is the most powerful predictor of ALP support in these subdivisions. (2) Similarly, farm owners continued to reject the ALP. As in 1922, the coefficient of the Farmer variable is the largest in each equation. In states other than New South Wales, this coefficient increases in strength at this election. In New South Wales, however, it decreases in magnitude (from -1.73 to -.42), and its standard error grows markedly. Within New South Wales, in other words, farm owners no longer shunned the ALP in House of Representatives elections. (3) The coefficient of the Business variable (House of Representatives) decreases markedly in size. (4) In both House of Representatives and Senate elections the coefficients of the Grain Acreage and Cattle variables decrease in size and efficiency (relative to 1922).

Table 6-12: Nationalist Party Electoral Support, Senate, Commonwealth Election, 1925

	Voter Turnout			Vote		
Variable	Aust	NSW	Other	Aust	NSW	Other
Religion						
Anglican	-.06*	.03	-.12**	.17*	.53***	-.11
Occupation						
Farmer	.02	.23	-.04	.55***	.95**	.54***
Grazier	-.46***	-.95***	-.44***	.36	-.20	.30
Labour	-.03	-.03	-.02	-.39*	-.19	-.89**
Business	.13**	-.05	.16*	-.11	-.11	.23
Land Utilisation						
Grain Ac	-.01***	-.01***	-.01*	-.02**	-.03***	-.01**
Fruit	.01*	.01	.01	-.00	-.00	-.01**
Sheep	-.01***	-.01***	-.01	-.01*	-.01	-.01*
Cattle	-.01*	-.01*	-.01	-.04***	-.08***	-.01
Dairy		.01			.07***	
Mech'is'n	.02***	.01	.01*	.03**	-.02	.04**
Turnout				.01	-.41*	.16
State	-.01			.10**		
(Constant)	-.41***	.83***	.86***	.26	.56**	.16
Estimator	GLS	GLS	GLS	GLS	GLS	GLS
Model	(1)	(1)	(1)	(1)	(1)	(1)
N	348	254	94	348	254	94

N.B.: The dependent variables are NSPC25 and TOUT25. The coefficients of Model (1) are unstandardised b's.

* indicates that t < 1.96
** indicates that 2.32 < t < 2.58
*** indicates that t > 2.58

Table 6-13: Australian Labor Party Electoral Support, House of Representatives and Senate, All States, Commonwealth Election, 1925

	House of Representatives			Senate		
Variable	Aust	NSW	Other	Aust	NSW	Other
Religion						
Catholic	.36**	.42***	.06	.34***	.47***	.22***
Occupation						
Farmer	-1.25***	-.42	-1.10***	-.13***	-.11***	-.15***
Grazier	.43*	.26	.46	-.01	-.01	-.01
Labour	.27	.54	.12	.22***	.06	.35***
Business	-.01	-.03	.30	-.17***	-.20**	-.17*
Land Utilisation						
Grain Ac	-.01	-.01	-.02*	-.02	-.01	.00
Fruit	-.01	.01	-.05*	.03	.05*	.03*
Sheep	.01*	.01	.01	.01	-.01	.01
Cattle	-.02*	-.01	.01	-.01	-.02	.03
Dairy		-.03*			-.11***	
Mech'is'n	-.01	-.02	.03	.01	.17***	-.03
Turnout	.05	.19	-.07	.38	.87***	.76
State	-.14***			-.06		
(Constant)	.40**	.16	.59	-.82***	-.95***	-.52***
Estimator	GLS	GLS	GLS	GLS	GLS	GLS
Model	(1)	(1)	(1)	(2)	(2)	(2)
N	168	103	65	348	254	94

N.B.: The dependent variables are ALPHRPC25 and ALPSPC25.
The coefficients of Model (1) are unstandardised b's.
The coefficients of Model (2) are unstandardised b's and constant elasticities.

* indicates that $t < 1.96$
** indicates that $2.32 < t < 2.58$
*** indicates that $t < 2.58$

Summary of Findings -- 1925

An important conclusion emerges from the analysis undertaken in this section. Results are consistent with the hypothesis that an abatement in both voter dissatisfaction with the major parties and the salience of commodity price as a political issue weakens the agrarian party's base of electoral support (see Figure 3-3). This result was most apparent in House of Representatives elections. At this election, few Nationalist Party candidates stood in constituencies that were contested by the Country Party's House of Representatives candidates. The Country Party was thus the only alternative (apart from the occasional independent candidate) to the Australian Labor Party in these constituencies. Supporters of one of the non-Labor parties in these constituencies thus had no choice other than to vote for the Country Party (since, under the Commonwealth Electoral Act of 1924, they could not abstain from voting). Because the electoral influence of voters who would have (given the presence of a Nationalist Party candidate) supported the Nationalist Party was therefore appreciable in these constituencies, the Country Party received the support of many voters who were not dissatisfied with the Nationalist Party. Accordingly, at this election the Country Party's pastoral and agricultural base weakened and it acquired attributes characteristic of a "major" conservative party in rural districts: its base of support was occupational (Farmer) and, in New South Wales religious (Anglican).

Results are also consistent with the hypothesis that an abatement in the salience of commodity price as a political issue -- but not in voter dissatisfaction with the major parties -- does not reduce the agrarian party's electoral support (see Figure 3-2). This result was most apparent in Senate elections. In these elections all three parties competed for votes. Because Nationalist Party candidates were present in all upper house subdivisions contested by the Country Party, voters were able to choose between the non-Labor parties. For this reason the Country Party did not receive electoral support from voters who remained satisfied with the Nationalist Party. This is reflected in the parameters of the Country Party's upper house vote. Diagnostic statistics, as well as the coefficients of the Grain Acreage, Cattle, Business and Voter Turnout variables, indicate that voters dissatisfied with the major parties continued to underlie Country Party support at this election. Voters who were dissatisfied with the Nationalist Party voted for the Country Party; voters who remained satisfied with the Nationalist Party continued to support the Nationalist Party.

6.3. The 1928 Commonwealth Election

Graham contends that, in Parliament and at elections, the years 1925-1928 were difficult years for the Country Party. It share of cabinet posts, for example, fell from five out of twelve to four out of twelve in 1926 and to four out of thirteen in 1928 (Graham, 1966p.287). At elections, "much of the movement's early vitality had by this time drained away, and had the party dared to wage an independent campaign it would probably have lost about five seats. The electoral pact undoubtedly assisted it in maintaining its previous strength" (Graham, 1966p.288).

Table 6-14 sets out summary measures of party support at the 1928 election. It indicates that in House of Representatives elections the Country Party's percentage share of the vote decreased in New South Wales and increased in states other than New South Wales (except Western Australia). Table 5-7 indicated that the number of electoral subdivisions in which the party's House of Representatives candidates were present at this election decreased by 21.1 percent in New South Wales and increased by 17.1 percent in states other than New South Wales. For these reasons, parameters of the Country Party's electoral support should indicate, relative to 1925, that the party's electoral base weakened in New South

Table 6-14: Electoral Support, Commonwealth Election, 1928* (Summary Statistics)

Mean Vote (Percent)

	Country Party		Nationalist Party		Labor Party	
	(1928)	(1925)	(1928)	(1925)	(1928)	(1925)
House of Representatives						
New South Wales	40.7	44.9	3.6	13.3	27.3	39.7
Queensland	50.2	47.5	0.0	0.0	36.8	49.4
South Australia	46.3	0.0	44.3	0.0	0.0	0.0
Western Australia	55.2	60.1	0.0	0.0	26.6	36.9
Australia	44.8	46.9	8.9	8.9	25.3	41.8
Senate						
New South Wales	27.4	20.6	20.2	30.7	43.8	41.3
South Australia	27.4	7.5	39.1	32.3	34.8	33.5
Western Australia	11.5	20.8	31.5	28.2	47.2	41.6
Australia	23.1	18.5	24.6	30.7	42.7	40.1

* Figure refer to the percentage of the total vote in subdivisions with a Country Party candidate.

Wales and strengthened in states other than New South Wales. Table 6-14 also indicates that in Senate elections the Country Party's percentage share of the vote increased substantially in all states. Similarly, Table 5-7 indicated that the number of electoral subdivisions in which the party's Senate candidates were present remained unchanged at this election. For this reason, parameters of the Country Party's electoral support in Senate elections should indicate that the party's electoral base remained unchanged or strengthened between 1925 and 1928.

Table 6-15 summarises the results of model specification tests. It indicates that the Country Party's electoral base in House of Representatives elections remained unchanged between 1925 and 1928 (i.e., that Model (1) continued to provide a better representation than Model (2) of the Country Party's electoral base in House of Representatives elections). Table 6-15 also indicates that the Country Party's electoral base in Senate and House of Representatives elections continued to differ: as in 1922 and 1925, Model (2) provided a more adequate representation than Model (1) of the Country Party's electoral base in Senate elections. A comparison of Tables 6-9 and 6-15 thus indicates that the Country Party's base of support remained unchanged between 1925 and 1928.

Table 6-16 reports estimates of the parameters of voter turnout and Country Party electoral support in subdivisions contested by the Country Party's candidates in House of Representatives elections.[51] As in 1925, many variables fail to structure the party's electoral support. At the same time, however, a significant (New South Wales versus non-New South Wales) pattern of results emerges. Four sets of relationships illustrate this divergence. (1) As in 1925, the Country Party in New South Wales has a very strong religious base of support. Conversely, in states other than New South Wales, the Anglican variable has no significant effect on the Country Party vote. (2) Only in New South Wales is the coefficient of the

Table 6-15: Preferred Models of Electoral Support, Commonwealth Election, 1928

	House of Representatives		Senate	
	Turnout	Vote	Turnout	Vote
Country Party				
Australia (All States)	(1)	(1)	(1)	(2)
New South Wales	(1)	(1)	(1)	(2)
Other States	(1)	(1)	(1)	(2)
Australian Labor Party*				
Australia (All States)	(1)	(1)	(1)	(1)
New South Wales	(1)	(1)	(1)	(1)
Other States	(1)	(1)	(1)	(1)
Nationalist Party**				
Australia (All States)	***	***	(1)	(1)
New South Wales	***	***	(1)	(1)
Other States	***	***	(1)	(1)

* In subelectorates contested by the Country Party and the Australian Labor Party
** In subelectorates contested by the Country Party and the National Party
*** Indicates that there too few observations for an analysis

Labour variable very strongly negative. In the other states, workers in secondary industry did not shun the Country Party. (3) The previously-observed (negative) relationship between electoral participation and the Country Party vote disappeared at this election. Indeed, in New South Wales the Country Party drew disproportionate support from districts with high levels of voter turnout. By contrast, its effect is insignificant in other states.

(4) Occupational status as a farmer in New South Wales was not, for the first time, associated with electoral support for the Country Party. Nor did the Grain Acreage and Cattle variables structure the party's vote. In other states, however, the Farmer variable -- whose coefficient increases in magnitude between 1925 and 1928 -- is the strongest predictor of the party's vote. Moreover, in these states the Grain Acreage and Cattle variables re-emerge as significant bases of Country Party support (although their magnitude is small in relation to the Farmer variable). In House of Representatives elections in New South Wales, therefore, the Country Party had no agricultural base of support (occupational or economic). In states other than New South Wales, however, both occupational status as a farmer and the economic attributes of commodity production engendered Country Party support. The 1928 election therefore confirmed the Country Party's transformation into a surrogate for the Nationalist Party in House of Representatives elections in New South Wales. In the other states, the party retained the agricultural economic attributes of electoral support which were observed at earlier elections.

As in 1925, a different pattern of results appears in the Senate. Table 6-17 sets out parameters of the Country Party's electoral support in subdivisions contested by Country Party candidates in Senate elections.[52] Four results are particularly noteworthy. (1) In all states the Country Party remained without

Table 6-16: Country Party Electoral Support (House of Representatives), Commonwealth Election, 1928

	Voter Turnout			Vote		
	Aust	NSW	Other	Aust	NSW	Other
Variable						
Religion						
Anglican	-.10	.10	-.11**	.97***	1.64***	.18
Occupation						
Farmer	-.01	.01	-.01	.17	-.60	.65***
Grazier	-.18*	-.39	-.10	-.10	4.11	-.31
Labour	.24*	-.01	.51***	-1.61***	-3.81***	-.54
Business	-.02	.03	-.17*	.38	.36	.11
Land Utilisation						
Grain Ac	-.01	.01	-.01	.05***	.04	.04***
Fruit	.01	.01	.10*	-.02	-.04	.10
Sheep	-.01***	-.01	-.01	-.01	-.07**	.01
Cattle	-.01*	.01	-.01*	.01	.03	.05***
Dairy		.01			-.15**	
Mech'is'n	.01	-.04**	.01	.01	.16	-.07**
Turnout				1.50***	2.48**	.32
State	-.01*			-.14***		
(Constant)	.90***	.81***	.87***	-1.08**	-1.88**	.06
Estimator	GLS	GLS	GLS	GLS	GLS	GLS
Model	(1)	(1)	(1)	(1)	(1)	(1)
N	161	85	76	161	85	76

N.B.: The dependent variables are CHRPC28 and TOUT28. The coefficients of Model (1) are unstandardised b's.

* indicates that t < 1.96
** indicates that 2.32 < 2.58
*** indicates that t > 2.58

Table 6-17: Country Party Electoral Support, Senate, Commonwealth Election, 1928

	Voter Turnout			Vote		
	Aust	NSW	Other	Aust	NSW	Other
Variable						
Religion						
Anglican	-.14***	.04	-.18***	-.23	-.60*	.16
Occupation						
Farmer	-.01	.15	.01	.17***	-.01	.38***
Grazier	-.56***	-.68***	-.57***	-.01	-.01	.05
Labour	.08	-.05	.39**	-.45***	-.25	-.64**
Business	.14***	.03	.02	.11	.64***	-.02
Land Utilisation						
Grain Ac	-.01*	-.01	-.01**	.20***	.20***	.25***
Fruit	.01	.01	-.01	-.06	-.14**	.12
Sheep	-.01***	-.01**	-.01**	-.02	-.07**	.06
Cattle	-.01	-.01	-.01*	.26***	.48***	.20*
Dairy		.01**			-.19**	
Mech'is'n	-.01	.01	.02	-.31***	-.25***	-.43*
Turnout				-.91	-.96	.42
State	-.01			1.05***		
(Constant)	.92***	.84***	.93***	-3.32***	-1.95**	-2.99***
Estimator	GLS	GLS	GLS	GLS	GLS	GLS
Model	(1)	(1)	(1)	(2)	(2)	(2)
N	348	254	94	348	254	94

N.B.: The dependent variables are CSPC28 and TOUT28. The coefficients of Model (1) are unstandardised b's. The coefficients of Model (2) are unstandardised b's and constant elasticities.

* indicates that t < 1.96
** indicates that 2.32 < t < 2.58
*** indicates that t > 2.58

a religious base of support. (2) The coefficients of the Farmer, Grain Acreage and Cattle variables changed significantly between 1925 and 1928. In New South Wales, occupational status as a farmer ceased to be associated with electoral support for the Country Party. In states other than New South Wales, however, the Farmer variable remains an important (indeed, the most important) base of the party's support. (3) In all states, economic measures of agricultural and pastoral production became, relative to 1925, more powerful predictors of the Country Party's electoral support: in particular the magnitude of the Grain Acreage and Cattle variables increased markedly between 1925 and 1928 (the coefficient of the Grain Acreage variable, for example, increased from .09 to .25; the coefficient of the Cattle variable increases from .11 to .20).

(4) The negative relationship between electoral participation and Country Party support that was observed at the 1922 and 1925 elections disappears in 1928. The standard error of Voter Turnout is large; farmers (except in New South Wales) vote disproportionately for the Country Party but do not eschew electoral participation, whilst graziers show the opposite tendency. Only the Grain Acreage and Cattle variables continue to show (weak) evidence of this relationship.

Table 6-18 reports estimates of the parameters of electoral support for Nationalist Party and Australian Labor Party Senate candidates.[53] Its figures indicate that these parties' electoral base changed little between 1925 and 1928. Compared to the Country Party, the Nationalist Party and Australian Labor Party possessed a strong religious base of support. In New South Wales, the Nationalist Party drew disproportionate support from Anglicans. In all states, the ALP received very strong support from Roman Catholics. In each case, these religious variables are among the most important predictors of the party vote.

As in 1922 and 1925, graziers did not lend disproportionate support to either party, farm owners continued to support the Nationalist Party and to reject the ALP, the Cattle and Sheep variables continued to relate to the vote of both parties, the coefficient of the Farmer variable remained the largest in all six equations and these parties continued to possess little or no agricultural economic base of support. The coefficients of these variables (with the exception of Dairy for the Nationalists and Mechanisation and Fruit for the ALP) are uniformly negative. Moreover, their impact (relative to that on the Country Party vote) is modest. Agricultural and pastoral economic variables, in other words, remained more important determinants of the Country Party's electoral support (Senate) than of the major parties' electoral support.

Summary of Findings -- 1928

Tables 6-16, 6-17 and 6-18 corroborate the results observed at the 1922 and the 1925 election. Voters who were dissatisfied with the major parties continued to comprise a greater proportion of Country Party supporters in Senate elections than in House of Representatives elections. The coefficients of the Grain Acreage and Cattle variables, together with the results of model specification tests, indicate that at this election economic dissatisfaction continued to be the most important determinant of the Country Party's electoral support. As in 1925, because Nationalist Party candidates are present in all subdivisions contested by Country Party (Senate) candidates, voters had a choice between non-Labor parties. Voters who were dissatisfied with the Nationalist Party supported the Country Party alternative, and voters who were satisfied with the Nationalist Party remained loyal to the Nationalist Party. Even in Senate elections, however, voter dissatisfaction was less prevalent in 1928 election than in 1925. The large standard error of Voter Turnout indicates that dissatisfaction was no longer a general phenomenon, and the direction and standard error of the Farmer variable (Turnout equation) indicates that it no longer extended to all farmers.

Table 6-18: Australian Labor Party and Nationalist Party Electoral Support, Senate, Commonwealth Election, 1925

	Nationalist Party			Labor Party		
	Aust	NSW	Other	Aust	NSW	Other
Variable						
Religion						
Catholic				.78***	.75***	.51***
Anglican	.13	.66***	-.12			
Occupation						
Farmer	.46**	1.18***	.47***	-.93***	-1.54***	-.95***
Grazier	.32	-.74	.23	.32	.78	-.39
Labour	-.02	-.15	-.04	-.03	-.42	.98***
Business	-.24*	-.23	-.14	-.17	-.17	-.34*
Land Utilisation						
Grain Ac	-.02***	-.01***	-.03***	-.03***	-.03***	.01
Fruit	.01	-.01	.02	.02*	.03*	.03
Sheep	-.01*	-.01**	-.01	.01*	.01	.01
Cattle	-.03***	-.07***	-.05***	-.06***	-.06***	.01
Dairy		.09***			-.02	
Mech'is'n	-.02	-.05***	.09***	.09***	.11***	-.02
Turnout	-.11	-.60**	-.33	.29*	.56**	.15
State	-.06*			-.04		
(Constant)	.44**	.56**	.51**	.09	-.09	.39*
Estimator	GLS	GLS	GLS	GLS	GLS	GLS
Model	(1)	(1)	(1)	(1)	(1)	(1)
N	348	254	94	348	254	94

N.B.: The dependent variables are NSPC28 and ALPSPC28. The coefficients of Model (1) are unstandardised b's.

* indicates that $t < 1.96$
** indicates that $2.32 < t < 2.58$
*** $t > 2.58$

6.4. Summary and Conclusion

No study can provide a theoretically "complete" account of a problem for political science research: limitations of data, theory and research technique preclude such an ambitious endeavour, and the "pre-paradigmatic" status of political science (Ostrom, 1982pp.11-29); (Nicholson, 1983) ensures that shortcomings of some sort will accompany all analyses. For this reason, theories of political phenomena necessarily provide partial and incomplete explanations; the findings reported in this chapter should be assessed with this caveat in mind.

This caveat notwithstanding, it is not sufficient that formal theories of political phenomena be internally consistent and elegant, or that, *a priori*, their propositions be interesting and insightful: above all else, their propositions must be empirically valid (Friedman, 1953). The results reported in this and the preceding chapter indicate that this study's theoretical propositions are, on the whole, empirically valid. One basic conclusion underlies these findings: empirical propositions premised upon the notion that rural voters and parties are rational actors provide a plausible resolution for the problem for research set out in Chapter 1. The formation, electoral support and (partial) dissolution of the Australian Country Party, in other words, can be subsumed under a "covering law" of voter and party rationality. Recourse to class, ideological and institutional interpretations of agrarian parties (which, as Chapter 2 demonstrated, suffer from a variety of conceptual, logical and empirical shortcomings) is un-necessary.

In particular, the results reported in this and the preceding chapter are consistent with the contention that agrarian party formation and dissolution is a function of rural voter dissatisfaction with major parties and an economic issue whose salience in rural areas attains crisis proportions. These two stimuli precipitate agrarian party formation and augment agrarian party electoral support (as was the case at the 1922 election). A decrease in their combined impact weakens agrarian party support and promotes agrarian party dissolution (as was the case at the 1925 House of Representatives election).

Initially, voter disaffection produces voter abstention. Given an abrupt and calamitous decline in commodity prices (such as the price collapse of 1921-1922) passive disaffection is transformed into active electoral protest. Accordingly, not only did the Australian Country Party draw general support from districts with low levels of voter turnout; it drew its most consistent electoral support from the segments of the rural electorate least likely to cast ballots.

The greater the extent to which a primary producer's total revenue falls in response to a decline in commodity price (i.e., the greater the production of price- and income-inelastic commodities), the greater the producer's economic dissatisfaction. Given parties' inability to alter the parameters of demand for agricultural commodities, primary producer's economic dissatisfaction engenders rural voter dissatisfaction with the major parties. This study's results are consistent with the hypothesis that this dissatisfaction underlays agrarian party formation and electoral support. Conversely, the revenue of producers of price- and income-elastic commodities (most notably fruit and vegetable growers and dairy farmers) increases in response to a decrease in commodity price; for this reason, these strata of the rural electorate do not become dissatisfied with their most-favoured pre-existing party -- and hence eschew the agrarian party.

Part III

Part I identified the formation, electoral support and dissolution, in the years immediately following the First World War, of agrarian parties in Australia, Canada and New Zealand as a relevant and unresolved problem for political science research. It also argued that an econometric analysis might resolve this problem Part II undertook such an analysis (with particular reference to the Australian Country Party at the Commonwealth elections of 1922, 1925 and 1928). The results of that analysis are consistent with theoretical expectations.

Part III assesses these results in light of current knowledge of major and non-major parties, party systems and voter alignments and the relationship between economic conditions and electoral behaviour. It concludes that extant interpretations of agrarian party formation, electoral support and dissolution in these countries (as well as the role of the Country Party in the Australian party system) requires revision.

Chapter 7
Discussion

7.1. Agrarian Party Formation, Electoral Support and Dissolution

This study hypothesises that non-major party formation, electoral support and dissolution is a consequence of voter dissatisfaction with the two major parties and an economic issue whose salience to voters attains crisis proportions: the presence of these conditions causes agrarian party formation and agrarian party electoral support; the disappearance of these conditions decreases agrarian party electoral support and causes agrarian party dissolution (see, however, Appendix C).

This hypothesis closely resembles other hypotheses of non-major party formation, electoral support and dissolution. Mazmanian, for example, argues that non-major party formation and electoral support "occurs in a normally two-party system during a period of national political crisis, that is, when a few issues become highly controversial; when one or more of the issues engenders an intense minority, when the major parties ignore or attack -- in either case alienate -- the minority; and when an individual or group of political entrepreneurs then mobilises the minority behind a [new] party" (Mazmanian, 1974p.26); see also (Hauss and Rayside, 1978); (Rosenstone, Behr and Lazarus, 1984pp.132-133); (Pinard, 1975); (Studlar and McAllister, 1987).

In important respects, however, this study's hypothesis differs from these other hypotheses. (1) It is derived from a formal theory of non-major party formation, electoral support and dissolution. This theory specifies the causes of rural voter dissatisfaction with the major parties (and hence the determinants of agrarian party formation, electoral support and dissolution) in greater detail than do previous works. It assesses the relative impact of economic and non-economic (e.g., occupational and religious) influences upon rural voter and party behaviour more explicitly than previous works, and it confronts its empirical propositions with quantitative data in a more rigorous manner than do these works. As a result, this study places non-major party party formation, electoral support and dissolution on a firmer theoretical basis than do previous studies.

(2) This study operationalises rural voter dissatisfaction with major parties and the economic issue whose salience among rural voters attains crisis proportions in a novel manner. Psephologists have long recognised that a relationship exists between rural voter behaviour and different forms of land tenure, different sizes of holdings and the production of different agricultural and pastoral commodities (see in particular Siegfried, 1913:34-35, 277-79). They have not, however, analysed this relationship in detail. Nor have they explained why such a relationship should exist (Campbell et al, 1960:434).

This study remedies this omission. It hypothesis that a decrease in primary producers' total revenue which results from a decline in the price of agricultural commodities engenders rural voter dissatisfaction with the major parties. The price of agricultural commodities attains crisis proportions as a political issue

when it declines below the average variable cost of commodity production. This study therefore hypothesises that the formation and electoral support, in the years immediately following the First World War, of agrarian parties in Australia, Canada and New Zealand was a consequence of (1) maladjustments in primary producers' output of agricultural and pastoral commodities and (2) the world-wide collapse, between 1921 and 1922, in the prices of agricultural and pastoral commodities below the average variable cost of production. It hypothesises that these factors' combined impact divided the rural electorate into a relatively advantaged or unaffected group (composed of the producers of price- and income-elastic commodities and mechanised producers) whose income remained unchanged or increased as a result of this decline in commodity price, and a disadvantaged group (composed of the producers of price- and income-inelastic commodities and less mechanised producers) whose income decreased as a result of this decline in commodity price. It also hypothesises that agrarian parties responded to the dissatisfaction of the latter (and not the former) group, and that they received electoral support from the latter (and not the former) group of voters. Finally, it hypothesises that the recovery of commodity prices after 1922, together with producers' adjustment of the average variable cost of production (through an adjustment of inputs, the process of production and the composition of output) reduced the combined impact of these two variables, decreased the agrarian party's electoral support and thereby engendered agrarian party dissolution.

The results reported in Chapter 5 are consistent with these hypotheses. The economic attributes of agricultural and pastoral production, together with the number of businessmen and professionals in an electoral subdivision, were the most important determinants of Country Party formation and dissolution (i.e., of the presence or absence of a Country Party candidate in an electoral subdivision) at the 1922, 1925 and 1928 Australian (Commonwealth) elections. Moreover, the production of price- and income-inelastic commodities (particularly grain and beef cattle) was the most important determinant of Country Party formation and the production of price- and income-elastic commodities (such as fruits and vegetables, sheep and dairy products), together with farm mechanisation, was the most important determinant of Country Party dissolution. Occupational and religious variables were only weakly (and inconsistently) related to Country Party formation and dissolution.

Conversely, at these elections the production of price- and income-inelastic commodities was associated with (but was not the most important determinant of) Nationalist Party dissolution, and the production of price- and income-elastic commodities was associated with (but was not the most important determinant of) Nationalist Party formation. These results are consistent with the hypothesis that agrarian party formation (and major party dissolution) is a consequence of voter dissatisfaction with one or both of the major parties, and that agrarian party dissolution is a consequence of increased voter satisfaction with one or both of the major parties.

Finally, the results reported in Chapter 5 indicate that the greater the extent to which agrarian party formation responds to rural voter dissatisfaction with the major parties the more long-lived is the agrarian party. It is at least in part for this reason that the Country Party proved to be a relatively durable entity in New South Wales (and, by implication, in Victoria) and a relatively ephemeral entity in Tasmania (and, in Senate elections, in Queensland and South Australia).

The results reported in Chapter 6 are also consistent with these hypotheses. Particularly in New South Wales, where the Country Party proved most durable, and in Senate elections, where a clear choice existed between Country Party, Nationalist Party and Australian Labor Party candidates, a multiplicative-exponential model provides a better representation of Country Party support than an additive-linear

specification. Conversely, an additive-linear model represents the major parties' support better than a multiplicative-exponential model. This result closely resembles the pattern of results observed by Burnham and Sprague at the American Presidential election of 1968 (at which a non-major party candidate received thirteen per cent of the votes cast) (Burnham and Sprague, 1970). Given that a multiplicative-exponential function captures the general form of the relationship between voter dissatisfaction and voter behaviour (Soares and Hamblin, 1967), these results corroborate the hypothesis that non-major parties (including agrarian parties) form in response to voters' "aggressive hostility towards the leaders, parties and policies of the existing political order" (Burnham and Sprague, 1970p.1050).

The results set out in Chapter 6 also indicate that at these elections the economic attributes of agricultural and pastoral production -- not occupational status or religious denomination -- were the most important determinants of the Country Party's electoral support. Moreover, producers of price- and income-inelastic commodities were the most important bulwarks of the Country Party's electoral base and producers of price- and income-elastic commodities, together with mechanised producers, eschewed the Country Party. Conversely, at these elections occupational and religious variables were the most important determinants of the electoral support of the Nationalist Party and the Australian Labor Party. These results are also consistent with the hypothesis that agricultural and pastoral economic stimuli underlie voter dissatisfaction with major parties, and that this dissatisfaction engenders agrarian party formation and electoral support.

The results reported in Chapters 5 and 6 corroborate the results of many previous studies. Economic conditions have long been identified as catalysts of non-major party formation, electoral support and dissolution. In the United States, for example, the American Liberty Party grew dramatically in response to the depression of 1837 and receded in the wake of economic recovery after 1844 (Hesseltine, 1962p.13); electoral support for the American Communist Party grew markedly during the depression of the early 1920s (Greer, 1949p.187) and the prosperity which prevailed in 1948 dimmed the electoral fortunes of Henry Wallace's Dixiecrat Movement (Schmidt, 1960p.242). In the United Kingdom, the Liberal Party (and to some extent Plaid Cymru) was composed of "a constantly shifting group of individuals who were temporarily disaffected with their former party" (Studlar and McAllister, 1987p.43); see also (Crewe, Sarlvik and Alt, 1977); (Lemieux, 1977). Similarly, "distrust towards established political parties and towards the political system itself", which was engendered by "the repeated failure of governments of both colours to do anything about the economic situation," underlay the electoral support of the Scottish National Party (Brand, 1978p.22); (Miller, 1981pp.153-174). The major parties' "failure to halt economic decline", together with the salience of particular economic issues (inflation, unemployment) precipitated the formation of the Social Democratic Party (Bradley, 1981pp.28-33). In Canada, "the postwar depression precipitated the tremendous sweep of the Progressive Party in 1921" (Lipset, 1950p.84); the Great Depression prompted the formation and the electoral support of the Co-operative Commonwealth Federation and Social Credit movement (Lipset, 1950pp.204-205) and the recession of the early 1960s prompted the formation and the electoral support for the *Ralliement des Creditistes* (Pinard, 1975).

In Germany, several studies cite agricultural depression as one cause of the rapid increase in the electoral support of a new party, the Nazi Party, in the early 1930s [see in particular (Heberle, 1970)]. Indeed, "the manner in which the Nazis swept the farmer-peasant organisations of pre-Hitler Germany into the Nazi movement has parallels in the Greenback, Farmer's Alliance, Populist and similar movements [of nineteenth century America]" (Loomis and Beegle, 1946p.734).[54]

This study's results are thus consistent with the argument that "economic conditions are a paramount factor in determining [non-major] party success. In periods of expanding economic activity, parties may, without immediate economic penalty, ignore pressing problems. But when the economic tempo declines, these social problems are magnified. Hence, [non-major] parties of significant dimensions have developed during periods when economic tensions and frustrations have been unusually high (Fisher, 1974p.27); see also (Mazmanian, 1974pp.143-144); Rosenstone84 "pp.134-138"); (Bone, 1965p.142); (Downs, 1957p.130f); (Chambers, 1967p.32).

This study's results are also consistent with the results of several other analyses of agrarian parties. Economic historians have suggested that economic [price] instability in American agriculture was a primary cause of agrarian discontent during the late nineteenth century (Higgs, 1971pp.102-103); (North, 1974pp.134-136); (Parker, 1972p.407). Empirical analyses find that late nineteenth century agrarian unrest within a particular state was directly related to the degree of economic instability within that state (McGuire, 1981p.835); see also (Dahl, 1966p.52); (Lewis, 1982pp.688-699); (Mazmanian, 1974p.53 and 137).

Finally, this study anticipates the results of analyses of more recent agrarian political behaviour. Generally speaking, "contemporary farmers no longer fit the characterisation provided by *The American Voter*" (Lewis-Beck, 1977p.545). In the absence of an economic issue whose salience attains crisis proportions, "few economic variables were related to agrarian political behaviour after 1960" (Knoke and Long, 1975p.7); (Sigelman, 1983). This is in part because government programmes (such as price supports and subsidies, crop insurance and marketing boards) established at the behest of primary producers have attenuated violent fluctuations in agricultural markets and have thereby rendered agrarian political behaviour less responsive to economic stimuli.

This study, in short, formulates a set of novel hypotheses with respect to agrarian party formation, electoral support and dissolution; it also evaluates these hypotheses with previously untapped sources of data. Its findings are consistent with the expectations of this hypothesis and with the results of many other studies. This study's findings have three implications. (1) They provide an empirically-valid response to the questions for empirical research formulated in Chapter 1. (2) They challenge the assertions of analyses of Australian, Canadian and New Zealand agrarian parties [e.g., (Aitkin, 1972); (Aitkin, 1980); (Ellis, 1958); (Ellis, 1963); (Graham, 1963); (Graham, 1966); (Lipset, 1950); (Morton, 1950); (Macpherson, 1953)]. (3) They contribute to a more complete understanding of the economic antecedents voter and party behaviour, of major parties and non-major parties. Section 2 discusses these implications in comparative perspective. Section 3 discusses them with particular reference to Australia.

7.2. Implications

7.2.1. Agrarian Parties in the British Dominions

This study provides an empirically-valid response to the two questions for empirical research which were formulated in Chapter 1. Its results are consistent with the contention that the Australian Country Party arose in the years immediately following the First World War because rural voter dissatisfaction (engendered by maladjustments in the economic attributes of agricultural and pastoral production) with the Nationalist Party and Australian Labor Party, together with the salience to voters of the collapse in agricultural commodity prices between 1921 and 1922, discouraged voting for one of the major parties or abstaining from electoral participation. The theory set out in Chapter 3 suggests that the Canadian

Progressive Party and the New Zealand Country Party arose in these years at least in part for these same reasons.

This study demonstrates that the Australian Country Party fielded candidates (and, by implication, concentrated organisational and electoral resources) in states in which the combined magnitude of voter dissatisfaction with major parties and issue salience was most marked (i.e., in states such as New South Wales), and that it withdrew these resources from other states in which the combined magnitude of these variables was least marked (i.e., from states such as Tasmania). The theory set out in Chapter 3 suggests that, for these same reasons, agrarian party formation has been most prevalent in Canada's Prairie Provinces (particularly Alberta and Saskatchewan) and least prevalent in Canada's Maritime Provinces, Quebec and British Columbia.

This study indicates that the Australian Country Party continued to exist (particularly in New South Wales and at least until 1928) because (1) it fielded candidates in constituencies in which voter dissatisfaction with the major parties was most prevalent, because (2) voter dissatisfaction with the major parties and issue salience remained appreciable and because (3) the Nationalist Party (consciously or as a result of tactical error) granted the Country Party electoral preserves within which it was the sole non-Labor party. This study thus suggests that the Canadian Progressive Party and the New Zealand Country Party disintegrated because (1) they did not field candidates in constituencies in which voter dissatisfaction with the major parties was most prevalent (i.e., because these parties' elites committed tactical or strategic errors in decision-making) and/or because (2) both rural voter dissatisfaction with the major parties and the salience of agricultural commodity prices as a political issue disappeared. An econometric analysis of these parties should find, in other words, that unlike their Australian counterparts, Canadian and New Zealand primary producers adjusted the inputs into agricultural production and the composition of commodity output, and improved the efficiency of agricultural production.

Finally, this study indicates that economic variables were more powerful determinants than non-economic (occupational and religious) variables of the formation, electoral support and dissolution of the Australian Country Party. It suggests that an econometric analysis of agrarian party and voter behaviour in Canada and New Zealand would obtain similar results. Such an analysis would find that a multiplicative-exponential function provides a better representation of the Progressive Party's electoral support than of the Liberal Party's or the Conservative Party's electoral support (Canada), and of the Country Party's electoral support than of the Reform Party's or the Labour Party's electoral support (New Zealand).

In consequence, this study's results re-inforce the doubt, expressed in Chapter 2, cast upon Australian, Canadian and New Zealand studies with non-economic (class, ideological, regional and organisational) interpretations of agrarian party formation, electoral support and dissolution. These studies consider the primary producer to be (in one limited sense at least) economically independent. Each farm is considered to be a self-contained production unit whose exposure to market forces is direct and unimpeded (see in particular Macpherson, 1953:11-20). At the same time, they assert that the primary producer is a dependent and subordinate (and hence "exploited") actor in the market economy. Although they acknowledge gradations (and even conflicts) of interest among primary producers, these studies contend that farming is, in general, an internally homogenous occupation (Macpherson, 1953pp.19-20). Accordingly, these studies analyse the political consequences -- in terms of class consciousness, ideological coherence and organisational cohesiveness -- of this group's "relatively homogenous class composition" (Macpherson, 1953pp.215-250); (Morton, 1950); (Aitkin, 1972); (Ellis, 1958): (Ellis, 1963); (Graham, 1963); (Graham, 1966).

This study confirms the benefits of utilising a different set of initial conditions. Like these studies, it accepts that farmers are economically independent and directly exposed to economic stimuli. At the same time, however, it rejects both the logic and the evidence offered to support the contention that primary producers were an "exploited" group. It thus substitutes a well-understood (and diametrically-opposed) concept -- the primary producer as a rational actor in a perfectly competitive market -- for the vague and largely undefined notion of "exploitation." Its results are consistent with these initial conditions: primary producers are not an economically homogenous group; they are directly exposed to (and therefore extremely sensitive to) economic stimuli; and as a result of their heterogeneity economic stimuli influence their electoral behaviour in different -- indeed, opposite -- ways.

At the Commonwealth elections of 1922, 1925 and 1928 rural Australian voters (indeed, Australian primary producers) did not vote *en masse* for the Country Party. An experience common to all primary producers thus cannot account for this study's pattern of results. If all Australian primary producers possessed an agrarian "class consciousness", were "country-minded" or were "exploited" by urban or other interests (Graham, 1966); (Aitkin, 1972); (Ellis, 1958); (Ellis, 1963) and if these attitudes engendered support for agrarian parties, why did Australian primary producers not vote as an homogenous bloc? Why did the majority of Australian primary producers in districts with Country Party candidates fail to support the Country Party? Most incongruously, why did most Australian primary producers support "urban" parties ostensibly controlled by the "corrupt" and "exploitative" cities?

This study's results thus highlight -- and subsume within a formal theory -- the atomised nature of agrarian political behaviour. In so doing, they substantiate an alternate (and empirically-valid) interpretation of agrarian political behaviour: "the total farm community in the national population is severely fragmented into interests that are independent or even at times in conflict. Numerous investigations (Lipset, 1950pp.5-7); (Hicks, 1933); (Key, 1964) have documented the degree to which shifts in farm sentiment remain within bounds defined by crop area" (Campbell, Converse, Miller and Stokes, 1960p.404). Further, "the farmer appears to respond to his own economic situation, with little reference to the manner in which others in the same occupational category are faring. Since price and hence economic situation are tied to specific crops, economic winds frequently blow in several directions, leading to a variegated [electoral] response [from farmers]" (Campbell, Converse, Miller and Stokes, 1960p.419).

This study's results, in other words, are inconsistent with the assertions of major studies of agrarian parties in Australia, Canada and New Zealand. They are, however, consistent with the hypothesis that the formation, electoral support and partial dissolution of the Australian Country Party (and, by implication, of the Canadian Progressive Party and the New Zealand Country Party) were consequences of a micro-economic stimulus and rational behaviour in political and economic markets. This study therefore rejects the assertion that agrarian parties in Australia, Canada and New Zealand were the consequences of a class, agrarian or regional consciousness and tentatively accepts the hypotheses set out in Chapter 3. It places the study of agrarian party formation, electoral support and dissolution on a more empirically- and methodologically sound basis and thereby advances knowledge of agrarian parties in these three countries.

7.2.2. Econometric Analyses of Voter Behaviour

This study demonstrates that the concepts and methodology of micro-economic analysis can successfully analyse political phenomena. It therefore re-inforces the utility of broadly similar studies (Breton, 1974); (Downs, 1957); (Buchanan and Tullock, 1962); (Buchanan, 1978). It also demonstrates that studies premised upon notions of voter and party rationality can successfully illuminate aspects of party and voter behaviour (Robertson, 1976); (Meier, 1980); (Frohlich, Oppenheimer, Smith and Young, 1978). This study thus has implications for an understanding of the relationship between economic stimuli and electoral behaviour. Its conclusion that personal economic self-interest was the most important determinant of electoral behaviour in rural Australia between 1922 and 1928 is consistent with a large number of econometric analyses of electoral behaviour.[55]

Unlike these econometric analyses, however, this study demonstrates that personal economic well-being need not be influenced solely (or even primarily) by the incumbent party's macro-economic policies. It is also profoundly influenced by micro-economic conditions that are beyond the control of political parties. Further, it demonstrates that economic conditions do not affect parties equally. Its results suggest that non-major parties in general and agrarian parties in particular are more directly influenced by economic stimuli than are major parties. This study also demonstrates that there are sub-national differences in the extent to which parties and voters respond to economic conditions, that the influence of economic conditions upon electoral behaviour is not constant or continual over time, and that its magnitude is not felt equally by all voters.

A more complete understanding of the relationship between economic stimuli and electoral behaviour requires that econometric analyses of electoral behaviour assess the applicability of this study's results across time and space. Analyses such as Radcliff (which demonstrates that this relationship varies over time) and Owens and Wade (which demonstrate that it varies between regions) exemplify two of the concerns which econometric analyses of voter and party behaviour must address (Radcliff, 1988); (Owens and Wade, 1988).

7.2.3. Major Parties

Chapter 1 emphasised that political parties are a *sine qua non* of liberal representative democracy. Parties solicit and articulate the electorate's concerns, aggregate its preferences into policy proposals and, if elected, attempt to transform these proposals into legislation (Sartori, 1976pp.65-66); (Key, 1964p.433); (Dahl, 1967p.243); (Neumann, 1956p.397); (Ranney and Kendall, 1956p.85); (Schattschneider, 1942p.35). At the same time, Chapter 1 observed that studies of political parties have often lacked an explicitly theoretical base, have not often collected data amenable to cross-national comparative analysis and have not often contributed to a more profound understanding of parties and the party system.

This study (at least to some extent) overcomes these shortcomings. It constructs a formal theory which is based upon a useful set of initial conditions; its methodology, data and research techniques lend themselves to cross-national comparative analysis and its findings extend knowledge of agrarian party formation, electoral support and dissolution. This study's initial conditions assert that voters change their party preference in any way consistent with the principles of utility maximisation and that major parties change their programmes in any way necessary to maximise their electoral appeal. It follows from these initial conditions that the party whose programmes are congruent with the preferences of the greatest

number of voters will win any given election. It also follows that the major parties' policies with respect to any issue that is favoured by a majority of voters will converge. With respect to this issue, in other words, both parties will offer similar (and vague) policies [see, for example, (Downs, 1957); (Enelow and Hinich, 1984); (Davis, 1969); (Davis, Hinich and Ordeshook, 1970); (Hartley and Tisdell, 1981pp.50-55)].

These initial conditions imply that a "catch-all" or "brokerage" pattern of politics exists (Clarke, 1984); (Dalton, Flanagan and Beck, 1984pp.3-25); (Kirchheimer, 1966). Brokerage parties have five principal characteristics. (1) Brokerage parties are loosely-structured coalitions of groups and interests whose composition constantly changes (Mazmanian, 1974p.20). They do not possess well-defined bases of electoral support; rather, they re-create coalitions at each election. The more a party's electoral support unites disparate groups and ideas, and avoids identification with any particular stratum of interest, the more the party resembles a brokerage party.

(2) Brokerage parties do not emphasise (indeed, in many instances, do not possess) ideological principles, are not endowed with policy-related images and do not encourage voters to characterise them in policy- or ideology-related terms. (3) Brokerage parties' limited ability to differentiate themselves on the basis of policy, programme or ideology engenders a strong emphasis on leadership. Leaders create and sustain brokerage parties and represent them to the electorate.

(4) Because they rarely present a clear choice between programmes, provide only a limited possibility of making policy-oriented choices and must eventually replace leaders, brokerage parties elicit only weak (and hence unstable) partisan loyalties. When circumstances change, partisan ties to brokerage parties are tenuous enough to permit changes in party preference. (5) Most importantly, brokerage parties do not meaningfully discuss or debate policy. Their short-term concern with the formation of a winning coalition sharply circumscribes the range of viable policy positions and provides little incentive for sustained attention to long-term policy problems. Brokerage parties, in short, do not identify (or propose solutions to) long-term policy problems (Crewe and Denver, 1985pp.1-16).

A brokerage party must be supported by a great variety of interests. It must be held together by compromise and concession, and must discover and articulate common interests. It cannot meet every demand advocated by every interest (Schattschneider, 1942p.35). Accordingly, the brokerage party is ill-equipped to manage or to contain an intensely salient issue which arises suddenly and without warning. The brokerage party, in other words, does not perfectly ascertain or represent political preferences or translate these preferences into Government and Opposition policy (Blondel, 1978); (Harrop and Miller, 1987); (Pickles, 1970pp.115 and 122). Herein lies a "problem of party government" (Rose, 1974): the Nationalist Party and Australian Labor Party were unable to incorporate dissatisfied primary producers into their ranks (although they successfully aggregated occupational and religious interests into their ranks). For this reason,

> some party systems, particularly those with broad, amorphous [catch-all] parties, are especially prone to the rapid emergence and equally rapid decline of significant [non-major] parties (Studlar and McAllister, 1987p.41); (Pinard, 1975pp.280-290).

Like Rosenstone et al, therefore, this analysis

> identifies an important deficiency [in major parties]. Although the major parties are relatively good at managing conflicts, building major coalitions and holding voter loyalty, this success has its costs. While consensus over a broad range of policies is likely to ensue, the major parties tend to ignore issues that concern only a minority of citizens and threaten the interests of the majority. Moments of [non-major party] strength indicate that the major parties have failed to harmonise the different political interests in society and have failed to adjust to the economic and social demands that citizens have placed on the political system (Rosenstone, Behr and Lazarus, 1984p.221).

7.2.4. Party Systems and Voter Alignments

Section 2.2 discussed this study's relevance for econometric analyses of voter behaviour. Section 2.3 discussed its relevance for analyses of political parties. Lipset and Rokkan is one of the best-known analyses of the relationship between party systems and voter alignments (party support) (Lipset and Rokkan, 1967). Lipset and Rokkan hypothesise that Western party systems and voter alignments reflect social cleavages. Cleavages are "the criteria which divide members of a community into groups. Relevant cleavages divide members into groups with important political differences" (Rae and Taylor, 1970p.23); (Eckstein, 1966p.34); (Daalder, 1966pp.67-68); (Zuckerman, 1977pp.233-234); (Zuckerman, 1982).

Specifically, Lipset and Rokkan hypothesise that party systems and voter alignments in Western democracies are the result of a National Revolution and an Industrial Revolution. Each revolution created two cleavages. The National Revolution created a centre-periphery (regional) and a Church-state (religious) cleavage. The Industrial Revolution produced an agriculture-industry (rural-urban) and an owner-worker (class) cleavage. Cleavage theory expects that during the course of industrialisation the class cleavage will supercede traditional (regional, religious and rural-urban) cleavages (Rokkan, 1970).

Empirical research confirms that these four types of cleavage account for patterns of party and voter alignments in Western democracies after 1945 (Alford, 1963); (Rose and Urwin, 1969); (Lijphart, 1968); (Lijphart, 1979). Other studies analyse the extent to which this hypothesis applies to politics after 1960. These studies argue that advanced industrialism may be creating a new ("postmaterialist") cleavage and changing party and voter alignments. Unparalleled prosperity has significantly altered the social structure of Western democracies (Bell, 1973); (Dahl and Tufte, 1973); (Verba, Nie and Kim, 1978). At the same time, a new ("postmaterialist") set of issue concerns, which cut across traditional (religious, occupational) alignments of parties and voters, has arisen in these countries (Barnes and Kaase, 1979); (Inglehart, 1977); (Inglehart, 1981).

The eclipse of one cleavage by another cleavage, as well as the existence of orthogonal cleavages, poses problems for political parties. Not unexpectedly, therefore, the postmaterialist cleavage has introduced tensions into Western democratic party systems. As a result, many parties were initially unable or unwilling to respond fully to the "postmaterialist" demands placed upon them (Baker, Dalton and Hildebrandt, 1981); (Berger, 1979). Further, some studies find that the social and psychological bonds that heretofore bound voters to parties have fragmented, thereby throwing these party systems into a state of flux (Daalder, 1983) (Mayer, 1980). Other studies note signs of a re-alignment of voters and parties along post-materialist lines (Ladd with Hadley, 1975); (Miller and Levitin, 1976); (Kemp, 1978). Most significantly, a third set of studies relates the increased salience of the postmaterialist cleavage to the formation of new political parties (Dalton, Flanagan and Beck, 1984pp.463-467); (Mair, 1983).

Generally speaking, this study's results are consistent with the expectations of the cleavage hypothesis. They suggest that, in the years immediately following the First World War, an agricultural economic cleavage became a salient aspect of electoral politics in Australia, and that this cleavage cross-cut the prevailing (religious and occupational) alignment of voters and parties. This cross-cutting cleavage posed formidable problems for the Nationalist Party and Australian Labor Party. These parties were unable to aggregate the demands engendered by this cleavage into their ranks. Accordingly, this cleavage formed the basis of a new party. A decrease in the salience of this cleavage in particular states at particular elections precipitated the dissolution of the Country Party.

At the same time, these results disagree in one important respect with the expectations of the Lipset and

Rokkan model. The Country Party did not owe its existence to a centre-periphery (regional) cleavage. At elections, voters in rural Australia did not vote as a monolithic bloc: indeed, in 1922, 1925 and 1928, partisan support in subdivisions with Country Party candidates was relatively evenly divided between the three parties -- with a majority of voters thus continuing to support one of the major parties. Nor was the formation of the Country Party a consequence of a religious cleavage: only in subdivisions without a Nationalist Party candidate in House of Representatives elections did the Country Party receive disproportionate electoral support from a particular religious denomination (the Church of England). Nor was it the consequence of an agriculture-industry (urban-rural) or an owner-worker (class) cleavage: whilst drawing its most consistent support from primary producers, and whilst being firmly and consistently rejected by employees in secondary industry, the Country Party failed to win the allegiance of all primary producers. The Country Party, in short, was not a product of a cleavage *between* agriculture and industry or *between* the urban centre and the rural hinterland: it was a consequence of an agricultural economic cleavage *among* primary producers *within* rural Australia.

None of the commonly-cited cleavages, in other words, adequately characterises the alignment of parties and voters which was observed in rural Australia between 1922 and 1928. This result is not surprising: consensus with respect to the necessary and sufficient conditions for the presence of a cleavage, or with respect to a typology of cleavages, does not exist (Lane and Ersson, 1987p.45). This study may thus identify a shortcoming in the manner in which this concept is currently operationalised. It suggests that the term "cleavage" need not refer exclusively to voters' ascriptive characteristics (i.e., to race, religion, language, ethnicity, occupation, rural or urban residence); it may also encompass their economic characteristics (such as the agricultural commodities they produce and the means by which they produce these commodities). Cleavages not be exclusively sociological phenomena.

7.2.5. Elite Mobilisation

This study successfully predicts the source of the Country Party's electoral support and the timing of its formation and partial dissolution. It demonstrates that rural voter dissatisfaction with the major parties provided the base upon which its formation and mass support was built. At the same time, however, it finds that Country Party formation and electoral was associated with the actions of an elite stratum of voters: the Business variable was among the most important determinants of Country Party formation and electoral support at the 1922, 1925 and 1928 Commonwealth elections.

For two reasons, few citizens participate actively in politics: apart from voting, "*homo civicus* is not a political animal" (Dahl, 1966p.225); (Verba and Nie, 1972); (Verba and Nie, 1972); (Nie and Verba, 1975). First, acts of political participation vary considerably in intensity (i.e., the level of initiative required of citizens and the level of political conflict to which it exposes citizens) and thus demand different levels of emotional commitment. Low-intensity ("spectator") activities, such as voting, require little initiative and make few demands upon participants. Medium-intensity ("transitional") activities, such as volunteer work in political campaigns, require greater initiative and impose greater demands upon participants. High-intensity ("gladiator") activities, such as standing as a candidate for public office, require great initiative and make very great demands upon participants. Not surprisingly, therefore, the extent of any political activity varies inversely with its intensity (Milbrath and Goel, 1977).

Secondly, spectator, transitional and gladiator activities differ in kind as well as in intensity. They require participants to possess progressively greater physical, cognitive and psychological resources (Mishler, 1979p.21); (Verba and Nie, 1972). Citizens with higher-status occupations possess these

resources in greatest abundance: they are more highly educated, are exposed to more political stimuli and thus have greater political skills. Similarly, better-educated citizens are more interested in politics and are more knowledgeable about politics: the more one understands about politics the better-equipped one is to participate in politics (Milbrath and Goel, 1977). For these reasons, gladiators are composed disproportionately of better-educated individuals in higher-status occupations.

This study's results seem to corroborate these findings. The Country Party's formation and electoral support, in other words, was associated with the actions of rural elites: these elites focussed rural voters' dissatisfaction against the major parties, proposed remedies to rural economic difficulties and mobilised mass dissatisfaction against the major parties [see also (Rosenstone, Behr and Lazarus, 1984pp.188-214)].

7.3. The Country Party, Australian Politics and the Australian Party System

Sections 1 and 2 discussed the relevance of this study's results for non-Australian political studies. This section discusses their relevance for Australian political studies. It concludes that this study provides a modest antidote to the atheoretical and non-quantitative emphases of Australian political studies, and that in two respects this study's results necessitate a re-interpretation of the Country Party's place in Australian politics and in the Australian party system.

Studies of Australian party and voter behaviour and the Australian party system do not, generally speaking, address in an explicit manner questions whose theoretical relevance extends to other political systems [important exceptions include (Aitkin, 1977); (Kemp, 1978); (Jaensch, 1983)]. One study of the Australian Country Party, for example,

> suffers from a certain parochialism. Australia may be at the other end of the world, but it is hardly so far removed that it is impossible to relate the findings derived from the Australian setting to other research and to examine whether the Australian experience bears any points of comparability [to other systems]. For these reasons, one somehow doubts whether this scholarly and competent study will receive much attention outside Australia (Castles, 1973pp.550-2).

Nor have these studies taken advantage of advances in the collection and analysis of quantitative data (Aitkin, 1985); (Epstein, 1977); (Brugger and Jaensch, 1985p.ix); (Mayer, 1956p.253); (Head, 1985). Aitkin concludes that "the concentration of contemporary Australian political science is firmly on its part of the world. Moreover, it is neither theoretical nor quantitative in its attack: apart from an interest in the statistics appropriate to election studies, Australian political science has avoided mathematical approaches almost completely" (Aitkin, 1982pp.10-11).

This study differs in important respects from other studies of Australian political parties and agrarian voter behaviour. (1) It attempts to resolve a specific research problem whose relevance extends to Canada and New Zealand. (2) In order to resolve this research problem, it constructs a formal (mathematical) theory of non-major and agrarian party formation, electoral support and dissolution. (3) It assesses this theory's propositions with an appropriate set of quantitative data and research techniques. (4) Because its results are consistent with theoretical expectations (and are inconsistent with the expectations of competing interpretations) this study challenges a conventional wisdom that has long remained unquestioned. If it is true that "the 1980s may be the decade in which Australian political scientists become adept in linking their empirical research to [positive] political theory" (Aitkin, 1982pp.71-72) then this study may contribute to an increase in the emphasis accorded to theoretical, mathematical and quantitative rigour by Australian political scientists.

This study not only corroborates hypothesised relationships; it also uncovers new relationships. These new findings require that in important respects the Country Party's place in Australian politics and the

Australian party system be re-assessed. Non-major parties such as the Australian Country Party have frequently been considered to be dysfunctional or otherwise undesirable entities (Fisher, 1974pp.2-4); (Janda, 1970p.84). Indeed, the Australian Country Party "has probably been the most criticised of the major (sic) Australian parties" (Rawson, 1961p.49); (Costar and Woodward, 1985p.1); (Davis and Hughes, 1958p.119). Aitkin, for example, observes that

> it has been the most severely treated by academics, many of whom have called it "selfish", "reactionary" or "naive". Its leaders have been found "dull" or "plodding", and more than one modern-day Procrustes, holding that Australia has a two-party system, has denied the party a separate existence at all (Aitkin, 1980p.415).

The existence of the Country Party necessitates, from the point of view of the major non-Labor party, co-operation with the Country Party in the parliament. Only if such co-operation is obtained can the major non-Labor party command majority support in the parliament and form a government. In practice, the co-operation between these two parties in parliament and at elections is "not merely a coalition but a coalescence" (Sartori, 1976p.188). The deleterious consequences of this permanent coalition-coalescence for responsible and responsive government underlie (to some extent at least) Australian political scientists' hostility towards the Country Party.

In a two-party system, political competition is a zero-sum game. A clear winner commanding a majority in parliament emerges at elections, and the government (composed of a single party) cannot evade responsibility for its actions. Conversely, when power is dispersed among coalition(s) of parties, stable government becomes problematic (Riker, 1962) and responsibility for government policy becomes more difficult to assign (Key, 1964p.334); (Epstein, 1983pp.139-140):

> at least as far as traditional British theories go, governing in coalition blunts the edge of responsibility and confuses voters. It makes responsibility for particular actions difficult to pin down and [encourages] politicians to blame others within the coalition for failures. Perhaps more importantly, coalition leads to the compromise of principles for expediency [and] to the subordination of principles [in order to] accommodate partners in government (Maddox, 1985p.225).

With respect to its activities in Parliament, Australian political scientists' hostility towards the Country Party has four elements. (1) Australian political scientists frequently disparage the inconsistencies between the party's rhetoric and its actions. Miller, for example, observes that the Country Party "is against the idea of socialism. But it is in favour of the fact of socialism, insofar as it desires the provision by governments of social capital in rural areas which could not pay for it themselves" (Miller, 1966ap.66). Similarly, Crisp observes that

> ironically, though it has constantly attacked Labour's (sic) socialism, the Country Party has sought office to advance policies of public provision of utilities, amenities, social services, development and conservation works for the benefit of country-dwellers. The listener to Country Party parliamentarians on the subject would be forgiven for concluding that they were socialists of the countryside, whose socialism-cum-syndicalism stops just short of each farmer's boundary fence. Theirs is a "trade cycle" socialism, happy to "socialise" the losses of hard times than the premium prices or premium incomes of good times (Crisp, 1978pp.252-253); (Jaensch, 1983p.177); (Overacker, 1952p.228); (Woodward, 1985pp.61-62).

(2) The relative difficulty of assigning responsibility for specific actions to specific parties within a coalition permits and encourages the Country Party to pursue narrow and sectional aims. These actions have provoked much criticism. Summarising this criticism, Costar and Woodward conclude that the Country Party "has been seen as parasitic -- as a selfish, self-interested, sectional party which displays scant regard for broader national interests" (Costar and Woodward, 1985p.2); (Aitkin, 1972p.3); (Eggleston, 1953p.120); (Overacker, 1952pp.228-230); (McFarlane, 1968p.8); (Davis and Hughes, 1958p.119). The Country Party's influence upon the coalition's policy is pervasive, and has directed its coalition partner in a more conservative direction than might otherwise have been the case (Barbalet, 1975); (Woodward, 1985pp.64-67). This influence is exerted most strongly in rural and economic policy (Costar and Woodward, 1985p.1). Hence, "the fact that the Country Party has generally been only a junior

partner in conservative governing alliances has not prevented it from being the most successful pressure group in Australia" (Buckley, 1972pp.71-72).

(3) Conversely, as the junior partner in a permanent coalition, the Country Party's independence in Parliament is severely constrained. For this reason, the party's relevance in terms of "coalition potential" has been questioned: (Jaensch, 1983p.20); (Maddox, 1985p.257); (Sartori, 1976pp.186-187).

(4) The relative difficulty of assigning responsibility for specific actions to particular parties within a coalition encourages the Country Party, on occasion, to flout the conventions of individual and collective ministerial responsibility. For this fourth reason, the Country Party has been criticised:

> It claims credit for all the Government's measures which commend themselves to rural interests and washes its hands of those which do not. A sectional party, playing purely on the country-mindedness of its supporters, can with profit act thus, whereas a party like the Liberals, compelled to appear as most things to most men in its endeavour to project a national image, cannot utilise such tactics without alienating potential supporters (Crisp, 1978p.262).

Similarly, the Country Party-in-the-electorate has not escaped criticism. Australian political scientists often argue that the Country Party is, in terms of electoral support, indistinguishable from its coalition partner. Graham, for example, contends that "for all significant electoral purposes, they constitute a single unit, the conservative bloc in a two-party system" (Graham, 1966p.196); (Buckley, 1972p.72); (Crisp, 1965pp.224-227); (Webb, 1954pp.103-104). Similarly, Aitkin asserts that

> there can be little doubt that Liberal country Members of Parliament receive support from the same kinds of people who in other electorates vote Country Party, and at about the same level. For the great majority of country electors, the Liberal and Country Parties are seen as to all intents and purposes identical (Aitkin, 1980p.422).

Verrall, Ward and Hay re-inforce this conclusion. They analyse the coalition parties electoral support and conclude that their electoral support does not differ. In particular, "there appears to be no specific agricultural sector which provides a basis for [Country] Party allegiance, nor which distinguishes [Country Party] heartlands from Liberal-held regions" (Verrall, Ward and Hay, 1985p.16). As a result, "the Country Party is sometimes regarded as little more than the rural wing of the Liberal Party" (Lucy, 1985p.65):

> In Australia the two principal Anti-Labour parties in national politics, the Liberal and Country Parties, are first and foremost the political instruments of the owners and controllers of private, productive and commercial capital, urban and rural. At their core they are the parties of the successful, of the men and women of substance and "social" consequence, as a predominantly liberal capitalist society evaluates these things (Crisp, 1978p.227).

In short (and generally speaking) Australian political scientists do not believe that the Country Party has contributed in a positive manner to representative government in Australia. Nor do they believe that the Country Party is electorally relevant (since the coalition parties' electoral support is considered to be indistinguishable). For these reasons, Australian political scientists do not believe that the Country Party influences the behaviour of voters and major parties (i.e., that it is a significant actor in the Australian party system).

This study disagrees in two respects with these assessments. (1) Between 1922 and 1928 the Country Party made at least one positive (and hitherto unrecognised) contribution to representative government in Australia. The Country Party drew disproportionate support from areas with low levels of voter turnout -- indeed, a disproportionate amount of the Country Party's electoral support was drawn from the segments of the rural electorate that were least likely to vote. Only the Country Party possessed this attribute. The Nationalist Party and the Australian Labor Party drew disproportionate support from rural areas with high levels of voter turnout.

This finding has an important implication. If, as this study finds, dissatisfaction with major parties' agricultural economic policies discourages electoral participation, then the rural voters most deleteriously affected by a decline in commodity prices have the least influence upon government policy, and the collective decision expressed at elections will not reflect the preferences of the entire electorate [see, for example, (Garvey, 1966); (Key, 1964)]. The greater the abstention at elections, in other words, the greater the asymmetry between the preferences of voters and the preferences of the entire electorate (voters and abstainers). In the years immediately following the First World War, the Australian Country Party redressed this asymmetry. It responded to hitherto unrepresented preferences and thereby re-integrated dissatisfied non-voters in rural districts into the active electorate. In this one sense at least (and notwithstanding the contentions of most Australian political scientists), the Country Party was a democratic agent *par excellence*. This study thus corroborates the principal conclusions of Rosenstone et al and Mazmanian:

> [Non-major] parties crystallize issues that otherwise might go unheeded or receive little attention during a campaign (Mazmanian, 1974pp.148-149). [They] provide a voice for a minority that would otherwise go unheeded in the most democratic of arenas, elections. They are the primary means in the electoral system for dissatisfied citizens to challenge the reigning major parties (Mazmanian, 1974p.150); (Rosenstone, Behr and Lazarus, 1984pp.221-222).

A more complete assessment of the Country Party's role in Australian politics demands cognizance of this result.

(2) Between 1922 and 1928 the Country Party was (in terms of electoral support and the presence or absence of its candidates in electoral subdivisions) a distinctive entity at elections. Country Party formation and Nationalist Party dissolution were consequences of voter dissatisfaction with one or both of the major parties, and that Nationalist Party formation and Country Party dissolution were consequences of voter satisfaction with the major parties. Economic attributes of agricultural and pastoral production underlay the Country Party's formation, electoral support and dissolution. Occupational and religious variables underlay the major parties' formation, electoral support and dissolution.

Clearly, therefore, the Country Party's presence influenced the behaviour of voters and major parties. For these reasons, the Country Party was (at least between 1922 and 1928) a significant non-major party (i.e., a *third party*), not an insignificant non-major party (i.e., a *minor* party) in the Australian party system. During these years, in other words, the Australian party system was a three-party system. A more complete understanding of the Australian party system demands cognizance of this result.

Appendix A

Religious, Socialist and Ethnic Minority Party Formation

Table A-1: Religious (Christian Democratic) Party Formation

Country	Party Name	Date of Formation
Austria	Christian-Social Party	1889
	Austrian People's Party	1945
Belgium	Parti social chretien/ Catholic People's Party	1884
	Christian People's Party	1945
Denmark	Christian People's Party	1970
Estonia	Christian Democratic Party	1919
F R Germany	Christian Social Party	1868
	Centre Party	1870
	Christian Democratic Union/ Christian Social Union	1945
Finland	Christian Workers' Party	1907
	Finnish Christian League	1958
France	Popular Democratic Party	1924
	Popular Republican Movement	1944
	Democratic Centre	1966
Ireland	Fine Gael	1933
Italy	Italian Popular Party	1919
	Christian Democratic Party	1943
Netherlands	Staatkundig gereformeerde partij	1918
	Gereformeerd politiek verbond	1948
	Katholieke volkspartij	1896
	Anti-revolutionaire partij	1879
	Christelijk-historische unie	1908
	Christen demokratisch appel	1972
	Politieke partij radikalen	1968
Norway	Christian People's Party	1933
Sweden	Christian Democratic Union	1964
Switzerland	Swiss Catholic Association	1905

**N.B.: "Date of Formation" refers to the year in which the party first presented candidates at elections.

Source: Lane and Ersson (1987:98), McHale and Skowronski (1983:1224-1225).

Table A-2: Socialist Party Formation

Country	Party Name	Date of Formation
Australia	Australian Labor Party	1891
Austria	Social Democratic Party	1889
	Revolutionary Socialists	1934
	Socialist Party	1945
Belgium	Workers' Party	1885
	Socialist Party (Flemish)	1978
	Socialist Party (Francophone)	1978
Canada	Co-Operative Commonwealth Federation	1933
Czechoslovakia	Czech Social Democratic Party	1878
	Slovak Social Democratic Party	1905
Denmark	Danish International Labour Association	1871
Estonia	Social Democratic Party	1917
F R Germany	Social Democratic Party	1975
Finland	Social Democratic Party	1903
France	French Labour Party	1879
	Unified Socialist Party	1958
Iceland	Social Democratic Party	1916
	Socialist Party	1938
Ireland	Labour Party	1912
	National Labour Party	1944
Italy	Italian Socialist Party	1892
Latvia	Social Democratic Party	1918
Lithuania	Social Democratic Party	1896
Netherlands	Sicial Democratic Workers' Party	1894
New Zealand	Labour Party	1916
Norway	Labour Party	1887
Poland	Socialist Party	1892
Rumania	Social Democratic Party	1893
Sweden	Social Democratic Labour Party	1889
Switzerland	Social Democratic Party	1880
United Kingdom	Labour Party	1906
	Social Democratic Party	1981

**N.B.: "Date of Formation" refers to the year in which the party first presented candidates at elections.

Source: Lane and Ersson (1987:99), McHale and Skowronski (1983:1227-1230).

Table A-3: National Minority (Ethnic) Party Formation

Country	Party Name	Date of Formation
Belgium	People's Union	1954
	Wallon Rally	1967
	Democratic Front of Francophones	1964
	German-Speakers Party	1972
	Flemish Bloc	1978
Canada	Parti Quebecois	1968
Czechoslovakia	German League of Farmers	1920
	Sudeten German Party	1933
Denmark	Schleswig Party	1920
	Self-Government Party	1979
Finland	Swedish People's Party	1906
France	Occitanian Nationalist Party	1959
	Breton Democratic Union	1964
	Union of Corsican People	1977
F R Germany	Alsace-Lorraine Party	1874
	Bavarian People's Party	1920
	Danish Party	1871
	Polish Party	1871
Italy	South Tyrol People's Party	1948
	Val'Aosta Union	1958
United Kingdom	Scottish National Party	1928
	Welsh Nationalist Party	1925

**N.B.:"Date of Formation" refers to the year in which the party first presented candidates at elections.

Source: Lane and Ersson (1987:98), McHale and Skowronski (1983:1235-1236).

Appendix B
Intentionalist and Theoretical Explanations

B.1. Intentionalist Explanations

Studies which utilise intentionalist explanations account for an event(s) by setting out the process of reasoning that underlay this event(s) (Sowell, 1980p.97). Collingwood exemplifies this methodology:

> For historians, the object to be discovered is not the mere event, but the thoughts [e.g., the goals and motives] expressed in it. To discover the thought is to understand [the event]. After the historian has ascertained the facts, there is no further process of inquiry into the causes. When he knows what happened, he already knows why it happened (Collingwood, 1961p.214).

Intentionalist explanations contain an evaluative (interpretive or judgemental) component. They are exercises in "empathy" and "understanding." They attempt to re-create the past and to evoke a consciousness of actors' motives and feelings (Carr, 1961); (Nicholson, 1983p.183).

For four reasons, intentionalist explanations are incomplete explanations. (1) Most importantly, empathetic identification with the motives of agents sets the intentionalist explanation beyond the reach of empirical appraisal and criticism (Gardiner, 1952). In consequence, "there's something visciously subjective or projective about [intentionalist] explanations" (Flew, 1985p.26); (Hempel, 1965p.233); (Nagel, 1961pp.463f); (Popper, 1957p.177). Czudnowski, for example, observes that

> if we cannot assume reference to a general law, or at least to a number of recurring instances of the same relationship, then the "explanatory status" of the relationship can be ascribed only to the investigator's special insights, understanding or wisdom; alternatively, the relationship has no "explanatory status" at all (Czudnowski, 1976p.19).

The subjectivity of the intentionalist explanation has several manifestations. If the objectivity of an inquiry depends upon deduction of its content (i.e., the Cartesian or mathematico-deductive criterion of objectivity) intentionalist explanations must abandon all claims to objectivity (Passmore, 1974pp.146-147). Direct, unimpeded access to facts and careful observation is a hallmark of objective analysis. Intentionalist explanations, however, must rely upon mediated evidence (observations mediated by the testimony of actors indirectly involved in events). Thus, if the objectivity of an inquiry is defined as a function of the data upon which it is based, intentionalist explanations cannot hope to attain objectivity (Passmore, 1974pp.148-150); (Clubb, 1977). Finally, the empirical propositions of objective studies are refutable and their results are replicable. Intentionalist explanations, however, are neither refutable nor replicable. For this reason, too, they must abandon their claims to objectivity (Passmore, 1974p.150).

(2) The range of instances (across space and time) to which a particular intentionalist explanation may be applied is severely limited. Because actors' specific objectives vary from place to place and from time to time, and depend upon institutional arrangements and cultural norms, intentionalist statements are typically so detailed that they apply only to single events. Moreover, their explanatory power rests upon the manner in which they arrange the details of each event: intentionalist explanations possess verisimilitude only if they amass a large number of details about a particular event and are able to arrange

these details in a coherent manner. As a result, the burden of explanation is carried by the details of each event (Moon, 1982pp.153-156).

(3) Another difficulty concerns the postulation that observed behaviour is the result of intended (deliberate) action. In many instances, this position is untenable, since many of the consequences of human action were not intended (Flew, 1985p.21). For example, it has long been recognised that the pursuit of economic self-interest has unintended consequences. Adam Smith drew attention to a mechanism by which something strongly suggesting design derives quite spontaneously and without direction:

> But it is only for the sake of profit that any man employs a capital in support of industry . . . every individual, therefore, endeavours as much as he can . . . to employ his capital . . . that its produce may be of the greatest value. By directing . . . industry in such a manner as its produce may be of the greatest value, he intends only his own gain, and he is in this as in many other causes, led by an invisible hand to promote an end which was no part of his intentions (Smith, 1979); (Skinner and Wilson, 1976).

Clearly, therefore, individuals' intentions produce both intended and unintended results. Accordingly, research must be directed at the unintended as well as the intended consequences of individuals' deliberate actions (Flew, 1985p.77); (Hayek, 1978pp.41f). In particular, the mechanism by which particular intentions produce unintended results (i.e., the hidden and transcendent causes of events) requires investigation (Durkheim, 1964p.76). The intentionalist model of explanation precludes such investigation.

(4) The presumption that observed behaviour is the outcome of intended (deliberate) action imposes a fourth (and closely related) set of constraints upon intentionalist explanations. Agents cannot act in a conscious or deliberate manner for reasons they do not understand; intentionalist explanations, in consequence, cannot (and do not) make use of concepts and information not available to (or understood by) the agents themselves (Gardiner, 1974p.11); (Winch, 1958); (Flew, 1985p.22). Moreover, adoption (by analysts) of the reasons and concepts actors use to explain their actions often engenders uncritical acceptance of the reasons and concepts actors use to explain their actions. As a result,

> whilst in ordinary life every shopkeeper is well able to distinguish between what somebody professes and what he is, historians take an epoch at its word and believe that everything that it says and imagines about itself is true (Flew, 1985p.29); (O'Neill, 1973p.95).

This tendency makes intentionalist explanations inherently ambiguous, since people are not always clear about their intentions and actions. Moon, for example, finds that people "may be deeply ambivalent about some of these objectives and they may be unable to acknowledge some of their own needs and values. Moreover, even if a person's behaviour is intelligible, his goals and beliefs may be less than fully coherent. In all these cases we can suggest that the situation is "opaque" to the actors involved, or even that they are "opaque" to themselves" (Moon, 1982p.174). As a result, the language of intentionalist explanations is typically discursive, intuitive -- and often imprecise. Hexter observes that these studies "choose -- often unself-consciously, but sometimes well-aware of what they are doing -- to write in a way that the rhetoric of science proscribes. They deliberately choose a word or phrase that is imprecise and may turn out to be ambiguous, because of its rich aura of connotation. Without compunction they sacrifice exactness for evocative form" (Hexter, 1968p.369).

(5) Finally, intentionalist explanations are incomplete explanations because they are often factually incorrect explanations. Nicholson finds that "very frequently the statements made on the basis of a supposed empathy will not match up with any careful (or even cursory) examination of the facts. The supposed goals do not yield the predictions which conform to the actual state of the world" (Nicholson, 1983p.60). Intentionalist explanations, in short, are subjective, ambiguous and unfalsifiable explanations:

> general obscurity in assertion and, in particular, evasiveness about what would or would not constitute

falsifications of assertions made, are clear signs of insincerity in the search for scientific truth. Popper has famously insisted that the proper criterion for distinguishing scientific from non-scientific utterance is falsifiability. Any kind of indeterminateness is meaning is always bound, and often intended, to disable potential critics (Flew, 1985p.198).

B.2. Theoretical Explanations

Theoretical explanations adopt very different premises (Moon, 1982); (Hempel, 1965); (Nagel, 1961). Theoretical explanations relate an event(s) to a generalisation or set of generalisations of which it is an instance. They set out initial conditions, deduce empirical propositions from these initial conditions and compare these propositions with observed behaviour. The weight of empirical evidence supports or disconfirms theories. Theoretical explanations truly explain events. When correctly formulated, they demonstrate that (given a set of initial conditions) no event other than that which is under examination is logically possible. If an explanation is cast in the form of a valid deductive argument, acceptance of its premises (prior to the inspection of data) necessitates acceptance of its propositions. Conversely, rejection of one or more of the theory's initial conditions necessitates rejection of its empirical propositions (Ryan, 1970pp.56-60); (Popper, 1963pp.122f). Any supposed explanation which cannot be phrased and tested in this manner is not a proper explanation, but merely a "story" (Hempel, 1965).

It is possible (given an appropriate set of initial conditions) to develop theoretical explanations of political phenomena (Boynton, 1982pp.31-34). Economic (particularly micro-economic) reasoning provides a compelling analogy. By focussing attention upon a well-defined and narrowly-circumscribed phenomenon (the interaction consumers and firms in the market) whose behaviour is tightly structured by institutional arrangements, a large number of empirical propositions can be deduced from a few initial conditions (Barry, 1970); (Barry, 1982).

Electoral competition is closely analogous to market competition (Hartley and Tisdell, 1981pp.45-67); (Buchanan, 1978); (Seldon, 1978), and the economic theory which illuminates the behaviour of consumers and firms can also illuminate the behaviour of voters and parties (Brittan, 1977a); (Brittan, 1977b); (Buchanan and Wagner, 1977); (Lindbeck, 1966); (MacRae, 1977); (Nordhaus, 1975); (Parkin, 1975); (Wagner, 1977). Indeed, the application of deductive logic and the insights of standard micro-economic theory to the study of electoral politics represents the most successful effort yet made to analyse political phenomena in a systematic manner (Budge and Farlie, 1977p.102). At least one study applies such a methodology to the study of an election in rural constituencies in the years before the First World War (Percy, Norrie and Johnston, 1982). Clearly, therefore, an analysis of agrarian party formation, electoral support and dissolution might benefit greatly from a theoretical methodology in general and an economic methodology in particular.

Appendix C
"Instrumentalist" Methodology

Some knowledge of the nature and form of scientific explanation, of the meaning and use of scientific methods, techniques, and constructions, and of the various other aspects of scientific inquiry, is already an essential part of the intellectual equipment of any adequately-trained political scientist and the need for this training seems very likely to increase rapidly in the near future (Meehan, 1965p.v).

The term "methodology" does not refer, despite frequent usage to the contrary, to techniques of empirical research (i.e., to the techniques by which data -- quantitative and non-quantitative are analysed). Rather, it refers to the "requirements for good science" (Papineau, 1978p.21), i.e., the rules and conventions that are invoked in order to ascertain "whether a suggested hypothesis or theory should be tentatively accepted as part of a body of systematised knowledge" (Friedman, 1953p.3);see also (Agassi, 1969); (Blaug, 1980pp.27-28); (Boland, 1982pp.1-9). The methodology which is appropriate for a particular research project depends upon its objectives (Boland, 1982pp.188-196). This study's *raison d'etre* is practical, not theoretical; it constructs a formal theory not for its own sake, but in order to resolve a relevant problem for comparative political science research (i.e., the formation, electoral support and dissolution, in the years immediately following the First World War, of agrarian parties in Australia, Canada and New Zealand). An "Instrumentalist" methodology is an appropriate methodology for the analysis of immediate and practical problems (Boland, 1979); (Boland, 1980); (Boland, 1981); (Boland, 1982pp.141-152, 174-175, 193-195). This study therefore adopts an Instrumentalist methodology.

Recognition of two modes of reasoning is essential for an understanding of this methodological doctrine [see in particular (Boland, 1979p.505)]. (a) To argue from the truth of a set of premises to the truth of a set of conclusions is to argue in *modus ponens*. If an argument conforms to the formal rules of logic, in other words, then whenever all of its premises are true then all of its conclusions will also be true. (b) However, if an argument is logical then any time that one of its conclusions is false then not all of its premises can be true. To argue against the truth of one or more of a theory's premises by demonstrating that one or more of its conclusions is false is to argue in *modus tollens*. If an argument can be successfully criticised by *modus tollens* then one or more of its premises is false or it is not logical (or both).

Heuristically, *modus ponens* "passes" the assumed truth of a theory's premises forward to its conclusions; *modus tollens* "passes" the falsity of a theory's conclusions backward to its premises. The truth of a theory, however, cannot be "passed" backward; nor can its falsity be "passed" forward. Any use of *modus ponens* in reverse ("the Fallacy of Affirming the Consequent") or of *modus tollens* in reverse ("the Fallacy of Denying the Antecedent") violates the canons of logic and is therefore invalid (Boland, 1979p.508).

Three characteristics distinguish Instrumentalism. (1) Given the "problem of induction" (i.e., the impossibility of inferring true universal statements from singular statements or individual observations), the "truth" of theories can be neither established nor rejected with complete certainty (Papineau, 1978:26). Instrumentalism therefore considers theories to be no more than contingent instruments for making

successful predictions (i.e., predictions which are consistent with observations).[56] Theories organise, summarise and impose order upon hitherto incommensurable observations, but do not represent "truth" or "reality" (Boland, 1982pp.16-17); (Davis, 1969pp.25-33); (Friedman, 1953p.9).

(2) An hypothesis or theory can be accepted as part of a body of systematised knowledge only to the extent that it makes successful predictions. Instrumentalism rejects any attempt to immunise an hypothesis against falsification; rather, it advocates the formulation of falsifiable predictions and a willingness to abandon hypothesis that have been refuted. Blaug, for example, argues that "theories must stand or fall on the basis of the predictions that they yield. Empirical testing of hypotheses constitutes the Mecca of modern economics" (Blaug, 1986p.270). Similarly, Friedman argues that "the only relevant test of the validity of an hypothesis is a comparison of its predictions with experience" (Friedman, 1953pp.8-9); see also (Davis, 1969pp.22-25); (Popper, 1963pp.33-41); (Lipsey, 1966pp.1-21).

(3) Given (1) and (2), as long as its conclusions are derived in a logical manner and are successful (i.e., are consistent with experience) the "truth" and "realism" of a theory's premises are, for all practical purposes, irrelevant. By *modus tollens*, one or more of a theory's premises must be false whenever one or more of its conclusions are false. It does not, however, follow that a theory's premises are true *because* its conclusions are consistent with observations (this would constitute an invalid, reverse *modus tollens* argument). Provided that its conclusions are consistent with observations, therefore, criticism of a theory's premises is meaningless because it relies upon an invalid (reverse *modus tollens*) form of reasoning. (Similarly, nothing is gained by applying *modus ponens*: this line of reasoning requires absolute certainty that a theory's premises are true; the "problem of induction," however, precludes such certainty).

An hypothesis or theory, in short, cannot be judged on the basis of the "truth" or "realism" of its initial conditions (which are frequently but erroneously labelled "assumptions"). The demand that the theory's initial conditions be "realistic" belies "a lack of understanding of theoretical knowledge. All theories abstract from reality. They are approximations and not reality. They are by definition unrealistic" (Davis, 1969p.26). Accordingly, "the relevant question to ask about the "assumptions" of a theory is not whether they are descriptively realistic (for they never are), but whether they are sufficiently good approximations for the purpose in hand" (Friedman, 1953p.15). This question can be answered only by ascertaining whether the theory yields accurate predictions.

A theory's initial conditions help to present the theory succintly and to specify the conditions under which the theory is expected to be valid. A theory's initial conditions are frequently "unrealistic" because they are abstract, because they idealise actors' behaviour and because they simplify the theory's explanatory variables. Indeed, "any theory which is not an exact replica of reality abstracts, idealises and oversimplifies outrageously. If good theories are to explain much with little, they must be descriptively inaccurate or unrealistic" (Blaug, 1986). Friedman expresses this methodological point most forcefully:

> Truly important and significant hypotheses will be found to have "assumptions" that are wildly inaccurate descriptive representations of reality; the more significant the theory the more "unrealistic" the assumptions. An hypothesis is important if it "explains" much by little, that is, if it abstracts the common and crucial elements from the mass of complex and detailed circumstances surrounding the phenomenon to be explained and permits valid predictions on the basis of these alone (Friedman, 1953p.14).
>
> To be important, therefore, an hypothesis must be descriptively false in its assumptions; it takes account of, and accounts for, none of the many other attendant circumstances, since its very success shows them to be irrelevant for the phenomena to be explained (Friedman, 1953pp.14-15); see also (Davis, 1969p.26); (Robertson, 1976p.23).

Three conclusions follow from these methodological points. (1) The theory set out in Chapter 3 is no

more than an engine for generating refutable empirical propositions. It does not attempt (or claim) to provide an exhaustive explanation of agrarian party formation, electoral support and dissolution. It accepts that it may omit relevant factors from consideration. Nor does it claim that its empirical propositions uncover ultimate or transcendent truths. It says only "look at the phenomenon of agrarian party formation, electoral support and dissolution in this way; when you do you will see the order which has been eluding you" [paraphrased from (Boynton, 1982p.38)]. (2) At the same time, however, to the extent that its empirical propositions are consistent with factual observations, this study claims to produce systematised knowledge. (3) This study's theory and empirical propositions cannot be judged on the basis of the "realism" of its initial conditions; rather, they can only be judged on the basis of its empirical proposition's conformity with factual observations. As Boland observes, "any valid or fair criticism of an instrumentalist [theory] can only be about the sufficiency of its argument. The only direct refutation is one that shows that the theory is inapplicable. Failing that, the critic must alternatively provide his own sufficient argument, which does the same job" (Boland, 1979p.509).

Appendix D
Mathematical Derivations

Chapter 3 constructed a formal theory (in the form of a linear, first-order system of difference equations) of non-major and agrarian party formation, electoral support and dissolution. In particular, Equation (3.15) specified the manner in which the system's inputs (voter dissatisfaction with the major parties and an issue whose salience attains crisis proportions) are transformed into an output (non-major/agrarian party formation, electoral support and dissolution):

$$Y(z) = \frac{z}{z^2-(1+\alpha-\gamma+\lambda)z+\lambda(1+\alpha)} [U_1(z)+U_2(z)].$$

(3.15)

Equation (3.15) can be solved (i.e., its response characteristics can be determined) when numeric values are assigned to its constants and its input sequences are specified. Equations (3.18-3.19), (3.22-3.23) and (3.26-3.27) describe the response characteristics of Equation (3.15). This Appendix derives these equations.

Following Equation (3.16), for example, let

α=.1
γ=.2
λ=.2

Substituting these values into Equation (3.15) gives

$$Y(z) = \frac{z}{z^2-(1+.1-.2+.2)z+.2(1+.1)} [U_1(z)+U_2(z)]$$

$$Y(z) = \frac{z}{z^2-1.1z+.22} [U_1(z)+U_2(z)]$$

$$Y(z) = \frac{z}{(z-.84)(z-.27)} [U_1(z)+U_2(z)].$$

(D.1)

If the characteristics of the input sequences are known, the z-transform of the input sequences can be substituted for the term $[U_1(z)+U_2(z)]$ in Equation (D.1). Following Equation (3.16), each input sequence is a unit step input. The z-transform of the unit step input is $\frac{z}{(z-1)}$ (Boynton, 1980pp.61-65). The z-transform of the sum of two input sequences is equal to the sum of the z-transform of each sequence; for this reason, $\frac{2z}{(z-1)}$ can be substituted for $[U_1(z)+U_2(z)]$ in Equation (D.1):

$$Y(z) = \frac{(z-.2)z}{(z-.84)(z-.27)}\left(\frac{2z}{(z-1)}\right)$$

(D.2)

Combining terms gives

$$Y(z) = \frac{2z^2}{(z-.84)(z-.27)(z-1)} \tag{D.3}$$

Equation (D.3) is the z-transform of the linear discrete time system represented by Equation (3.15). The solution to this equation is obtained by means of an inverse z-transform (i.e., by finding the sequences which produce Equation (D.3)); specifically, the solution is obtained through a partial fraction expansion, which decomposes this complex z-transform into additively-related (and simpler) z-transforms whose sequences are known (Boynton, 1980pp.72-80).

A partial fraction expansion of Equation (D.3) yields four linearly-related components:

$$\frac{2z^2}{(z-.84)(z-.27)(z-1)} = A + B\left(\frac{z}{(z-.84)}\right) + C\left(\frac{z}{(z-.27)}\right) + D\left(\frac{z}{(z-1)}\right) \tag{D.4}$$

The value of the four coefficients A, B, C and D can be found by evaluating Equation (D.4) for appropriately chosen values of z. For example, it can be easily shown that A = 0:

$$\frac{2(0)^2}{(0-.84)(0-.27)(0-1)} = A + B\left(\frac{0}{(0-.84)}\right) + C\left(\frac{0}{(0-.27)}\right) + D\left(\frac{0}{(0-1)}\right)$$

$$0 = A + 0 + 0 + 0. \tag{D.5}$$

B can be determined by multiplying Equation (D.4) through by $\frac{(z-.84)}{z}$:

$$\left(\frac{(z-.84)}{z}\right)\left(\frac{2z^2}{(z-.84)(z-.27)(z-1)}\right) = A\left(\frac{(z-.84)}{z}\right) + B + C\left(\frac{z}{(z-.27)}\right)\left(\frac{(z-.84)}{z}\right) + D\left(\frac{z}{(z-1)}\right)\left(\frac{(z-.84)}{z}\right) \tag{D.6}$$

Equation (D.6) can be evaluated by choosing a value for z that will simplify the task of finding B. Setting z equal to .84 facilitates this process:

$$\frac{(.7056)}{(.57)(-.16)} = 0 + B + 0 + 0$$

$$\frac{1.41}{-.091} = B$$

$$-18.42 = B. \tag{D.7}$$

Similarly, C can be determined by multiplying Equation (D.4) through by $\frac{(z-.27)}{z}$:

$$\left(\frac{(z-.27)}{z}\right)\left(\frac{2z^2}{(z-.84)(z-.27)(z-1)}\right) = A\left(\frac{(z-.27)}{z}\right) + B\left(\frac{z}{(z-.84)}\right)\left(\frac{(z-.27)}{z}\right) + C + D\left(\frac{z}{(z-1)}\right)\left(\frac{(z-.27)}{z}\right) \tag{D.8}$$

Equation (D.8) can be evaluated by choosing a value for z which will simplify the task of finding C. Setting z equal to .27 facilitates this process:

$$\frac{(.146)}{(-.57)(-.73)} = 0 + 0 + C + 0$$

$$\frac{.146}{.416} = C$$

$$1.29 = C.$$

(D.9)

Finally, D can be determined by multiplying Equation (D.4) through by $\frac{(z-1)}{z}$:

$$\left(\frac{(z-1)}{z}\right)\left(\frac{2z^2}{(z-.84)(z-.27)(z-1)}\right)$$
$$= A\left(\frac{(z-1)}{z}\right) + B\left(\frac{z}{(z-.84)}\right)\left(\frac{(z-1)}{z}\right) + C\left(\frac{z}{(z-.27)}\right)\left(\frac{(z-1)}{z}\right) + D$$

(D.10)

Equation (D.10) can be evaluated by choosing a value for z that will simplify the task of finding D. Setting z equal to 1 facilitates this process:

$$\frac{2}{(.16)(.73)} = 0 + 0 + 0 + D$$

$$\frac{2}{.12} = D$$

$$16.70 = D.$$

(D.11)

Having completed the partial fraction expansion, it is possible to find the inverse z-transform of Equation (D.3). Inserting the values of A, B, C and D into Equation (D.3) gives

$$Y(z) = 0 - 18.42\left(\frac{z}{(z-.84)}\right) + 1.29\left(\frac{z}{(z-.27)}\right) + 16.70\left(\frac{z}{(z-1)}\right)$$

(D.12)

Boynton lists the sequences which correspond to these simplified z-transforms: $\frac{z}{(z-.84)}$ is the z-transform of the sequence $(.84)^k$; $\frac{z}{(z-.27)}$ is the z-transform of the sequence $(.27)^k$; and $\frac{z}{(z-1)}$ is the z-transform of the sequence $(1)^k$ (Boynton, 1980pp.61-65). Accordingly, the solution to Equation (3.15), given these values for the constants and these input characteristics, is

$$y(k) = -18.42(.84)^k + 1.29(.27)^k + 16.70(1)^k$$

k=0,1,2,...(D.13)

Equation (D.13) is equal to Equation (3.18). The same procedure is used to derive Equation (3.19) (Equations (3.18) and (3.19) differ only with respect to the values of α, γ and λ). This procedure is also used to derive Equations (3.22), (3.23), (3.26) and (3.27). For these equations, however, different terms are subsituted for $[U_1(z)+U_2(z)]$: for Equations (3.22) and (3.23), which have one unit step input and one Kronecker Delta input, $\frac{(2z-1)}{(z-1)}$ is substituted for $U_1(z)+U_2(z)]$; for Equations (3.26) and (3.27), which have two Kronecker Delta inputs, 2 is substituted for $[U_1(z)+U_2(z)]$.

Appendix E

A Generalised Least Squares Estimator

Chapter 4 argued that the Ordinary Least Squares estimator is not (given that this analysis must use aggregate data) an appropriate estimator of voter behaviour in rural constituencies. *A priori*, the number of eligible voters within each aggregate unit (in this case Australian electoral subdivisions) can be expected to vary substantially; as a result, the variance of the OLS estimator's residual (disturbance) term will not be constant (i.e., will be heteroskedastic) and will thereby violate one of the conditions of the Classical Linear Model. This Appendix demonstrates this result mathematically. It also describes a more appropriate estimating procedure which closely approximates the Generalised Least Squares (GLS) estimator and which can be assessed with standard OLS diagnostic statistics.

Equation (1) is a linear model which is similar in form to Model (1) and Model (2) (these models were described in Chapter 4). Y_i is a dependent variable which represents a party's percentage share of the total vote in the ith electoral subdivision, X_i is a matrix of independent variables which represents, in the ith electoral subdivision, the variables described in Table 4-2 and U_i is a vector of normally-distributed residual (disturbance) terms whose expected value is zero.

$$Y_i = \beta X_i + U_i \tag{1}$$

The variance of Equation (1)'s residual term may be written

$$\sigma_u^2 = E(U_i)^2 = E(Y_i - \beta X_i)^2 \tag{2}$$

[see, for example, (Kelejian and Oates, 1981p.219)]. However, because the number of voters in each electoral subdivision varies, Equation (1) must be re-written

$$\sum_{i=1}^{N_i} \frac{Y_i}{N_i} = \beta \sum_{i=1}^{N_i} \frac{X_i}{N_i} + \sum_{i=1}^{N_i} \frac{U_i}{N_i} \tag{3}$$

(where N_i represents the number of voters in the ith electoral subdivision and the summations are across all voters in each subdivision). The variance of Equation (3)'s residual term is thus

$$\sigma_u^2 = E\left(\frac{\sum_{i=1}^{N_i} U_i}{N_i}\right)^2 = E\left(\frac{\sum_{i=1}^{N_i} Y_i}{N_i} - \beta \frac{\sum_{i=1}^{N_i} X_i}{N_i}\right)^2 \tag{4}$$

This residual term may also be written

$$E\left(\frac{\sum_{i=1}^{N_i} U_i}{N_i}\right)^2 = \sum_{i=1}^{N_i} E\left(\frac{U_i}{N_i}\right)^2 = N_i\left(\frac{U_i}{N_i}\right)^2 \tag{5}$$

Because N_i is a constant -- and therefore because $E(N_i) = N_i$ -- Equation (5) may be re-written

$$E\left(\frac{\sum_{i=1}^{N_i} U_i}{N_i}\right)^2 = \left(\frac{N_i}{(N_i)^2}\right)E(U_i)^2 = \left(\frac{1}{N_i}\right)E(U_i)^2 = \left(\frac{1}{N_i}\right)E(Y_i - \beta X_i)^2 \quad (6)$$

σ_u^2 must be constant (homoskedastic) in order to generate a best (minimum variance) estimate of β. Equation (6), however, indicates that the variance of the residual term of Equation (3) is heteroskedastic (since Equation (6) differs from Equation (3) by the factor $\frac{1}{N_i}$). In particular, the extent to which the model accurately predicts the actual value of the dependent variable will be a function of the number of eligible voters in each electoral subdivision. Equation (6) indicates that observations for more populous electoral subdivisions will be more accurate and will exhibit less variation about the true value of Y_i than observations from less populous subdivisions (since, as $N_i \rightarrow \infty$ $\frac{1}{N_i} \rightarrow 0$ and Equation (6) = Equation (2)). Equation (6), in other words, indicates that the value of U_i for smaller electoral subdivisions will exceed the value of U_i for larger subdivisions and therefore that U_i is heteroskedastic. In consequence, the Ordinary Least Squares estimator remains unbiased but is no longer the Best (i.e., minimum variance) Linear Unbiased Estimator and standard statistical tests (F, t, et al) will be invalid.

Equation (6) indicates that a correction for this form of heteroskedasticity must give more weight to observations which have the least error (i.e., electoral subdivisions with larger numbers of voters) and give less weight to observations which have the most error (i.e., electoral subdivisions with fewer voters). Hanushek and Jackson find that assigning a weight that is inversely proportional to the variance of the disturbance terms associated with each observation and applying OLS to these transformed observations yields homoskedastic residuals (Hanushek and Jackson, 1977pp.150-163). These residuals' coefficients closely resemble those obtained with the Generalised Least Squares estimator (White, 1988). Weighting each observation in the data set by $\sqrt{N_i}$ yields such residuals. Multiplying Equation (3) through by $\sqrt{N_i}$ gives

$$\sqrt{N_i}\left(\frac{\sum_{i=1}^{N_i} Y_i}{N_i}\right) = \beta\sqrt{N_i}\left(\frac{\sum_{i=1}^{N_i} X_i}{N_i}\right) + \sqrt{N_i}\left(\frac{\sum_{i=1}^{N_i} U_i}{N_i}\right) \quad (7)$$

Re-arranging terms gives

$$\frac{\sum_{i=1}^{N_i} Y_i}{\sqrt{N_i}} = \beta\left(\frac{\sum_{i=1}^{N_i} X_i}{\sqrt{N_i}}\right) + \frac{\sum_{i=1}^{N_i} U_i}{\sqrt{N_i}} \quad (8)$$

The variance of the disturbance term of Equation (8) is

$$E\left(\frac{\sum_{i=1}^{N_i} U_i}{\sqrt{N_i}}\right)^2 = E\left(\frac{\sum_{i=1}^{N_i} Y_i}{\sqrt{N_i}} - \beta\frac{\sum_{i=1}^{N_i} X_i}{\sqrt{N_i}}\right)^2 \quad (9)$$

Re-arranging terms gives

$$\frac{1}{N_i}\left(\sum_{i=1}^{N_i} E(U_i)^2\right) = \left(\frac{1}{N_i}\right)\sum_{i=1}^{N_i} E(Y_i - \beta X_i)^2 \quad (10)$$

The sums on both sides of Equation (10) are equal to N_i, yielding

$$\left(\frac{N_i}{N_i}\right)E(U_i)^2 = \left(\frac{N_i}{N_i}\right)E(Y_i - \beta X_i)^2 \qquad (11)$$

This result confirms that the variance of the disturbance term of Equation (7) is homoskedastic (since Equation (11) = Equation (7)). All model coefficients set out in Chapter 6 use this Weighted (Generalised) Least Squares technique.

Appendix F

Agrarian Party Formation and Dissolution (Diagnostic Statistics)

Table F-1: Country Party Formation and Dissolution, Commonwealth Election, 1922 (Summary Statistics for Alternative Estimators and Specifications)

Australia

Estimator	logit	logit	probit	probit
Model	(1)	(2)	(1)	(2)
L-R Test	68.09	66.80	67.24	65.89
Maddala R-sq	.1292	.1270	.1277	.1253
C-U R-sq	.1779	.1748	.1758	.1725
McF R-sq	.1068	.1047	.1054	.1033
Chow R-sq	.1415	.1407	.1394	.1383

New South Wales

Estimator	logit	logit	probit	probit
Model	(1)	(2)	(1)	(2)
L-R Test	152.76	152.44	155.18	154.40
Maddala R-sq	.4520	.4513	.4572	.4555
C-U R-sq	.6220	.6211	.6292	.6269
McF R-sq	.4637	.4628	.4711	.4687
Chow R-sq	.4942	.5010	.4973	.5020

OtherStates

Estimator	logit	logit	probit	probit
Model	(1)	(2)	(1)	(2)
L-R Test	25.27	25.40	24.70	24.60
Maddala R-sq	.1007	.1012	.0986	.0982
C-U R-sq	.1387	.1394	.1357	.1352
McF R-sq	.0819	.0824	.0801	.0798
Chow R-sq	.1082	.1111	.1042	.1057

Table F-2: National Party Formation and Dissolution, Commonwealth Election, 1922 (Summary Statistics for Alternative Estimators and Specifications)

	Australia			
Estimator	logit	logit	probit	probit
Model	(1)	(2)	(1)	(2)
L-R Test	117.69	132.33	119.86	133.87
Maddala R-sq	.2128	.2356	.2162	.2382
C-U R-sq	.3268	.3623	.3322	.3660
McF R-sq	.2273	.2556	.2315	.2585
Chow R-sq	.2401	.2769	.2381	.2752

	New South Wales			
Estimator	logit	logit	probit	probit
Model	(1)	(2)	(1)	(2)
L-R Test	52.21	53.54	53.20	54.57
Maddala R-sq	.1856	.1901	.1890	.1933
C-U R-sq	.3669	.3753	.3731	.3817
McF R-sq	.2911	.2986	.2966	.3043
Chow R-sq	.2414	.2472	.2330	.2392

	OtherStates			
Estimator	logit	logit	probit	probit
Model	(1)	(2)	(1)	(2)
L-R Test	77.61	85.97	76.33	84.63
Maddala R-sq	.2783	.3032	.2744	.2992
C-U R-sq	.3879	.4226	.3825	.4172
McF R-sq	.2581	.2859	.2538	.2814
Chow R-sq	.3251	.3603	.3162	.3526

Table F-3: Country Party Formation and Dissolution, Commonwealth Election, 1925 (Summary Statistics for Alternative Estimators and Specifications)

Australia

Estimator	logit	logit	probit	probit
Model	(1)	(2)	(1)	(2)
L-R Test	139.45	132.17	139.32	133.06
Maddala R-sq	.2468	.2356	.2466	.2370
C-U R-sq	.3395	.3241	.3393	.3260
McF R-sq	.2184	.2070	.2182	.2084
Chow R-sq	.2493	.2299	.2451	.2274

New South Wales

Estimator	logit	logit	probit	probit
Model	(1)	(2)	(1)	(2)
L-R Test	155.71	156.31	153.28	155.56
Maddala R-sq	.4583	.4596	.4531	.4580
C-U R-sq	.6194	.6211	.6123	.6190
McF R-sq	.4552	.4569	.4481	.4548
Chow R-sq	.5198	.5093	.4997	.5044

OtherStates

Estimator	logit	logit	probit	probit
Model	(1)	(2)	(1)	(2)
L-R Test	96.99	98.52	97.41	99.02
Maddala R-sq	.3347	.3390	.3359	.3403
C-U R-sq	.4752	.4812	.4769	.4832
McF R-sq	.3343	.3397	.3359	.3414
Chow R-sq	.3490	.3526	.3470	.3512

Table F-4: National Party Formation and Dissolution, Commonwealth Election, 1925 (Summary Statistics for Alternative Estimators and Specifications)

Australia

Estimator	logit	logit	probit	probit
Model	(1)	(2)	(1)	(2)
L-R Test	73.27	69.93	71.71	72.05
Maddala R-sq	.1384	.1325	.1356	.1362
C-U R-sq	.2109	.2020	.2067	.2077
McF R-sq	.1395	.1332	.1366	.1372
Chow R-sq	.1226	.1142	.1240	.1139

New South Wales

Estimator	logit	logit	probit	probit
Model	(1)	(2)	(1)	(2)
L-R Test	45.48	44.56	47.22	46.37
Maddala R-sq	.1639	.1609	.1697	.1669
C-U R-sq	.2603	.2555	.2694	.2649
McF R-sq	.1802	.1766	.1871	.1837
Chow R-sq	.1281	.1272	.1323	.1303

OtherStates

Estimator	logit	logit	probit	probit
Model	(1)	(2)	(1)	(2)
L-R Test	113.51	115.08	114.54	116.21
Maddala R-sq	.3793	.3834	.3820	.3863
C-U R-sq	.5579	.5639	.5618	.5682
McF R-sq	.4187	.4245	.4225	.4286
Chow R-sq	.4084	.4125	.4098	.4141

Table F-5: Country Party Formation and Dissolution, Commonwealth Election, 1928 (Summary Statistics for Alternative Estimators and Specifications)

Australia

Estimator	logit	logit	probit	probit
Model	(1)	(2)	(1)	(2)
L-R Test	79.09	92.22	80.62	93.70
Maddala R-sq	.1485	.1709	.1511	.1734
C-U R-sq	.1997	.2299	.2033	.2332
McF R-sq	.1181	.1377	.1204	.1399
Chow R-sq	.1343	.1565	.1340	.1566

New South Wales

Estimator	logit	logit	probit	probit
Model	(1)	(2)	(1)	(2)
L-R Test	147.34	151.61	145.90	151.09
Maddala R-sq	.4402	.4495	.4370	.4483
C-U R-sq	.5960	.6086	.5917	.6071
McF R-sq	.4325	.4450	.4282	.4435
Chow R-sq	.4942	.4938	.4839	.4933

OtherStates

Estimator	logit	logit	probit	probit
Model	(1)	(2)	(1)	(2)
L-R Test	12.84	16.04	12.53	15.78
Maddala R-sq	.0525	.0652	.0513	.0642
C-U R-sq	.0703	.0872	.0686	.0858
McF R-sq	.0392	.0490	.0382	.0482
Chow R-sq	.0584	.0702	.0565	.0685

Table F-6: National Party Formation and Dissolution, Commonwealth Election, 1928 (Summary Statistics for Alternative Estimators and Specifications)

Australia

Estimator	logit	logit	probit	probit
Model	(1)	(2)	(1)	(2)
L-R Test	84.76	87.15	84.47	87.52
Maddala R-sq	.1583	.1623	.1578	.1631
C-U R-sq	.2171	.2226	.2164	.2237
McF R-sq	.1319	.1356	.1315	.1364
Chow R-sq	.1631	.1606	.1608	.1594

New South Wales

Estimator	logit	logit	probit	probit
Model	(1)	(2)	(1)	(2)
L-R Test	75.86	76.95	75.83	76.71
Maddala R-sq	.2582	.2614	.2581	.2607
C-U R-sq	.3530	.3573	.3529	.3564
McF R-sq	.2272	.2304	.2271	.2297
Chow R-sq	.2633	.2666	.2630	.2665

OtherStates

Estimator	logit	logit	probit	probit
Model	(1)	(2)	(1)	(2)
L-R Test	62.28	62.41	62.05	62.95
Maddala R-sq	.2303	.2307	.2295	.2324
C-U R-sq	.3170	.3176	.3160	.3200
McF R-sq	.2020	.2024	.2012	.2041
Chow R-sq	.2381	.2245	.2297	.2203

Appendix G

Agrarian Voter Behaviour (Diagnostic Statistics)

Table G-1: Country Party Electoral Support, All States, Commonwealth Election, 1922 (Diagnostic Statistics for Alternate Model Specifications)

House of Representatives

	Turnout		Vote	
Model	(1)	(2)	(1)	(2)
Summary Statistics				
F	32.94	29.65	18.44	29.66
Std Err	.0897	.1659	.1218	.1659
R-sq (Adj)	.5196	.4925	.3907	.4925
Diagnostic Statistics -- Normality of Residuals				
Chi-sq (N)	44.35	44.51	104.50	44.50
Chi-sq (JB)	48.69	31.96	234.72	31.96
Skewness	.6347	.3511	1.311	.3511
Kurtosis	1.879	1.651	3.604	1.651
Diagnostic Statistics -- Heteroskedasticity				
Y-Hat	12.45	0.342	18.77	0.342
Y-Hat**2	13.37	0.179	22.63	0.179
ln(Y-Hat**2)	11.36	1.965	12.74	1.065
B-P-G Test	65.18	46.64	40.92	46.64
Harvey Test	41.87	37.95	38.33	37.95

Senate

Summary Statistics				
F	39.84	41.06	22.07	33.93
Std Err	.0985	.5843	.1147	.6532
R-sq (Adj)	.4889	.4905	.3608	.4688
Diagnostic Statistics -- Normality of Residuals				
Chi-Sq (N)	40.24	28.66	159.27	94.49
Chi-Sq (JB)	17.40	12.43	507.99	162.97
Skewness	.0446	.0289	1.486	0.552
Kurtosis	1.049	.8728	4.626	2.798
Diagnostic Statistics -- Heteroskedasticity				
Y-Hat	17.92	0.686	32.41	5.802
Y-Hat**2	19.14	0.261	37.54	5.552
ln(Y-Hat**2)	16.21	1.257	18.32	5.556
B-P-G Test	85.50	41.74	49.55	42.28
Harvey Test	58.93	32.88	58.79	49.40

Table G-2: Country Party Electoral Support, New South Wales, Commonwealth Election, 1922 (Diagnostic Statistics for Alternate Model Specifications)

House of Representatives

	Turnout		Vote	
Model	(1)	(2)	(1)	(2)
Summary Statistics				
F	5.74	5.77	15.38	17.46
Std Err	.0497	.0949	.1230	.5151
R-sq (Adj)	.2339	.2350	.5035	.5374
Diagnostic Statistics -- Normality of Residuals				
Chi-sq (N)	11.50	24.79	39.33	22.78
Chi-sq (JB)	1.48	0.17	25.58	3.823
Skewness	.2300	.0869	0.709	.0855
Kurtosis	0.012	0.021	1.587	.8025
Diagnostic Statistics -- Heteroskedasticity				
Y-Hat	1.69	4.163	8.659	0.446
Y-Hat**2	1.65	4.168	10.59	2.102
ln(Y-Hat**2)	1.54	4.128	2.555	8.812
B-P-G Test	20.57	19.05	19.87	13.82
Harvey Test	5.70	8.40	15.68	13.52

Senate

Summary Statistics				
F	6.11	5.98	23.95	45.93
Std Err	.0711	.1519	.1088	.4822
R-sq (Adj)	.1731	.1695	.5075	.6688
Diagnostic Statistics -- Normality of Residuals				
Chi-Sq (N)	27.54	34.38	58.77	32.79
Chi-Sq (JB)	85.87	493.25	157.74	16.87
Skewness	.1371	1.099	1.162	0.448
Kurtosis	2.910	6.346	3.416	1.306
Diagnostic Statistics -- Heteroskedasticity				
Y-Hat	2.528	1.395	37.89	12.57
Y-Hat**2	2.358	1.255	68.69	0.180
ln(Y-Hat**2)	2.555	1.506	13.16	0.038
B-P-G Test	13.19	18.71	150.61	113.74
Harvey Test	22.20	28.91	27.02	17.31

Table G-3: Country Party Electoral Support, Queensland, South Australia, Western Australia and Tasmania, Commonwealth Election, 1922 (Diagnostic Statistics for Alternate Model Specifications)

House of Representatives

	Turnout		Vote	
Model	(1)	(2)	(1)	(2)
Summary Statistics				
F	38.39	38.04	6.88	15.21
Std Err	.0916	.1680	.1763	.6836
R-sq (Adj)	.6898	.6879	.2741	.4791
Diagnostic Statistics -- Normality of Residuals				
Chi-sq (N)	17.46	16.72	23.87	23.57
Chi-sq (JB)	2.70	3.76	21.86	643.77
Skewness	.2812	.0936	.4153	1.419
Kurtosis	.5249	.7776	1.754	9.625
Diagnostic Statistics -- Heteroskedasticity				
Y-Hat	8.806	2.764	1.472	0.405
Y-Hat**2	10.66	1.587	2.849	0.846
ln(Y-Hat**2)	7.361	18.05	4.329	0.017
B-P-G Test	41.63	39.35	31.29	7.883
Harvey Test	19.93	35.13	13.67	15.26

Senate

Summary Statistics				
F	33.97	36.66	9.34	10.67
Std Err	.0967	.1733	.0887	.6941
R-sq (Adj)	.6319	.6500	.3206	.3540
Diagnostic Statistics -- Normality of Residuals				
Chi-Sq (N)	19.62	13.89	92.20	22.66
Chi-Sq (JB)	3.127	10.06	110.96	44.18
Skewness	.3014	.0580	1.337	0.302
Kurtosis	.4834	1.229	3.133	2.399
Diagnostic Statistics -- Heteroskedasticity				
Y-Hat	8.156	7.697	34.48	4.230
Y-Hat**2	10.54	2.868	41.19	5.570
ln(Y-Hat**2)	6.197	29.55	25.67	2.810
B-P-G Test	38.84	24.24	44.92	19.28
Harvey Test	21.60	22.72	31.72	12.65

Table G-4: Australian Labor Party Electoral Support, Commonwealth Election, 1922 (Diagnostic Statistics for Alternate Model Specifications)

House of Representatives

	Australia		NewSouthWales		OtherStates	
Model	(1)	(2)	(1)	(2)	(1)	(2)
Summary Statistics						
F	14.52	12.26	9.56	9.59	11.77	9.72
Std Err	.1003	.2866	.0816	.2169	.1023	.3021
R-sq (Adj)	.3764	.3344	.4228	.4235	.4524	.4002
Diagnostic Statistics (Normality of Residuals)						
Chi-sq (N)	11.83	38.24	21.08	27.76	17.28	17.86
Chi-sq (JB)	19.02	19.37	5.27	7.23	5.05	4.03
Skewness	.0428	.3321	.3369	.4820	.0980	.2557
Kurtosis	1.394	1.182	.7787	.6945	1.027	.7561
Diagnostic Statistics (Heteroskedasticity)						
Y-Hat	0.147	12.74	1.164	4.075	0.626	11.39
Y-Hat**2	0.464	12.31	1.435	1.668	0.435	11.83
ln(Y-Hat**2)	0.000	11.99	1.051	1.773	1.056	10.50
B-P-G Test	13.55	31.61	8.730	27.70	9.404	25.72
Harvey Test	16.37	30.77	6.627	17.18	9.844	19.59

Senate

Summary Statistics						
F	23.78	23.06	21.42	19.08	16.09	15.69
Std Err	.1028	.3082	.0977	.3072	.0872	.2497
R-sq (Adj)	.3790	.3715	.4782	.4479	.4614	.4548
Diagnostic Statistics -- Normality of Residuals						
Chi-Sq (N)	81.41	98.53	34.27	53.61	17.81	16.05
Chi-Sq (JB)	162.4	502.5	109.4	211.9	7.40	11.04
Skewness	.3726	.8376	.2821	.5121	.1342	.4004
Kurtosis	2.941	5.073	3.282	4.423	1.021	.9952
Diagnostic Statistics -- Heteroskedasticity						
Y-Hat	1.200	18.33	0.279	4.020	10.92	4.364
Y-Hat**2	0.554	20.34	0.818	4.032	13.44	6.662
ln(Y-Hat**2)	2.078	14.20	1.175	3.396	8.81	1.841
B-P-G Test	49.03	44.93	53.08	40.93	49.97	44.11
Harvey Test	25.82	46.07	23.87	30.26	17.66	36.03

Table G-5: National Party Electoral Support, Commonwealth Election, 1922 (Diagnostic Statistics for Alternate Model Specifications)

House of Representatives

	Australia		NewSouthWales		OtherStates	
Model	(1)	(2)	(1)	(2)	(1)	(2)
Summary Statistics						
F	9.22	9.40	13.22	11.39	3.29	4.66
Std Err	.1039	.3727	.0909	.3444	.0939	.3044
R-sq (Adj)	.3006	.3051	.4886	.4478	.2064	.2999
Diagnostic Statistics (Normality of Residuals)						
Chi-sq (N)	15.78	77.43	35.08	36.67	14.64	11.23
Chi-sq (JB)	7.30	29.42	3.21	22.49	7.45	0.24
Skewness	.2598	.7153	.3212	.8633	.7603	.1395
Kurtosis	0.767	1.224	.5192	1.185	.3342	.0732
Diagnostic Statistics (Heteroskedasticity)						
Y-Hat	9.280	0.182	1.124	4.072	0.367	2.109
Y-Hat**2	8.064	0.095	0.408	3.431	0.527	1.500
ln(Y-Hat**2)	10.16	0.307	1.865	4.205	0.210	2.746
B-P-G Test	28.90	23.82	14.94	16.06	13.13	14.83
Harvey Test	24.76	21.18	11.79	17.64	23.77	23.05

Senate

Summary Statistics						
F	13.12	10.38	16.93	12.16	4.16	4.93
Std Err	.1101	.4232	.1045	.4346	.0933	.2895
R-sq (Adj)	.2449	.2005	.4168	.3332	.1500	.1804
Diagnostic Statistics -- Normality of Residuals						
Chi-Sq (N)	57.17	103.9	60.01	113.6	20.94	14.91
Chi-Sq (JB)	37.79	687.4	83.43	212.1	2.15	25.78
Skewness	.1854	1.557	.7411	1.534	.2552	.5121
Kurtosis	1.457	5.568	2.768	3.937	.1759	1.659
Diagnostic Statistics -- Heteroskedasticity						
Y-Hat	9.318	2.066	1.932	35.99	1.001	3.245
Y-Hat**2	7.320	1.266	2.310	62.95	0.793	2.826
ln(Y-Hat**2)	10.75	3.068	1.411	19.23	1.139	3.651
B-P-G Test	48.08	39.14	37.67	131.5	35.40	37.19
Harvey Test	19.62	40.91	25.11	44.35	17.30	24.30

Table G-6: Country Party Electoral Support, House of Representatives, Commonwealth Election, 1925 (Diagnostic Statistics for Alternate Model Specifications)

	Turnout		Vote	
		Australia		
Model	(1)	(2)	(1)	(2)
F	5.66	5.36	6.09	4.91
Std Err	.0417	.0568	.1512	.4654
R-sq (Adj)	.2329	.2210	.2629	.2141
Chi-sq (N)	27.11	27.89	19.14	51.33
Chi-sq (JB)	0.74	3.24	1.11	49.06
Skewness	.0958	.2174	.2000	.8732
Kurtosis	.2815	.4999	.0639	1.957
Y-Hat	21.18	21.40	6.685	16.58
Y-Hat**2	20.27	26.71	6.187	17.66
ln(Y-Hat**2)	22.06	16.12	5.299	12.50
B-P-G Test	52.22	54.33	32.88	26.06
Harvey Test	24.94	30.17	24.27	38.62
		New South Wales		
F	3.68	3.37	4.94	4.26
Std Err	.0389	.0517	.1517	.5020
R-sq (Adj)	.2066	.1862	.2938	.2546
Chi-Sq (N)	14.00	11.65	14.09	27.24
Chi-Sq (JB)	.2693	.4888	1.110	14.76
Skewness	.0935	.0107	.0086	.5551
Kurtosis	.2832	.4282	.4750	1.563
Y-Hat	0.139	0.296	9.136	11.02
Y-Hat**2	0.102	0.736	8.177	12.64
ln(Y-Hat**2)	0.183	0.041	9.675	8.57
B-P-G Test	40.85	33.43	17.15	19.16
Harvey Test	27.08	27.98	13.07	19.65
		Other States		
F	3.46	3.42	3.36	2.11
Std Err	.0424	.0592	.1282	.1050
R-sq (Adj)	.2386	.2355	.2410	.1140
Chi-Sq (N)	4.96	6.50	25.72	27.16
Chi-Sq (JB)	1.01	0.71	4.07	8.48
Skewness	.3153	.2630	.6228	.8361
Kurtosis	.0177	.1735	.2357	.6591
Y-Hat	16.32	14.43	0.558	1.657
Y-Hat**2	15.87	15.89	0.509	2.203
ln(Y-Hat**2)	16.77	12.64	0.549	1.141
B-P-G Test	26.34	24.75	10.56	11.84
Harvey Test	30.29	22.65	15.65	9.35

Table G-7: Country Party Electoral Support, Senate, Commonwealth Election, 1925 (Diagnostic Statistics for Alternate Model Specifications)

	Turnout		Vote	
		Australia		
Model	(1)	(2)	(1)	(2)
F	18.20	15.24	19.62	31.99
Std Err	.0417	.0577	.1165	.6435
R-sq (Adj)	.3636	.3216	.4005	.5274
Chi-sq (N)	58.45	81.49	91.82	61.27
Chi-sq (JB)	10.85	47.33	281.8	130.7
Skewness	.3025	.5986	1.301	.0886
Kurtosis	.5363	1.160	3.784	3.061
Y-Hat	3.07	25.26	24.46	0.000
Y-Hat**2	3.05	28.69	25.23	0.192
ln(Y-Hat**2)	3.07	21.20	22.66	0.612
B-P-G Test	24.18	79.52	51.03	13.24
Harvey Test	61.05	77.44	52.62	21.99
		New South Wales		
F	14.46	13.47	12.57	20.92
Std Err	.0412	.0563	.1254	.6523
R-sq (Adj)	.3762	.3584	.3585	.4909
Chi-Sq (N)	39.79	51.62	63.52	45.35
Chi-Sq (JB)	11.60	29.47	165.4	95.35
Skewness	.1903	.3787	1.287	.1445
Kurtosis	.9601	1.402	3.296	3.078
Y-Hat	0.245	29.80	39.38	1.401
Y-Hat**2	0.091	35.23	69.82	3.627
ln(Y-Hat**2)	0.485	22.74	17.70	0.036
B-P-G Test	19.97	52.98	111.9	22.59
Harvey Test	33.98	36.92	40.46	12.42
		Other States		
F	9.66	6.48	23.48	26.52
Std Err	.0341	.0499	.0631	.4610
R-sq (Adj)	.4675	.3548	.7127	.7382
Chi-Sq (N)	12.47	12.33	33.93	19.82
Chi-Sq (JB)	0.73	6.54	44.38	0.22
Skewness	.2031	.4415	.7458	.1201
Kurtosis	.1917	.9223	3.467	.1017
Y-Hat	14.71	12.46	0.543	2.464
Y-Hat**2	14.63	14.12	6.893	1.146
ln(Y-Hat**2)	14.67	10.45	6.871	7.86
B-P-G Test	42.44	40.11	21.22	35.16
Harvey Test	29.56	50.90	24.22	15.86

Table G-8: Australian Labor Party Electoral Support, Commonwealth Election, 1925 (Diagnostic Statistics for Alternate Model Specifications)

House of Representatives

	Australia		NewSouthWales		OtherStates	
Model	(1)	(2)	(1)	(2)	(1)	(2)
Summary Statistics						
F	17.08	14.83	18.82	18.53	8.01	7.38
Std Err	.0771	.2058	.0529	.1447	.0898	.2273
R-sq (Adj)	.5330	.4950	.6605	.6567	.5035	.4790
Diagnostic Statistics (Normality of Residuals)						
Chi-sq (N)	24.37	27.04	13.07	22.68	29.44	19.66
Chi-sq (JB)	69.31	34.57	7.95	24.55	2.73	45.67
Skewness	.2707	.3900	.0714	.1488	.3778	1.082
Kurtosis	3.242	2.190	1.483	2.544	.8968	3.950
Diagnostic Statistics (Heteroskedasticity)						
Y-Hat	7.543	3.405	0.104	2.205	7.065	1.559
Y-Hat**2	9.140	4.648	0.049	2.246	7.576	1.738
ln(Y-Hat**2)	5.796	1.535	0.175	2.165	6.259	1.336
B-P-G Test	32.27	16.49	31.08	27.79	23.75	15.33
Harvey Test	20.79	19.87	18.50	21.06	13.80	16.30

Senate

Summary Statistics						
F	17.97	21.85	17.03	17.85	13.18	9.07
Std Err	.1108	.2646	.1017	.2375	.0854	.2604
R-sq (Adj)	.3784	.4280	.4367	.4492	.5720	.4678
Diagnostic Statistics -- Normality of Residuals						
Chi-Sq (N)	95.11	78.47	52.70	52.50	27.41	21.11
Chi-Sq (JB)	804.6	443.0	298.8	216.1	6.08	11.94
Skewness	1.763	.9551	1.215	.6974	.3961	.4144
Kurtosis	8.406	5.528	5.155	4.611	1.150	1.764
Diagnostic Statistics -- Heteroskedasticity						
Y-Hat	3.428	2.548	49.78	1.357	7.985	0.110
Y-Hat**2	3.819	3.197	2.385	1.206	8.576	0.162
ln(Y-Hat**2)	2.438	1.651	2.312	1.404	5.790	0.014
B-P-G Test	60.07	39.96	224.0	41.15	39.11	31.37
Harvey Test	19.06	16.13	32.17	38.66	18.26	41.65

Table G-9: National Party Electoral Support, Senate Commonwealth Election, 1925 (Diagnostic Statistics for Alternate Model Specifications)

	Australia		NewSouthWales		OtherStates	
Model	(1)	(2)	(1)	(2)	(1)	(2)
Summary Statistics						
F	6.39	5.02	10.50	6.53	5.93	4.87
Std Err	.1247	.5046	.1236	.5283	.0678	.2674
R-sq (Adj)	.1612	.1252	.3142	.2098	.3465	.2919
Diagnostic Statistics (Normality of Residuals)						
Chi-sq (N)	59.49	119.6	25.52	81.27	12.41	23.50
Chi-sq (JB)	39.49	322.1	13.00	207.5	2.38	16.20
Skewness	.4415	1.460	.4692	1.468	.3398	.8645
Kurtosis	1.581	4.090	.7913	3.826	.5959	1.534
Diagnostic Statistics (Heteroskedasticity)						
Y-Hat	24.27	0.042	17.92	0.045	0.960	6.305
Y-Hat**2	26.62	0.038	34.42	0.060	1.252	7.304
ln(Y-Hat**2)	19.53	0.036	8.33	0.038	0.704	5.127
B-P-G Test	56.23	21.76	83.99	17.85	19.31	28.55
Harvey Test	38.12	30.97	23.32	30.60	6.74	14.06

Table G-10: Country Party Electoral Support, House of Representatives, Commonwealth Election, 1928 (Diagnostic Statistics for Alternate Model Specifications)

	Turnout		Vote	
		Australia		
Model	(1)	(2)	(1)	(2)
F	12.63	12.57	5.60	7.05
Std Err	.0314	.0384	.1777	1.677
R-sq (Adj)	.4431	.4419	.2504	.3064
Chi-sq (N)	12.86	14.08	23.80	64.58
Chi-sq (JB)	0.13	0.50	15.84	575.4
Skewness	.0652	.1479	.3011	1.737
Kurtosis	.0341	.0773	1.525	9.171
Y-Hat	7.96	9.703	11.77	52.89
Y-Hat**2	7.55	12.26	8.26	62.59
ln(Y-Hat**2)	8.38	7.33	14.69	34.06
B-P-G Test	34.02	36.60	58.74	62.46
Harvey Test	13.86	26.15	38.59	64.03
		New South Wales		
F	6.14	6.11	7.00	9.88
Std Err	.0267	.0324	.1862	1.754
R-sq (Adj)	.3749	.3788	.4131	.5128
Chi-Sq (N)	12.97	13.36	17.98	19.31
Chi-Sq (JB)	1.89	0.53	0.34	15.75
Skewness	.3511	.0651	.0709	.6948
Kurtosis	.0767	.2947	.3599	1.870
Y-Hat	0.356	0.489	0.027	1.253
Y-Hat**2	0.425	0.075	0.032	5.463
ln(Y-Hat**2)	0.293	1.416	0.092	15.92
B-P-G Test	34.19	23.17	29.24	16.41
Harvey Test	25.15	21.94	16.65	14.29
		Other States		
F	9.63	8.39	4.29	3.36
Std Err	.0302	.0385	.0952	.2082
R-sq (Adj)	.5105	.4706	.2772	.2117
Chi-Sq (N)	16.06	19.66	7.46	17.08
Chi-Sq (JB)	1.66	2.67	0.29	2.42
Skewness	.3671	.4728	.1426	.4086
Kurtosis	.1068	.0102	.0119	.3962
Y-Hat	7.418	9.026	0.435	2.187
Y-Hat**2	7.047	11.39	0.437	2.868
ln(Y-Hat**2)	7.795	6.69	0.409	1.500
B-P-G Test	18.11	18.98	17.73	19.48
Harvey Test	23.26	20.27	17.61	16.94

Table G-11: Country Party Electoral Support, Senate, Commonwealth Election, 1928
(Diagnostic Statistics for Alternate Model Specifications)

	Turnout		Vote	
		Australia		
Model	(1)	(2)	(1)	(2)
F	19.18	14.98	24.49	31.24
Std Err	.0368	.0497	.1223	.6236
R-sq (Adj)	.3766	.3170	.4574	.5205
Chi-sq (N)	34.50	48.06	88.38	68.52
Chi-sq (JB)	0.17	17.41	141.2	100.1
Skewness	.0447	.4066	.8434	.1106
Kurtosis	.0725	.6038	2.712	4.629
Y-Hat	1.463	32.99	41.87	8.558
Y-Hat**2	1.638	38.40	58.24	7.821
ln(Y-Hat**2)	1.279	26.76	27.42	8.806
B-P-G Test	10.09	78.89	150.6	44.57
Harvey Test	67.86	67.13	64.01	32.40
		New South Wales		
F	12.17	10.96	20.43	30.08
Std Err	.0328	.0425	.1206	.5072
R-sq (Adj)	.3335	.3083	.4847	.5849
Chi-Sq (N)	36.52	26.48	49.06	49.71
Chi-Sq (JB)	0.24	7.40	19.71	90.28
Skewness	.0807	.3093	.4760	.2299
Kurtosis	.0344	.4747	1.048	2.957
Y-Hat	0.375	20.62	41.68	4.420
Y-Hat**2	0.449	22.80	69.04	6.585
ln(Y-Hat**2)	0.299	17.80	16.71	0.450
B-P-G Test	7.679	54.76	147.5	45.20
Harvey Test	58.36	66.39	43.47	17.05
		Other States		
F	15.73	9.53	7.47	12.02
Std Err	.0357	.0545	.0964	.6275
R-sq (Adj)	.6007	.4637	.4124	.5470
Chi-Sq (N)	11.49	18.99	30.26	15.39
Chi-Sq (JB)	1.50	5.98	661.7	3.51
Skewness	.3168	.4403	2.474	.2219
Kurtosis	.0198	.8498	13.33	.9474
Y-Hat	6.967	14.02	0.065	0.974
Y-Hat**2	7.492	14.11	18.17	3.444
ln(Y-Hat**2)	6.318	12.42	9.702	0.001
B-P-G Test	27.36	33.41	22.83	20.67
Harvey Test	20.13	46.31	16.95	11.54

Table G-12: National Party and Australian Labor Party Electoral Support, Senate Commonwealth Election, 1928 (Diagnostic Statistics for Alternate Model Specifications)

National Party

	Australia		NewSouthWales		OtherStates	
Model	(1)	(2)	(1)	(2)	(1)	(2)
Summary Statistics						
F	19.77	17.67	16.39	13.44	6.12	6.00
Std Err	.1049	.5716	.0955	.5725	.0721	.2340
R-sq (Adj)	.4024	.3741	.4267	.3754	.3556	.3498
Diagnostic Statistics (Normality of Residuals)						
Chi-sq (N)	41.65	39.31	22.34	20.81	25.60	25.89
Chi-sq (JB)	5.63	40.87	0.91	7.47	8.69	42.33
Skewness	.1276	.5180	.0709	.3858	.7160	1.227
Kurtosis	.5622	1.455	.3087	.4720	.9340	2.939
Diagnostic Statistics (Heteroskedasticity)						
Y-Hat	2.857	49.98	133.1	27.86	1.252	7.638
Y-Hat**2	1.536	59.43	209.2	34.78	0.581	10.45
ln(Y-Hat**2)	3.898	38.49	35.03	17.97	2.331	4.810
B-P-G Test	99.89	110.1	219.8	90.22	10.78	26.44
Harvey Test	37.75	86.77	68.84	58.69	6.986	14.22

Australian Labor Party

Summary Statistics						
F	21.21	13.35	13.82	8.28	17.36	10.94
Std Err	.1182	.3184	.1224	.3216	.0770	.2407
R-sq (Adj)	.4203	.3068	.3825	.2597	.6430	.5209
Diagnostic Statistics -- Normality of Residuals						
Chi-Sq (N)	74.50	94.30	47.56	65.33	24.99	20.01
Chi-Sq (JB)	384.6	595.7	392.6	640.8	16.88	39.61
Skewness	.7672	3.657	1.226	3.970	.1109	.2625
Kurtosis	16.40	44.86	17.16	46.11	2.276	3.360
Diagnostic Statistics -- Heteroskedasticity						
Y-Hat	1.100	0.026	0.279	0.263	5.694	0.030
Y-Hat**2	1.376	0.028	0.818	0.108	4.693	0.080
ln(Y-Hat**2)	0.624	0.037	1.175	0.494	5.934	0.001
B-P-G Test	77.24	27.92	53.08	46.21	44.34	25.56
Harvey Test	41.94	31.25	23.87	33.20	28.47	17.46

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Notes

[1] (Rosenstone, Behr and Lazarus, 1984); (Pinard, 1975); and (Mazmanian, 1974) are important exceptions to this observation. These studies, however, do not address this study's concerns (which are set out fully in this chapter). Neither focusses attention upon agrarian parties and neither investigates in detail the economic antecedents of non-major party formation, electoral support and dissolution.

[2]These labels are adopted in order to attach a more precise definition to hitherto interchangable terms. This study therefore uses the term "non-major" party in order to refer to a party (other than a major party) whose significance to the party system and voters has not yet been ascertained. It reserves the use of the term "third party" to parties (other than major parties) which bear a significant impact upon major parties and voters (see in particular the discussion in Chapter 7).

[3]The most exhaustive analysis of Western Europe's agrarian parties, by its own admission, is but "an exploratory study and broad synthesising overview of the political behaviour of agrarian groups in Western Europe" (Urwin, 1980p.20). Accordingly, it

> [makes] no attempt to construct a theoretical edifice. Nor, strictly speaking, is the study a systematic empirical analysis of cross-national variations. The methodological orientation is relatively non-rigorous . . . Moreover, the empirical basis is unsatisfactory. Much of the information is impressionistic and qualitative, while the origin and value of some of the quantitative data employed are open to criticism (Urwin, 1980pp.20-21).

[4]The figures for agrarian parties are drawn from Tables 1-1, 1-2 and 1-3; the figures for the other parties are drawn from data set out in Appendix A.

[5]Not even the most comprehensive examination of agrarian parties (Urwin, 1980), makes explicit the concurrent formation of many of these parties. Similarly, von Beyme devotes one sentence to this phenomenon (von Beyme, 1985p.112). Graham discusses the formation of farmers' parties in North America and Australia in comparative perspective (Graham, 1966p.1-28), but makes no attempt to construct a formal theory of non-major and agrarian party formation.

[6]Clearly, Sartori's definition and use of the term "faction" (which is set out fully in the text) differs considerably from other studies' definition of this term. According to Sartori, factions are historically-distinct entities: the factions of the eighteenth and nineteenth centuries evolved (concurrently with the democratisation of politics) into parties (Sartori, 1976p.72). Most analysts, however, define factions as subunits of political parties. Ranney and Kendall, for example, define a faction as "an element inside a party whose purpose is to control the personnel and the policies of the party"(Ranney56 "p.126"). Similarly, Rose asserts that "a political faction may be defined as a group of individuals based upon representatives in Parliament who seek to further a broad range of policies through consciously organised political activity" (Rose, 1964p.37); (Ranney, 1975); (Zariski, 1960pp.27-51); (Beller and Belloni, 1978pp.3-4).

[7]Although he does not emphasise its significance, Urwin is not unaware of this distinction:

> At first glance it would seem that some of [Eastern Europe's] agrarian parties were different from those established in Scandinavia (Urwin, 1980p.164). [Specifically], the Scandinavian agrarian parties were less "peasantist" than "farmers" or interest-group parties (Urwin, 1980p.192).

[8]Knoke and Long, for example, argue that "it seems reasonable to suppose that differences in types of farming and in the market for farm commodities may have important consequences upon [rural] political orientation" (Knoke and Long, 1975p.17). Further, one major study of voter behaviour (Campbell, Converse, Miller and Stokes, 1960) demonstrates that agrarian political behaviour responds to both short-term economic stimuli (i.e., to changes in the prices of agricultural commodities between elections) and to long-term economic stimuli (i.e., farm size).

[9]The Australian Country Party has maintained a continuous existence in the Commonwealth Parliament since its formation prior to the 1922 election. From 1975 to 1982 it was known as the National Country Party and since 1982 it has been known as the National Party.

[10]In particular, these studies do not take steps to ensure that their evidence is representative of the phenomena that they purport to describe. As a result, the evidence upon which these studies are based is not representative; rather, it is the record of a restricted (elite) segment of society. It most typically chronicles elites' actions or interprets the actions of the masses through elites' eyes. Elites' attitudes and behaviour need show little resemblance to the attitudes and behaviour of other social groups. Research which draws upon such evidence in order to make assertions about the attitudes and behaviour of society at large is thus on uncertain methodological ground (Clubb, 1977).

[11]So too is the principal analysis of farmers' and peasants' parties in Western Europe, which

> explores the interconnections between agrarian [social] structure, socio-economic change and political activity. More particularly, the focus is upon the emergence of agrarian political organisations (or their absence) in the decades between the late nineteenth century and the Second World War, and upon how far this emergence was influenced by agricultural [social] structure, by the experience of industrialisation, urbanisation and political democratisation. In this sense the study specifically attempts to test and to expand upon the hypotheses advanced by Lipset and Rokkan (Lipset and Rokkan, 1967) in their seminal study of the historical preconditions of social cleavages and party divisions in Western Europe (Urwin, 1980p.12).

[12]Consensus, however, exists with respect to its principal tenets. Agriculture is, in a Physiocratic sense, the "basic occupation" upon which all other economic pursuits depend; agricultural life is the natural and most fitting life for man; therefore, being natural, it is good, while city life is artificial and evil; rural autarchy is desirable; the farmer's diligence demonstrates his virtue, and the family farm is the bulwark of democracy (Flinn and Johnson, 1974pp.189-195); (Carlson and McLeod, 1978pp.17-30).

[13]This result is consistent with the observation of Campbell et al:

> most discussions share an underlying assumption that there need be some basic congruence between the ideology proposed by the [agrarian party's] elite and the motivations of the mass base in flocking to its electoral support. To presume that the mass base is endorsing the ideology as the analyst conceives it is to presume that [it] is in some sense comprehended by more than a handful within the mass base. [Our findings] tend to call this assumption into question even for the moderately educated and moderately involved voter. It should be clear that no commonly recognized political actor would be less likely to fulfill this assumption than the farmer (Campbell, Converse, Miller and Stokes, 1960p.436); see also (Converse, 1964p.231)

[14]Lipset, for example, asserts that

> the cleavage that developed early [in Saskatchewan's political history] between the economically dominant urban world and insecure rural areas was sharpened by fluctuations in the business cycle and encouraged conflict between the urban middle classes and farmers (Lipset, 1950p.29); see also (Graham, 1966p.17).

[15]More generally, for discussions of economic conditions as catalysts of the formation of transient

non-major parties, see (Bone, 1965p.142); (Ranney and Kendall, 1956p.458); (Downs, 1957p.130); (Chambers, 1967p.32).

[16]See also (Hauss and Rayside, 1978); (Studlar and McAllister, 1987).

[17]The assertion that electoral laws facilitated non-major party (i.e., Country Party) formation in Australia is compelling (Webb, 1954). *A priori*, however, the effect of electoral laws would not appear to be decisive: despite different electoral laws (simple candidate ballot and plurality electoral formula in Canada; alternate candidate ballot and majority electoral formula [after 1918] and compulsory voting [after 1922] in Australia), both countries spawned agrarian parties in the years immediately after the First World War. Further, despite the fact that (within each country) all regions vote on the basis of identical electoral laws, only particular areas of each country spawned (and, in the case of Australia, sustained) agrarian parties.

[18]Equation (3.1) deliberately expresses Δ y(k) as a cumulative function of of the two inputs. It thereby captures an important characteristic of party behaviour: parties cannot possibly respond to the demands of all voters; rather, they must respond selectively (using some decision-rule or criterion) to the demands of particular voters. Equation (3.1) specifies one such criterion: parties respond only to demands which are sustained over time. As Figures 3-1 and 3-2 will make clear, inputs which occur only at a single point in time have much less influence upon Δ y(k) than inputs which are sustained over time.

[19]This analyses closely follows the analysis of (Boynton, 1980).

[20]New Zealand price indices for these commodities are not directly comparable to the Australian and Canadian indices.

[21]Econometric analyses of Australian electoral behaviour include (Douglas, 1975); (Schneider and Pommerehne, 1980); (Mughan, 1987). Econometric analyses of Canadian electoral behaviour include (Erickson, 1988).

[22]Kramer explicitly adopts the tenets of the rational choice model of voting (Kramer, 1971); subsequent works implicitly follow its lead (Monroe, 1979p.143). Riker stresses the importance of this assumption:

> Kramer's [1971] essay is, in my opinion, mainly significant as an effort to sustain the tradition of rational choice [in voting]. He speaks of the vote as a rational choice between alternatives and says that his study is an attempt to put that interpretation to "a more direct test than is readily possible with survey data" (Riker and Ordeshook, 1973p.178).

[23]At least one former chairman of the [American] Council of Economic Advisers accepts the view that the results of a government's economic policy has an important influence on voting (Okun, 1973p.176). So too did British Prime Minister Harold Wilson:

> All political history shows that the standing of a Government and its ability to hold the confidence of the electorate at a General Election depend on the success of its economic policy [quoted in (Goodhart and Bhansali, 1970p.45)

Further, Paldham notes that

> It is difficult for many reasons to treat the short- and the long-run in the same statistical analysis, and [therefore] it is a recognised tradition that [econometric analyses of electoral behaviour] concentrate on the short-run. Consequently, they deal with the swing voter only. In such short-run analyses the long-run element might often be regarded simply as a trend dependent only on time (Paldham, 1981p.183).

[24]Equation (4.1) serves a heuristic purpose only; it includes all variables normally incorporated into econometric studies of electoral behaviour. In practice, most studies omit one or more of its terms.

[25]This omission appears to result from a lack of theoretical guidance:

> Third party votes are not included since it is unclear whether they represent a vote against the incumbent party or a protest against the two party system (Bloom and Price, 1975p.1241).

Nonetheless, Kramer acknowledges that

> we should try to incorporate the minor party vote into the analysis rather than lose information by simply ignoring it (Kramer, 1971p.136).

[26]Studies using aggregate-level data often (but by no means always) find a relationship between macro-economic conditions and electoral behaviour. Studies using individual-level (sample survey) data, however, largely fail to uncover such a relationship. This study follows Kramer's argument that (1) this discrepancy is a statistical artifact, that (2) individual-level estimates of the effects of macro-economic conditions on electoral behaviour are badly biased, and that (3) analyses using aggregate data yield more reliable estimates of this relationship. (Kramer, 1983). This chapter thus focusses largely upon econometric analyses of electoral behaviour which employ aggregate-level data.

[27]see also (Okun, 1973); (Lewis-Beck, 1984); (Feldman, 1984); (Weatherford, 1983); (Bloom and Price, 1975); (Tufte, 1975); (Tufte, 1978); (Paldham, 1981).

[28]See also (Stigler, 1973p.160); (Fiorina, 1978); (Owens and Olson, 1980).

[29]The most notable exceptions are (Fair, 1978); (Fair, 1982); (Fair, 1988); (Meltzer and Vellrath, 1975); (Tufte, 1978).

[30]Such a situation is not infrequent: Kramer reports that it has occurred in eight of the thirty-five elections between 1896 and 1964 (Kramer, 1971p.135).

[31]see, for example, (Bloom and Price, 1975p.1251); (Goodman and Kramer, 1975p.1264); (Kramer, 1971p.131)

[32]Social science research typically considers the agricultural sector to be an homogenous entity. For a variety of reasons (most notably variations in climatic, moisture and soil conditions that engender geographically distinct patterns of commodity production, together with diverse combinations of land, labour and capital in agriculture), however, it is very difficult to make generalisations about agricultural production or agricultural economic conditions which are valid nation-wide: agriculture is more accurately viewed as a conglomeration of pursuits whose economic prospects vary greatly and whose interests diverge as often as they converge (Schultz, 1945); (Schultz, 1953). These factors (as well as the differential demand for agricultural commodities set out in Chapter 3), account for the substantial variability of the economic conditions and prospects faced by primary producers. Treatment of aggregate trends in production (or of the conditions faced by a particular region or group of commodity producers) as if they were representative of economic fortunes of agriculture in general leads almost inevitably to distorted or erroneous conclusions (Johnson, 1985p.172).

[33]Specifically, these data are available from

- *New South Wales Statistical Register:* Crop and livestock statistics for the year ended 30th June 1922 (which record agricultural conditions closest to the 1922 Commonwealth elections) are available in the 1921-1922 edition at pp. 724-749; for the year ended 30th June 1925 (which set out conditions closest to the 1925 elections), in the 1924-1925 edition at pp. 678-693 and for the year ended 30th June 1928 (which set out conditions closest to the 1928 elections) in the 1927-1928 edition at pp. 584-599.
- *Statistics of the State of Queensland:* Crop and livestock statistics are for the years 1922, 1925 and 1928 are available in the 1921-1922, 1924-1925 and 1927-1928 editions at pp. 7H-10H and 20H-45H.

- *Statistical Register of the State of South Australia:* the 1921-1922, 1924-1925 and 1927-1928 editions set out local crop and livestock statistics in part V. pp. 1ff.
- *Statistical Register of Western Australia:* crop and livestock statistics for the period ended 28 February 1922 appear in part V of the 1921-1922 edition at. pp. 12-27, 50-61; for the period ended 28 February 1925, in part V of the 1924-1925 edition at pp. 12-27 and 52-65, and for the period ended 28 February 1928, in part V of the 1927-1928 edition at pp. 12-27 and 50-65.
- *Statistics of the State of Tasmania:* statistics for the year ended 1st March 1922 appear in part V of the 1921-1922 edition at pp. 30-42; for the year ended 1st March 1925, in the 1924-25 edition at pp. 22-36, and for the year ended 1st March 1928 in the 1927-28 edition at pp. 21-35.

[34]The boundaries of these agricultural economic, electoral and census data co-incide. For the census of 1921 the Commonwealth Electoral Officer in each state became a Deputy Supervisor of Census, each electoral division became a census division and each census division was divided into census subdivisions whose boundaries corresponded with electoral subdivisions (Australia, 1940pp.8,17-18). Further, in all but a few instances the boundaries of these census-electoral subdivisions co-incide with the boundaries used by extension officers to collect agricultural and pastoral economic data.

[35]Suitable data are not available for the State of Victoria. Accordingly, in the analysis undertaken in Chapters 5 and 6 "Australia" refers to all states except Victoria and "other states" refers to Queensland, South Australia, Western Australia and Tasmania.

[36]The agricultural and pastoral economic variables (i.e., the count as opposed to the proportion variables) described in Table 4-2 are expressed in terms of their logarithmic equivalents. This logarithmic transformation serves an important purpose:

> data that are *counts* [as opposed to proportions] of populations, vital statistics, census data and the like are almost always improved by taking logs. Charles Windsor frequently prescribed the taking of logs of all naturally occurring counts (plus one to handle that embarrassing quantity zero) before analysing them -- no matter what the sources [of the data] (Tufte, 1974p.108).

The logarithmic transformation thus improves the inferences drawn from badly-skewed distributions (Tufte, 1974pp.108-109).

[37]Linear models assume that for each independent variable X_{ij}, the amount of change in the expected value of the dependent variable associated with a unit increase in X_{ij}, holding constant the effects of all other independent variables, is the same regardless of the value of X_{ij}. Additive models assume that for each X_{ij} the amount of change in $E(Y_i)$ associated with a unit increase in X_{ij} (holding all other independent variables constant) is the same regardless of the values of the other independent variables in the model. In contrast, non-linear models posit that this relationship varies according to context: for any independent variable X_{ij}, the change in $E(Y_i)$ associated with a unit increase in X_{ij} varies according to the value of X_{ij}. Finally, if the relationship between X_{ij} and $E(Y_i)$ is expected to vary with the values of other independent variables, a non-additive (interactive) specification is required (Berry and Feldman, 1985p.59).

[38]The alternate estimators (probit and logit) and model specifications that are analysed in this chapter were selected on the basis of a set of diagnostic statistics. These statistics are listed in Appendix F. For example, the parameters of Country Party formation and dissolution in New South Wales at the 1922 Commonwealth election are best estimated by logit estimates of Model (1) because the value of the Likelihood-Ratio Chi-Square and associated test statistics (Maddala R^2, Cragg-Uhler R^2, McFadden R^2 and Chow R^2) for this combination of estimator and model specification exceeds that of the three other combinations of estimators and model specifications. All other equations analysed in this chapter were selected in the same manner.

[39]Elasticities are included in the table because some means of comparing the effects of independent variables (both within and between equations) is desirable and because standardised coefficients ("beta weights") are unsuitable for this purpose (King, 1986:669-674). The independent variable's elasticity (measured at its mean) is superior to the standardised coefficient: it is unit-free and is not sensitive to sample characteristics (Hanushek and Jackson, 1977p.79).

[40]This chapter analyses GLS coefficients estimated from Models (1) and (2). As in Chapter 5, model specifications were selected on the basis of the results of diagnostic tests. These diagnostic statistics (whose results are summarised in Tables 6-2, 6-9 and 6-15) are set out fully in Appendix G. See Appendix G and subsequent footnotes.

[41]The figures in Appendix G (Table G-1) indicate that Model 2 is a more appropriate specification of the Country Party's electoral support (House of Representatives and Senate) than Model 1. The value Chi-square, skewness and kurtosis statistics is less for Model (2) than for Model (1), indicating that the former model's residuals are more normally-distributed than Model 1's residuals. Similarly, the value of the heteroskedasticity statistics is less for Model (2) than for Model (1), indicating that the variance of the former model's residuals is more constant than the variance of Model 1's residuals. With respect to the Country Party's electoral support, Model 2 conforms better to the conditions of the Classical Linear Model than does Model 1; for these same reasons, Model (2) is also a more appropriate model of voter turnout in these electoral subdivisions than Model (1).

[42]In the years immediately following the First World War, nearly all Australians were affiliated, at least nominally, with either the Anglican, Roman Catholic, Presbyterian or Methodist churches. Thus, the proportion of a subdivision's population that is affiliated with any one of these denominations is a linear combination of the proportions affiliated with the other three denominations: for example, in each subdivision

$$p(\text{Anglican}) = f(p(\text{Roman Catholic}) + p(\text{Presbyterian}) + p(\text{Methodist})).$$

This clearly violates the assumption that no independent variable be a perfect linear combination of one or more independent variables, and causes severe estimation problems. The surest way to rid an equation of severe imperfect collinearity is to drop all but one of the offending variables (Studenmund and Cassidy, 1987p.192). Separate analysis of each religious variable reveals that Anglican best predicts the Country Party and Nationalist Party vote, and that Roman Catholic best predicts the ALP vote. For this reason, Anglican was retained as the religious predictor of the Country and Nationalist vote (and Roman Catholic was retained as a predictor of ALP vote choice) in all equations.

[43]In New South Wales, as across Australia, the residuals of Model (2) (Country Party electoral support) are more normally-distributed and homoskedastic than the residuals of Model (1). With respect to voter turnout, however, Model (1)'s residuals are clearly more normally-distributed (Senate) and more homoskedastic (House of Representatives). Model (1) was therefore selected as a more appropriate model of voter turnout.

[44]The diagnostic statistics set out in Table G-3 indicate that, with respect to voter turnout in these states, no model is clearly preferable to the other. Model (2) was therefore selected in order to facilitate comparison with Australia-wide coefficients (the coefficients of both models are very similar). With respect to the Country Party's electoral support, Model (2) was selected on the basis of its more homoskedastic residuals.

[45]The diagnostic statistics set out in Table G-4 indicate that Model (1) is clearly preferable to Model (2) in all equations except Senate elections in states other than New South Wales. Because both models' coefficients in this latter election are very similar, and in order to facilitate comparison of coefficients, Model (1) was selected for Senate elections in these states.

[46]The diagnostic statistics set out in Table G-5 clearly indicate that Model (1) is a more appropriate model of the Nationalist Party's electoral support in the Senate. In House of Representatives elections, Model (1) was selected as the default model because neither model is clearly superior to the other.

[47]The diagnostic statistics set out in Table G-6 indicate clearly that with respect to the Country Party's electoral support the residuals of Model (1) are more normally-distributed and homoskedastic than the residuals of Model (2). (Comparison of Tables G-1 and G-6 thus provides strong evidence that the Country Party's base of support in the House of Representatives changed significantly between 1922 and 1925). This result also obtains with respect to voter turnout (particularly across Australia). Because no model is clearly preferable to the other in New South Wales and states other than New South Wales, and in order to facilitate comparison of coefficients, Model (1) was selected as the more appropriate model of voter turnout sub-nationally.

[48]The diagnostic statistics which indicate that that Model (1) is a more appropriate model of voter turnout and that Model (2) is a more appropriate model of the Country Party's electoral support (Senate) are reported in Table G-7.

[49]The diagnostic statistics set out in Table G-9 indicate that neither model is clearly superior to the other as a representative of the Nationalist Party's electoral support. However, because Model (1)'s residuals are clearly more normally-distributed, because its F statistic is larger, because its coefficients are comparable to those observed in 1922 and because the coefficients of both models are very similar, Model (1) was chosen as the more appropriate model of the Nationalists' electoral support.

[50]The diagnostic statistics reported in Table G-8 indicate, in contrast to the result observed in 1922, that Model (2) is a more appropriate model of the Australian Labor Party's electoral support (Senate) than Model (1). House of Representatives elections in New South Wales corroborate this result. Given the context of labour unrest which surrounded this election, this result seems to corroborate Burnham and Sprague's hypothesis (i.e., that a multiplicative and exponential model will best represent vote choice during a period of social or economic crisis) (Burnham and Sprague, 1970pp.471-490) . This specification of the ALP's electoral support is unanticipated and merits further investigation.

[51]The diagnostic statistics set out in Table G-10 indicate that Model (1) is a more appropriate representation of the Country Party's electoral support (House of Representatives) than Model (2). With respect to voter participation at this election, however, neither model is clearly superior to the other. In order to facilitate comparability with other coefficients, therefore, the coefficients of Model (1) are set out in Table 6-16.

[52]The diagnostic statistics reported in Table G-11 closely resemble the statistics reported in Table G-7: each table indicates that Model (2) represents the Country Party's electoral support in Senate elections more adequately than Model (1), and that Model (1) represents voter participation in these electoral subdivisions more adequately than Model (2).

[53]Table G-12 indicates that Model (1) is a more adequate model than Model (2) of the Nationalist

Party's electoral support: across Australia and in the two sub-national groupings, Model (1)'s F statistics are greater, its normality-of-residuals statistics are smaller and (except in New South Wales) its heteroskedasticity statistics are smaller. F and normality-of-residuals statistics also indicate that Model (1) is a more adequate model than Model (2) of the Australian Labor Party's electoral support. Heteroskedasticity statistics, however, favour Model (2). Following Soares and Hamblin (1967), this result may reflect the crisis atmosphere created by the labour unrest most apparent at the 1925 election and still present at the 1928 election.

[54]See also (Asher, 1980p.189); (Chambers, 1971p.655); (Downs, 1957ch.8); (Sewell, 1976p.84); (Burnham, 1955p.131); (Dinnerstein, 1971p.1506); (Rosebloom and Eckes, 1979p.107); (Sundquist, 1973p.94); (Key, 1964p.281); (Pinard, 1975pp.280-290); (Bone and Ranney, 1963p.147); (Ranney and Kendall, 1956p.458).

[55]See, for example, (Bloom and Price, 1975); (Feldman, 1984); (Goodman and Kramer, 1975); (Kiewiet and Rivers, 1984); (Kinder and Mebane, 983a); (Kramer, 1971); (Lewis-Beck, 1984); (Okun, 1973); (Paldham, 1981); (Tufte, 1975); (Tufte, 1978).

[56]These predictions need not be forecasts of future events. They may be past events whose outcome is not known to the theorist.