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Modeling Politics with Economic Tools:
A Critical Survey of the Literature

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Abstract

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Whereas the economics discipline possesses a highly refined theoretical apparatus to analyze the effects of government behavior on the economy, it has not (yet) managed to fully develop a positively formulated "economic theory of politics" that would permit the integration of the decision-making processes of voters, parties, and governments with those of consumers and firms. Considerable recent advances notwithstanding, the large and heterogeneous body of literature has (so far) remained outside the economic mainstream. This paper surveys the main approaches used to endogenize democratic elements and assesses the underlying reasons for researchers' renewed interest in this field.

<div align="center">Contents   Page</div>

I. THE ECONOMIC THEORY OF POLITICS

A. Introduction

Modeling politics (or simply government behavior) is impeded by the fact that politicians' decisions are not based on prices but considerations typically considered exogenous. While in itself a truism, the above statement highlights the principal reason behind the considerable difficulty encountered in (i) formulating policymakers' objective functions, (ii) identifying the nature of the constraints restricting a policymaker's scope for action when faced with periodic reelection requirements, and (iii) jointly explaining the activities in the private and public sectors of the economy. The large number of recently published politico-economic contributions—in the following subsumed under the heading "economic theory of politics" (ETP)[2]—reflects the renewed interest in this particular subdiscipline of nonmarket economics. Whereas the strikingly heterogeneous approaches used to describe the various aspects of political behavior form a stark contrast to the axiomatic robustness in the theoretical representation of firms and consumers, the politico-economic models have only begun to form a fundamental consensus, thereby differentiating the ETP from other fields in economics.[3]

The necessity to investigate the intricate interplay between the market and the polity was first highlighted by Samuelson (1954). He presented a formal proof demonstrating the market's inability "to determine optimally ... levels of collective consumption" (p. 388) if public goods are included in a representative household's consumption basket. Alternative processes of collective decision-making—such as elections—would need to be considered in order to complement the decentralized pricing system in performing this task.[4]

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[2] The term "economic theory of politics" (or *ökonomische Theorie der Politik*) was coined by Frey (1974a). In his very comprehensive survey article, Frey carefully differentiated a positive theory of politics from alternative approaches, interpreting the former branch of the literature as an attempt to overcome the division between the economic and political sciences. He defined the term as the application of modern economic techniques to political questions (aimed at overcoming the narrowness of "pure" economics). The term itself—but also its definition and substance—closely follows Downs (1957). Synonymous expressions for this literature are public choice, endogenous politics, or new political economy.

[3] In light of the ETP literature's vast and generally disjointed nature, the present review will but trace only the principal innovations. Other surveys—and fairly different angles—can be found in Paldam (1981), Alesina and Tabellini (1988), Persson (1988), Schneider (1992). Especially insightful are the reference texts by Mueller (1979, 1989).

[4] More informally, this view had already been voiced a decade earlier. In his presidential address delivered to the 56th Annual Meeting of the American Economic Association, Wolfe (1944) pleaded—quite passionately—for these two "purposive" sciences to take a joint approach to economic problems and distributive questions.

Notwithstanding Samuelson's critique, the separation between the collective decision-making processes allocating private goods and public ones (through prices and elections, respectively) has tended to demarcate the sphere of interest between economists and political scientists. Few exceptions exist. Among those, the single most important contribution en route to bridging the chasm between these two social sciences was Downs (1957), whose highly influential median voter theorem[5] permitted the familiar "law of one price" to be translated into an analogous "rule of one program." To date, this theorem has remained the ETP's cornerstone.

B. The Limitations of the Traditional "Political Economy" Approach

One reason for the ambiguity in the theoretical description of political processes has been the particular focus traditionally applied to the economic research of policy-related issues. Viewing governments (and their economic behavior) as exogenous, economists have studied the effects of given policies on the state of the economy rather than politics per se, thus abstracting from the interactions linking these two spheres of collective decision-making.

For most economic questions, this approach is adequate and has proven very productive, permitting researchers to derive formal answers to a multitude of questions concerning the inherent economic effects of changes in government behavior. The standard "political economy" approach presupposes that the underlying motivation for government behavior is regarded as being outside the realm of economic interest, implicitly insinuating that, after having determined x to be the least costly tool available to achieve policy goal α^*, the policymaker will abstain from entertaining the thought of implementing policy y, since it will either be more expensive or lead to sub-optimal outcomes.

The implicit abstraction from politico-economic interdependencies raises the question as to whether the economics discipline would lose any important information by restricting its

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[5] Downs demonstrated that candidates would propose identical platforms if the electorate were to be placed in a completely frictionless world with perfect foresight, if preferences were formed over only one (single-peaked) variable, if the two opposing politicians were purely office-motivated, omniscient, and completely rational, and, finally, if "extremist" voters, when confronted with "overly" centrist candidates, did not simply abstain from voting altogether (see Section D). The existence of such an electoral equilibrium, however, gave rise to another important question. As the median voter's ability to "single-handedly" determine political outcomes would represent political stagnation, it was not entirely clear why anybody else should bother to vote at all. For economists, the answer to the subordinate question of "rational abstentions" has not always been immediately obvious either. It has been debated in the considerable literature on voter calculus, instigated by Downs' Chapter 14, in which he argued that a given vote was one for a specific party as well as the principle of democracy. On this point, see also Tullock (1967b). A more formal discussion can be found in Riker and Ordeshook (1968), Davis, Hinich, and Ordeshook (1970), and, more recently, Grant (1998).

analyses to the standard political economy questions of the type described above. The answer is *yes*. In an unrelated work examining the stability of econometric estimates, Lucas (1976) argued that changes to the economic environment, within which expectations are formed, crucially affected those and actions based upon them. Historical relationships, he reasoned, could not be expected to hold if economic policies (for instance, as a result of a change in government) were significantly revised. Lucas' Critique, referring to the inapplicability of econometric estimates derived from past data for the purpose of predicting future behavior under the conditions and constraints of a different policy regime, means—in the present context—that economic agents will adjust their actions if expectations about the (future) government's behavior change. As long as the party composition of a given government and the policies that it intends to pursue remain an exogenous factor (comparable only to "weather"), it follows that the task of forecasting households' and firms' behavior is aggravated, at least over the longer-term horizon. Economic expectations over wage demands, interest rates, inflation rates, budget deficits, and foreign direct investment—to name just a few—all require forecasts about the future behavior of policymakers, which, in turn, is determined by the political party that forms the next government.

C. Questions Regarding the Optimal Size of Government

Typically, economists use the ratio of government expenditure to gross domestic product (GDP) as a shorthand characterization of the government's economic involvement in the economy. And there are, when using this definition of the public sector's economic role, some indications that voters in industrialized economies have been converging toward a generally desired—optimal?—level of public expenditures. Richards (1994), for instance, believed that previous politico-economic episodes in industrialized countries had hinted at an optimal range somewhere between 40 and 50 percent of GDP. While the accompanying summary data for 1993 (see below) demonstrated that only a minority of the industrialized countries, as represented by the Organization for Economic Cooperation and Development (OECD), had actually fallen into this target band, he continued to argue—as it turned out, correctly[6]—that the voters of those countries that had found themselves outside this range would unfavorably respond to their governments' conduct by voting for a change in leadership.

In so doing, Richards' text raised several import questions fundamental to politico-economic studies. They primarily relate to (i) the validity of the conjectured "optimal" range of

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[6]According to the OECD's June 2000 *Economic Outlook* (p. 270), government activity as a share of GDP has, for most of its member countries, continued to move toward the value suggested by Richards (1994), possibly with a tendency to undershoot the "Richards" range. The reduction in the size of government was particularly pronounced in those countries, for which Richards had shown values in excess of 55 percent. Of the 19 countries considered, only 4—Australia, Ireland, Japan, and the United States—seem to defy the rule suggested by him; see Table 1.

Table 1. The Size of Government, 1993-99

(In percent of GDP)

	1993 */	1993 **/	1994 **/	1995 **/	1996 **/	1997 **/	1998 **/	1999 **/
Australia	41.2	36.4	35.0	35.5	34.7	33.2	32.8	32.3
Austria	52.6	53.0	52.4	52.6	51.9	50.7	50.9	50.7
Belgium	59.0	53.1	51.1	50.1	50.3	48.5	48.0	47.9
Canada	51.5	50.0	47.5	46.3	44.4	42.4	42.6	40.2
Denmark	61.9	60.6	60.6	59.0	58.7	56.9	55.7	54.3
Finland	56.3	59.1	57.5	54.3	54.0	51.3	48.4	47.1
France	54.2	53.9	53.8	53.5	53.8	52.8	52.3	52.2
Germany	50.8	46.2	46.0	46.3	47.3	46.3	45.6	45.6
Greece	50.7	47.9	45.5	46.6	44.4	42.8	42.6	43.5
Ireland	47.2	39.1	38.9	36.4	34.5	33.2	31.0	31.5
Italy	54.8	56.4	53.9	52.3	52.5	49.9	48.7	48.3
Japan	34.9	33.7	34.4	35.6	35.9	34.9	36.6	38.1
Netherlands	59.3	49.9	47.6	47.7	45.6	44.6	43.5	43.2
Norway	58.5	51.0	49.9	47.6	45.4	43.8	46.4	46.1
Portugal	50.7	54.3	49.1	47.7	46.6	46.0	44.3	44.5
Spain	48.2	45.2	43.1	42.5	41.3	40.0	39.7	38.6
Sweden	73.5	67.7	65.3	62.4	60.8	58.7	56.1	55.9
Switzerland	33.2	...	...	...	...	...	...	...
United Kingdom	47.0	45.4	44.7	44.4	43.0	40.9	40.0	39.3
United States	38.7	34.1	33.1	32.9	32.4	31.4	30.5	30.1
Weighted average ***/	44.9	42.2	41.3	41.1	40.7	39.4	39.0	38.8
Number of countries in the ...								
"Richards" range	4	5	8	8	8	10	10	9
39-51 percent range	7	8	8	9	9	11	12	11

*/ OECD *Economic Outlook* (December 1993), as quoted in Richards (1994), p. 41.

**/ OECD *Economic Outlook* (June 2000), p. 270.

***/ Weighted by population; IMF *International Financial Statistics* (December 2000).

government activity; (ii) to the internally consistent explanation of the apparently different preferences revealed by those electorates that continually elect governments that defy this rule;[7] and (iii) the possible existence of politico-economic (or electoral) equilibria and steady states. The derivation of formal answers, however, requires the clarification of the nature of the underlying political problem.

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[7] Richards (1994) stressed the Danish and Swiss examples, where the ratios of government expenditures to GDP had, for many years, remained consistently above 60 and below 35 percent, respectively, while the governments in both Copenhagen and Bern had remained in comparatively high regard.

D. On the Uncertain Nature of the Politico-Economic Problem

The difficulty in formally setting up ETP problems centers, to a large degree, on the definition of political incentives inherent in the trade-off between ideology and reelection requirements. The literature has, so far, not resolved the question whether political parties attempt to win elections in order to pursue certain policies (or whether the causality runs in the opposite direction). This structural ambiguity influences the politico-economic problem's overall structure relating to political objective functions, democratic constraints, and the relationship between "ordinary" members and the leadership in a political party .

On the whole, there is little consensus as to what—in economic terms—constitutes politics. Economists following the Downsian tradition claim that the prestige of a political office drives politicians inasmuch as profits motivate entrepreneurs. By contrast, partisan cycle theorists insist that democratic rules channel conflicts that are fought out by households over issues of income redistribution. The disagreement among researchers over the theoretical formulation of political objectives, therefore, constricts the formal description of optimal, democratically constrained policies. This failure could, in turn, impair the quality of policy advise and/or the practicability in the implementation of recommended reforms.

The clearest indication of the limited response that politico-economic models have (so far) provoked is their almost complete absence from standard textbooks[8]—graduate as well as undergraduate. To date, standard texts have widely dodged this topic. Blanchard and Fischer (1989),[9] who have written one of the most popular graduate textbooks in macroeconomics, at least addressed this issue by saying that the traditional approach was to assume that the policymaker (that is, the social planner or benevolent dictator) maximized a social welfare function.[10] Blanchard and Fischer acknowledged that "[e]conomists have, for the most part,

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[8] However, several textbooks have recently been published that are entirely devoted to ETP problems, thereby hinting at an imminent change in the attitude of economists toward this "under-researched" subdiscipline in economics. In response to "[t]he explosion of contributions in the field of political economy" (Saint-Paul, 2000, p. 915), the comprehensive monographs by Drazen (2000) and Persson and Tabellini (2000)—with, respectively, a specific macroeconomic and institutional approach—systematically review the literature and discuss its inherent results; both contributions should soon be regarded "classic" ETP textbooks. In addition, Frey and Kirchgässner (1994)—based on Frey (1981)—have presented an undergraduate textbook discussing key problems underlying democratically motivated economic policies.

[9] The discussion of the politico-economic interaction takes up but one out of more than 600 pages of their *Lectures on Macroeconomics* textbook—and only after more than 90 percent of the text.

[10] Optimizing social welfare subject to a society's production possibilities is equivalent to the standard utility-maximization problem of any given ("representative") individual.

ignored these incentives and constraints and have analyzed optimal policy starting from a social welfare function, leaving to political scientists the job of explaining the characteristics of existing policy" (p. 567).

But even if it were possible to derive a persuasive, second-best method of aggregating individual preferences, the social planner approach would still lack theoretic appeal and practical relevance as a foundation for a truly economic theory of politics. A social planner is not constrained by any reelection considerations and, moreover, has to exhibit characteristics of omniscience, altruism, and absolute power. These assumptions, however, violate fundamental economic axioms and elevate the problem into divine regions of little interest to economists and policymakers.

Economists have long been aware of this dilemma, dating back to Buchanan (1949). He was the first author to hint at the unsatisfactory nature and the inadequacies of the social planner approach by characterizing the government—in what he called the organismic theory[11] of the state—as a "single decision-making unit acting for society as a whole" (p. 496). This description is theoretically congruous with the more modern term of a social planner. Subsequently, if equipped with a well-defined social welfare function, "[i]t is the function of the 'fiscal brain' to select the values of these many variables which will maximize social utility" (p. 497). Buchanan concluded that the implicit solution to this problem—the equality of the state's marginal gains from spending and its marginal loss from taxation—lacked both substance and contextual meaningfulness, as "[i]t becomes extremely arduous, if not impossible, to fill in the theoretical framework with empirical content" (p. 505).

II. THE DEVELOPMENT OF AN ECONOMIC THEORY OF POLITICS

A. Precursory Studies

In his *General Theory*, Keynes (1936) offered to the economics profession a unified theoretical framework—formalized by Hicks (1937)—with which it seemed possible to explain and, subsequently, cure the high and persistent rates of unemployment. In so doing, he made economists think about governments, about economic policymaking, and, by implication, about the relationship between these two spheres of a society. "Classical" economics—using Keynes' self-assured redefinition of the term—had developed a powerful system of establishing behavioral axioms about firms and consumers, analyzing their interactions, and demonstrating the effectiveness of the market as a social coordination mechanism for the production and distribution of private goods and services. As all markets

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[11] The "organismic" approach is (unfavorably) contrasted to the "individualistic" one, in which only individuals are pursuing independent objectives and "[t]he state has no ends other than those of its individual members" (p. 498). The state is seen as a mechanism by which households try to satisfy "certain collective desires" (p. 505).

were assumed to continuously clear, they secured an unbroken stability in the balance of supply and demand. Consequently, little scope was seen for, and little thought given to, any kind of government intervention that went beyond the maintenance of peace and property.

For classical economists, unemployment was, at worst, a temporary problem that the price system would eventually solve. Keynesian underemployment economics changed that view, and economists started to regard joblessness as a permanent challenge to economic policymaking. The implication of Keynesian demand management was the conviction that, with sufficient political will, a full-employment outcome could be attained (and maintained). With the right mix of fiscal and monetary policies, it was believed to be possible to fine-tune the economy and to protect it from the cyclical fluctuations that had plagued capitalist economies ever since their inception about a century earlier. However, neither the classical nor the Keynesian approaches addressed questions concerning the political decision-making processes leading up to optimal (desired) outcomes—both approaches similarly abstracted from problems stemming from political power or distributive struggles. Policy goals, if stated at all, were derived on a purely normative basis.

Through the fruitful intellectual union of the—at the time quite popular—Marxian class-conflict logic[12] and Keynesian demand-management tools, the ETP seed was planted. While these two parent schools of thought played only a minor (and an increasingly diminishing) role in the subsequent development of the literature, a new set of questions had been thrown into the academic arena. And no other contribution was more forceful than Kalecki's (1943) pioneering paper on the political business cycle (PBC).

On the premise that Keynesian-style policies would allow an economy to maintain its full employment situation, Kalecki (1943) argued that an outcome without joblessness—while beneficial to workers—would be detrimental to the interest of the business élite. He viewed the latter group's opposition to Keynesian policies (particularly when employed as a means to maintain full employment outcomes) as being politically driven, partly because a notice of dismissal in a full-employment economy would no longer represent a credible threat to workers. Consequently, business leaders would begin to fear the gradual erosion of the

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[12] In the first volume of *Das Kapital*, Marx (1867) presented an argument consistent with the idea of a political business cycle. While he defined power in terms of access to factors of production (rather than control of governments), the economic actions taken by "those in power" were deliberate. For the capitalists, it was the class conflict between them and the proletariat that caused them to generate fluctuations in output. If an expansionary phase continued for too long, the unemployment rate fell (or, in Marxian terminology, the size of the reserve army shrank). That strengthened the workers' collective bargaining power, resulting in a higher share of income allocated to them. Consequently, profits were falling—a trend that the capitalists sought to reverse by, intentionally, causing an economic contraction. In short, they were motivated to bring on a recession to weaken the workers' bargaining power and, inversely, strengthen their own authority.

"discipline in the factories" (and of general political stability). Their social—and not necessarily only economic—position would be undermined by the growing self-assurance and class consciousness of the working class, with the result that "[s]trikes for wage increases and improvements in conditions of work would create political tension" (p. 326). Hence, their "class instinct tells them that lasting full employment is unsound from their point of view." Kalecki continued to argue that the consensus belief in Keynesian policies (prevalent at the time of his writing) prevented entrepreneurs from objecting to policies aimed at achieving full employment during a recession, but their opposition to "unsound" policies beyond the initial stabilization phase would persuade governments "to return to the orthodox policy of cutting down the budget deficit. A slump would follow in which Government spending policy would come again into its own" (p. 330)—thereby generating a political business cycle of government-induced booms and recessions. Kalecki, however, expected these fluctuations to be milder than those experienced prior to the knowledge of Keynesian demand-management tools.

Yet, it would be misleading to characterize Kalecki as the founder of a class conflict-driven political business cycle literature. There simply is none to speak of.[13] His main contribution can be seen in demonstrating that the economic outcome can be, and likely is, a function of political factors. Earlier contributions analyzing the interaction between the economy and the polity (as, for instance, Davis (1941) on pages 441–45) stressed the reverse relation, that is, one in which political events and election outcomes were caused by the—exogenously determined—state of the economy.[14]

Without directly crediting Kalecki, Åkerman (1947) picked up on this relation when analyzing U.S. data, assessing whether the 3½-year Kitchin cycles, which were "generally conceived as fundamental economic cycles, of a stable, permanent character and independent of connections with institutional change" (Åkerman, 1947, p. 108), in fact represented *politico*-economic cycles that spanned the four years of a parliamentary term:

> The election year spells hesitancy and a shortening of perspectives affecting investment and employment; when the political question is settled through the outcome of the election enterprise

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[13] The one notable exception is Boddy and Crotty (1975). Closely following Kalecki's line of argumentation, they analyzed American post-World War II data to support the hypothesis that fiscal and monetary policy instruments had been largely instrumentalized by the capitalist class to support their twin goals of profit maximization and control over organized labor. Unemployment thus served the same function as in Kalecki (1943): "The goal of macro policy is not to eliminate the cycle," Boddy and Crotty concluded, "but to guide it in the interest of the capitalist class" (p. 10).

[14] Prior to Keynes, the state of the economy was widely seen to be the result of several types of overlapping business cycles; for surveys contrasting the pre- and post-Keynesian theories of business cycles, see, for instance, Schumpeter (1939), Estey (1946), and the American Economic Association (1944).

> will grow cumulatively until the new election is foreshadowed, causing less optimistic
> anticipations, and hence crisis and depression. (p. 109)

Åkerman characterized the political economic cycle as dominant during the period between the 1890s and the New Deal.

Both Kalecki (1943) and Åkerman (1947) directed economists toward the study of mechanisms by which politics (in the widest sense of the word) and political variables determine—or, at least, influence—economic outcomes. Both authors approached the topic from very distinct angles, yet both suffered from the fact that no quantitatively verifiable theoretic framework existed[15] within which these problems could be addressed. While the questions were adequately framed, the literature—temporarily at least— stopped at this junction as it first explored the detour route of social welfare functions.

B. The Social Welfare Function

The mathematical complement to the analytical ETP questions, which had taken shape certainly by the late 1940s, can be traced back to the origins of modern welfare economics,[16] a normative field of economics that analyzes the welfare implications of different economic states and the mechanisms of social choice. Its tools have been used as a basis for (value-judgment-based) policy recommendations. The first generation of models in welfare economics, based on the assumption that levels of individual welfare are cardinally measurable and thus interpersonally comparable, offered a method of deriving a society's total welfare by simply combining, in some appropriate fashion, individual levels of utility.[17]

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[15] One notable exception is Bowen (1943). He attempted to address the political problem of making collective decisions on public goods by placing it into the standard marginal benefit/marginal cost context. Combining a "curve of total marginal substitution," which reflects the consumers' trade-off between the consumption of private and public goods, with the marginal cost curve of public goods, he derived the optimal amount of public goods and, subsequently, reflected on the practical difficulties of measurement and collective choice.

[16] An insightful survey and in-depth evaluation of the various branches of welfare theoretic approaches to explaining politics can be found in van den Doel and van Velthoven (1993).

[17] Following Bentham's utilitarian approach, individual utilities were simply added up: $W = \Sigma_i u_i$. In such a scenario, the policy-induced reduction in welfare of one person would improve social welfare if the increase in another person's welfare is larger in size. One of many other alternatives (but one that has been widely noticed and is very influential) has been suggested by Rawls (1971). According to his rule, social welfare—representing a social contract to which individuals have agreed upon from behind a "veil of ignorance" (as it relates to their socioeconomic statuses)—is equal to that individual's welfare who is worse off: $W = \min \{u_1, u_2, ..., u_L\}$. In the Rawlsian case, social welfare improves only if the welfare of the worst-off person increases.

Subsequently, optimal economic policies that maximized social welfare could be calculated. The origins of welfare economics, largely developed by Pigou (1920), were built on such a set of assumptions. However, lacking the possibility of scientifically verifying the intrinsic results of Pigovian welfare economics, economists soon distanced themselves from this approach and advanced an "ordinal" framework (Robbins, 1932), which meant that utility was interpersonally uncomparable.

Several economists, particularly Lerner (1934) and Hicks (1939), attempted to resurrect the basics of welfare economics—this time, however, as a theory that was to be built on the "generalized" assumption of ordinal utility. Both authors conscientiously tried to avoid methods that presupposed the necessity of interpersonal comparisons. They tied their approaches to Pareto's (1913) earlier work on—what came to be known as—the Pareto optimality concept. However, the implicit restriction of economic analyses based solely on economic policies that make some people better off without making anyone worse off was severely limiting, even when including the (hypothetical) compensation criterion initially advanced by Kaldor (1939) and Hicks (1940).[18] Scitovsky (1951), who presented a wonderful survey on the struggle over the appropriate utility axioms to be used in welfare economics, remarked dryly, "[c]onsidering that practically every economic change favors some and hurts other people, Professor Robbins was, in effect, barring himself and his colleagues from any policy recommendations whatever" (p. 305).

The breakthrough in welfare economics did not occur until Bergson (1938) published his extremely influential contribution on social welfare functions, later to be refined by Samuelson (1947). In lieu of cardinal utility and their interpersonal comparability, Bergson devised a rule by which individual utilities could be collectively represented. He thereby allowed economists to escape the extreme narrowness of Paretian analyses. On the basis of the assumptions that (i) there was a rule according to which social states could be ranked and (ii) such a social welfare ordering was continuous, a social welfare function, W, could be derived that comprised the utility levels of all L households, $W = W(u_1, u_2, ..., u_L)$, such that higher values for W reflected welfare improvements.[19] The large response provoked by

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[18] According to the Kaldorian criterion, a particular policy improves social welfare, if it is—hypothetically—possible to compensate those that are detrimentally affected with a certain fraction of the total gains such that, in the end, everyone will be better off. Hicks defined a policy as being socially desirable if the losers are unable to—again, hypothetically—"bribe" the potential winners *not* to pursue it.

[19] Again, it is worthwhile to read Scitovsky's (1951) comments on Bergson's social welfare function: "This social welfare function is completely general. It can take into account external economies and diseconomies as well as the dependence of one person's satisfaction on other people's welfare. In fact, the social welfare function, as Bergson defines it, is so completely general that it is impossible to tell, on the basis of internal evidence alone, what use Bergson wanted to make of it" (p. 311).

Bergson's paper stemmed from a widely held perception that the problems of interpersonal utility comparison and of decisions regarding the desirable distribution of welfare could be elegantly circumvented by seeking refuge in an aggregated utility function that expressed everyone's preference over alternative states of the economy. The Bergson-Samuelson social welfare function, therefore, seemed to allow[20] welfare economists—again—to derive policy recommendations on the basis of familiar techniques used elsewhere in economics.[21]

The strongest criticism of the use of social welfare functions has been brought forward by Arrow (1950, 1951). He demonstrated that in special cases in which the number of possible alternatives exceeded two and preferences were not single-peaked, the only possible consistent and noncontradictory social ordering of alternatives was the individual welfare function of a dictator. The conclusion that, in general, no social welfare function could truly represent individual preferences was based on a few, very reasonable assumptions. This result, which found its way into the academic literature as Arrow's Impossibility Theorem (the term was coined by Tullock, 1967a), implied that any social welfare function that conformed to the conditions of (i) universal applicability,[22] (ii) independence of irrelevant alternatives,[23] and (iii) the Pareto principle[24] could be inconsistent with democratic voting

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[20] Scitovsky (1951) pointed out that this perception was erroneous. Pigovian welfare economics had forced economists to make value judgments regarding the ability of different individuals to derive enjoyment from a given amount of goods. Scitovsky argued that, rather than placing weights on different individuals' levels of "satisfaction and welfare," Bergsonian welfare economists—required to determine the actual shape of the social welfare function—had to attach "weights to different people's opinions and preferences" when aggregating individual utilities: "Do we stand on surer ground when we give people equal votes than did the classical economists when they assumed that everybody has the same ability to enjoy life? I doubt it" (p. 312).

[21] Consider, for instance, the general two-household case ($L = 2$), with the social welfare function represented in terms of u_1 and u_2. Hence, for a given level of social welfare, the function can be expressed as $u_2 = W^{-1}(u_1, \overline{W})$ with $\partial u_2/\partial u_1 < 0$ and $\partial^2 u_2/\partial u_1^2 < 0$. In full knowledge of this function, an omniscient social planner maximizes social welfare subject to a utility-possibility function, $U_P = U_P(u_1, u_2)$, or $u_2 = U_P^{-1}(u_1, \overline{U}_P)$, this time, however, with $\partial u_2/\partial u_1 < 0$ and $\partial^2 u_2/\partial u_1^2 > 0$. Therefore, there exists one unique optimum, which, in the literature, is frequently referred to as the constrained bliss point.

[22] This condition refers to the individual's freedom of choice, that is, no preference ordering is a priori impermissible. At times, this condition is also referred to as the one of "unrestricted domain."

[23] With this condition, Arrow described the prerequisite that the collective order of two alternatives (say, x and y) would not be changed should good z be included (or excluded) from the set of available goods. Underlying this condition is the requirement that the collective order of alternatives is a function of individual preference ordering.

procedures.[25] In the context of the ETP literature, Arrow's theorem—together with Black's condition (cf. footnote 29)—seems to mean that democracy does not necessarily always work. While Kramer (1973) demonstrated that, even with only a little deviation from perfect homogeneity in preferences, consistent social welfare functions could not be derived, other authors—such as Bergson (1954), Buchanan (1954) and de Graaff (1962)—argued that the possibility of voting paradoxes might actually be advantageous for the stability of a democracy. By default, societies would thereby reduce the likelihood of some minority being permanently exploited. Others, like Tullock (1967a), added that Arrow's criteria would be met not perfectly but with a "very high degree of approximation"—allowing him "to reconcile the theoretical impossibility with the practical success of democracy" (p. 270).

For the context of this paper, it suffices to note that the concept of a social welfare function is a normative concept that is fraught with several theoretical and—as will be argued in Subsection E—econometric problems. An indication of the fragile nature of the social welfare function approach is the fact that, so far, no economist has been able to derive, or even approximate, this function in a manner robust enough to be exploitable in further quantitative ETP studies.

This result would suggest that economic models that attempt to endogenize political decisions should dispense with the welfare-economic approach altogether and, instead, base their analyses on standard microeconomic foundations. Normative welfare judgments, then,

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[24] The Pareto principle implies that, if all members of a society prefer x to y, then the society as a whole will prefer x to y as well.

[25] The classic example is an economy of three individuals, in which person A prefers x over y over z, B y over z over x, and C z over x over y. Bringing x to a vote against y, x will win with a 2-1 majority; bringing y to a vote against z, y will win with the same majority. But if one brings x to a vote against z, z will win over x with a 2-1 majority. The social preference ordering, then, would be $x > y > z > x$—that is, the collective preferences are not transitive as they show a cyclical pattern. Downs (1957) used Arrow's Impossibility Theorem to demonstrate that a vote-maximizing government might be faced with an insurmountable policy dilemma: "[n]o matter what [the government] does, it is wrong because a majority would have preferred some other action" (p. 61). However, if the alternatives are ordered on a one-dimensional scale, say, from x = leftist policies, y = centrist policies, and z = rightist policies, A would be a left-winger, favoring leftist policies over centrist ones, which, in turn, he or she would favor over rightist ones. The ordering of person C, however, would be considered somewhat odd. Being a right-winger, he or she clearly prefers rightist policies over leftist ones—but also leftist policies over centrist ones. General intuition would suggest an individual preference ordering of the form $z > y > x$, in which case the social preference ordering would indeed be noncontradictory. See Black (1958), but also, for an early discussion of this point, Black (1948a, b); for a detailed and rigorous discussion of Arrow's Impossibility Theorem, see Arrow (1963) and Sen (1970, 1986).

need not be made—and the models would stay within the tradition of positive economics. The characterization of Nannestad and Paldam's (1994)—"[t]he theory of the social welfare function is ... known as the most dismal part of the dismal science of economics" (p. 216)— hints, quite correctly, at the desirability of ETP models that base their results on relationships that are known with a greater degree of certainty than social welfare functions.

Yet, a large part of the modern ETP literature, as will be seen in the following, continues to be based, implicitly or explicitly, on objective functions that closely resemble the concept of a social welfare function. But irrespective of the actual visualization of the social planner's form, this degree of theoretical abstraction, by definition, rules out the analysis of political processes within a democracy. Alesina (1988) was thus more than justified to base his analysis on the premise that "'[s]ocial planners' and 'representative consumers' do not exist" (p. 13).

C. Fundamental Contributions

The stylized description of policy-making as a normative social welfare maximization problem was critically challenged by Downs (1957), who, in his pathbreaking book entitled *An Economic Theory of Democracy*, offered a positive—and intrinsically truly economic— alternative. By representing the actions of policymakers more in line with standard behavioral assumptions of individual self-interest, he modeled government behavior analogously to the way that firms are depicted in microeconomic theory and, accordingly, supposed that politicians' actions were driven by their vote maximization objective (rather than by some other altruistic or ideological motives).[26] Thus, together with Arrow (1951), Black (1958), Riker (1962), Buchanan and Tullock (1962), and Olson (1965), Downs built the foundations, on which the subsequent ETP could thrive.

By assuming that political parties "act solely in order to attain the income, prestige, and power which come from being in office" (p. 28), it necessarily follows that "parties formulate policies in order to win elections, rather than win elections in order to formulate policies" (p. 28). Ideologies, then, are indeed comparable to the goods offered by firms: they are supplied, not because firms/political parties have any genuine interest in them, but because they sell in the marketplace. The market mechanism, applied to political decision-making processes, ensures that the actual policies pursued by Downsian politicians are those most favored by the electorate. That, in turn, means that the unashamedly selfish behavior of

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[26] The assertion that parties adopt a certain platform not for political reasons but, opportunistically, to maximize votes was first mentioned by Schumpeter (1942). He intuitively deducted what Downs formally demonstrated 15 years later—the median voter theorem: "A party is a group whose members propose to act in concert in the competitive struggle for political power. If that were not so it would be impossible for different parties to adopt exactly or almost exactly the same program. Yet this happens as everyone knows" (p. 283).

individual politicians will ultimately result in economic policies that guarantee an outcome usually referred to as a social optimum. Clearly, this type of logic has appealed to economists ever since Adam Smith published his *Wealth of Nations*. And, to close the analogy, the equilibrium condition derived in a Downsian model is described by a corresponding equality of marginal benefits and marginal costs. In a political context, this balance means that "governments continue spending until the marginal vote gain from expenditure equals the marginal vote loss from financing" (p. 73).

On the basis of the vote-maximization axiom, and following the spatial competition framework advanced by Hotelling (1929), Schneider (1935), and Smithies (1941), Downs developed an integrated politico-economic model of rational economic agents that, ultimately, managed to direct economists toward methods that fully endogenized government behavior into standard economic models. In the 300 pages of his book, he derived the conditions necessary and sufficient for the influential median-voter theorem to hold.[27]

By representing the political spectrum on a one-dimensional scale from zero to one hundred,[28] Black's (1948a, 1948b, and 1958) condition[29] of the single-peakedness of individual preferences can, for purely logical reasons, be expected to hold. If, in a two-party system, the electorate is either spaced equally along this straight line[30] or unimodally distributed, if it is assumed that "extreme" voters at the distribution's tail ends will not be alienated by "overly" moderate positions—which, according to Smithies' (1941) elastic

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[27] For a formally more rigorous and elegant version of the Downsian model, see, for instance, Shubik (1968) and Davis, Hinich and Ordeshook (1970); for a formal proof of the median-voter theorem, see Black (1958) and also Ordeshook (1986); and for empirical studies evaluating whether policies are indeed aimed at achieving the median voter's policy optimum, see Romer and Rosenthal (1979) for a survey, as well as Gramlich and Rubinfeld (1982), Pommerehne (1978), and, more recently, Turnbull and Chang (1998). Results are generally supportive of the median-voter theorem.

[28] The numbers approximate "ideology" and can be thought of as one hundred times the value of the share of private sector output in total economic output. A value of zero would therefore represent a situation without any government at all (thus representing some extreme right-wing, anarchic-libertarian viewpoint), while a value of one hundred stands for an entirely state-controlled economy preferred by a completely unreconstructed communist.

[29] Black's condition states that, under the conditions of (i) a one-dimensional space, (ii) the single-peakedness of individual preference orderings, and (iii) an odd number of individuals, there will be one alternative that, in direct votes against any other alternative, will always get the majority of votes. Collective preferences, under these conditions, are transitive. Arrow (1963) extended this proof by generalizing the number of policy alternatives.

[30] See Hotelling (1929).

demand argument would lead to abstentions—and if voters are perfectly informed, the two parties will indeed converge to an identical program. The hypothesis of an eventual and complete nondifferentiation of policy platforms has found its expression in the literature as the median voter theorem.

However, the theorem does not hold generally. In cases in which political alienation occurs, the two-party conversion will stop at the point at which the marginal increase of votes at the center is equal to the marginal loss of voters at the extremes—and both parties can be expected to maintain differentiated ideologies. The same logic holds if one supposes that voters are "future-oriented," that is, if they sacrifice the election victory of the less disliked party in period t in order to entice that party to move closer to their ideal position in $t + 1$ (or later) by either abstaining or voting for a "hopeless" third party closer to their personal policy optimum. Moreover, when the distribution is bimodal, total convergence would not lie in the parties' self-interest either, as they would lose more voters on the extreme than they could gain at the sparsely populated center.[31] And irrespective of whether the distribution is uni-, bi-, or polymodal, the particular shape of the electorate's preferences over the one-dimensional space determines not only the number of parties competing for votes but also their respective ideological positions, leading to stability in the political landscape (apart from periodic changes in government).

Several authors extended the Downsian analysis into multidimensional political spaces,[32] demonstrating that such an equilibrium can exist only when the condition of symmetry in the distribution of the voters' policy optima is strictly met—in all directions. With even slight deviations from perfect symmetry in the voters' preferences, "the usual situation will be that majority paths exist between *any* two points in the space," with the result that "[a]ny one

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[31] Downs argues that polymodal distributions drive the development of multiparty systems, where parties tend to behave, for "product-differentiation" reasons, in a more ideological fashion than they do in two-party systems. The Smithies (1941) argument, combined with the original Hotelling (1929) distribution, where preferences are equally distributed across the entire political spectrum (so that it can be considered an n-modal distribution with $n \to \infty$) also leads to a multiparty outcome, depending on the demand elasticities. In such a case, parties will be equally spaced across the spectrum, with the number of parties determined by the degree to which voters will be politically alienated by overly moderate policies (see Downs, 1957, pp. 122–25). A multiparty system decreases the likelihood that any single party gains the absolute majority necessary to form a government, which will then be formed by coalitions (cf. Chapter 9). These political alliances are expected to "adopt a non-integrated set of policies covering a wide range on the political scale" (p. 163). The classical reference for the political theory of coalition building is Riker (1962). See also de Swaan (1973) and Laver and Shepsle (1990). The extreme difficulty in modeling coalitions in multiparty systems has been explored in Selten (1971).

[32] See, for instance, Plott (1967), Davis, de Groot, and Hinich (1972), and McKelvey (1979).

voter, with knowledge of other voter's [*sic*] preferences, and the power to set the agenda could, using binary, majority rule based procedures, arrive at any outcome he wants to" (McKelvey, 1979, p. 1106. Italics also appear in the original text). Contrary to Downs' analysis, the above results indicate that a political party's ideological position will not be stable over time.

Nevertheless, Downs' contribution has managed to bridge the gap between economics and political science by demonstrating the efficacy of the application of economic tools to the analysis of political processes. His core results (such as the median voter theorem) have become quite influential in the discipline, thereby reconfirming Stanley Kelley Jr.'s intuition of May 1956 that "[s]ome years from now I shall be surprised if Downs' work is not recognized as the starting point of a highly important development in the study of politics" (Foreword to Downs, 1957). The main value-added of Downs' contribution is that he made economists aware of the fact that the description of political behavior as an attempt to maximize social welfare was a fundamentally noneconomic approach. By representing the behavior of politicians as analogous to the conduct of firms, by developing a framework in which the results of selfish behavior are collective optima, he pulled political decision-making processes back into the realm of economics. The plethora of subsequent ETP contributions citing his book bears witness to his enormous success and influence. In demonstrating the applicability of economic methods to politics, he challenged the normative approaches and countered the fact that "[a]ttempts to treat government as an endogenous variable in general equilibrium theory are extremely scarce, because most theorists have followed the classical tradition of considering government as a disturbing influence upon the self-regulating private economy" (Downs, 1957, p. 280).

While his contribution in emphasizing the noneconomic character of the behavioral assumptions implied by the various social welfare-maximizing models—and in rectifying this deficiency—cannot be overemphasized, Downs' alternatively proposed vote maximization axiom as the sole objective of political behavior appears to suppress some crucial factors that are widely deemed essential for the accurate explanation of political behavior. Whereas, in many jurisdictions, politicians' "incomes" are relatively meager (compared with those paid in the private sector) and their "prestige" quite dubious, "power" alone could, convincingly, be thought of as a motivation for the political activities of a candidate. But what, in a Downsian world, would motivate the many volunteers and functionaries to help one individual to gain office? Most of them will not immediately benefit from their candidates' election victory (for instance, in terms of a government-appointed job). It is not, therefore, income, prestige, or power that prompts them.

Yet, this behavior should not be characterized as completely irrational either. As people care about certain policies for their own reasons (Downs acknowledged as much when he talked about ideologies and voting decisions), they might decide to become involved beyond just casting a ballot every four or five years. By joining a political party, they have a better chance of influencing a party's platform and policies—and that more effectively than by engaging in the Downsian "games" of abstaining or voting for hopeless fringe parties. The more "ideologically motivated" the members are, the less likely will the party be able to act

as an independent entity that can strategically plan its actions. The ability of political parties to "pick" their optimal ideologies is constrained by its members' individual self-interests.

D. A Mathematical Model of Government Behavior

In an attempt to represent the political process in a more realistic manner, Frey and Lau (1968) complemented and generalized the Downsian framework with the first fundamental, post-Downsian model of optimal government behavior. They combined the government's traditional vote maximization objective with a second, equally influential goal: "Even casual observations of the political scene shows that another factor, namely the government party's *ideology*, is also of considerable importance" (p. 359. Italics also appear in the original text).

The design of economic policies, according to Frey and Lau's (1968) approach, arises from the interaction of two separate tension points. They first hint at possible internal pressures stemming from the fact that governments represent "a conglomeration of subunits" that all "have specific interests of their own but at the same time ... share a common interest to stay in power ... Internal pressures are characterized by the fact that the government loses its power not because the voters defeat it in an election, but rather because it breaks up due to internal inconsistencies" (p. 360). Second, governments are faced with a variety of external pressures. These would, if ignored, lead to an election defeat. Frey and Lau (1968) model the likelihood of reelection as a function of the political goodwill that a government has been able to accumulate over all previous administrations (net of depreciation).

Formally, the government (formed by party j) maximizes utility over all future periods of time according to the following objective function, Θ_j:

$$(1) \qquad \max_{\{I_t^j, \tilde{v}_t^j\}} \Theta_j = \int_0^\infty \beta^t u_t^j(I_t^j, \tilde{v}_t^j) dt, \beta > 1,$$

where β represents the discount factor, u_t^j the "instantaneous utility flow at time t," I_j^t party j's ideological satisfaction at t, and $\tilde{v}_j^t$ party j's popular approval (as, for instance, measured in opinion polls). The higher the value of I_j^t, according to the model's inherent logic, the lower are the tensions within the government and, consequently, the smaller the chances of the government's breaking apart. Analogously, if the government succeeds in remaining popular with the electorate, the accumulated values of $\tilde{v}_j^t$ will be comfortably high and the chances of j's reelection correspondingly larger.

The amount of goodwill that j brings into the election campaign is represented by an expression of the following form:

$$(2) \qquad \tilde{V}_t^j = \int_{-T}^t \tilde{v}_{\tilde{t}}^j d\tilde{t} - \int_{-T-T}^{t} \int^{\tilde{t}} \tilde{v}_{\hat{t}}^j m(\tilde{t} - \hat{t}) d\hat{t} d\tilde{t},$$

where $\int_{-T}^{t}\tilde{v}_{\tilde{t}}^{j}d\tilde{t}$ is the government's total stock of accumulated goodwill, $\int_{-T}^{t}\int_{-T}^{\tilde{t}}\tilde{v}_{\tilde{t}}^{j}m(\tilde{t}-\hat{t})d\hat{t}d\tilde{t}$

the depreciation of goodwill over time, and $(1-\int_{\hat{t}}^{t}m(\hat{t})d\hat{t})$ the rate at which the electorate

"forgets" the past. Party j's actual vote share is thus simply the weighted average of goodwill accumulated over time. In order to be (re)elected, it has to exceed 50 percent.

The ideology function is conjectured to include full employment, price stability, just income distribution, satisfactory growth, and a balance of payment equilibrium as relevant variables. Frey and Lau (1968) thus followed Kirschen et al. (1964) in the definition (and ranking) of those five variables—see Table 2. Ideology functions represent the goals politicians would want to pursue if they were not constrained by reelection requirements. For that reason, ideology functions cannot be derived from what governments actually do. Approval functions, however, are related to the concept of popularity functions, which are discussed in Subsection E; they represent the electorate's reaction to policies and announcements.

The economic problem, then, is to solve (1) subject to a production possibility function and the reelection requirement. While explicit solutions could not be derived, Frey and Lau (1968) found that "it is *logically possible* that the political system produces economic cycles" and that these are "extremely likely in countries where there is no dominant ideology subscribed to by a large share of the population" (p. 377. Italics also appear in the original text). Politically induced cycles were conjectured to be more pronounced when the government had been rather unpopular. Moreover, fluctuations were most likely to occur in the periods just prior to an election—with expansionary policies being pursued in an attempt to boost the stock of political capital.

The article by Frey and Lau (1968) was pathbreaking in that it was the first theoretic attempt at explicitly modeling optimal government behavior in terms of both office motivation and ideology. In so doing, they very nicely combined the two main factors determining political behavior into one objective function. However, despite its considerable theoretic appeal, the model has left only minor marks in the literature, largely because "the formal problem as set up is mathematically extremely complex" (p. 369). The (overly) complicated techniques used by Frey and Lau (1968) have thus obstructed the derivation of explicit solutions.

Even more serious than the substantial degree of mathematical complexity, or the—now theoretically unappealing—assumption of myopic, backward-looking voters, appears to be the fact that the implicit results are expressed in terms of the optimal balance between approval and ideology as a function of the stock of the preelection "goodwill capital." All ingredients of Frey and Lau's solution are nonquantifiable and therefore only of purely theoretic interest. Approaches that are geared toward applied modeling of government behavior need to explicitly express their results in terms of the relevant governmental tool variables (government spending, taxes, etc.)—otherwise no significant progress can be made in endogenizing political behavior as these variables will continue to be included in macroeconomic models as exogenous policy variables. Particularly for the purpose of

Table 2. Political Parties' Preferences
(Synthesis of eight European countries in 1964)

Rank (In descending order)	Progressive Parties	Centrist Parties	Conservative Parties
1	Full employment	...	Price stability
2	Just income distribution	...	...
3	...	Price stability	...
4	Satisfactory growth	...	...
5	...	Satisfactory growth	BOP equilibrium
6	...	Full employment	...
7	...	Just income distribution	...
8	Price stability	...	Satisfactory growth
9	...	BOP equilibrium	Full employment
10	...	...	...
11	BOP equilibrium	...	...
12	...	...	Just income distribution

Source: Kirschen et al. (1964), p. 227; as quoted in Frey and Lau (1968), p. 367. [33]

forecasting and political advice (both mentioned in Frey and Lau's (1968) introduction as motivating objectives for their paper), it is quintessential that explicit, optimal amounts of these political variables be derived within the context of a functioning, free market democracy; only then will it be possible to integrate political and economic decision-making processes into one unified framework.

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[33] The numerical ranking, as shown here, was proposed by Frey and Lau (1968). In the original text, which included 7 other goals, for a total of 12, Kirschen et al. (1964), in order to calculate the strength of political preference, devised a questionnaire with which they "sought to establish for each country and for each political family the order of priority of the objectives as disclosed, not necessarily from the officially published programmes of parties, ..., but from more technical documents ... and from observing the significance actually given to each of the principal objectives ..." (p. 225). They ranked, with intermediate classifications, the various objectives as either dominant, significant, minor, negligible, or hostile. They stressed that the interpretation of these symbols had not been more closely defined since, in most cases, it had raised no difficulties (p. 226).

E. Vote and Popularity Functions

Conceptually, the social welfare function, as an abstract construct, could represent a rather elegant approach with which to tackle questions of optimal economic policymaking. Its normative nature, however, combined with unresolved measurement and aggregation issues, severely limits its practical usefulness as a tool of political advice. Since the introduction of regular political polling and the development of econometrics as a pivotal tool of economic analysis, researchers have explored a path that was widely conjectured to allow at least the approximation of an empirically testable, collective preference relationship not unlike the elusive social welfare function. Following the three seminal papers by Goodhart and Bhansali (1970), Mueller (1970), and—most influentially—Kramer (1971), an astonishingly large literature[34] evolved that tried to isolate those macroeconomic variables that promised to be prime candidates for the explanation of a political party's interelection popularity and/or its final vote share at the ballot box. Once established, it was hoped that quantitative results could be derived that would (i) improve the quality of economic forecasts (as standard optimization problems with an approximated social welfare function could be easily solved) and (ii) increase the chances that economists' policy recommendations could be implemented politically (as these would have been derived on the basis of the explicit consideration of the politicians' incentives and the relevant political constraints).

If this approach had proven successful, the ETP literature could have easily been integrated into the standard micro- and macroeconomic frameworks developed for the description of the decisionmaking processes underlying the market mechanisms for goods, services, capital, and labor. With the knowledge of political objective functions, estimated with a "sufficient" degree of accuracy and confidence, the problem of optimal economic policymaking would have become a purely mathematical one.

The derivation of "vote" and "popularity" functions differs only in the definition of the dependent variable. From an economic point of view, vote functions (explaining actual voting behavior) are much more interesting than popularity functions (explaining intended voting behavior). The ability to empirically test the latter, however, is significantly strengthened by the abundance of observation points. In many countries, these are available at least on a quarterly basis—rather than just every four or five years. As either type of function is derived with the explicit aim of understanding the economically induced changes in the (electoral) support for a political party, the explanatory emphasis is laid on the behavior of "swing" (rather than "core") voters, who exhibit the lowest degree of partisan

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[34] Nannestad and Paldam (1994), who comprehensively reviewed this literature, counted "close to two hundred titles including two dozen books" (p. 213), of which they surveyed "about [a] hundred studies only." Beyond their insightful discussion on vote and popularity functions, see also Marti (1995) for recent discussions on the instability of popularity functions. For a survey of the earliest contributions, see Kramer (1971). A very nice "midterm" summary and evaluation of the literature can be found in Paldam (1981).

loyalty and are expected to react strongest to changes in the economic environment. And even though the ratio of swing to core voters might be quite low, the behavior of the former often crucially influences election outcomes.

Almost all of the evolving literature on vote and popularity functions refers back to Kramer's (1971) paper. Subsequent studies, however, did not unambiguously support his results—and the contrast to Stigler (1973) is particularly remarkable; he essentially re-regressed Kramer's (1971) model but arrived at opposing results. While Kramer concluded that fluctuations in per capita real income in the year prior to the election were influential in deciding congressional races (and while he reluctantly submitted to the fact that fluctuations in the unemployment rate, in his model, were statistically insignificant), Stigler found that voters disregarded both the unemployment and the income variables when deciding between parties at the ballot box. Both authors, most crucially, differed in their intuitions as to whether these variables *should* be significant in affecting the electoral outcomes. These two lines of arguments (and supporting contributions) will be analyzed in turn.

The economic impact on voting behavior

Given the perceived complexity of a forward-looking voting decision, Kramer (1971) based his analysis on the assumption that "[t]he past performance of the incumbent party in particular gives some indication of what it would do if returned to office, and of the effectiveness of its policies and personnel" (p. 134). Hence, the share of votes for party j, v_t^j, is explained by the constant support by its core voters, $\bar{v}^j$, plus a number of policy-dependent variables:

$$(3) \qquad v_t^j = \bar{v}^j + \delta_t^j (\beta_0 + \sum_{q=1}^{Q} \beta_q + \Delta_t(x_q)) + \eta_t.$$

The incumbency dummy δ_t^j represents j's political position at the eve of the period-t election, that is, $\delta_t^j = +1$ if j is the incumbent party and $\delta_t^j = -1$ if it is in opposition. The parameter β_0 represents the "incumbency bonus" (or malus), while the functions $\Delta_t(x_q)$ measure the difference between the incumbent government's actual and "expected" performance in regards to the macroeconomic variables x_q. The error term, η_t, reflects the noneconomic and exogenous factors influencing a ballot decision (personalities, campaign tactics, and the state of foreign affairs are mentioned here). Kramer (1971) included 31 of the 35 congressional elections[35] that were held in the United States between the years 1896 and 1964. By defining votes for third parties as anti-incumbent votes (that is, votes against the party that holds the presidency), he considered the following variables as likely candidates for the explanation of voting behavior: personal income (he tried both the nominal and real definitions of this

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[35] He excluded the election of 1912 (owing to the difficulty in interpreting the large progressive vote of that year) and the wartime elections 1918, 1942, and 1944.

variable), inflation, and unemployment.[36] Using either the nominal or real income variable, Kramer's (1971) results for the U.S. Republican vote look as follows:

(4a) $\qquad v_t^j = 0.506 + \delta_t^j (0.0018 + \mathbf{0.546}\Delta_t(y^r) - 0.161\Delta_t(\pi) + 0.200\Delta_t(\xi))$,

(4b) $\qquad v_t^j = 0.506 + \delta_t^j (0.0012 + \mathbf{0.526}\Delta_t(y^n) - \mathbf{0.642}\Delta_t(\pi) + 0.167\Delta_t(\xi))$,

where δ_t^j is the Republican party's incumbency dummy (as defined above), and $\Delta(\cdot)$ the difference between the incumbent government's actual and the previously expected[37] performance in regards to real growth (y^r), nominal growth (y^n), inflation (π), and unemployment (ξ), respectively. The coefficient of determination, R^2, is 0.52 for both regressions, and the Durbin-Watson test statistic 1.38 and 1.36, respectively. Kramer found that the income terms were statistically significant whereas the unemployment estimates were not.[38] This result stood in contrast to his introductory hypothesis, and he thus concluded that "[t]he fact the unemployment fluctuations have no significant effect is somewhat puzzling" (p. 139). In the light of the approaches based on income distribution (Subsection I), it is interesting to note that, in all of Kramer's reported specifications, the unemployment term, while insignificant, is *positively* correlated with the dependent variable. The "counterintuitive" sign would therefore be consistent with an interpretation of the Republican Party as representing upper-(middle-) class voters. Given their private resources, they are less affected by the fluctuations in the labor market and, if bondholders, more interested in an economic environment of price stability.

In addition, the Kramer study resulted in the following two observations. First, the incumbency bonus was negligible. Second, inflation proved significant only when testing

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[36] In addition, Kramer (1971) attempted to isolate the presidential "coattail" effect. When ignoring the minor-party votes altogether, he found that "around one-third of the votes gained (or lost) because of the specific candidates and campaign tactics of the presidential race carry over to the congressional candidates of the same party" (p. 140). If the minor-party votes are included as anti-incumbent vote, the coattail value is not significantly different from zero. Moreover, he attempted to add a time-dependent trend term T to account for the shifts in the "natural" support levels of the parties. The variable proved statistically significant, and its value implied that, in 1896, the Republican Party's core support stood at approximately 54 percent, after which it eroded, on average and steadily, by about 0.2 percentage points every two years.

[37] Kramer modeled expectations adaptively—"on the basis of experience during the preceding year" (p. 134)—as the product of a constant growth rate, γ, and variable x's $t - 1$ outcome: $x_t^e = (1 + \gamma) x_{t-1}$.

[38] The estimates typed in a bold font are the statistically significant ones.

equations with nominal income variables. Standard reasoning, however, makes these
equations less interesting as increases in nominal income per se mean little. In summary,
Kramer (1971) predicted that, "[i]n quantitative terms, a 10% decrease in per capita real
personal income would cost the incumbent [Republican] administration 4 or 5 percent of the
congressional vote ... this would translate into a loss of around 40 House seats" (p. 140).

The articles by both Goodhart and Bhansali (1970) and Mueller (1970) estimate post-World
War II popularity functions for the United Kingdom and the United States, respectively.
Analyzing popularity series for British parties and party leaders between 1947 and 1968,
Goodhart and Bhansali (1970) singled out two macroeconomic variables that appeared most
significant in their effects on party popularity, viz. unemployment and inflation. They thus
not only supported the particular definition of vote-loss functions chosen for the subsequent
studies in political business cycles and partisan theory, they were also the first authors to hint
at the apparent fruitfulness of such a venture by referring to the undesirable dynamics
stemming from the expectations sensitivity in this relationship: expansionary policies would,
owing to increasing inflation (expectations), limit the political options over time, thereby
opening the door for the types of strategic approaches suggested in Nordhaus (1975) and
MacRae (1977).[39]

Through their exhaustive econometric study, Goodhart and Bhansali (1970) were able to
demonstrate the existence of a popularity cycle for the incumbent government[40] and of a
considerable time lag of four to six months before changes in the economic variables
appeared to affect government popularity. In conclusion, however, they cautioned their
readers and emphasized that the numerical values of the econometric results and descriptive
statistics were rather unstable.

Mueller (1970), by contrast, expressed his popularity function in terms of only one economic
variable (unemployment), and he advanced the idea that the relationship between economic
variables and popularity might be asymmetric, arguing that a recession reduces the
president's popularity numbers while an economic upswing will not necessarily improve
them.[41] The main factors, however, by which Mueller (1970) explained presidential

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[39] Actually, Goodhart and Bhansali (1970) arrived at a slightly more sobering conclusion:
"[t]hus from our model we reach the politico-economic conclusion that a pure democracy
with all parties seeking to maximize political support is doomed to increasing inflation and
political disintegration" (p. 82).

[40] This incumbent government popularity cycle was estimated to consist of three phases, the
approximately four-month post-election euphoria, then increased voter alienation, and finally
a surge in popularity during the final six months of the government's term. These results
correspond nicely to the predictions made in Nordhaus (1975) and MacRae (1977).

[41] Later studies—with the exceptions of Arcelus and Meltzer (1975)—did not substantiate
this point.

popularity, are foreign policy factors[42] as well as other trend and level dummies. Frey and Garbers (1972), analyzing German data, put forward the hypothesis that only considerable economic changes affected party popularity. A large number of additional country-specific studies on the significance of macroeconomic variables in vote and popularity functions can be found in a comprehensive volume edited by Whiteley (1980).[43] In it, Inoguchi—analyzing Japanese data—hypothesized that economic conditions affected polls more than elections.

Further support for Kramer's hypothesis was developed by Fair (1978) who substantiated his initial, widely quoted results with several follow-up studies—see Fair (1982, 1988, 1996a, and 1996b). He strengthened Kramer's (1971) argument demonstrating that the real, per capita income variable has some influence on the voters' ballot box decisions at presidential elections after all; moreover, he showed that changes in unemployment rates could be a significant variable in explaining voting behavior. Fair's (1978) regressions revealed that voters' memories decay rapidly. His general voting equation, with which he explained the Democratic Party's vote share, looks as follows (note, again, its conceptual kinship with the Phillips Curve):

$$(5) \qquad v_t^j = \bar{v}^j + \delta_t^j (\beta_0 + \beta_1 y_t^r + \beta_2 \pi_t) + \beta_3 \delta_t^{P2} + \beta_4 t,$$

where $\delta_t^j = +1$ if Democrats occupy the White House at the time of the election and $\delta_t^j = -1$, if Republicans do. The dummy variable δ^2 captures the scenario in which a president seeks reelection; therefore $\delta^2 = +1$ if a Democratic president runs again, $\delta^2 = -1$, if a Republican one does, and zero otherwise. As defined above, π_t stands for inflation and y_t^r for growth rates in real income.

Much of the attention paid to Fair's work stems from his (rather precise) out-of-sample forecasts for presidential elections.[44] Starting his time series with the presidential election of 1916, Fair estimated vote functions (ending with 1976, 1980, 1984, and 1988, respectively) of the following forms; see Summary Table 1 in Fair (1996b):

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[42] Mueller (1970) called this term the "rally-around-the-flag" variable. It represents foreign-policy crises and tries to capture the phenomenon that, during such periods, opposition toward the government temporarily subsides.

[43] Studies on vote and popularity functions (Chapters 1 to 5) include Henrik Madson for Scandinavian countries, Bruno Frey and Friedrich Schneider for the United States and the Federal Republic of Germany, Paul Whiteley for the United Kingdom, Jean-Jacques Rosa for France, and Takashi Inoguchi for Japan.

[44] Summarizing his forecasting results, Fair (1996b) argued as follows: "[u]sing the actual economic values, the 1980 equation makes a prediction error of only .028 for the 1984 election and the 1984 equation makes a prediction error of only .017 for the 1988 election" (p. 92).

(6a) $1976: v_t^j = 0.401 + \delta_t^j (0.0043 + 0.0088 y_t^r - 0.0055\pi_t) + 0.0485\delta_t^{P2} + 0.0047t,$

(6b) $1980: v_t^j = 0.418 + \delta_t^j (0.0147 + 0.0098 y_t^r - 0.0068\pi_t) + 0.0415\delta_t^{P2} + 0.0035t,$

(6c) $1984: v_t^j = 0.407 + \delta_t^j (0.0049 + 0.0102 y_t^r - 0.0034\pi_t) + 0.0449\delta_t^{P2} + 0.0033t,$

(6d) $1988: v_t^j = 0.402 + \delta_t^j (0.0053 + 0.0104 y_t^r - 0.0031\pi_t) + 0.0424\delta_t^{P2} + 0.0036t.$

Until 1992, the above equations, quite accurately, managed to predict the outcome of the following presidential elections. The 1992 case, as discussed in Fair (1996b), was complicated by the strong showing of the third-party candidate—and the accuracy of his 1992 out-of-sample forecast crucially hinged on the interpretation of the origin of the Perot vote. Adding the 1996 election experience, it appeared that the original specification of the vote equation, discussed here, fared better than the modified one presented in Fair (1996b)—implying that the 1992 Perot vote was accumulated mainly at the expense of the incumbent president George Bush.

Other influential studies of the same genre, which demonstrate the statistical significance of economic (and political) variables on popularity and votes, are—among many others—Kirchgässner (1974) for Switzerland, Jonung and Wadensjö (1979) for Sweden, Hibbs (1979) for the United States, Lewis-Beck (1980) for France, Paldam and Schneider (1980) for Denmark, Pissarides (1980) for the United Kingdom, Neck and Karbuz (1997) for Austria, and, particularly, Frey and Schneider (1978a, 1978b, 1978c, and 1979) for the United Kingdom, the United States, the Federal Republic of Germany, and Australia, respectively. These papers show that economic variables, while having *some* effect on popular party support, are in fact quite unstable. In light of the underlying Kramer-Stigler debate (see below), it is also interesting to look at the recent empirical study done by Kiewiet and Udell (1998), who—while re-revisiting Kramer (1971)—argued that poor data quality obfuscated earlier results. Therefore, they confronted Kramer's model with new and revised measures of income and unemployment, finding that "the single economic variable that most powerfully affects congressional election outcomes is change in unemployment, and not, as most studies following Kramer have assumed, change in real per-capita income" (p. 243).[45]

Insignificant (and irrelevant) macroeconomic variables

Fundamentally, two criticisms were directed at the above line of research. The first was theoretic in nature. Rational expectations and new classical macroeconomics resulted in policy neutrality predictions. With the strong results of this school's models, economic

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[45] Furthermore, Kiewiet and Udell (1998) found that, "for a century, American voters have reliably rewarded congressional candidates of the incumbent party for job growth, gains in real income, and price stability" (pp. 243–44), indirectly strengthening the validity of the retrospective voting approach.

variables became irrelevant when making a rational ballot box decision. The second criticism is econometric in nature, demonstrating that economic variables do not significantly affect vote and popularity functions.

While the studies surveyed above revealed a statistical significance of some macroeconomic variables, they also showed that the explanatory power of those economic variables determining votes and popularity (relative to various "political" and R^2-boosting dummy variables) was small and their estimates unstable. Stigler (1973) argued—alongside the second line of criticism—that this result should not have come as a surprise. Responding to Kramer's (1971) "puzzling" conclusion of the insignificance of the unemployment variable, Stigler (1973) wrote:

> Why should a rise in unemployment from 3.5 percent to, say, 6.5 percent of the labor force in the year preceding an election be a major threat to the incumbent party's reelection? The 3 percent of unemployed, largely concentrated in the young, unmarried, and less educated, has substantially less than 3 percent of the vote. Not all of the 3 percent unemployed would shift against the existing office holders. (p. 162)

The above statement, though, would not hold with *high* rates of unemployment, which "would serve no important class in a society and their persistence would be considered strong evidence of the party's incompetence" (p. 162). By re-regressing the Kramer equation, Stigler supported his argument of the irrelevance of the unemployment variable with several cross-sectional regressions on incumbency dummies, a variable depicting rural farm population relative to all inhabitants, and unemployment rates (or "changes in employment") and concluded that the results "are therefore in full agreement with Kramer's finding that state of employment does not have a detectable effect upon voting behavior" (p. 161). Stigler then slightly redefined the variables[46] and "proceeds to make the coefficients *disappear* and even *turn signs* by rather small changes in the same period" (Paldam, 1981, p. 185. Italics also appear in the original text). He showed that the estimates were extremely sensitive to the chosen time period—leading him to question their overall statistical reliability: "The conclusion is that voters disregard average income experience in deciding between the parties" (p. 166).

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[46] First, he expressed the Republican vote share as the number of ballots cast for Republicans divided by the sum of ballots cast for Democrats and Republicans (ignoring third-party votes altogether on the grounds that "a vote for minor parties is less a vote for new managers of the political system than a vote for a new political system" (p. 162). Second, he redefined the period by analyzing the years 1900 to 1970 and reinstalling the years 1912, 1918, 1942, and 1944 as "[w]ar is regrettably not an exceptional state of affairs and no persuasive reason has been given for omitting war years" (p. 163). Third, he calculated and regressed on two-year changes (that is, he considered the changes that occurred over the span of the entire congressional term). Lastly, and most interestingly, he expressed variables in relationship to their respective average changes—thereby eliminating historic trend elements.

Similarly "nihilistic" (Stigler, 1973, p. 166) in their conclusions were Arcelus and Meltzer (1975). The inclusion of the participation rate as a factor determining the final vote represents the main innovation of their paper. They estimated that real incomes had a slight impact on vote participation, but none on the voters' partisan decisions. They also found that unemployment as well as agricultural prices, stock prices, and other economic variables were insignificant and did not affect voting behavior. Arcelus and Meltzer (1975) gave some support to Mueller's (1970) hypothesis of asymmetric effects when showing that rising inflation rates would hurt Democrats (but not Republicans), whereas falling inflation rates were insignificant for either party. In conclusion, they argued that "the principal fluctuations in the percentage of the votes received in congressional elections arise from changes in the participation rate and not from shifts between parties" (p. 1238).

Concluding comments

Fair's (1996b) evaluation that "this work is ... of interest from the perspective of learning (and teaching) econometrics" (p. 90) might help to explain the large interest that vote and popularity functions have found in the literature. This line of research, inspired by a positive academic supply shock (viz., the possibility of using econometrics software programs), is fraught with some serious shortcomings.

First, the derivation of vote and popularity functions is fundamentally atheoretic.[47] These studies usually failed to demonstrate why certain variables should induce individuals to cast their votes for a given political party. Stigler (1973) brought up the question as to why a household should care about unemployment. The majority of households is unaffected by rising or falling jobless levels. Why should they care about inflation (particularly when well-developed systems are in place to index wages and pensions)?

Only when developing ETP models with explicit microeconomic foundations will it be possible to base the explanation of electoral behavior and related economic decision-making processes on the effects that political variables have on individuals' utility functions. With microeconomic theory typically representing individual utility functions in terms of consumption (or consumption and leisure), it follows that solely those variables that influence private consumption are the ones that voters *should* care about. Prominent examples would be tax rates (affecting the amount of disposable income), interest rates (affecting capital income and the costs of personal debt), wage rates, and potentially unemployment rates (if interpreted as the likelihood of zero wage income in the following

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[47] On the basis of assumptions that, in the description of political constraints, resembled those employed in Frey and Lau (1968), Frey (1974b) attempted to fill that gap by pioneering with computer simulations in order to trace the effects of various exogenous shocks on the parties' popularity functions.

period), inflation (for bondholders and earners of nonindexed wage or pension income), and government transfers (and/or the availability of public goods[48]).

Unemployment and inflation, interpreted this way, clearly affect individuals, but they do so asymmetrically—and both variables' likelihood of influencing the vote is a function of other characteristics of a particular person's stream of income and stock of wealth. The literature on vote and popularity functions, interestingly enough, has ignored variables like tax rates, interest rates, and social expenditures completely. Moreover, owing to the asymmetric effects of the other economic variables on the levels of utility enjoyed by different households, vote and popularity functions probably need to be derived for certain, well-defined subsets of the electorate. In that case, however, the aggregation issue, which social welfare and vote and popularity functions were supposed to overcome, would reappear and thus invalidate this approach altogether. Related to this point are the scientific problems associated with "regression fishing" as, for instance, discussed in Goldberger (1991) on pages 261–62.

Furthermore, irrespective of whether certain variables are statistically significant, estimates have continued to show a large degree of instability in the value of the estimates, both over time and across countries. Notwithstanding—or, more accurately, because of—the large volume of this literature, the lack of robustness in the estimates significantly reduces the practical usefulness of vote and popularity functions.

And finally, apart from the large reliance on R^2-boosting dummies and political variables (which, in turn, makes the issue increasingly less interesting for economists), the literature offers little a priori reasoning as to why even a "good" vote or popularity function should actually be congruent with a politician's objective function. Assuming that one economist will indeed be able to find just the right definition (and mix) of variables that accurately explained voting behavior, such a function would still not necessarily be a policymaker's objective function; it might just be a constraint for a politician's "hidden agenda" (that is, for the pursuit of his or her "real" objective function)—a point that has been made by Frey and Lau (1968) in the context of their ideology function, I_t^j. But that, then, would stand in stark contrast to the ultimate goal of this branch of literature, viz. "to find an imperfect social welfare function" (Nannestad and Paldam, 1994, p. 216).

It appears likely that the strong emphasis placed on the Phillips curve variables inflation and unemployment as main explanatory variables of political objective functions has led the literature a little astray. It is this author's belief that researchers ought to have paid closer attention to Stigler's (1973) earlier warning: "The economic bases for party affiliation must be sought in [the] area of income redistribution" (p. 167). By using that approach, as done about two decades later, only those variables would be considered that directly affect an

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[48] One notable exception in this regard has been Pommerehne (1974), who proposed a positive theory of public expenditures, explaining the demand by individuals for local public goods on the basis of their political behavior.

individual's standard utility function. In short, the research on vote and popularity functions largely ignored the lessons learnt in other fields in economics at roughly that period of time. Modeling macroeconomic relationships requires the knowledge of the underlying microeconomic foundations.

F. Policy Options Alongside the Phillips Curve

The apparently stable relationship between unemployment and inflation, to which Phillips (1958) had drawn the profession's attention, impacted the development of the ETP literature immensely and in a lasting—albeit not unambiguously advantageous—manner. Notwithstanding Stigler's (1973) empirically substantiated and "strongly nihilistic conclusions with respect to the influence of general economic conditions on voting behavior" (p. 166), the evolving literature in political business cycles (PBC) and partisan theory (PT), started by Nordhaus (1975), Lindbeck (1976), MacRae (1977) and Hibbs (1977), respectively, firmly embedded unemployment and inflation as main focal points of economic policy-making in theoretical explanations of politically induced fluctuations in key macroeconomic variables.[49] Even the strong policy neutrality results of the new classical, rational expectations-based models (discussed in the following subsection) did not deter researchers from placing economic-policy decisions within this general trade-off. In hindsight, this has been a rather surprising development, as the results of the new classical theory "invited" approaches that, by building on the policy neutrality conclusions, would have relied more on redistribution stories to define government behavior rather than regenerated the core results of the myopic models on the basis of information asymmetry assumptions.

In the history of ETP contributions, the Phillips curve models have proven very important and generated a large body of theoretical and, particularly, empirical contributions. As will be argued below, the Phillips curve, however, may have lured researchers into a theoretical cul-de-sac, not only because these contributions were based on a relationship that—even prior to their publications—was suspected not to hold,[50] but also, and equally important, because its particular emphasis diverted the researchers' attention away from the underlying microeconomic foundations of individual decision-making processes, both on the part of voters and political parties. In the years and decades following Phillips' (1958) influential study, researchers modeled political objective functions almost unanimously in terms of these

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[49] An in-depth overview of this literature, combined with a thorough discussion of the theoretical foundations and, particularly, previous and newly derived empirical evidences (covering essentially all of this literature), can be found in Alesina and Roubini's (1997) reference text on *Political Cycles and the Macroeconomy*.

[50] Friedman (1968)—in his famous presidential address to the American Economic Association—was the first to argue that the Phillips Curve ought not to be (mis)understood as an exploitable "policy menu."

two macroeconomic variables inflation and unemployment. Given that the underlying premise of the macroeconomic "bliss point" of zero unemployment and zero inflation was elusive in the short run and, certainly, in the long run, the Phillips curve appeared to offer politicians a "menu" of options characterized by the inverse functional relation between these two variables.[51] For policymakers, it seemed to mean that targeting low rates of joblessness would result in an accelerated speed of price increases (and vice versa). Their task, then, was to find the combination of inflation and unemployment on the Phillips curve that optimized some well-defined social welfare function.

Whereas the set of underlying assumptions is essentially identical, the exact manner through which the political fluctuations are produced in PBC and PT papers, respectively, varies in one important point: the motivation of politicians' behavior. While PBC papers view politicians as being *opportunistic* (they propose platforms to maximize votes), the PT literature regards them as having distinct *ideological* standpoints, designed to primarily benefit their political clienteles.

Political business cycles

As mentioned above, PBC models have their starting point in the influential contributions by Nordhaus (1975) and MacRae (1977).[52] Both authors placed a myopic electorate and vote-maximizing—that is, opportunistic—politicians into an economy that is constrained by a stable, in the short-run exploitable, unemployment/inflation trade-off. These models thus predict cycles of preelection expansion and postelection contraction, motivated by the policymakers' desire to feign economic growth (and spark popular support) when seeking electoral (re)confirmation.

In the Nordhaus-MacRae model, the policymakers' space of maneuver is constrained by an expectations-augmented Phillips curve of the following form[53]

(7) $$\pi_t = a_1\pi_t^e - a_2\xi_t + a_3,$$

where $0 < a_1 \le 1$, $a_2 > 0$, and $a_3 > 0$. The variable π_t represents the inflation rate, π_t^e inflation expectations, ξ_t the unemployment rate, a_1 and a_2 sensitivity parameters, and a_3 a constant

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[51] In this context, Nordhaus (1989) emphasized that the Phillips curve-driven analysis applied more broadly to all decisions that involved intertemporal trade-offs (p. 16).

[52] See also Lindbeck (1976) for a more intuitive approach.

[53] To simplify the calculations, the linearized Phillips curve representation is chosen.

compressing exogenous factors.[54] Voters in the Nordhaus-MacRae model are backward looking and form their expectations adaptively:

$$(8) \qquad \pi_t^e = \pi_{t-1} + a_4(\pi_{t-1}^e - \pi_{t-1}),$$

where $0 < a_4 < 1$ measures the size of adjustment to previous expectation errors. By recursively substituting inflation expectations into (8), π_t^e can be expressed in terms of previous-period inflation rates:

$$(9) \qquad \pi_t^e = (1 - a_4)\sum_{i=1}^{\infty} a_4^i \pi_{t-i-1}.$$

Substituting (9) into (7) yields an expression of inflation solely in terms of unemployment, representing the government's policy menu in the short run, where the present period's choices are dependent on prior economic policy decisions:

$$(10) \qquad \pi_t = -a_2\xi_t + a_5,$$

where $a_5 = a_3 + a_1(1 - a_4)\sum_{i=0}^{\infty} a_4^i \pi_{t-i-1}$. Equation (10) implies that previously pursued anti-inflationary policy programs improve the policy options in an election year, as the term $(1 - a_4)\sum_{i=0}^{\infty} a_4^i \pi_{t-i-1}$ will be correspondingly smaller.

The economy's long-run constraint is determined by its steady state inflation rates, that is, the equality of π_t and π_t^e. Therefore,

$$(11) \qquad \pi_t = a_5(1 - a_1)^{-1} - a_2\xi_t(1 - a_1)^{-1}, \quad a_1 \neq 1.$$

With $0 < a_1 < 1$, the long-run Phillips curve is steeper than the short-run equivalent (with a_1 approaching unity, the curve will become vertical).

Political parties are assumed to maximize a social welfare function (Nordhaus) or to minimize a vote-loss function (MacRae); both approaches, however, represent an identical economic problem. Nordhaus' and MacRae's objective functions are defined in terms of inflation and unemployment. Using MacRae's explicit objective function, a quadratic vote-loss function, Θ^{VL}, the problem becomes trivial:

$$(12) \qquad \min \Theta^{VL}(\xi_t, \pi_t) \equiv 0.5a_6\xi_t^2 + 0.5a_7\pi_t^2, \text{ s.t. (9),}$$

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[54] In case $a_1 = 1$, no long-run trade-off between unemployment and inflation exists—and policymakers will find it impossible to reduce unemployment below its "natural" rate.

where a_6 and a_7 are positive weights. It can be shown that its solutions

(13a) $\qquad \xi_t^* = a_2 a_5 a_7 (a_6 + a_2^2 a_7)^{-1}$,

(13b) $\qquad \pi_t^* = -a_2^2 a_5 a_7 (a_6 + a_2^2 a_7)^{-1} + a_5$

are to the left of the long-run Phillips curve. A social planner who does not face any reelection constraints therefore would minimize Θ^{VL} subject to (11) and choose as the optimal policy outcome the following combination situated on the steeper graph:

(14a) $\qquad \xi_t^{**} = a_2 a_5 a_7 ((a_1 - 2) a_1 a_6 + a_6 + a_2^2 a_7)^{-1}$,

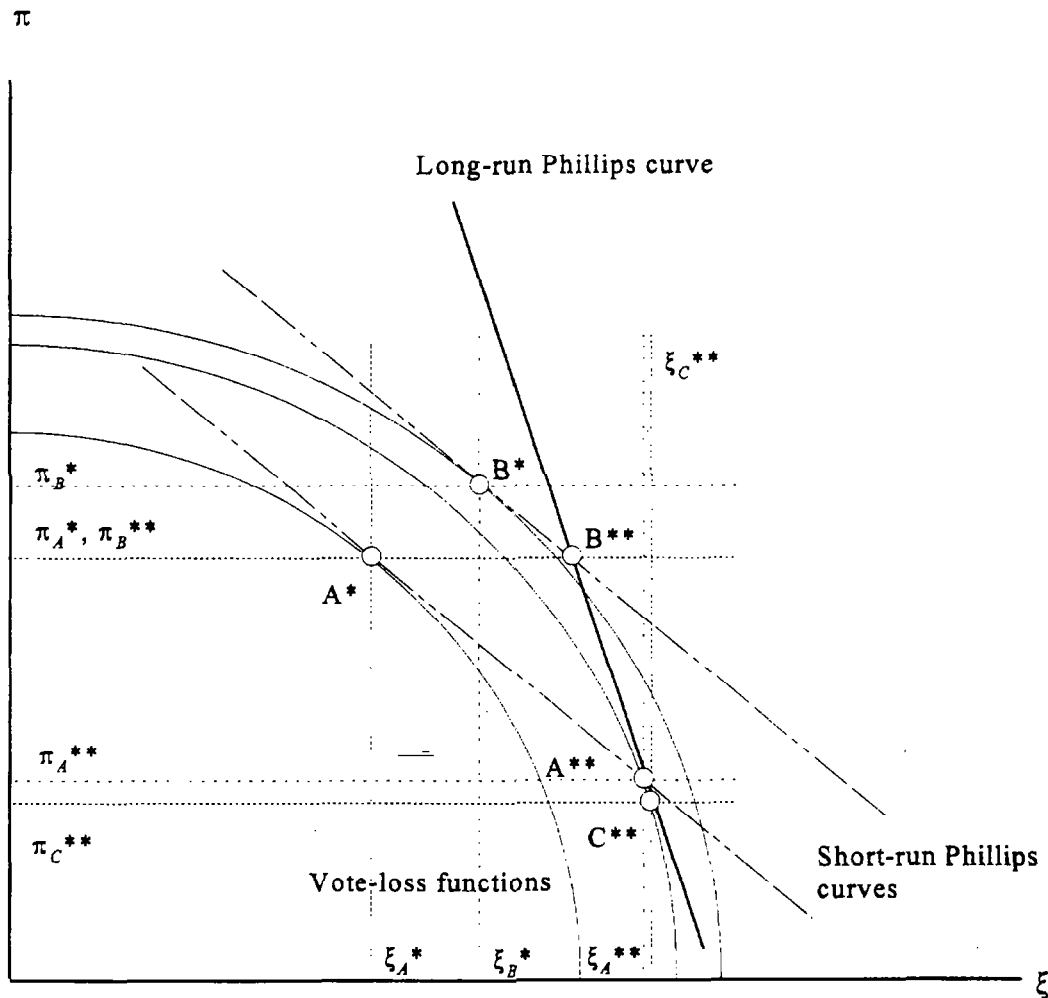(14b) $\qquad \pi_t^{**} = (-a_2^2 a_5 a_7 ((a_1 - 2) a_1 a_6 + a_6 + a_2^2 a_7)^{-1} + a_5)(1 - a_1)^{-1}$.

As $0 < a_1 < 1$, it follows that $(a_1 - 2) < 0$ and $(1 - a_1)^{-1} > 1$. Consequently, $\xi_t^* < \xi_t^{**}$ and $\pi_t^* > \pi_t^{**}$. Politicians, when faced with a reelection constraint, will therefore overstimulate the economy before an election, which will lead to unsustainably low unemployment rates. Such an outcome is represented by point A^* in Figure 1. At A^*, the short-run Phillips curve is tangent to the iso–vote-loss curve closest to the origin. In the subsequent period(s), voters will realize that the actual inflation exceeds its previously expected level, that is, $\pi_{t+1} > \pi_{t+1}^e$. Their inflation expectations will adjust accordingly, moving the short-run Phillips curve upwards—with the result that the policy options available to the government in period $t + 1$ have deteriorated: point A^* has now become unattainable, with B^* being the combination of unemployment and inflation that maximizes votes. If there were another election in $t + 1$, the incumbent party's vote share would have declined correspondingly.

As a result of the preelection behavior of the government, the sustainable long-run combination of inflation and unemployment is moving from point A^{**} to B^{**}. The social desirability of that move has to be seen in relation to point C^{**}, the tangent point between the long-run Phillips curve and the lowest possible iso–vote-loss curve. This combination serves as the reference point, as C^{**} represents the outcome that would have been chosen by a social planner.[55] If the government proposed a platform B^{**} in the postelection year(s), inflation and inflation expectations would converge at the level π_A^*—and B^{**} would remain stable. In order to reduce inflation expectations consistent with the short-run Phillips curve of the preelection period, the government has to contract the economy to a degree that its immediate postelection position will be to the right of the long-run Phillips curve.

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[55] If $a_1 = 1$, the long-run Phillips curve is vertical, and point B^{**} would unambiguously be an inferior outcome; if $0 < a_1 < 1$, the curve is negatively sloped, and the welfare effects are uncertain (in Figure 1, A^{**} is preferred to B^{**}).

Figure 1. Election-Year Politics

The particular results of the PBC models are derived from the dynamics inherent in this expectations-augmented Phillips curve framework. The particular short-run Phillips curve available to a policymaker depends on previous-period inflation rates, that is, on the economic policies pursued in nonelection years: if policies of price stability are chosen during those years, the short-run Phillips curve will gradually shift inward as inflation expectations adjust to the levels prevailing in the environment of price stability. Expansionary policies, however, will leave governments with an inferior set of policy options during the election year, as inflation expectations move upward with rising prices. The policy options available immediately prior to polling day have worsened.

Given these dynamics, PBC models predict rising inflation and falling unemployment rates before an election and falling inflation and rising unemployment rates afterward. Prior to an election, a government pursues expansionary economic policies aimed at maximizing votes; it will thus choose the combination of inflation and unemployment that minimizes vote loss (point A^* in Figure 1). After the election, in period $t + 1$, the government finds itself on a

short-run Phillips curve that would reduce reelection chances were they held in that period as well. Given its length of incumbency, the government will—strategically—implement policies that reduce inflation and, in the subsequent period(s), affect inflation expectations. The short-run Phillips curve will thus begin to move inward again. By the time the government faces the electorate anew, the contractionary policies will have increased unemployment but, at the same time, moved the short-run Phillips curve sufficiently inward so that A^{**} can be presented as the economy's preelection position: the cycle is thus complete as the trend reverses and unemployment falls while inflation rises.

According to PBC models, the government's strategic game plan comprises policies that will depress an economy after an election (in order to bring down the electorate's inflation expectations) so that, by the time of the next election, the economy can be sufficiently stimulated (alongside an inwardly-shifted short-run Phillips curve) to ensure maximum support at the ballot box. As voters are "myopic"—they do not learn about this particular pattern of political business cycles—and backward looking in regard to the formation of their inflation expectations, governments will always pursue expansionary policies prior to an election and contractionary policies afterward. Both behavioral assumptions—myopic voters and adaptive expectations—are crucial to generate the particular results of PBC models.

Partisan theory

With a set of assumptions practically identical to those of PBC models, Hibbs (1977, 1987) generated politically induced cycles by contrasting parties with different—although exogenously determined—policy functions. In the PT literature developed thereupon,[56] economic fluctuations result from the succession of different economic policies enacted by progressive and conservative parties, respectively. Analyzing post-World War II data of 12 Western European and North American economies, Hibbs (1977) derived behavioral patterns according to which leftist parties "revealed" a preference for low-unemployment outcomes, whereas right-wing governments aimed for low-inflation results. Contrary to the behavioural assumptions in PBC models (viz., that politicians are purely office motivated), policymakers in a PT context want to get elected in order to implement their programs. These differences in platforms and policies stem from the socioeconomic status of their respective. constituents—with left-wing governments representing, in rough terms, the lower (middle) classes and trade unions and right-wing ones the upper (middle) classes and businesses.

While facing the same constraints as the politicians in the Nordhaus-MacRae model, the objectives of PT-model politicians are distinct as changes in unemployment and inflation

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[56] For a recent review of PT contributions, see, e.g., Hibbs (1992). Empirical support for Hibbs' partisan cycles can be found in Paldam (1989b), who developed a nonparametric method, with which he tested the PT model using 1948–85 data for a large set of OECD countries, and Alesina and Rosenthal (1995). More recently, a (backward-looking) PT-cum-competence model has been developed and tested by Swank (1998).

affect the different constituents differently. In Hibbs (1987), the author argued that "inflation, although essentially neutral in its impact on money income distribution, may actually have improved somewhat the relative income position of low income households" (p. 87). More unambiguous are the effects of changing unemployment rates on the economic welfare of the different constituencies. Hibbs (1987) found that an increase in unemployment rates reduced the income shares of the population's two poorest quintiles, while increasing those of the two richest ones.[57] He calculated that a one-year increase in the unemployment rate from 6 to 10 percent shifted about 1 percentage point of income from the poorest two quintiles to the richest two. Minford and Peel (1982) and Minford (1985) supported this general view by analyzing U.K. data.

The partisan theory's dynamics differ from the ones driving the PBC model. The PT argument hinges upon the placement of two (or more) separate vote-loss functions in a Phillips curve framework that either ignores the short-run curves completely (while assuming a negatively sloped long-run relationship) or allows for long lags in the movement of the short-run curves with only minimal shifts caused by the changes in inflation expectations. As poor people worry more about unemployment than inflation, their vote-loss functions are steeper than those of more prosperous citizens. If there is a negatively sloped long-run Phillips curve, an outcome close to point B^{**}—cf. Figure 1—might then represent a left-wing party's envisaged position, whereas conservatives would prefer the economy closer to a point like A^{**}. If progressive policymakers take control of the government from a right-wing party, they will expand the economy, lower the rates of unemployment, and increase inflation (that is, the economy will move from A^{**} to B^{**}). Once voters switch back to a conservative government, politicians will cause an economic contraction in order to lower the rates of inflation while accepting higher ones of unemployment. The economy thus moves back toward point A^{**} in Figure 1. In a Hibbsian world, this succession of different partisan governments generate the politically induced cycles in output and inflation.

However, analogous to Nordhaus-MacRae, the PT model, too, is crucially dependent on the assumptions of myopic voters and adaptive expectations, thereby rendering it theoretically unattractive. Later versions will, as with Nordhaus-MacRae, attempt to rectify this shortcoming.

Concluding comments

Both the PBC and PT models were immensely innovative in that they convincingly managed to integrate democratic elements into standard macroeconomic modeling. While the theoretic foundation on which these models were built quickly became subject to criticism, mainly because of the empirically observed breakdown of the Phillips curve relationship and the

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[57] As seen above, Kalecki (1943) and followers offered *one* scenario that would explain the positive correlation between unemployment rates and the income levels of the capital-owning classes.

development of rational-expectations-based macroeconomics, they nevertheless represented an important step forward in the discipline's attempt to endogenize government behavior. As a result, both the PBC and PT approaches were extremely influential in defining the research agenda.

G. In the Wake of the Rational Expectations "Revolution"

Notwithstanding the generally strong empirical support that the theoretic results of the myopic Phillips curve models enjoyed, they had already lost their theoretic appeal when published—particularly following the insights of the rational expectations (RE) "revolution." Its proponents categorically rejected any possibility of voters being tricked by the same "policy game" over and over and over again. By the time that the PBC/PT models had found their way into the academic journals, the RE revolution was already in full force, sweeping the "standard" Keynesian models off the scholastic curricula. Based on the pathbreaking contributions by Lucas (1973) and Sargent and Wallace (1975), the new classical, RE-based models—as their theoretical predecessors before the days of Keynesian disequilibrium economics—predicted complete policy ineffectiveness, except in situations in which economic agents were surprised by unanticipated nominal shocks (in which case the real economy could be temporarily affected).

In short, the RE revolution invalidated not the results but the set of assumptions on which both the PBC and PT models were built. Even more important, the "new" consensus evolving in macroeconomics destroyed the optimism inherent in Keynesian economics, viz., that governments *could* indeed influence the economy in a permanently beneficial way. The far more nihilistic outlook adopted by new classical economists created an environment in which the interest in the study of ETP topics naturally flagged. The reason for the waning concern is—as it was before—obvious: if economic policymaking does not matter, then the analysis of "optimal" government behavior (beyond the maintenance of peace and property) becomes irrelevant.

However, the strong theoretical appeal of the RE assumption, paired with the extreme policy-neutrality results generated by the new classical theories, did spur the research efforts of those economists not completely convinced by their inherent implications. They began to analyze, within that theoretic framework, possible alternative linkages between the different sectors of the economy. Most promising for the further development of the ETP literature have proven to be the highly influential papers by Fischer (1977) and Taylor (1979, 1980). These two authors showed that, under certain institutional collective-bargaining practices that result in long-term or staggered wage contracts, properly timed demand policies could—temporarily, at least—affect the real sector of the economy. They thereby showed that this result did not crucially depend on the existence of nonrational expectations. On that ("new Keynesian") foundation, a second generation of PT models, introduced in the late 1980s, managed to thrive.

The so-called rational PBC (RE-PBC) models require information asymmetry between voters and the government: the electorate cannot determine the incumbent politician's

administrative competence, at least not without a time lag. The amount of public good that a policymaker is able to provide at a given level of tax revenue is that person's private information. Only in the following period can voters deduce the incumbent politician's competence level. Clearly, competent leaders try to signal their skills to the electorate. They can do this by pursuing economic policies that overstimulate the economy, to a degree that an incompetent politician is incapable of doing.

While the economy proves immune to Keynesian-style stimulation attempts, it can be administered efficiently or wastefully. Voters clearly (and rationally) prefer the former scenario (enabling them to receive a certain amount of public goods at lower tax rates). The preelection period therefore serves as an indicator of policies to be expected in the post-election term. Voters will thus "rationally" evaluate a politician's record and determine whether the politician seeking reelection is competent. If so, they will vote for him or her; if not, they will elect the opponent, whose competence level is unknown. That is, analogous to first-generation models, decisions are made in a backward-looking fashion. However, contrary to those models, the decision rule in these models is rational.

The RE-based models of the 1980s managed to demonstrate that the results of the initial 1970s models can indeed be recreated by using a modern, forward-looking framework. While not necessarily providing fundamentally new insights, they kept the ETP literature alive and renewed interest in it. Given the "(presumed) devastating effect of the rational expectation critique" (Alesina, 1988, p. 15) on the evolution of PBC/PT models, that was no small accomplishment! Both RE-based approaches will be reviewed in turn.

Rational models of office-motivated politicians

The signaling of administrative competence through the—again suboptimal[58]—temporary stimulation of output characterizes the RE-PBC models first introduced by Cukierman and Meltzer (1986), Rogoff and Sibert (1988), and Persson and Tabellini (1990),[59] as well as the closely related rational budget cycle (RBuC) theories initially proposed by Rogoff (1990). In these papers, politicians derive utility from being in office; they are—competence and

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[58] Tufte (1978) stressed equity reasons as the social benefits of preelection expansions: "Are ... election-year economic machinations ... completely undesirable? I am not sure. At a minimum the issue is more subtle than the anti-political evaluation now recorded in the economic ... literature. One relevant observation is that election-year economics may tend to redistribute income downwardly. A bribe to voters is, after all, a bribe to voters. In election years, unemployment drops, social welfare programs expand, and beneficiary payments to millions of people increase. The months before the election are the 'liberal hour,' replacing the administration's efforts earlier in the term to build 'business confidence'" (p. 149).

[59] More recently, Lohmann (1998) proposed a "workhorse" model that "synthesizes" key ideas about RE-PBCs with imperfectly informed and backward-looking voters.

"looks" apart—identical. Both the RE-PBC and RBuC models, therefore, closely follow the intellectual tradition of the Nordhaus/MacRae-type PBC models.

All the authors mentioned in the paragraph above generated politically induced business cycles by combining the asymmetric information assumption with the skilled politicians' signaling behavior. Cukierman and Meltzer (1986) had politicians differ in their ability to forecast and to respond to unforeseen circumstances—meaning that "[g]overnments with better forecasting ability are more likely to produce higher welfare" (p. 368).[60] However, closest to the intuition that has driven the "first generation" PBC models was the one proposed by Persson and Tabellini (1990). In it, policymakers have direct control over the economy's inflation rate. Their underlying constraint is a Phillips-curve-cum-competence term:

$$(15) \qquad y_t^r = (y^{r*} + \varepsilon_t) + (\pi_t - \pi_t^e),$$

where y_t^r is the economy's rate of output growth and y^{r*} its "natural" level (consistent with steady state inflation rates). The variable ε_t reflects the government's ability to increase the economy's growth rates of output beyond its natural level attainable at given steady state inflation rates.

Following the modeling tradition advanced by Rogoff and Sibert (1988) and Rogoff (1990), Persson and Tabellini (1990) represented the "competence" term as an MA(1) process, thereby justifying the electorate's pattern of rational retrospective voting.[61] On the basis of rational inflation expectations, $\pi_t^e = E_{t-1}(\pi_t)$, and a utility function defined over the two variables inflation and growth rates in real output—$u(\pi_t, y_t^r) = -\frac{1}{2}\pi_t^2 + a_8 y_t^r$, where $a_8 > 0$[62]—voters aim at electing a policymaker who maximizes their expected streams of discounted utility:

$$(16) \qquad \max \Theta = E \sum_{t=0}^{\infty} \beta^t u(\pi_t, y_t^r),$$

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[60] Cukierman and Meltzer (1986) motivated their paper by attempting to analyze the "cost of democratic government," based on which the authors, in conclusion, argued against the use of discretionary policy tools.

[61] Retrospective voting is rational because the level of an incumbent's competence, $\varepsilon_t = \tilde{\varepsilon}_t + \tilde{\varepsilon}_{t-1}$, observed in the current period, will be carried over into the following one, $\varepsilon_{t+1} = \tilde{\varepsilon}_{t+1} + \tilde{\varepsilon}_t$.

[62] Note the similarity to equation (8).

where $0 < \beta < 1$. The model's solution hinges on the voters' ignorance of the two variables π_t and $\tilde{\varepsilon}_t$ (and thus ε_t)—otherwise no political cycles would exist. Given any knowledge about the challenger's abilities, the representative voter prefers a competent incumbent over any opponent and any opponent over an incompetent incumbent. In a "separating" equilibrium, the competent politicians manage to signal their exceptional skills, thereby securing reelection. In order to convey this information, competent policymakers aim at growth rates that are unattainable by their ineffectual peers. In instances in which the incumbents seeking reelection are sufficiently skilled the preelection period is characterized by distortionary— that is, undesirable—expansion with unsustainable growth and higher-than-expected inflation rates. As moderately skilled officeholders cannot feign competence, they will continue to pursue those optimal policies that are generally chosen in nonelection years. These lead to, comparatively speaking, lower growth and inflation rates.

Rather than relying on the contentious Phillips curve relationship, Rogoff and Sibert (1988) defined the constraints in terms of the budget. Yet, as government expenditures are modeled in terms of lump-sum and seigniorage tax revenues[63] (as well as administrative competence), the model also relies on the implicit trade-off between inflation and output reminiscent of the traditional Phillips curve inference. The model's logic follows the arguments outlined above. In fact, it was Rogoff and Sibert (1988) who first proposed the argument describing RE-PBC models and to whom the credit belongs: the authors demonstrated in their very influential paper that, in election years, separating equilibria exist—that is, policy outcomes in which all incumbent policymakers (except the least competent ones) reduce taxation and increase inflation in order to signal their administrative capability to the voters.

Whereas it is not immediately intuitive why the electorate should observe output growth immediately but inflation rates only with a lag of one period, Rogoff (1990) proposed a very similar model that addressed this particular problem in a much more satisfactory manner. The information asymmetry in his model stems from the particular composition of the government's budget. While voters can immediately observe the amount of government expenditure, G_t, of which the benefits are accrued within that period (for instance, in the form of a social program transfer check), the gains from public investment projects, K_{t+1}^{govt}, can only be savored after a one-period (construction) lag. Therefore,

$$(17) \qquad G_t + K_{t+1}^{govt} = \bar{\tau}_t + \varepsilon_t,$$

where $\bar{\tau}_t$ is a nondistortionary lump-sum tax. Voters thus cast their votes in ignorance of K_{t+1}^{govt} and ε_t. The model was closed in a fashion quite analogous to Rogoff and Sibert's

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[63] Whereas lump-sum taxes are nondistortionary, seigniorage taxes (that is, inflation) distort the economy. A *social planner* would therefore never resort to the latter tool. Politicians faced with a reelection constraint, however, will resort to seigniorage financing as the electorate will observe this variable only with a one-period delay (that is, after the election).

(1988) and Persson and Tabellini's (1990): in order to be able to signal his or her competence, the skilled incumbent politician substitutes G_t for K_{t+1}^{govt} to an extent that is impossible for an inept policymaker, thereby causing budget cycles. As in the models discussed above, Rogoff's model also relied on rational retrospective voting.

The one feature of the RE-PBC and RBuC models that has provoked the most amount of discomfort and, subsequently, disagreement is the claim that it is the competent politician who needs to rely on distortionary policies while both the benevolent social planner and the elected, inept policymaker choose optimal, nondistortionary policies. In so doing, these authors managed, however, to recreate the qualitative result of the PBC models—that is, strategic preelection expansion and postelection contraction of the economy—while incorporating rational expectations and forward-looking behavior in the models. As Cukierman and Meltzer (1986) concluded, these fluctuations might just be the "cost of democracy."

Rational partisan theory

With a very influential paper, Alesina (1987) revived the PT tradition by adding a decentralized process of rational wage setting to Hibbs' (1977) model. Chappell and Keech (1988) presented a very similar model, of which the results were summarized in Chappell and Keech (1986).

Following Barro and Gordon (1983), Alesina assumed that wages in t have to be agreed upon at the end of period $t - 1$, that they were nonindexed, and that social partners attempted to keep wages constant "at the level compatible with the 'natural' rate of growth" (p. 654). Therefore,

(18) $\qquad w_t = \pi_t^e = E_{t-1}(\pi_t).$

Given (18), the economy is constrained by a traditional expectations-augmented Phillips curve relationship:

(19) $\qquad y_t^r = y^{r*} + a_9(\pi_t - w_t),$

where y_t^r is the real growth rate and y^{r*} the natural rate of growth. Two parties with different vote-loss functions minimize those subject to (19). Analogous to the Hibbs model, center-left parties are more preoccupied with lower unemployment rates than center-right ones. Specifically,

(20a) $\qquad \Theta_L^{VL} = \sum_{t=0}^{\infty} \beta^t (0.5(\pi_t - \pi_L^*)^2 - a_{10} y_t^r),$ where $\pi_L^* > 0$, $a_{10} > 0$, and

(20b) $\qquad \Theta_R^{VL} = \sum_{t=0}^{\infty} \beta^t (0.5(\pi_t - \pi_R^*)^2 - a_{11} y_t^r),$ where $\pi_L^* > \pi_R^* \geq 0$, $a_{10} > a_{11} \geq 0$.

The vote-loss functions, Θ_j^{VL}, $j \in \{L, R\}$, linearized by Alesina (1987) for reasons of computational simplicity, represent the fact that parties have different—exogenously determined—tastes concerning inflation and output growth. The positive "optimal inflation rate" (or inflation tax), $\pi_L{}^*$, envisaged by the center-left party could, in this context, be interpreted as one source of revenue within a mix of different taxes. In the borderline case (where $\pi_R{}^* = 0$ and $a_{11} = 0$) that is underlying Alesina's (1987) behavioral assumption of the center-right party's objective function, L's politicians are unresponsive to changes in unemployment and concerned with low—and preferably zero—inflation rates. The center-left party, by contrast, derives utility from increasing growth rates (or decreasing unemployment rates)—as captured by the parameter $a_{10} > 0$. In short, the center-left party "believes in higher government spending ... and is willing to use money creation as a way of financing it" (Alesina, 1987, p. 655). Given equations (20a) and (20b), political parties minimize their vote-loss functions with respect to π^j as follows:

(21a) $\qquad \pi_t^{*L} = \pi_L^* + a_9 a_{10} = \pi^{*L} \forall t,$

(21b) $\qquad \pi_t^{*R} = \pi_R^* + a_9 a_{11} = \pi^{*R} \forall t.$

Equations (21a) and (21b) are the conditional expectations of inflation rates (depending on the election outcome). Inflation forecasts are made, and—this is a crucial assumption—wage contracts signed, prior to the vote. Alesina furthermore assumed that (i) elections occur in every other period, (ii) the distribution of voters' preferences is unknown, and (iii) polling results are public knowledge and constant over time. In an election year, voters will therefore only know the probability with which the center-left party is expected to win, denoted ρ. Given this information, voters expect the election-year inflation rates to be

(22) $\qquad \pi_t^e (= w_t) = \rho \pi^{*L} + (1-\rho)\pi^{*R}.$

In Alesina (1987), $\pi_R{}^* = 0$ and $a_{11} = 0$. With the "extreme" assumption $\pi^{*R} = 0$, it follows that $\pi_t^e = \rho \pi^{*L}$. In off-election years, the ideological preferences of the incumbent government are known with certainty. Therefore, $\pi_{t+1}^e = \pi^{*L}$ if the center-left government has won the election and $\pi_{t+1}^e = \pi^{*R}$ otherwise. In off-election years, the electorate can form expectations with certainty. Consequently, $y_t^r = y^{r*}$, irrespective of the party in power. In election years, however, output growth is dependent on the government. This can easily be seen when combining (19) with (22), which yields the conditional output growth rates in election (23a and 23b) and off-election (23c) years:

(23a) $\qquad y_t^{rL} = y^{r*} + a_9(1-\rho)(\pi^{*L} - \pi^{*R}),$

(23b) $\qquad y_t^{rR} = y^{r*} + a_9\rho(\pi^{*L} - \pi^{*R}),$

(23c) $\qquad y_{t+1}^r = y^{r*}.$

As, by assumption, $\pi^{*L} > \pi^{*R}$ and $a_{10} > a_{11}$, it follows from equations (21a) and (21b) that $\pi^{*L} > \pi^{*R}$. That, in turn, means that, from equations (23a) and (23b), $y_t^{rL} > y^{r*} > y_t^{rR}$—thereby (partially) reconfirming Hibbs' (1977) PT results.

Owing to the rigidity in nominal wages, center-left parties, when elected, manage to stimulate the economy beyond its "natural" level, as symbolized by (23a), but they are able to sustain that amount of economic growth for one period only. Afterward, that is, once the wage contracts have been renegotiated for the following period, growth rates in output fall back to their natural level, as specified by (23c). If the center-right government is voted into office, it will, by contrast, cause an economic contraction during the first period, see (23b), before the growth rates adjust to their natural level, as specified in (23c). As can be seen in equations (21a) and (21b), inflation rates, however, are consistently higher with a center-left government. Equation (22) shows that inflation rates in years with an election are higher than they would have been if a center-right government were in office and lower than if a center-left administration governed. In the second period of a progressive administration, inflation rates will therefore increase—while they would decrease for a conservative one.

Equations (23a) and (23b) show the extent to which these postelection fluctuations in output are pronounced: they increase with a larger difference between π_L^* and π_R^* (that is, "the more polarized ... the political system" (p. 658)), with a bigger election-night "surprise" (that is, larger forecast errors), and a steeper Phillips curve relationship (that is, a bigger value for a_9). While it is undisputed that Alesina (1987) pushed forward the research into PT modeling,[64] Hibbs (1992) criticized his particular approach—commonly referred to as rational partisan theory (RPT)—on mainly two theoretical points. First, he argued that

> [t]he mystery in the RPT's political economy is why optimizing agents with rational expectations repeatedly lock themselves into multi-period nominal wage contracts with start dates just preceding (rather than just following) elections. ...[B]uilding a rational political theory of the business cycle on the perpetuation of sub-optimal contracting is perhaps not a great deal more satisfactory on theoretical grounds than older sluggish expectations models (pp. 365–66).

And second, Hibbs disliked the fact that the driving force behind the RPT cycles was countercyclical real wages, a phenomenon that was largely unsubstantiated by empirical research.[65]

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[64] Alesina (1987) extended this model to analyze the welfare effects of a coordinated approach between the two parties. Using a game-theoretic approach with "repeated games," he proved that such an approach could eradicate the fluctuations in output and inflation and improve the welfare of both constituencies in the long run. Even in the absence of binding commitments, Alesina argued, reputational forces, which he saw as developing from the repeated interaction of the two parties and the public, might help to reduce the magnitude of the fluctuations characterizing a situation of repeated "one-shot" games.

[65] In addition, recent empirical studies have proven not to be supportive of RPT models; see, for instance, Crosby, Brown, and Malady (1997) for Australian, Carlsen (1998) for U.S.,

Concluding comments

The policy-neutrality results of the new classical models drastically altered economists' view as to what government can—and, consequently, should—do to improve on the market outcome. The optimism of Keynesian economics about the government's ability to fine tune the economy fell victim to the new the insights won by the RE revolution. Given this new set of behavioral assumptions, the only mechanism through which real variables could be affected—and, then, only temporarily—was to surprise the firms and consumers. Both the RE-PBC literature and the RPT contributions were motivated by politicians' attempts to exploit their information advantages over the general public in order to—at least, temporarily—mislead the electorate. While immense progress has been made with these models in terms of economic modeling and quantitative estimation techniques, only few additional insights into the complex interdependence between the economy and the polity have been won. Neither the competence nor the staggered-wage stories are particularly convincing—and the research emphasis, as a result, has shifted more toward the exploration of an entirely new set of links conjectured to exist between these two spheres of a society. More accurately, the latest stage in the economic analysis of political decision-making processes takes up on the Kaleckian hypothesis of class conflict and the democratic struggle over the distributions of income and wealth as a starting point for a further research.

H. The Current Research Agenda: Inequality and Growth

With stimuli from, particularly, the endogenous growth theory,[66] a whole new set of fresh ideas was (quite successfully) injected into the ETP literature. The focal point of this new branch, developed during the mid- and late 1990s, was the relationship between a country's inequality measures and its growth potential, reintroducing the concept of conflict. As a result, fiscal policies were seen—again—as an instrument used to redistribute income.[67] Especially innovative were the papers by Persson and Tabellini (1994) and Alesina and Rodrik (1993, 1994), demonstrating the existence of mechanisms that could help to explain

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Andrikopoulos, Prodromidis, and Serletis (1998) for Greek data. Their results stand in contrast to the more encouraging results derived, for instance, by Paldam (1989a) and, with some reservations, by Carlsen and Pedersen (1999), who analyzed data for seven OECD countries. The latter authors found empirical support for the RPT using data from the United Kingdom, Canada, and Australia; however, the U.S. and Swedish data were interpreted as evidence against the RPT's predictions, while those for Federal Republic of Germany and Norway generated inconclusive results.

[66] For a survey of endogenous growth theories, cf., e.g., Romer (1989) and Helpman (1992).

[67] On this particular point, see also Schwartz and Ter-Minassian (2000).

the inverse relationship between the distribution of income and the resultant growth path.[68] According to the argument laid out in these studies, a higher degree of inequality increased the political pressure for fiscal redistribution. Once implemented, rising levels of distortionary taxes would retard economic growth, leading to growth rates that, on average, are lower than in countries that are, ceteris paribus, more egalitarian.[69]

Persson and Tabellini (1994) placed their empirically well-supported analysis into a standard overlapping-generations framework, in which individuals maximize identical utility functions over their respective streams of consumption, both when young and old, while facing a government that pursues redistributive policies. When young, a given generation's welfare depends on the capital accumulated by previous generations as well as average and personal endowments of skills. When old (and only when old), that generation's welfare is directly affected by government behavior, because "it takes from those who have invested more than the average and gives to those who have invested less than average" (p. 602). Persson and Tabellini's (1994) model completely abstracted from problems of intergenerational redistribution schemes. The households' political preferences, expressed in terms of a tax on capital income, are determined by the balance between the tax burdens on their individual capital stocks and the lump-sum transfers paid out to all the old. Persson and Tabellini's (1994) politico-economic equilibrium was derived utilizing the median voter theorem, indicating that half of every old generation would benefit at the expense of the other

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[68] An alternative approach has been proposed by Parker (1999), who had a government maximize a social welfare function with income and inequality as determining variables. Given the trade-off between these two variables, his solution resulted in a situation, in which optimal policies generated "growth with cycles." While mathematically elegant, this line of argument—mainly for the reasons summarized in Subsection B—are not further explored in this paper. Also, the approach used by Krusell and Ríos-Rull (1999), placing the median voter into a dynamic, neoclassical growth framework, is not discussed in detail, as their main contribution consists of solidifying the results of earlier contributions by showing the importance of the correlation between the income and wealth distribution and the median voter's electoral behavior.

[69] However, not all of the recent studies showed a clear correlation between these two variables. Perotti (1996), for example, could not find any conclusive results. By contrast, Alesina and Perotti (1996), analyzing 71 countries, managed to empirically support the hypothesis of an inverse link between inequality and growth "[a]fter an extensive battery of robustness tests" (p. 1225). An alternative mechanism that could help to explain the conjectured positive correlation between income inequality and growth was suggested by Olters (1996, 2000a, 2000b). Modeling political decisions as a two-tiered process over votes (deciding elections) and party membership (determining party platforms and fiscal policies), he argued that the size of electorally induced policy shocks increased with a more pronounced disparity of income and wealth, following the adoption of more dissimilar policy platforms by the competing parties' respective median delegates.

one. The resulting tax level determined the economy's growth potential, implying that both a more equal distribution of income and a higher average level of basic skills increased growth.

A similar mechanism drove the otherwise very different model proposed by Alesina and Rodrik (1993, 1994). Their result had income inequalities increase the pressure for distortionary taxes as well, because the "economically disenfranchized" segments of the population were "more likely to be willing to 'tax' growth-enhancing resources such as physical or human capital" (Alesina and Rodrik, 1993, p. 23). The authors placed "capitalists" and "workers" in an economy described by a Cobb-Douglas production function (with capital, labor, and "government spending on productive services" as determining variables) and with a budget constraint of the form

$$(24) \qquad G_t^{prod} = (1 - g_t^{trnsf}) \tau_t K_t,$$

where G_t^{prod} represents government spending on productive services, g_t^{trnsf} the share of tax revenue transferred to the workers, and τ_t the tax on aggregate capital, denoted K_t. Capitalists were assumed to be the only ones who save (that is, their behavior alone determines the economy's growth rate). If the economic structure is such that capital is taxed and labor subsidized, it follows logically that a government supported by "capital" would simply maximize the economy's growth rate. By contrast, a pro-labor government's optimal policy is determined by the equality of the marginal benefit of taxes (increased wages and direct lump-sum payments) and marginal costs in terms of reduced economic growth. When allowing for a continuum of agents and the determination of policies by majority vote, the median voter determines the ultimate choice of τ_t. Consequently, "the more capital poor the median voter ..., the higher the resulting tax rate and the lower the equilibrium growth rate" (p. 31). Alesina and Rodrik (1993) concluded that "in a democracy, the more unequal the distribution of wealth, the lower is the growth rate of the economy" (p. 32). They, too, supported their model by quite an extensive set of empirical tests.

These latest developments in the ETP literature represent a truly significant advancement toward the full endogenization of political behavior into macroeconomic modeling. The variables driving these models are those that directly affect an individual's utility. An equally valuable feature of these models is the fact that the results have been expressed in terms of variables defining government behavior. The contributions of Alesina and Rodrik (1993, 1994) and Persson and Tabellini (1994) provide frameworks through which the derivation of the answers that have been sought in the introductory section of this paper is possible.

These models are elegant and to the point, but some weaknesses—as with any model—do remain, mainly relating to the overly stylized description of political competition and the absence of integrated political decision-making processes. While both papers presented strong cases, theoretically as well as empirically, demonstrating the increased propensity of nonegalitarian countries to tax growth-generating activities for redistributive purposes, they fell just shy of fully endogenizing politics in growth models. Their papers' appeal—viewed from within the ETP context—is limited by the implicit reliance on politico-economic

transition mechanisms in which the median voter determines optimal taxation levels and, correspondingly, the optimal size of government.

Therefore, it remains "not very well understood," as Persson and Tabellini (1994) concluded, "how income distribution and economic growth are jointly determined in political equilibrium" (p. 618). The median voter as an instrument to describe politics leads to results that, by definition, abstract from (i) the differences in underlying constitutional frameworks differentiating democracies, and (ii) the *political* dynamics caused by the interaction of voters and political parties. Current research is attempting to advance the understanding of these two points,[70] thereby rounding off the literature. ETP research has come full circle, with reference to the intuition driving Kalecki's (1943) political business cycles, interpreting politics as a democratically channeled conflict over distributional issues, which affects—and is affected by—a country's economic development.
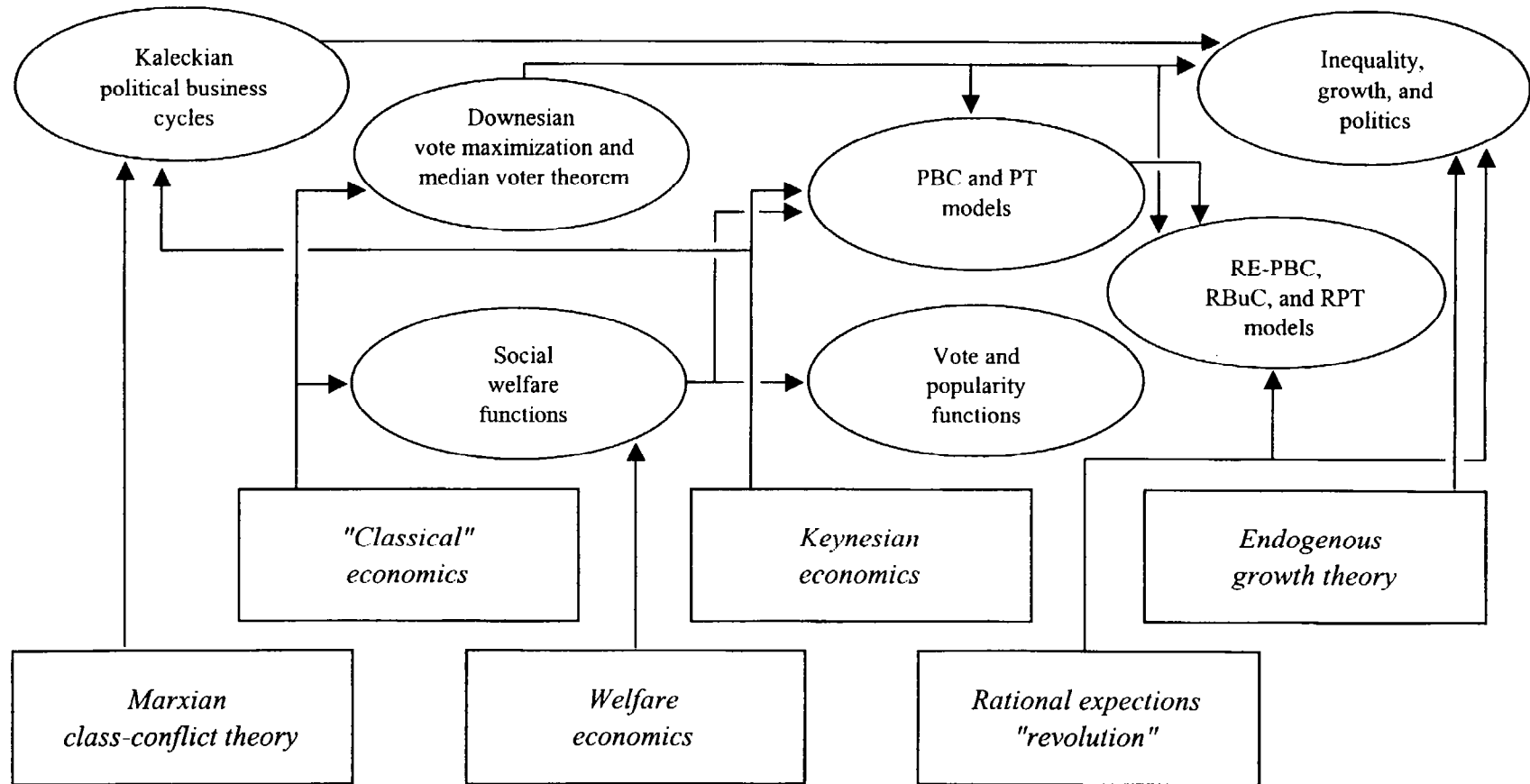
III. CONCLUDING REMARKS

Rarely (if ever) does research progress in a linear fashion, and this has certainly not been the case in the evolution of an economic theory of politics (ETP). Summarized in the accompanying Figure 2, this paper has surveyed its main ideas and innovations over the last six decades, retracing its meandering path through the discipline in search of models that could explain optimal government behavior in democracies (using standard economic techniques). So far, ETP contributions have largely remained outside the mainstream of economics—largely owing to the absence of universally accepted axioms of, particularly, parties' and governments' political behavior.

Over several decades, various approaches have been tried and tested, and many results been derived. The earliest contributions, dating back as far as the early 1940s, hinted at the ability of governments to consciously manipulate economic outcomes for political purposes. Supplemented by normative approaches, which discussed the ability of society to measure its collective welfare, and—particularly—by fundamental economic models, which sought to establish the analogies between the behavioral patterns in business and politics, a theoretic

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[70] Significant progress has been made in understanding the impact of *institutional designs* on the government's fiscal conduct; see, especially Persson and Tabellini (2000), Persson, Roland, and Tabellini (2000), and Austen-Smith (2000); in all of these contributions, it could be shown that high-tax, egalitarian societies were more likely to occur under parliamentary regimes with proportional representation than under either presidential ones or winner-take-all electoral systems. In regards to the modeling of *political dynamics*, Olters (2000a, 2000b) has suggested one approach to theoretically describe party ideologies, voter turnout, and electoral behavior by using computer simulations. The model highlights the crucial importance of, e.g., the initial inequality of income an wealth on a country's politico-economic path.

Figure 2. The Development of an Economic Theory of Politics

base was developed by the late 1950s that allowed subsequent authors to discuss various forms of possible strategic interactions among voters, parties, and their governments. While much has been learned, from an economist's point of view, about the democratic process and its economic implications, the literature is still evolving. Its various approaches are unified in their attempts to provide a theoretic framework to integrate this branch of nonmarket economics with the rest of the discipline and, subsequently, to overcome the division between economics and political science. Convincing models have been suggested to express key political variables—such as government spending and tax levels—in an endogenous fashion. Permitting these variables to affect individuals' levels of utility, standard economic optimization problems could be derived on that basis. From this point forward, it should not be an overly large step toward answering the questions laid out on pages 6–7 and integrating the ETP insights into the mainstream of economic writing and instruction.

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