

Does Egalitarianism Have a Future?

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1. Introduction

1.1 Recent Events

International political events of the past two decades have led many observers, both amateur and professional, to conclude that the egalitarian experiments of the twentieth century are finished and failed, and, moreover, that no similarly motivated experiments will occur in the foreseeable future. These events include (1) the failure of the communist economies of Eastern Europe and the Soviet Union to provide a standard of living for their citizens commensurate with the standard that capitalist economies have provided, and the dramatic demise of these systems in the period 1989–91; (2) the market reforms in China since 1979, which transformed first agriculture and then industry, and engendered a growth rate higher not only than that experienced by China under the prereform regime, but also than that experienced by virtually every other economy in the world in this pe-

riod; (3) the putative collapse of Swedish social democracy; (4) the end of the expansion, and even the contraction, of the welfare state in western Europe and the United States; and (5) the privatization wave in mixed economies. Associated with these events has been a growth of the genre of economic analysis that maintains that unfettered markets are the optimal institution for promoting human welfare, and that attempts to patch up apparent market failures by government intervention lead to even worse outcomes. This view, traced to what are now considered to be the prescient writings of Friedrich Hayek, is based on problems of uncertainty and asymmetric information, from which flow agency problems of myriad kinds. The political events referred to above are, from this viewpoint, seen as ratifying laws of economics.

Our task in this paper is to summarize what recent theoretical and empirical work by economists has to say about the equality–efficiency trade-off in modern economies. That trade-off can be examined with different time horizons in mind: the shortest-run horizon

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might consider only tax rates of various kinds to be alterable, a medium-run horizon might consider property forms to be alterable, and the longest run might consider the possibility of altering the distribution of human capital as well. We shall largely ignore issues pertaining to policies that would take the longest time to implement, in particular, the possibilities of transforming the distribution of earning potentials through policies of educational access and finance. But at the same time, our concern when discussing, for instance, the potential redistribution of alienable wealth, is mainly with those changes that could be expected to have sustainable, as opposed to merely short term, consequences.

We find it useful to think about two issues concerning the future of egalitarianism, economic and political. The economic issue concerns what degree of equality could be achieved, and at what cost, using available instruments (markets, taxation, various forms of property rights). The political issue concerns the possibility of implementing the use of these instruments in democracies to alter income distribution in an egalitarian direction, assuming such alterations are economically feasible. While most of the paper will deal with the economic issue, because that literature is more highly developed, we will devote one section to the political issue as well.

1.2 *The Equality-Efficiency Trade-Off*

Egalitarian policies are often criticized on the grounds that they entail efficiency losses. One can, of course, find historical examples of policies that are both egalitarian and inefficient: the recent experiences of the USSR and of Eastern Europe provide a wealth of illustrations. But is this association unavoidable? To what extent is there an

inescapable trade-off between equality and efficiency?

The Second Fundamental Theorem of Welfare Economics offers a clear-cut answer. It states that no such trade-off exists if several conditions are met, notably: (a) markets are complete and perfectly competitive; and (b) it is possible to transfer wealth among consumers in an incentive-neutral or "lump sum" manner.²

Neither condition was satisfied in the egalitarian regimes of the USSR and Eastern Europe: in their late years, the absence of competitive markets and severe incentive limitations interacted with a vengeance, causing low standards of living for a majority of the population. But, arguably, modern market economies display a high degree of competition. Any equality-efficiency trade-off must then be attributable to the impossibility of lump sum transfers, and to the asymmetries of information that make such transfers infeasible.

Perhaps paradoxically, the very informational asymmetries that allow for an equality-efficiency trade-off also cast doubt on the relevance of conventional measures of inefficiency. Moreover, they imply that *laissez faire* may lead to states that are inside the equality-efficiency boundary, from which it is in principle possible to improve both equality and efficiency by careful policies.

The "aggregate excess burden" or "aggregate deadweight loss" literature provides the most sophisticated attempt to measure efficiency losses. But its logic rests squarely on the possibility of lump sum transfers, that is, income transfers based on personal characteristics, which are unaffected by

² See Andreu Mas-Colell et al. (1995) for a recent discussion.

behavior. This can be illustrated by the following example.

Consider a gift by society to Peter in the amount of \$100. The \$100 could be raised either by taxing Paul's labor earnings at the rate of 10 percent, or by taxing Mary's investment returns also at the rate of 10 percent. Because of the changes in lifestyle that the taxes induce, Paul would be indifferent between facing the 10 percent labor tax and being assessed a lump sum tax of \$115. Mary, in turn, would be indifferent between the 10 percent tax on her returns and a lump sum tax of \$130. By definition, the excess burden (or dead-weight loss) of the labor tax is \$15, whereas that of the investment tax is \$30.

But it would be incorrect to view Mary's loss under the investment tax as greater than Paul's loss under the labor tax: such a comparison would be possible only if utility were interpersonally comparable, which is here nowhere assumed, and, moreover, if both Mary and Paul had the same, and constant, marginal utility of wealth.

Were lump sum taxes possible, then a tax on labor would dominate the tax on capital according to the potential improvement or Kaldor-Hicks criterion: it is in fact this criterion that ultimately justifies the use of the aggregate excess burden. A potential improvement is one that is possible, that is, that society can carry out if it so wishes. If lump sum transfers are not possible, then it is not true that the labor taxes represent a "potential" improvement over capital taxes.³

More generally, the usual characterization of economic efficiency as synonymous with Pareto efficiency (i.e.,

with the impossibility of a unanimous move to another allocation) assumes that the set of feasible allocations, and thus the utility possibility set, is defined by society's aggregate resources and technology alone.⁴ In particular, it is assumed that any recombination of property rights on any resource or productive unit can be attained at no cost, and that society has the means to elicit costlessly any amount of effort, any quantity or quality of work, from anybody "according to his capabilities."

But to assess and implement lump sum transfers, society needs detailed knowledge of individual characteristics, while consumers may have incentives not to reveal private information on their characteristics or actions. A large literature has developed the implications of individual incentives in the presence of informational asymmetries, as well as the resulting principal-agent, contracting, and commitment problems. The implications include not only the impossibility of lump sum transfers, but also the nonexistence or imperfect operation of many credit and insurance markets. Joseph Stiglitz (1994) presents this viewpoint in some detail, and calls it the "information paradigm," in contrast to the "neoclassical paradigm."

The fundamental difference between the two paradigms lies in the constraints included when defining the set of feasible allocations. The neoclassical paradigm considers only aggregate resource and technology constraints. The information paradigm adds the constraints derived from individual incentives in the presence of asymmetric information. Lumpsum transfers are not possible in the information paradigm,

³ The claim is that improvements that are impossible cannot be considered potential. This point is unrelated to the usual clarification that a potential improvement need not be carried out.

⁴ Strictly speaking, there is one individual characteristic that enters the definition of attainable allocations, namely, the individual consumption sets.

because they violate informational and incentive constraints.

Conventionally, welfare analysis under the neoclassical paradigm's constraints is called first-best. Adding a constraint of any type automatically turns the analysis into second-best. By this time-honored convention, the welfare analysis of the information paradigm is second-best. The study of many policy problems will in practice require including a variety of institutional or political-economic constraints, depending on the problem at hand. But, at a more fundamental level, the relevant distinction should be the one between constraints that are physical—imposed by nature—and those that could be relaxed by policy, including institutional change or reform. This criterion, in fact, underlies the conventional definition of first-best, because, from the neoclassical viewpoint, only the resource and technology constraints are physical. We believe that the incentive and informational constraints that prevent the implementation of lump sum transfers (in particular, the costless transfer of claims on income derived from unobservable personal characteristics) are, to a large extent, as natural as technological constraints.

If lump sum transfers are impossible, then a worsening in efficiency may well accompany an improvement in equality. But the informational and incentive constraints that prevent lump sum transfers also cause laissez faire to result in inefficiencies, leaving room for policies that enhance both efficiency and equality. Consider Figure 1, depicting two utility possibility sets for a two-person economy. The frontier of the neoclassical utility possibility set passes through points F and G, and that of the information paradigm utility possibility set passes through H and J. The neo-

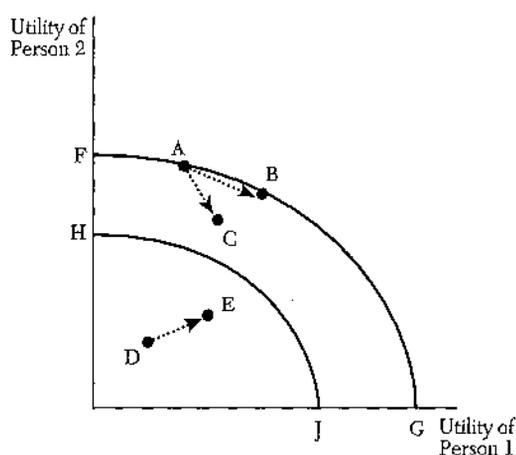


Figure 1. The Neoclassical and the Information Paradigms.

classical paradigm views laissez faire as efficient, reaching A as initial status quo point. If society thinks that point A is inequitable (Person 1 is getting too little), then lump sum transfers can be used to move to the more equitable point B, also on the utility possibility frontier. In line with the Second Fundamental Theorem of Welfare Economics, a more equitable point can be reached while maintaining economic efficiency. But suppose that lump sum taxation is unavailable. One would be tempted to say that, while laissez faire leads to A, moving to its right would require taxing Person 2's labor or capital or, perhaps, purchases. The move would then lead inward from the utility possibility frontier, say, to C.

This is not a totally coherent story, however. First, what is the meaning of a utility possibility frontier if some of its points, such as B, just cannot be reached? Second, the same reasons that make lump sum transfers impossible also imply, first, that the utility possibility set is smaller than the neoclassical one, and, second, that laissez faire is not efficient, even relative to the shrunk utility possibility set, for laissez faire leads to a point such as D, which

is not even on the HJ frontier.⁵ This in particular means that it is in principle possible to find directions (such as from D to E) along which equality increases with an efficiency gain.

1.3 *Equality of What?*

We have used the phrase “equality–efficiency trade-off” rather than the more conventional “equity–efficiency trade-off” because equity connotes justice, a notion that may or may not be associated with a situation of equality. Economists are trained to evaluate the equality–efficiency trade-off, but not, for the most part, the equity–efficiency trade-off. Nevertheless, most of those who are interested in the equality–efficiency trade-off derive their interest from a view that more equality than currently characterizes the society with which they are concerned would be desirable from an ethical viewpoint, but only if it could be engendered without large efficiency costs. In other words, more equality would be desirable only if those who are at present poor would become better off in the more equal situation, without significant cost to those who are at present not poor.

What exactly should be equalized—income or welfare, or some other kind of input or opportunity for welfare? If pressed, most would admit that what really counts is welfare, not income or wealth. There are problems, however, with taking the equalisandum as welfare. First, there is the issue of measurement: Is it theoretically possible to make interpersonal comparisons of welfare, and if so, how does one measure welfare in interpersonally comparable units? While economists, philosophers, and psychologists give a spectrum of answers to the first question, one point should be made. General equilibrium theory requires only information on ordinal preferences, without interpersonal

comparability; from this fact, many economists too quickly conclude that interpersonal comparisons are either meaningless or impossible. This inference is faulty. For example, one may not have to know what the colors of objects are to compute their specific densities, but this does not mean objects are colorless. Likewise, it may be possible to make interpersonal welfare comparisons, even though the theory of market equilibrium never requires that information; other theories, such as theories of distributive justice, may.

Secondly, even if interpersonally comparable welfare measurements were possible, it is not obvious that equalizing welfare levels across persons would be ethically desirable, for at least two reasons. First is the problem of expensive tastes. Suppose “A” has more expensive tastes than does “B”—A’s champagne tastes versus B’s lager tastes—that is, A requires more resources than B does to reach B’s level of welfare. Equalizing the welfare levels of A and B might, in this case, appear unfair to B: why should society coddle A, with her expensive tastes, thereby lowering B’s welfare below what it would have been if A and B had received equal resource bundles? The second problem is one of cheap tastes. Suppose that C, who by virtue of economic necessity or culture, has opted for a marriage that seriously limits her activity: she must clean house, cook, and nurse children all day. In order to cope, she takes on “tamed housewife” preferences, in which she derives a high level of welfare from these activities.⁶ The tamed housewife has cheap tastes. Would it be fair that,

⁵ More precisely (see Stiglitz 1994 for a detailed justification), neither the second nor the first fundamental theorem holds, not even in the second-best sense.

⁶ The “tamed housewife” example is Amartya Sen’s (1987).

under the welfare-equalizing policy, she receive fewer resources than those who did not develop tastes in order to cope with disadvantage?

These considerations—of the difficulty in comparing welfares, and of expensive and cheap tastes—have stirred political philosophers beginning with John Rawls (1971) to propose a number of alternatives to welfare for the equalisandum of an egalitarian theory of distributive justice. Rawls famously proposed that what should be equalized across individuals are their bundles of “primary social goods”; one of these goods is money, but as it is not the only one, Rawls faced an “index problem” of how to aggregate these bundles in an interpersonally comparable measure, one other than welfare as conceived by the individual himself. Because of difficulties with taking primary goods as the equalisandum, at least three other proposals have been made: to take individuals’ levels of *functionings* as the thing to be equalized, where functionings are observable “doings and beings” of persons, such as literacy and nutritional and health levels (Amartya Sen 1980); to take the amounts of *resources* that individuals have as the equalisandum, where resources consist in both transferable and non-transferable (talents) ones (Ronald Dworkin 1981); or to take the *opportunities* people face as the thing to be equalized (Richard Arneson 1989; G.A. Cohen 1989; and John Roemer 1993). Each of these proposals faces an index problem, similar to the one Rawls faced, of aggregating a multi-dimensional list into a number which is interpersonally comparable.

We shall not further pursue these ideas: the reader who wishes to delve into the philosophical debate may consult Roemer (1996). Economic analysis based upon these modern conceptions of justice is still in its infancy. We shall,

conventionally, take equality to mean equality of income or wealth. A person’s income may be a good proxy for his level of functioning, resource control, and opportunities; we do not claim it is the best one can do, but it is certainly one of the easiest characteristics of a person to measure, among those that might be appropriate for egalitarian concerns.⁷

1.4 *A Preview of Our Conclusions*

The communist countries demonstrated the failings of a particular combination of uncompetitive politics (political dictatorship) and uncompetitive economics (state ownership and quantitative controls), which, we believe, tells us relatively little about the possibilities for egalitarian improvements in democratic market societies. Economic theory still provides no proof of the superiority, much less the necessity, of either unabridged private property or of its highly unequal distribution. Indeed, modern theories of asymmetric information and incentives provide numerous examples of equality–efficiency synergies, and postwar economic experience indicates that equality does not obviously conflict with growth. While the operation of unfettered markets engenders great inequalities of wealth, claims that markets would be inefficient without such inequalities are largely speculative.

We shall examine the effects of labor, profit, and wealth taxes on the equality–efficiency trade-off, and what alternative compensation, insurance, and ownership arrangements could accomplish. We argue the following:

1. An improvement in efficiency can

⁷It might be noted that the United Nations Development Programme publishes an annual Human Development Report that attempts to measure for every country a “human development index” in which income is only one aspect.

accompany more equal distributions of wealth, due to its felicitous effects on effort and educational investment choices. The potential effects of wealth redistribution on the resources devoted to the protection of property, and on the political pressure for inefficient redistributive actions by the state, can also be favorable (Section 2).

2. While the literature on taxation has argued that fiscal redistribution can be quite costly, many of the costs are borne by higher-income groups. This does not automatically translate into high social costs if the gains to poorer citizens are substantial. On the other hand, considerable cost saving may be achieved through the appropriate choice of instruments, for example, taxing pollution rather than output (Section 3).

3. The cost of attaining a more equal distribution of wealth, a matter of considerable uncertainty given lack of consensus on the motivation for savings and bequests, may be similarly sensitive to the methods chosen (Section 3).

4. Worker management at the enterprise level has shown strong potential viability. While perhaps quite desirable from the standpoint of social equality and self-esteem, it is no panacea for economic inequality, and its potential inefficiencies must be studied with extreme care (Section 4).

We examine the political-economic determinants of the sorts of policy likely to be adopted in a democracy. We briefly review the experiences of the welfare state (why substantial redistribution has taken place in advanced democracies), and why sharp inequalities continue to exist in democracies. We note that:

5. Capitalism has manifested considerable resilience when faced with high levels of taxation and government expenditure. While leveling off and mod-

eration of the highest of these levels is the agenda of the day, the demands that gave rise to them remain present, and dismantling of the apparatus that some say saved industrial capitalism is less likely than its reinvention (Section 3).

6. Substantial wealth and income inequality continue to exist in democracies, not only because citizens recognize the necessity of providing incentives for the exercise of talent and entrepreneurship, but because of other implications of asymmetric information, and because of the nature of democratic politics (Section 5).

2. Labor and Credit Markets

2.1 Asset Redistribution and Credit Markets

We have claimed that some forms of redistribution can actually enhance efficiency. A large literature on land reform, dating back to the 1970s, argues that in poor countries, an equality-enhancing redistribution of land could indeed raise output and welfare. A common argument is that effective labor may be more cheaply obtained from family members than from hired workers because the latter have greater incentives to shirk unless supervised. Small family farms therefore use more labor per acre than do larger farms requiring some hired labor input. The inefficiency is not corrected due to imperfections in credit markets and principal-agent problems in the owner-tenant relation, themselves due to informational asymmetries (Hans Binswinger, K. Deininger, and Gershon Feder 1995). One instance is that risk-neutral cultivators must borrow to finance cultivation. The option of defaulting on their loans in bad states causes ex ante incentives to apply effort to be increasing in the initial wealth (collateral) of the cultivator, so that cultivators who

own their land are more productive than tenants. Tenants cannot purchase land, however, because the debt they would have to take on to accomplish this would reduce their effort incentives and productivity (Dilip Mookherjee 1996). An improvement in both equality and efficiency may also arise if there exists a physiologically based linkage between income and effort. Indications that work capacity and effort rise steeply with the availability of calories, before leveling off, have the direct implication that a more equal distribution of calories might increase total output. A more controversial assertion is that unequal food access resulting from unequal landholding may lead to equilibrium unemployment and malnutrition, and that redistributing land might therefore raise output and reduce involuntary unemployment and malnutrition.⁸

Agriculture is a minor sector in today's industrial economies, but agency problems causing a positive relationship between equality and efficiency are by

⁸ See Partha Dasgupta and Debraj Ray (1986), who open their paper with a quotation from Alfred Marshall, which would make an apt epigraph for the present section: "it was only in the last generation that a careful study was begun to be made of the effects that high wages have in increasing the efficiency not only of those who receive them, but also of their children and grandchildren . . . the application of the comparative method of study to the industrial problems of different countries of the old and new worlds is forcing constantly more and more attention to the fact that highly paid labour is generally efficient and therefore not dear labour; a fact which, though it is more full of hope for the future of the human race than any other that is known to us, will be found to exercise a very complicating influence on the theory of distribution." Although the physiological efficiency-wage link suggests the possibility of improving both equality and efficiency, as this quotation hints, Shankar Subramanian and Angus Deaton (1996), and T.N. Srinivasan (1994), skeptically appraise the empirical validity of the link between unemployment and land distribution elaborated in Dasgupta (1993). For a review of the evidence on the physiologically mediated relationship between income and work effort, see John Strauss and Duncan Thomas (1995).

no means unique to it. When the activities of workers in any sector are costly to supervise, it may be efficient for them to own their own equipment and be self-employed (Bengt Holmstrom and Paul Milgrom 1991). But this may be unachievable if workers have too little wealth to purchase the equipment and cannot borrow due to lack of collateral, limited liability, and the resulting high supervision costs to lenders. It may not be achieved, as well, if workers are too risk averse, a problem that can also be ameliorated by transfers of wealth. The principle carries over to the setting of managerial activity, where initial wealth can play a crucial role in reducing or eliminating agency costs (Ben Bernanke and Mark Gertler 1990; Patrick Legros and Andrew Newman 1996). It may also carry over to worker ownership of firms, arguably the relevant analogue to self-employment when economies of scale dictate production in teams.⁹ Redistributing wealth can in principle alleviate these tradeoffs and thus both raise the productivity of workers and managers and reduce the costs of supervising them, thereby raising total output in the economy.

Imperfect credit markets may also generate inefficiencies that might be reduced by redistribution. Consider the financing of small entrepreneurs. Individuals have private information about their chances of success that is un-

⁹ To be sure, the incentive advantages of owning the enterprise could be undermined by free-riding when the team is large. However, Samuel Bowles and Herbert Gintis (1996b) argue that those advantages may be sustained because profit sharing gives workers incentives to engage in mutual monitoring, and because worker ownership encourages solutions of the firm's effort elicitation problem involving a higher ratio of expenditures on rewards to expenditures on supervision (see also Bowles 1985). Limited worker wealth and correspondingly higher risk aversion, rather than productivity disadvantages, account for the low incidence of worker ownership in existing market economies, they argue.

known to lenders. Since lenders expect borrowers who partially self-finance to self-select on the basis of private information, they will lend to them first, reducing access for the poor. But some of those who partially self-finance may overinvest, anticipating that they can default on repayment. Were wealth to be more equally distributed, there would be less scope for inefficiently high investment by rich individuals with marginal prospects and inefficiently low investment by more capable but poor individuals, hence a more efficient overall allocation of entrepreneurial opportunities.¹⁰ The magnitudes of these efficiency costs have not, to our knowledge, been estimated.

Problems of asymmetric information can give rise to other conditions under which reassigning control over assets or rights and responsibilities for residuals can enhance efficiency in concert with equity. For example, occupant ownership of housing units may induce a more efficient supply of investment in maintenance; letting private and non-profit organizations compete for government education and social service dollars tied to vouchers distributed to citizens could increase both the efficiency and the equity with which such services are supplied. Making parents "residual claimants" of the impacts of family continuity decisions by granting children property rights in parental income could make for both more efficient and more equitable choices in that domain.¹¹

¹⁰ This is essentially the argument of Karla Hoff and Andrew Lyon (1995), although they emphasize an "investment in education" interpretation.

¹¹ These arguments on housing, vouchers, and parental responsibility are made by Bowles and Gintis (1996b), who argue that vouchers can be made to serve egalitarian objectives if they bring equal resources to those redeeming them, or even resources that vary inversely with the socioeconomic status or other equity-relevant characteristics of the voucher user.

2.2 *Sharing Labor Income Risks*

An important component of economic efficiency in an uncertain world is ex ante risk-sharing efficiency. Yet markets for the sharing of income risks are remarkably incomplete. The modern corporation and the trade of shares in the stock market diversify the risks of corporate income, but dividends from publicly traded stock are a small fraction of aggregate income. Diversifying the risks of labor income is much harder, because, on the one hand, workers cannot spread their labor time in different jobs, and, on the other, the asymmetries of information and resulting adverse selection and moral hazard problems make private insurance markets for labor-income risks problematic. True, public policies such as taxes, transfers, unemployment insurance, and general assistance spread the risk to some degree (see, e.g., Jonathan Gruber 1997). Moreover, as the implicit contract literature has emphasized, long-term labor contracts allow for some risk sharing within the firm. But, as argued by Robert Shiller (1993), the overall inefficiency of the existing system is huge.

In addition, ex ante sharing of labor-income risks, whether due to fluctuations in real wages or in unemployment, would reduce ex post income inequality. In Jacques Drèze's (1993, p. 166) words,

the existence of risk-sharing arrangements reduces the urge for corrective redistribution; conversely, their absence reinforces that urge. Many public policies, like progressive taxation or unemployment insurance, are a mixture of indemnities reflecting ex ante efficient insurance schemes on the one hand and ex post redistributive transfers on the other hand. The mixture of the two components is seldom identified explicitly, and there is an inescapable element of ambiguity in the meaning of "ex ante." Thus, redistribution of income from high-skilled to low-skilled wage

earners could be viewed as risk-sharing among unborn individuals uncertain about their native skills.

One solution may be the creation of markets for financial instruments that would enable the sharing of the risks of income changes around the world. The markets could be created, as proposed by Shiller (1993), by private entrepreneurs, perhaps supported, subsidized, and regulated to some extent by the government; he envisages a variety of futures markets, in real estate, in the incomes of specific occupations, in the national incomes of various countries, or on the price and wage indices. Because of adverse selection and moral hazard difficulties, the objective would be to insure against income losses due to "macroeconomic" factors, unaffected by a person's decisions, whereas the insurance against income losses not due to macroeconomic factors would be only partial, for example, subject to a large deductible.¹²

Various proposals for institutional reform of the labor market may achieve similar goals, in particular with respect to business cycle fluctuations. They include different forms of work sharing (James Meade 1972), and suggestions that follow Martin Weitzman's (1983, 1984) well-known "share economy." The latter has generated a sizeable literature, partly devoted to qualifying the claimed superiority of the share economy over the usual "wage economy." The basic insight embodied in the share economy is nevertheless powerful, and

¹² Shiller discusses in detail both the potential benefits of the advocated markets, should they become active, and the difficulties in achieving a satisfactory level of market activity. He foresees a slow process by which the new markets gain acceptance and participation grows to relevant levels: examples abound of new markets that have a priori good potential but that, once in place, fail to become reasonably active, for example, the market on CPI futures established in 1985, and various markets for transferable pollution rights.

is, in fact, carried on by several contributions that propose alternative schemes. A worker's wage in the share economy is the sum of a (low) base wage and a share in the firm's profits, in such a way that the aggregate profit share of workers is independent of the number of workers employed. The marginal cost of labor to the firm is then low (it is the base wage), and the firm is permanently in a situation of excess demand for labor. This induces the firm to keep its labor force employed after adverse shocks, with the subsequent labor income loss being symmetrically spread among workers, providing a degree of risk sharing among the workers of a given firm.

Any mechanism for sharing labor-income risks potentially suffers from a conflict between *ex ante* risk-sharing efficiency and *ex post* productive efficiency, which can be illustrated as follows (Drèze, 1993). Let workers inelastically supply one unit of labor, as long as the wage that they receive exceeds a reservation wage. Thus, the aggregate supply-of-labor curve has two segments: a vertical one at the full employment level, and a horizontal one at the reservation wage level. There are productivity shocks. Assume that, in good (respectively, bad) states of the world, spot labor markets clear at a point on the vertical (respectively, horizontal) segment of the supply-of-labor curve; that is, in bad times, some workers are employed at their reservation wages, and some are unemployed. This unemployment is both voluntary and productively efficient, but, *ex ante*, it forces workers to bear high levels of risk.

Risk-averse workers are willing to buy insurance against the drop in market wages. To the extent that profit earners are less risk averse than workers (or that wages are more uncertain than

profits), there is room for an insurance contract which is mutually beneficial *ex ante*: workers would pay firm owners in good states of the world, and vice versa in bad states. A market for these contingent contracts, if available, would allow for efficiency both in risk sharing and in production. But because of the asymmetric information problems discussed above, such markets are unlikely to exist.

An unemployment-benefit mechanism, giving benefits to all unemployed workers in bad states, and financed by wage deductions during good times, would mimic some aspects of the insurance market: the unemployment benefit would raise the reservation wage, and thus the market wage for employed workers, in bad times. Yet the induced *ex ante* risk-sharing efficiency comes at a cost in terms of *ex post* productive efficiency, because the increased reservation wage in bad times generates additional unemployment, which is still voluntary, but no longer efficient. A conflict between *ex ante* risk-sharing efficiency and *ex post* productive efficiency then appears.

A possible solution to the conflict is an alternative insurance mechanism that, in bad times, pays benefits to all workers, employed or not: the reservation wage of each worker is then unaffected. This achieves *ex post* productive efficiency, while permitting *ex ante* risk-sharing efficiency, because the market wage stays equal to both the marginal disutility of work and the marginal value product of labor, whereas, in bad times, the income of both employed and unemployed workers goes up by the amount of the subsidy. Note that the employment subsidy may equivalently be paid to employers. Then the reservation wage of each worker increases by the amount of the subsidy, shifting the supply-of-labor curve up-

ward. But the subsidy to the employer shifts the demand-for-labor curve upward by the same amount. Employment is then unchanged, and the market wage increases by the amount of the subsidy.¹³

An interesting variant would finance subsidies to the (employed or unemployed) workers in bad states of the economy by a tax on profits, that is, a tax—unlike a payroll tax—not linked to the number of workers employed (Drèze 1993). This variant dominates Weitzman's share economy in the sense that the marginal cost of labor to the firm is relatively low, with the accompanying excess demand for labor. But, from the viewpoint of workers, it is a wage economy, because additional hires by the firm reduce neither the wage nor the subsidy received by a worker. Thus, the workers who are already employed have no incentive to resist new hirings, contrary to what is the case in Weitzman's original share economy. In addition, the system pools labor income risks economy-wide, not only among the workers of a given firm.

This employment subsidy solves the conflict between *ex ante* risk-sharing efficiency and *ex post* productive efficiency at the cost of requiring huge transfers, because in bad times the whole labor force receives a subsidy equal to the unemployment benefit. The need to administer and finance such large transfers is, in turn, a potential source of social costs. This motivates the search for second-best mechanisms, constrained not to subsidize employed workers.

The conflict between *ex ante* risk-sharing efficiency and *ex post* productive efficiency then reappears in a somewhat subdued form (Drèze and

¹³ See Meade (1989) and Drèze (1993). Meade's (1938) early suggestion to cyclically adjust social security contributions prefigures these ideas.

Christian Gollier 1993). Consider states of the world where it would be risk-sharing efficient to subsidize workers: the constraint on not subsidizing employed workers then bites, and unemployment benefits would cause productive inefficiency by raising the reservation wage. Two regimes appear. Considerations of productive efficiency dominate in not-so-bad states of the world, and full employment should be reached (without employment subsidies). But if productivity is very low, then risk-sharing considerations carry the day: wages are kept above market clearing levels by the unemployment subsidy, and inefficient unemployment appears. The wage floor induced by the unemployment subsidy is then a second-best tool for sharing labor income risks.

2.3 *Asymmetric Information and the Effect of Minimum Wage Laws*

The competitive supply and demand model of the labor market found in most elementary textbooks predicts that a minimum wage will decrease employment among low-wage workers. This prediction was, until recently, widely accepted, but some empirical studies have now claimed a positive correlation between the level of the minimum wage and employment for modest increases of a comparatively low minimum wage (David Card and Alan Krueger 1995). The analysis, somewhat controversial, will no doubt stimulate further theoretical and empirical research.

These findings are consistent with two theoretical alternatives to the textbook model that embody informational constraints. Both alternatives yield a positively sloped locus in the space (employment by the firm, wage offered by the firm), reminiscent of a "company town" where a firm has monopsony power in the labor market, despite the

fact that these theoretical alternatives postulate many small firms.¹⁴

The first alternative departs from the conventional assumption that a firm can hire as many workers as it likes at the going wage by assuming that, because of search costs, the pool of workers available to the firm is finite and increasing in the wage paid. Thus, even if the firm is small in its market and has no monopsony power in the traditional sense, it does face an upward sloping locus of pairs (pool of available workers, wage), or "supply of labor" curve. The curve depends on the going wage, and a complete equilibrium model must capture the dependence. But, as in the partial equilibrium monopsony model, a moderate ceiling on wages may increase employment.

Efficiency-wage models provide the second approach. Because individual effort is not observable, workers must be supervised, and it is assumed that a larger labor force requires relatively more supervision. Efficiency-wage constraints then yield a positively sloped (employment, wage) locus. The models show that asymmetries of information may in principle open the door to simple policies that increase equality to some extent, particularly at lower levels of income, without substantial efficiency losses.

3. *The Costs and Benefits of Taxation*

3.1 *The Welfare State*

If egalitarianism is passé, what are we to make of the redistributive systems that have marked the industrial democ-

¹⁴ See Dale Mortensen and Kenneth Burdett (1989) and Alan Manning (1995) for the first alternative, and, for the second one, James Rebitzer and Lowell Taylor (1995) and Manning (1995). William Boal and Michael Ransom (1997) present the main ideas and evaluate the existing empirical evidence.

racies during much of the twentieth century? Whereas government expenditure accounted for an average of 11.7 percent of GDP in France, Germany, Japan, the Netherlands, the UK, and the US in 1913, its share rose to 28 percent in 1939, 37 percent in 1973, and 46 percent in 1987 (Angus Maddison 1991, p. 77). In the OECD countries, transfers and subsidies to households rose from 26 percent of government expenditure during 1955–57 to 34 percent during 1974–76, or from 7.5 percent to 13.9 percent of GDP (Andrew Glyn et al., 1990). Data for 1979 and 1981 show that the Gini coefficient of household per capita income would have been .405 rather than .360 in the United States, .432 rather than .383 in France, and .332 rather than .290 in Sweden, without the progressive impact of taxes. Tax progressivity alone raised the income shares of the poorest 40 percent of households from 13.9 to 16.3 percent, from 14.8 to 16.8 percent, and from 19.9 to 22.4 percent, respectively, in those countries.¹⁵ With neither taxes nor transfers, the share of the poorest 40 percent of households would have been only 7.3 percent, as opposed to its actual 22.2 percent in the Sweden of 1972.¹⁶

The combination of extended political franchises with unequal distributions of wealth and income may go some way to explaining the growth of the welfare state. However, Nicholas Barr (1992) downplays the welfare state's redistributive dimension, arguing that in industrialized countries asymmetric information leading to failures in

the markets for insurance against unemployment, medical emergencies, and the like, lead the average citizen to demand public solutions from governments of every ideological stripe. A central problem for private provision is that the would-be insured have private information about their risk levels, and that bad risks may accordingly drive out good, while the riskiest are also least likely to be able to afford the high cost of any insurance that could still be offered. Like Drèze (1993, quoted above), Barr argues (1992, p. 795) that even general social insurance "can be viewed as an insurance contract entered voluntarily by risk-averse individuals behind John Rawls' (1971) Veil of Ignorance."

During the 1980s, to be sure, the welfare state was perceived to be in crisis. The share of social spending in the U.S. federal budget, which had gone from 2 percent to 10.9 percent between 1950 and 1980, saw no further increase in that decade.¹⁷ Tax progressivity was substantially reduced, contributing, though not as the decisive factor, to a substantial widening of post-tax income inequality.¹⁸ Europe, including socialist-governed France and the Nordic countries, followed such leads to differing degrees.

Just how harmful the welfare state has been to growth remains a topic of considerable controversy. As discussed in Section 3.2 below, some studies of the marginal excess burden of taxes and of the cost of redistribution suggest that the fiscal approach to egalitarianism can

¹⁵ Based on data in Sourushe Zandvakili (1994, Table 2).

¹⁶ Based on data presented in Sawyer (1976). The same source shows corresponding shifts from 12.4 to 17.4 percent in the U.K. in 1973, and from 10.9 to 14.4 percent in Canada in 1972, but does not provide comparable data for the U.S. or France.

¹⁷ Based on O.M.B. data presented by Rudolph Penner (1994). Categories included as social spending are education, training, employment, social services, health, medicare, income security, and social security.

¹⁸ The ratio of top quintile to bottom quintile after-tax income rose from 8.3 in 1980 to 11.6 in 1989, with the ratio of top 5 percent to bottom quintile after-tax income rising from 14.6 to 23.2 (calculated from figures in Lawrence Mishel and Jared Bernstein 1994, p. 90).

carry a large price tag. Robert Barro (1991) reports that government consumption net of education and defense spending has a negative effect on the growth rate of real per capita GDP in cross-country samples for various periods spanning 1960 to 1990. Yet Roberto Perotti (1996), using a similar set-up, finds that the average marginal tax rate, the average labor and personal income tax rates, and social security and public housing and health expenditures, as shares of GDP, are all positively correlated with rates of growth during 1960 to 1985. Maddison's data show that the period during which the welfare state was growing most rapidly—1950 to 1973—was also the period of the most rapid growth of real GDP, GDP per capita, and productivity per man hour in 16 OECD nations.

Despite the end of an era of expansion, there is little indication that the insurance and redistribution functions of governments will be dispensed with by the electorates of industrialized countries anytime soon. "Fifty years on, the broad thrust of the [U.K.'s] Beveridge Report . . . remains intact" (Barr 1992, p. 795). The future is thus likely to be one of increasing efforts to improve, rather than dismantle, these institutions, keeping incentive issues at the forefront of reform so as to achieve better combinations of both equity and efficiency.

One innovation, increasingly under discussion in Europe, and variously known as the basic income grant (BIG), Grudeinkommen, reddito di cittadinanza, and allocation universelle, harkens back to Milton Friedman's negative income tax. Each citizen would receive a fixed, unconditional income grant. (For discussion, see, for instance, Philippe Van Parijs 1992, 1995; and Anthony Atkinson 1995.) In Van Parijs's formulation, the BIG would be accom-

panied with a reduction in the net minimum wage and employer contributions to social security. Thus, the grant could be viewed as an employment subsidy given to the worker rather than to the employer. As the grant would be unconditional, it would arguably increase the supply of low-wage labor, while the demand for such labor would increase due to the fall in the minimum wage and other employer contributions. Proponents argue that the labor market would become more flexible not only for the above reasons, but because part-time work (and hence job sharing) might increase; workers might use the grant to sustain them during periods of retraining or sabbatical. Whether the institution of an unconditional income grant would be politically acceptable to citizenries that, in large part, believe that for persons not otherwise incapacitated, income should be a reward for work, is a serious question.

3.2 *The Costs of Personal Income Taxation*

The after-tax distribution of income is clearly less unequal than the before-tax distribution, as shown above. Moreover, income taxation contributes to the financing of subsidies and equality-enhancing programs, such as the provision of education, health care and a variety of public goods. But an extensive literature maintains that various social costs of income taxation render redistribution relatively ineffective—summarized by Arthur Okun's (1975) image of the "leaky bucket." These costs, largely based on informational asymmetries and incentive problems, may be classified into four types: (a) administrative and enforcement costs, (b) social costs derived from tax fraud, (c) macroeconomic costs, and (d) excess burdens. We focus on the last two, after noting that increased tax fraud may

erode norms on voluntary compliance, possibly causing social costs that, although hard to model and to quantify, may be significant (see Frank Cowell 1990).

Macroeconomic costs appear as output or capital accumulation losses due to the incentive effects of a tax on aggregate labor supply or savings. Excess burdens are, by definition, the difference between the cost of the tax to the taxpayer, measured, for example, by the equivalent variation, and a hypothetical lump sum tax yielding the same revenue. The leak in the redistributive bucket would here be the need to inflict on the taxpayer a cost "higher" than the amount transferred to the beneficiary of the redistribution.

There are two main differences between these two types of cost. The first difference rests on the distinction between the total effect (measured by uncompensated elasticities) and the substitution effect (measured by compensated elasticities) of an individual's response to the tax: macroeconomic costs are due to total effects, whereas excess burdens are due to substitution effects. In order to illustrate the distinction, consider the limit case where every individual's labor supply has zero uncompensated response to an income tax, whereas the compensated response is not zero. (For instance, assume Cobb-Douglas preferences and zero nonlabor wealth). Then there is an excess burden, that is, the equivalent variation exceeds the amount collected. But the tax has no macroeconomic effects in the sense that the aggregate supply of labor is unaffected. At the other extreme, let there be a kink in the indifference curves, so that the substitution effect is zero, but the total effect is not. Then labor supply changes, and thus, macroeconomic effects do occur, while the excess burden is zero.

The second difference is related to aggregation across individuals. Macroeconomic costs are due to changes in market aggregates caused by the tax, while excess burdens are personal in nature: they quantify the individual losses of welfare due to the tax. In order to illustrate this difference consider the case where, in response to an income tax, one-half of the population of workers increases their supply of labor, and the other half exactly neutralizes this increase by reducing theirs. There is then no macroeconomic cost through the labor market, because it externally behaves exactly as it would without the tax. But each worker would prefer to pay the tax in a lump sum manner and would, therefore, experience an excess burden.

We offer some critical comments on the view that social costs of these two types are, in fact, empirically significant and theoretically salient. First, a review of the empirical literature does not support large macroeconomic costs due to personal income taxation. Second, the impossibility of lump sum transfers deprives the quantification of excess burdens of much of its social welfare meaning. Third, the welfare significance of either type of cost is further obscured by the unrealistic assumption of no previous distortions.

In addition, many studies on the efficiency costs of taxation either are partial equilibrium or postulate a representative consumer. Partial equilibrium gives an unreliable picture of tax incidence. The representative consumer method is suspect on positive and, more seriously, on normative grounds. Indeed, only under the unrealistic assumption that all consumers have affine Engel curves of the same slope does the utility function of the representative consumer have welfare meaning. Then the meaning is reduced to the potential

compensation criterion (i.e., the utility function of the representative consumer ranks A above B if and only if A is better than B in the potential compensation test); this, as argued in Section 1.2 above, in turn requires that lump sum transfers be feasible.¹⁹ The last difficulty leads Alan Auerbach (1985, p.83) to conclude

Thus, it will generally not be possible to make welfare comparisons on the basis of aggregate measures of excess burden, no matter what our attitude is about the relative importance of equity and efficiency.

Some recent work avoids these two difficulties. A significant literature in computational general equilibrium addresses tax incidence.²⁰ On the other hand, the increasing availability of data at the individual or household level permits disaggregated analysis.

Macroeconomic costs are traditionally associated with the responses of labor supply, savings, and capital flight. But the empirical literature does not support large effects of personal income taxes on these aggregate magni-

tudes.²¹ Labor supply has been extensively studied. Recall that the uncompensated elasticity of labor supply is the sum of the compensated elasticity (based on the substitution or Slutsky term) and a "total income elasticity," which is negative if leisure is a normal good.²² If the supply of labor is derived from utility maximization, then the compensated elasticity must be positive by the Slutsky condition (or possibly zero if there is no substitution between leisure and consumption, i.e., if the indifference curves have a kink). The uncompensated elasticity is then the sum of a positive and a negative term, and could be negative if the income effect is large enough: a negative uncompensated elasticity corresponds to a backward bending labor supply curve.

The by-now classic survey by John Pencavel (1986) covers 22 studies on the labor supply of men on nonexperimental U.S. and U.K. data published in the 1970s and early 1980s. One (Irwin Garfinkel 1973) yields zero compensated and uncompensated elasticities.²³ Of the remaining 21, all but 2 display negative uncompensated elasticities, that is, backward bending labor supply curves, and all but one display negative income terms. On average, both the uncompensated and compensated elasticities are, in absolute value, small: Pencavel (1986) suggests as representative the values -0.1 and 0.1, respectively.²⁴

²¹ See Barry Bosworth and Gary Burtless (1992) for a recent report.

²² The total income elasticity is the product of the wage rate and the partial derivative of the supply of labor with respect to nonwage income.

²³ This is compatible with the maximization of a utility function with a kink at the relevant point (zero uncompensated elasticity) and quasilinear preferences (zero income effect). Of course, it is also compatible with the view that labor yields neither utility nor disutility.

²⁴ The suggestion also takes into account eight estimations based on U.S. data from negative income tax experiments.

¹⁹ See Alan Kirman (1992), Thomas Stoker (1993), and Mas-Colell et al. (1995) for recent discussions. In the case of same-slope, affine Engel curves, the representative consumer may also have welfare meaning according to a utilitarian social welfare function. But this requires taking as interpersonally comparable utility magnitudes the values of individual indirect utility functions that display identical and constant marginal utility of wealth, contrary to the classical utilitarian view that the marginal utility of wealth is decreasing (the transfer of a dollar from a poor person to a rich person would decrease social welfare in that view, whereas it leaves "utilitarian" social welfare unaffected if the marginal utility of wealth is constant and identical across people). There is another instance of representative consumer with welfare meaning, namely when individual utility functions are homogeneous of degree one and relative incomes are constant. This theoretical result is particularly irrelevant for the welfare analysis of redistributive taxation.

²⁰ See Charles Ballard, John Shoven, and John Whalley (1985a,b) and Ballard and Steven Medema (1993).

Seven of the studies in Pencavel (1986) show negative uncompensated elasticities, contradicting the "representative consumer" hypothesis. This could in principle be due to the assumption of linear budget constraints, rather than piecewise-linear ones that result from typical income tax schemes (Jerry Hausman 1985). But Thomas MaCurdy (1992) gives an interesting explanation for the discrepancy: studies that embody piecewise-linear budget constraints, as recommended by Hausman (1985), use statistical techniques that automatically impose the positivity of compensated elasticities.²⁵

Traditional estimates for female labor supply are more dispersed and tend to show positive and larger compensated and uncompensated elasticities.²⁶ But a revisionist study by Thomas Mroz (1987) argues that the response of the labor supply of already-working women to wages is small (although economic factors may influence the decision to work). Robert Triest reviews the evidence and concludes: "Overall, recent work on female labor supply has called into question the assumption that women's hours of work are highly responsive to economic incentives" (1994, pp. 142-43).

A substantial amount of recent empirical work quantifies excess burdens. Some studies are disaggregated by individual characteristics, as in the estimation of excess burdens based on the shift from taxed to tax-exempt consumption goods, or on the substitution

of nontaxable benefits for taxable wages.²⁷ This work observes, for instance, that the individual excess burden tends to be higher at higher income brackets. The disaggregated results are useful, yet much of the empirical work, whether starting with disaggregated or aggregated data, often looks at aggregate excess burdens. Other studies compute the marginal cost of public funds, related to the marginal aggregate excess burden.²⁸ But, as argued in Section 1.2, the theoretical justification for the aggregate excess burden measure is the potential improvement criterion. If lump sum transfers are impossible, then no potential for improvement exists, and the exercise loses relevance.

The minimization of aggregate excess burdens motivates a substantial theoretical literature that analyzes the comparative distortion created by alternative taxes, such as taxing labor versus capital income, or switching among personal income, sales (and VAT), consumption, wealth, and inheritance taxation. The general result, which goes back to Frank Ramsey (1927), is that the tax scheme that minimizes aggregate excess burden taxes more heavily the factor with more inelastic (compensated) supply. This argument motivates Feldstein's (1995b) recommendation to lower the marginal tax rate of married women and increase that of their husbands, and, more significantly, the traditional view, illustrated in Section 1.2 above, that labor taxes are superior to capital taxes.

This putative superiority takes new forms in the growing literature on optimal taxation in dynamic equilibrium

²⁵ More precisely, the requirement that the likelihood function be defined imposes parameter restrictions that are essentially equivalent to the positivity of the compensated elasticity. It is important to note that these restrictions are not imposed from the outside (i.e., from individual demand theory), but are simply necessary conditions for working with Hausman's statistical model.

²⁶ See Mark Killingsworth and James Heckman (1986).

²⁷ See Triest (1992, 1994), and Martin Feldstein (1995a,c).

²⁸ The marginal cost of public funds is defined as the marginal equivalent variation of the tax divided by the marginal government revenue from the tax. The concept presents some paradoxes; see Triest (1990) and Ballard and Don Fullerton (1992).

models, which recommends a time path where capital taxation is substantial in early periods but asymptotically tends to zero. The conclusion is in line with older recommendations that were based on relatively high estimates of the interest elasticity of savings. The dynamic equilibrium literature is instead based on the intertemporal utility maximization by consumers endowed with perfect foresight, and looks at the welfare effect of substituting capital taxes for labor taxes, or at the Ramsey-type second best problem of choosing tax paths for capital and for labor income that maximize the intertemporal utility of an infinitely lived, representative consumer who derives utility from consumption and leisure.

In the Ramsey second-best problem, taxing existing capital is fine (existing capital is in fixed supply). But taxing new investment (or savings) is not, because it makes future consumption more expensive than present consumption, violating the Ramsey principle that taxes should be similar for goods which are similar in consumption. Because all current capital (old or new) must be taxed at the same rate, this leads to zero capital taxes in steady states (Christophe Chamley 1986). To be sure, steady states (all per capita quantities constant over time) are less interesting as benchmarks than are balanced growth paths (all quantities growing at the same rate). The analysis is more complex in the latter, but it yields, asymptotically, the same result. The initial capital stock must be heavily taxed, but the tax rate on capital should tend to zero.²⁹

²⁹ Robert Lucas (1990) offers some simulations on the effects on capital accumulation and welfare of a shift from capital to labor taxes. The quantitative effects do not seem to depend much on the degree of intertemporal substitution in consumption, but they are sensitive to the substitutability of capital and labor in production, as well as to the labor supply elasticity.

The analysis is subject to several limitations. First, it assumes no risk. It has long been argued that taxes on investment returns may in some circumstances contribute positively to social efficiency by encouraging risk taking.³⁰ Second, it assumes that government expenditures are exogenously given: some models where government expenditures are productive and chosen by policy yield the result that taxes on capital should asymptotically be positive (Larry Jones, Rodolfo Manuelli and Peter Rossi 1993). But, to us, a more serious shortcoming of this line of work is the representative consumer assumption, which, as argued above, is unacceptable for the normative analysis of taxation. Teresa Garcia-Milà, Albert Marcet and Eva Ventura (1995) offer a striking illustration of the negative distributional effects of shifting taxes from capital to labor. Their simulations of a dynamic, rational-expectations, neoclassical economy confirm that all aggregate economic indicators improve when capital taxes are abolished and the same revenue is collected through labor taxes. But redistribution in favor of capital owners is drastic, and the utility of workers decreases dramatically. The authors conclude that the large welfare losses for a majority of the population raise serious doubts on the traditional recommendation, because, in their words, "the problem of distribution of wealth is several orders of magnitude more important than other traditional topics of macroeconomics."³¹

³⁰ See Atkinson and Stiglitz (1980) and Agnar Sandmo (1989).

³¹ There is some empirical evidence of a shift from capital to labor taxes in recent years. On the one hand, Ellen McGrattan, Richard Rogerson and Randall Wright (1997, Table 6) construct time series for the U.S. effective tax rates on capital and labor from 1947 to 1992. The mean annual rates in the 1981-92 period were 0.48 for capital and 0.27 for labor, versus 0.57 and 0.22, respec-

A major limitation of many empirical studies is the methodological assumption that, in the absence of taxation, the economy would find itself in an efficient market equilibrium. The relevance of the first welfare theorem has been discussed earlier. Here we focus on three aspects that bear more directly on the empirical estimation of the welfare losses due to taxation.

First, as emphasized by Pencavel (1986), there is no convincing manner of treating unemployment data. If unemployment is understood as the result of non-wage-taking behavior, then the welfare effects of taxes must be differently modeled and studied: to the extent that workers are not on their labor supply curve, information about the observed reaction of employment to wage changes says little about labor supply.

Second, the presence of externalities may make the no tax-no subsidy equilibrium inefficient and thus, taxes on activities that cause negative externalities may reduce excess burdens when taxes induce efficiency gains that balance the taxpayer loss.

Last, some of the exemptions and deductions that are at the root of the excess burden computations of Feldstein (1995a,c) and Feldstein and Daniel Feenberg (1996) apply to goods and services, such as health insurance, for which informational asymmetries prevent *laissez faire* from being efficient.

The first and second aspects may be quantitatively significant. As noted above, unemployment creates a persistent difficulty for the empirical study of the effects of taxes on the labor market.

tively, in the 1947–80 period. (Their rates use the definitions of the series MTRK1 and MTRL1 in Douglas Joines 1981.) On the other hand, Harold York (1993, p. 664) finds that corporate tax rates fell an average of 24 percent in the 1980s while labor tax rates rose 12 percent. His explanation is in terms of international tax competition.

If unemployment is treated as a disequilibrium phenomenon, then any cost-benefit analysis must incorporate indices of the quantity constraints, for example, à la Drèze (1991). If unemployment is due to market power in the labor or output markets, then the welfare implications of taxes are quite different from those under Walrasian conditions (Joaquim Silvestre 1993, 1995).

A recent literature looks at the relationship between the degree of tax progressivity and wages under the non-Walrasian assumption that wages are the result of bargaining. A consistent theoretical result is that increased tax progressivity lowers the wage demands of unions.³² Some empirical support for this proposition is claimed by Ben Lockwood and Alan Manning (1993) for the United Kingdom, and by James M. Malcomson and Nicola Sartor (1987) for Italy. The latter paper offers some intuition in the simple case of a monopolistic union, interested in real wages and employment, and facing a downward-sloping labor demand curve. Increased tax progressivity widens the gap between the real wage received by the workers and the one on which the firm bases its employment decisions. It can be shown that increased tax progressivity at constant average tax rates then creates a pure “substitution effect,” and leads the firm to demand a lower wage.³³ Lockwood and Manning (1993,

³² See Tor Hersoug (1984) and John Creedy and Ian MacDonald (1990).

³³ A simple argument goes as follows. Let prices be exogenously given, and write w for the wage, and z for a tax parameter. The tax function is written $t(w,z)$: progressivity increases with z if $t_{12} > 0$, whereas the first-order constancy of average rates means that $t_2 = 0$. (The subscripts indicate partial derivatives.) The after-tax real wage is $w - t(w,z)$, whereas employment n is a decreasing function of w . Given the tax function $t(w,z)$ and the demand-for-labor function $n(w)$, the union maximizes $u(w - t(w,z), n(w))$, where u is the utility function of the union. By implicit differentiation of the FOC,

p. 3) conclude, "If one wants to design a tax system to reduce wage pressure it should be strongly progressive, with the marginal tax rate considerably above the average tax rate." The particular implications and suggestions of this analysis are no doubt controversial, but they sharply illustrate the major departures from conventional wisdom that result from assuming non-Walrasian labor markets.

A second, potentially major previous distortion is the presence of negative externalities, say, in air and water quality, or in the destruction of natural environments. Some recent work flows from observing that Pigouvian taxes could simultaneously correct externalities and generate public funds (Sandmo 1975; David Pearce 1991). Ballard and Medema (1993) calibrate a general equilibrium model for the U.S. economy, where polluting firms may use pollution abatement technology, and compute the "marginal cost of public funds" under alternative tax schemes. They consider, among others, the following tax alternatives: (a) on output, all industries; (b) on labor income; (c) on output, polluting industries only; (d) Pigouvian, that is, on the net, after abatement, amount of pollution. For the parameters of their "central case" (which include an uncompensated labor supply elasticity of 0.1, and a compensated one of 0.25) the marginal costs of public funds are as shown in Table 1.

The figures show that a tax on labor income has a lower marginal aggregate excess burden than a tax on output. More importantly, they suggest the superiority of pollution taxes, particularly

the response of the union's optimal ω as the tax parameter z changes can be written as the sum of an "income term," zero when $t_2 = 0$, and a "substitution term," negative when $t_{12} > 0$.

TABLE 1

	Marginal Cost of Public Funds
Tax on Output of All Industries	1.113
Consumer Sales Tax, All Goods	1.082
Tax on Labor Income	1.067
Tax on Output of Polluters	0.925
Pigouvian Tax	0.731

the ones that influence both output and pollution abatement, over income or sales taxes. Their model assumes a frictionless labor market, but the idea can be extended to a world with inefficient unemployment: the Pigouvian revenues could then be used to encourage employment, creating a "double dividend" (Pearce 1991).

Summing up, there is solid empirical evidence that income taxation substantially reduces income inequality. The evidence on the associated social costs is, however, less conclusive. Taxation on income, consumption, and negative externalities in particular have not, it appears, been fully exploited for their equality-improving effects, given reasonable bounds on what losses in output are acceptable.

3.3 *Inheritance and Wealth Taxes*

Wealth and estate taxation offer further possibilities for increasing equality, conceivably with only modest costs in efficiency, to the extent that these taxes approximate a lump sum tax. Of course, the political feasibility of any large-scale redistribution is another matter (see Section 5), and the very need to debate such a program, in a democracy, would tend to undercut its lump-sum character as it became anticipated. Such problems aside, a one-time redistribution that has short-lived effects is of limited interest to us given

our concern with sustainable change.³⁴

To know whether a one-time redistribution will have long-run effects, or what types of ongoing measures might be required to perpetuate equality, we need an understanding of how inequality is generated and transmitted.³⁵ The interesting attempt to model the processes in question by Abhijit Banerjee and Andrew Newman (1993) suggests that perturbations of initial wealth can have lasting effects on the economy's ultimate wealth distribution; nevertheless, other models make clear that economic stratification can arise even when individuals begin with identical wealth, ability and tastes (see Steven Durlauf 1996; Roland Bénabou 1993). With such stratification tendencies being reenforced by differences in innate ability, drive, and time preference, we think it a reasonable conjecture that wealth inequality would tend to revert toward its earlier levels within a few years of any one-time redistribution of assets. Absent more fundamental

³⁴ If a one-time redistribution of wealth were expected to have only temporary effects from the standpoint of the general shape of the long-term distribution, it might still be argued for on grounds that it could help a particular group, for example, a racial or ethnic minority, to participate in the broader distribution of society's income rather than remain stuck in an exceptionally disadvantaged niche. However, except in such cases of entrenched deprivation, and there only with adequate measures to help the recipients overcome deep-seated disadvantages of skill and outlook, it might be of little long-run interest. In fact, the measures just mentioned might be argued to be the more critical factor here, rendering one-time redistribution of financial and other alienable assets almost superfluous.

³⁵ While there have been, in recent years, some valuable additions to the empirical literature on the intergenerational transmission of earnings and economic status (see Gary Solon's 1992 paper on income mobility), these deal mainly with estimating the magnitudes of parent-offspring transmission, rather than with the pathways of transmission or how the characteristics of a wealth distribution change over time and are affected by shocks. Thus, our discussion deals mainly with theoretical contributions.

changes in the economic system, a long-run increase in the equality of the wealth distribution might therefore require measures of an ongoing nature, with potentially important but method-dependent effects on behavior.

Predicting the response to an ongoing program of wealth or bequest taxation requires that one adopt one or another hypothesis about the determinants and motivators of saving. Consider, for example, the effect of a sharply progressive tax on bequests and other transfers among family members.³⁶ If saving is motivated by the desire to transfer wealth to one's offspring and if redistribution can effectively thwart realization of this desire, then saving will cease. But if saving is motivated by life-cycle and precautionary considerations, with observed bequests due entirely to imperfections in annuity markets and miscalculations of dates of death, it may be little affected.

Debate about the savings motive has run hot and heavy in recent years. On one end of the spectrum are economists who assert that saving is overwhelmingly explained by the desire for a more even intertemporal consumption pattern within a lifetime.³⁷ On the other end are those who argue that the desire to transfer wealth to members of future generations explains the bulk of saving.³⁸ The difference between the sides

³⁶ Whether such a tax would have an equalizing effect on distribution has been debated: if households' fortunes rise and fall over the generations, intergenerational transfers may help to even out resources over time, so partially thwarting such transfers may be disequalizing. However, most authors still find more likely the conventional view that such taxes would tend to be equalizing.

³⁷ A classic reference is Franco Modigliani and Richard Brumberg (1954). More recent discussions include Modigliani (1988a,b).

³⁸ Barro (1974) models the bequest motive but does not enter the debate about magnitudes. Laurence Kotlikoff and Avia Spivak (1981) provide a nonaltruistic explanation of bequests as strategic gifts conditioned on the supply of desired behavior by the offspring until the time of the donor's death.

has been large, with Denis Kessler and Andre Masson (1988) declaring that "both of them lead to the 'law of the 20/80'": one side argues that 80 percent of savings derives from bequests, and the other argues that 80 percent derives from life-cycle motives!³⁹ Kessler and Masson (1989) conclude that "it is hard to reject Kotlikoff's view that bequests play a 'sizeable' role in saving," but that the 80 percent figure offered by Kotlikoff and Summers (1981) "appears exaggerated" (p. 151). Among other evidence, they cite a simulation by James Davies (1982), who finds that if inheritances had been taxed at a 100 percent rate and if households adjusted their savings to this policy in accordance with his model and calibrations, mean wealth in Canada in 1970 would have dropped from \$29,017 to \$16,793, or by 42 percent. That estimate is, of course, directly apropos our subject matter, since it implies that a program of systematically confiscating inheritances would appreciably diminish the capital stock of a modern industrial economy unless offsetting measures such as taxes that reward individual savings or a substitute public savings program were put in place.

Direct taxes on wealth have existed at one time or another in recent decades in about half of all OECD countries. Nowhere do they appear to have had any significant success in collecting revenues or in altering the overall distribution of wealth. Their impact on wealth accumulation is also difficult to gauge. In principle, a proportional tax on the holding of wealth could discourage saving whether the motive were of the life-cycle or of the bequest variety. However, the result is not automatic: for example, the individual could con-

ceivably be induced to save still more so as to achieve a given post-tax accumulation at some future date. To be sure, this opposite result, which could in theory occur for bequests also, seems unlikely, in part because there are ways around these taxes, such as wide nominal dispersion of wealth within families. Nevertheless, the ultimate result is likely to be one of limited effect on either saving, tax proceeds, or wealth distribution, consistent with the stylized facts.

Problems of avoidance also afflict bequest taxes: it is possible to carry out transfers earlier in life, and to undervalue transferred assets, for instance. Henry Aaron and Alicia Munnell (1992) conclude that "despite high, progressive rates, the effective rate of tax on transferred wealth [in the U.S. in 1986] was about 5 percent" (p. 134), while "resources spent on avoiding wealth transfer taxes are of the same general magnitude" (p. 139). All of this suggests that to bring about and sustain a substantially more equal wealth distribution while maintaining adequate funding for capital formation might require novel approaches, perhaps even incorporating some "socialization of wealth" along lines discussed in Section 4.3.

4. *The Ownership of Firms*

4.1 *Who Should Own Firms, and Who Should Earn Profits?*

In developed market economies, personal and family wealth are far more unequally distributed than are labor incomes, so that, with similar rates of return on assets, returns from nonlabor sources are more unequally distributed than are those from labor. Some egalitarians view inequality of earnings from labor as unavoidable but believe that most inequality associated with capital

³⁹ See Laurence Kotlikoff and Lawrence Summers (1981), and Modigliani (1988a).

can be eliminated. Even if the transfer of capital to the state, long favored by Marxists, is undesirable on efficiency and other grounds, they suggest, redistribution among individuals, or other transformations of property rights, might be achieved at little cost. Whether this is so turns on the comparative viability of different forms of ownership and residual sharing arrangements, on the importance of who owns a given asset, and on the incentive implications of whatever redistributive or other changes are required to achieve an altered distribution of property returns.

What forms of ownership and what distributions thereof among individuals or groups of individuals are compatible with efficiency in the allocation and management of capital? The simplest neoclassical models imply that distribution of ownership and profits does not matter. Capital will flow to its highest return use regardless of who owns it, provided that the owner prefers more income to less. Similarly, the distribution of profits can be altered—almost without limits—without even changing ownership (as commonly conceived) simply by having government tax profits and spend the resulting revenue in an egalitarian fashion. Under competitive conditions, profits are pure rent, and firms maximizing profits will select the same production program and transact with buyers and input suppliers at the same prices under profit tax rates varying from 0 to just below 100 percent, since the same program maximizes after-tax profits. If this were true, the efficiency cost of profit taxation would be nil.

However, when incomplete information, search costs, and costs of agency are added to the foundational neoclassical model, the distribution of ownership and of the associated claims on revenue

becomes a relevant issue.⁴⁰ First, corporate profits may correspond not to the theoretical notion of rent but rather to a return to capital and/or entrepreneurial inputs, which are variable. The Modigliani–Miller approach, in fact, treats them as returns to capital, and the subsequent literature emphasizes that the tax regime is one of the major determinants of the financial structure of the firm. The literature on the taxation of capital which was reviewed in Section 3.2. also treats profits as a return to a variable factor. Insofar as profits compensate entrepreneurial effort, which may be more variable than capital input in the short run, profit taxes could affect that input's supply. Whether Section 3.2's remarks on labor supply apply to elasticities of entrepreneurship is unclear. Effects on the allocation of entrepreneurial effort across activities, however, are likely to be of higher order importance.

Profit taxes might be expected to have impact not only on financial structure but on a variety of organizational and investment choices, as suggested by the thought experiment of pushing the profit tax rate to 100 percent. At such rates, taxable business activity presumably would not cease, but would instead shift to less efficient forms. Proprietors would substitute wage earnings for profits (transfer pricing). Owners having other business dealings with a company, such as suppliers of nonlabor inputs, might likewise arrange to be paid more for those contributions in lieu of profits. Since no such option would be open to ordinary shareholders, radical changes would be needed in the corporate sector. Because a 100 percent tax would leave no dividends to distribute,

⁴⁰ See, for instance, Bengt Holmstrom and Jean Tirole (1989). A somewhat expanded version of the present exposition is found in Louis Putterman (1993c).

it would be nearly impossible to sell shares, forcing corporations to shift to debt and insider equity financing. High leverage could lead to higher interest rates, and asset composition might shift toward more redeployable capital goods, which can be pledged against debts, and away from idiosyncratic and intangible capital goods, which cannot. Finally, as enforced tax rates approached 100 percent, an ever larger amount of activity would move into the underground economy.

When incomplete information, search costs, and costs of agency are considered, it may make a difference, too, who owns the firm. Due to asymmetric information and consequent monitoring issues, the costs of financing enterprise will rise to the extent that ownership is separated from control. Only the need for very large amounts of capital and the presence of benefits from specialization and trade between those whose comparative advantage lies in financing and those whose forte is managing will override the desirability of having the same party own and manage.⁴¹ When ownership and management are separated, ultimate control rights still typically reside with owners (e.g., shareholders), and a variety of mechanisms evolve to help attenuate the misalignment of interests between the two.

Theory suggests that the identity of a firm's owner is important when the owner possesses unique human capital that is complementary to the firm's physical and intangible assets.⁴² If not, it does not matter who in particular the owner is; yet, the existence of some individuals wealthy enough to own firms is still conducive to enterprise efficiency, according to one line of reason-

ing, since the more firms are owned and managed by individuals or small groups of individuals, the more efficiently will firms be run. If this is correct, then the existence of diffusely held firms might imply that capitalism is already too egalitarian, or that society shows a willingness to accept some inefficiency rather than promote still more concentration of wealth. Whether diffuse ownership is really a source of inefficiency is a matter that continues to be debated, however.

Some argue that the agency problems of diffusely owned firms can be addressed adequately by such vehicles as monitoring by employees of specialist intermediaries like mutual funds and insurance companies, and by the "exit" mechanism of share trading and share price adjustment, neither of which need be forfeited with redistributed ownership. In this case, additional equality in the distribution of wealth need not have unwanted consequences for enterprise efficiency. By contrast, if corporate efficiency is enhanced by having large shareholders, and if compensation of managers by way of current shareholding and the exercise of stock options is a critical way of motivating them to maximize the returns on assets, then an egalitarian redistribution of shares could lead to reduced efficiency.⁴³ Concentration of shareholding, use of share-based management compensation, and occasional takeovers organized by wealthy individuals are regularly observed in some financial systems, suggesting the efficacy of these practices there. But international variation leaves open the possibility that they are dispensable, or that the efficiency losses which would result from substituting

⁴¹ See Eugene Fama and Michael Jensen (1985).

⁴² See, for example, Oliver Hart and John Moore (1990).

⁴³ See Harold Demsetz (1983). Stiglitz (1994) agrees on the importance of large shareholders, but not on the efficiency of stock-linked compensation.

other mechanisms for them could be quite small.⁴⁴

4.2 *Alternative Forms of Ownership*

Changing not only the distribution but also the form of ownership could conceivably ameliorate equality/efficiency trade-offs. We discuss here two alternative forms: public ownership and worker ownership.

One way to establish equality in capital returns is for capital and firms to be owned by a government which is required to distribute earnings in an egalitarian fashion. Government ownership, in this case, means that government is the citizens' agent for monitoring the firms.

A familiar criticism of public ownership is that governmental owners are influenced by the interests of narrow constituencies to override the concerns of society as a whole. They create jobs for influential groups, fail to eliminate jobs to avoid antagonizing supporters, and bail out firms unable to survive on their own to avoid angering those endangered by their collapse (the "soft budget constraint"). Such behavior may arise in a democracy if the resources citizens invest in monitoring and attempting to influence politicians vary closely with their prospective gains and losses. The problem is that the potential gains to an involved minority are concentrated, while, due to an equal distribution of profits, the potential losses to

the less-affected majority are diluted by large numbers.

Even when there are no asymmetries of interest, reliance upon citizen "voice" in the context of a commonly held asset portfolio can be predicted to have inferior disciplinary properties compared to "exit" and individually arranged, differentiated portfolios.⁴⁵ The argument here is that the private citizen-investor has incentives to seek out information about superior investments, since by rearranging her portfolio based on such knowledge she can obtain a superior private return. By contrast, the citizen who nominally co-owns a national portfolio of assets has little incentive to monitor their performances and prospects, since she can only upgrade her portfolio by convincing existing authorities to make a different set of investments, or by joining with others to vote in other authorities. With less monitoring by the ultimate beneficiaries of investment, self-interested managers of the public assets would be less faithful agents of their collective principals.

Theory provides no guidance as to the magnitude of the costs such inefficiencies will impose. These could vary, for instance, with the degree to which a public service ethos could be sustained within the relevant bureaucracy, or the degree of citizen activism in monitoring officials. Although many publicly owned firms in market economies have been inefficiently managed, there are also efficient public firms, and it has been argued that the competitiveness of the markets in which they operate is a more important determinant of their efficiency than is the form of ownership (John Vickers and George Yarrow 1991; Stiglitz 1994). China's recent

⁴⁴ That is, even if these factors mitigate managerial agency problems in large U.S. corporations, as Demsetz argues, this does not preclude the possibility that they could be replaced by a more active role for intermediaries (e.g., pension funds), by a linkage of managers' compensation to profits or share price through bonuses but not shareholding, and so forth, at little cost to efficiency. The example of Japanese firms, in which managerial discipline has tended to be exerted more by bank monitoring and bonus schemes, seems relevant here.

⁴⁵ This is the argument of Putterman (1993a,b) using terminology borrowed from Albert Hirschman (1970).

experience with separate localities owning competing public firms is especially interesting, since it suggests that public ownership need not rule out decentralization or competition.⁴⁶ Some recent "market socialist" proposals (see below), however, address the common portfolio problem more radically by combining approximate equality of assets with individual control over portfolio allocation.

Worker ownership has sometimes been viewed as a means of combining markets and self-interest with a promise of economic justice. In a famous chapter of his *Principles of Political Economy*, for instance, John Stuart Mill referred to a cooperative system as "the nearest approach to social justice, and the most beneficial ordering of industrial affairs for the universal good, which it is possible at present to foresee" (1936, p. 792). One may be sympathetic with Mill's enthusiasm for the cooperative form of enterprise, however, without endorsing his conclusion that it represents the nearest approach to justice. The theoretical literature suggests that with easy entry of competitors or a well-functioning market in firm memberships, profits per equivalent worker would be equalized, whence the interest from an egalitarian standpoint. However, absence of these conditions could lead to increased unemployment and to large interindustry earnings differentials. Thus, there is no guarantee that a worker-managed economy would produce more equal incomes than a capitalist one, without effective policy responses to the potential market failures that could cause these conditions not to hold.⁴⁷

⁴⁶ See Putterman (1995); also, Gary Jefferson and Thomas Rawski (1994).

⁴⁷ The relevant literature, which begins with Benjamin Ward (1958), is summarized in John Bonin and Putterman (1987).

The "labor managed firms" of former Yugoslavia were not worker-owned, but rather modified state enterprises. Capital was "social property" from which workers benefited during their employment, but not afterwards. Thus, workers' incentives to invest in their firm were dampened for capital goods providing returns beyond their employment horizons (Erik Furubotn and Sveztozar Pejovich 1970). In principle, bank lending subject to commercial loan criteria could have allocated funds efficiently. The actual system, however, entailed controlled, often negative, real interest rates, and political intervention in lending.⁴⁸

Full debt finance of worker-owned firms would not be without its problems. As debt finance approached 100 percent, workers would be inclined to take excessive risks with lenders' funds.⁴⁹ If this were the only permitted means of finance, the lender-worker agency problem would lead to a higher interest rate. Financial theory implies that individual ownership of firm shares by worker-members would improve their access to credit, but at the cost of nondiversification of their human and physical asset portfolios, and hence greater risk bearing. Since the firm's creditors would already be exposed to the risk of default, there would be scope for a market for nonvoting equity shares. But if permitted to cede some or all control rights to equity suppliers, most workers could elect to share risk and control with investors or to sell conventional equity and revert to capitalist

⁴⁸ See Janez Prasnikar and Jan Svejnar (1991).

⁴⁹ This, at least, is the case with limited liability, or if workers have so little wealth that their effective liability is small. If workers own assets and are individually liable for enterprise debts, or if they have only poor alternatives in the event of the enterprise's failure, then the opposite problem, that of insufficient risk taking by workers, could be encountered (Gintis 1989).

firm ownership. Risk-aversion and liquidity problems could thus explain the limited incidence of pure worker ownership in existing market economies.⁵⁰

Suppose, however, that the economy were composed entirely of worker-owned firms, perhaps because ceding of control rights to financiers is prohibited. Assume that all other trading is permitted, so that prices are freely set by supply and demand. Commercial debt financing by banks and other institutions would allocate capital efficiently, although higher interest rates would cut into worker profit earnings. Nonvoting equity shares would be floated by larger firms to help spread risk. In the absence of control rights—and hence of a takeover market—these shares would sell for less than conventional shares might have fetched. Worker financing would help fill in the gap. In the end, workers would bear more risk, and there might be a somewhat smaller overall supply of capital, than in the conventional market economy. The productivity advantages of cooperation in which Mill believed have been corroborated by a mounting body of evidence, which also suggests reduced need for supervisors.⁵¹ Unless offset by long-term erosion of economic growth due to depressed capital supply or decreased technological vitality, the average employed worker could see a somewhat higher income, both from a profit share and increased productivity. This plus the incentive to internally finance could lead to increased worker savings and wealth (Bowles and Gintis 1996a), while the governance needs of labor-managed firms might lead to a

broader distribution of education for decision participation, and of learning-by-doing in decision making. As mentioned, however, these gains could be distributed unequally, and there might be considerable unemployment unless efforts were made to facilitate new firm formation.

4.3 *Market Socialism*

Many economists view market socialism as a utopian idea whose best incarnation was formulated by Oskar Lange (1938) and persuasively critiqued by Hayek (1935, 1940, 1945). Hayek's predictions about the market-socialist mechanism were, it is commonly held, vindicated by the failure of the Hungarian and Yugoslav "reform" experiments. Nevertheless, in the last decade, there has been a rebirth of interest in market socialism, whose putative virtue is the successful harnessing of the market to implement a more egalitarian distribution of income than is characteristic of capitalism, without significant losses in efficiency.

We briefly review the essentials of Lange's model in order to contrast it with the modern proposals. Lange proposed that consumer goods, labor, and the trade of small enterprise (which would remain privately owned) be governed by the market, but that the public sector of firms, consisting chiefly of the "commanding heights" of the economy, operate with a quasi-market mechanism. Managers of firms in this sector would be instructed by the Central Planning Bureau (CPB) to set production at the level that would equate marginal cost to a price announced by the CPB. Production should be undertaken at this level without regard to whether the firm would thereby cover its costs: in particular, firms enjoying increasing returns to scale would typically operate at a loss. The price vector announced by

⁵⁰ See Drèze (1989); Meade (1989); and for more discussion and references, Putterman (1993c) and Gregory Dow and Putterman (1996).

⁵¹ See Bonin, Derek Jones, and Putterman (1993), and Pencavel (1996).

the CPB would be determined by an iterative "tâtonnement" process; the CPB would propose, in the first round, a vector of prices, and solicit the responses of firm managers regarding their demands for inputs and supplies of outputs at these prices, and, in the second round, would announce a new price vector which would decrease the "virtual" excess demands from the first round. Lange believed this process would, in a small number of rounds, converge to an equilibrium price vector. In addition, the CPB would set interest rates so as to equate the demand for investment funds by firms to the supply of investment funds, which would be raised from two sources: taxation and consumer savings. On the income side, the net profits of firms in the public sector would be distributed to citizens as a "social dividend," according to some egalitarian formula, for example, in proportion to family size.

The model was innovative for its time because it did not require that the CPB know the technologies of firms or the preferences of consumers; thus, the CPB would never have to solve "thousands of equations," but would rely on actual or quasi-market processes. There are, it should be said, a number of inconsistencies in Lange's proposal from the general-equilibrium viewpoint, but the principal attacks on the model by Hayek at the time, and by modern commentators (e.g., Stiglitz 1994; Louis Makowski and Joseph Ostroy 1993) do not belabor these problems, but rather raise a number of other ones.

Hayek (1940) raised three criticisms against the Lange model: (1) that the tâtonnement process would not converge, because at each step the world would have changed, and the target would be a forever moving one, (2) that commodities are incredibly complex,

and it would be impossible for the CPB even to name them all, let alone to announce prices for them, and (3) that even "loyal and capable managers" would be unable to find the least-cost methods of production absent the competitive struggle, which is carried out via price cutting by competitive firms, a process precluded by the passive response to prices by managers in Lange's procedure. It is noteworthy that, unlike present-day economists, Hayek emphasized that these problems would plague the Lange mechanism even granting the assumption that firm managers would be as "capable and anxious to produce as cheaply as the average capitalist entrepreneur" (Hayek 1940, p.139). Less charitable views of the selfish nature of socialist managers did not explicitly emerge until the formulation of the principal-agent problem in the 1970s, and are even largely absent in Janos Kornai's (1992) work.

The central question for market socialism is this: Can property rights in productive assets be made significantly more equal than they are in modern capitalist economies, without unacceptable losses in efficiency? Contemporary models of market socialism have all taken on board Hayek's criticisms of Lange—one no longer finds a central planning bureau that sets prices, and plays a tâtonnement game with firm managers. Real markets set prices. The theoretical puzzle can be conceived as follows. Historically, market economies have been characterized, for the most part, by the simultaneous existence of two institutions: markets and private ownership. Is it possible to transform those private rights in productive assets into some kind of collective rights, and still enjoy the virtues of organizing economic activity through markets?

More specifically, market socialist

proposals aim to distribute a nation's profits in a roughly egalitarian manner in the population, through expenditure of profits of state firms by the public treasury, or perhaps by the distribution of dividends directly to citizens. The question is whether either of these two forms of profit distribution can be accomplished by a property form in which good incentives exist for monitoring firm management. In state-owned firms, the link between the citizen and the management appears too distant, as the previous section notes. And if firms were owned privately, with each citizen owning her per capita share, the lack of concentration might preclude effective monitoring.

Some contemporary market-socialist proposals envisage decentralizing ownership of state firms to the local government level. Such firms would be corporations, whose stock would trade among these municipal units (Leland Stauber 1987). The owning local governments would use the revenues for local public finance. The soft-budget constraint phenomenon could be avoided by restricting the amount of stock a municipal unit could own in firms that are located in its municipality. This proposal is mindful of the successful township-and-village enterprise system in China, in which a vigorous, competitive sector of municipally owned firms has contributed perhaps the greatest fraction of China's industrial growth in the past 15 years. The difference, however, is critical: the township and village enterprises are not corporations, but are owned entirely by the local municipality, which solves the monitoring problem, as local government has every incentive to monitor management. In Stauber's proposal, local governments would presumably have diversified portfolios in the firms of other localities, and the incentives to monitor firms by such mu-

nicipal units would presumably be slight.⁵²

Among the advanced industrialized countries, only two—the United States and United Kingdom—rely mainly on the stock market and the takeover process as the mechanism for monitoring management. Other countries rely primarily on institutional monitoring, and more specifically, monitoring by banks: Japan and Germany are the main examples. It is natural to ask whether bank monitoring could be incorporated into a market-socialist system. Pranab Bardhan (1993) proposes a version of market socialism based upon the Japanese keiretsu system, in which firms are partitioned into corporate groups, each with a main bank at the center, which is responsible for arranging loan consortia for the firms in its group, and for monitoring them. The state would be a majority—though not the sole—owner of the main banks. Corporate groups would consist of sets of firms interrelated in production, and the shares of a firm would be owned by the main bank and the other firms in the corporate group. There are three reasons why interrelatedness of firms in a group is desirable: (1) it would make it easier for firms to understand what other firms in the group are doing, hence to facilitate interfirm monitoring; (2) there may be

⁵²An even more severe monitoring problem would appear to afflict James Yunker's (1994) "pragmatic market socialism," in which firms would remain state owned, but would be monitored by a Bureau of Public Ownership, whose employees would be responsible for monitoring firms and directing them to maximize profits. Firm dividends would be distributed to citizens, giving them a collective interest in holding the Bureau of Public Ownership to its task. Concentrating such power in the hands of one agency, however, would be an invitation for corruption and political interference, despite the legal injunctions Yunker would provide against such interference. The problem of monitoring the monitors would seem to be more severe than in Stauber's proposal.

spillover effects in R&D; and (3) the main bank could more easily specialize in a relatively narrow technological area, which again would facilitate its monitoring function.

It is now quite widely held (see, for example, Stiglitz 1994; Michael Porter 1992; Jenny Corbett and Colin Mayer 1991) that the takeover process, implemented through the stock market, is a highly inefficient way of disciplining firm management. The reasons supporting this view need not be rehearsed here. Arguably, the Japanese and German systems, in which firms are protected from takeovers by their institutional owners and stakeholders (chiefly banks) are more efficient and, in particular, conducive to long-range investment and planning on the firms' parts. The firms in Bardhan's version of market socialism are viewed as likely to share these virtues.

Bardhan's model does not possess a real stock market, as Japan's economy does, but one might incorporate such a market, as follows. Each citizen could receive, at the age of majority, an endowment of coupons from the government, denominated in a currency that could only be used to purchase stock of corporations in the "public" sector.⁵³ Furthermore, only such coupons could be used by citizens to purchase stock in these firms. Prices (on the coupon stock market), quoted in coupon currency, would oscillate according to supply and demand. Owning a firm's stock would entitle the bearer to dividends. There could be, as well, two other classes of stockholder—the government and pension funds; these corporate actors

would purchase stock denominated in regular currency (dollars). Firms could exchange coupons received from citizens with the treasury for investment funds, with the rate of exchange determined by the ratio of the dollar price to the coupon price of shares. Thus, firms would have five sources of funds: retained earnings, bonds, bank loans, equity capital from pension funds and the like, and equity capital delivered by the treasury in exchange for coupons. Coupon-denominated stock could only be exchanged at publicly advertised prices (whether the market price or the price of a tender offer). In particular, no individual could give coupon stock to others, including her children, nor could such stock or coupons be sold for money. At death, the coupon portfolio of an individual would escheat to the treasury, to be recirculated to young adults. (For further elaboration, see Roemer 1994a,b.)

The chief responsibility for monitoring firms would lie with main banks, as in the Bardhan proposal. In principle, the banks could be owned by coupon holders, the state and various other institutions. There would be mutual funds that would seek the coupons of citizens with which to purchase firm shares; there might be a greater or lesser role for these mutual funds, depending upon one's view of the value of allowing individuals complete freedom to participate in the capital market.

The intention of the coupon system is to disburse profits in a relatively egalitarian fashion among citizens, and to wipe out evolved inequalities of individual stock ownership at each generation, while maintaining several of the virtues of a stock market: as a means to organize the competition of firms for investment funds, to allow citizens to diversify their portfolios, and to provide some information, as transmitted in the

⁵³ In this respect, the proposal answers the concern of Putterman (1993b) that without the ability to arrange a private investment portfolio, the individual citizen has little incentive to monitor firm performance, and hence little power to discipline poor performers.

price of a firm's stock, about the performance of firms. As we have mentioned, all of these virtues are challenged by at least some economists, and to the extent that those challenges are correct, the attractiveness of Roemer's proposal declines. But even if the capitalist stock market is socially useful, one can still challenge its transplantation into Roemer's model. There is, of course, the question whether the institutional monitoring of firms would suffice. Furthermore, the injunction against capitalizing one's shares could, first, possibly reduce efficiency (in the sense of being equivalent to the closing of one market that is available under capitalism, the market on which stock can be exchanged for money), and, second, lead to illegal arrangements in which the wealthy somehow purchased the rights to the dividend flows from the portfolios of other citizens.⁵⁴

Probably the most extended recent work that poses as a critique of market socialism is Stiglitz (1994), which is, in fact, a critique of the Walrasian general equilibrium model; Stiglitz's conclusions concerning market socialism putatively follow as a corollary, because he characterizes market socialism as the Lange model, which is based on the Walrasian price-taking vision of an economy. To the extent that firms in market socialism compete on real markets, Stiglitz's criticisms do not directly apply. We therefore do not find Stiglitz's argument especially salient in evaluating the viability of the contemporary proposals, in which firms compete on real markets and do not follow instructions from a CPB. Stiglitz, indeed, writes of the "myth of the two ways" (p. 253), and also urges the former communist countries not to lose

the opportunity to distribute property rights so as to achieve an "equality of ownership of wealth unattained, and perhaps unattainable, in other market economies" (p. 265).

Summing up, critics from Hayek (1935) to Stiglitz (1994) have made trenchant criticisms of the Lange model of market socialism, based principally on three of its assumptions: (1) that managers would be perfect agents of the central planning bureau, (2) that, absent the ruthless competition of the competitive brawl, managers would discover their true production frontiers, and (3) that prices convey sufficient information to guide economic activity to an efficient outcome. Modern views of market socialism, however, dispense with Lange's directive central planning bureau, and require firms to compete on actual markets. The central hypothesis that lies beneath these proposals is that there exists a degree of freedom in the distribution of profit income in a market economy, holding roughly constant the level of efficiency. That degree of freedom does not exist with respect to labor income, as long as labor must be allocated through markets.

Evidence that such a degree of freedom exists in the distribution of profit income comes from the more or less successful solution of the stockholder-manager agency problem in large capitalist corporations: profits in large corporations redound in large part to shareholders who provide no useful, productive function. Moreover, the success of postwar German and Japanese capitalism indicates that the monitoring role of large shareholders can be replaced by institutional monitoring, principally by banks. The essential empirical question, about which we can only make educated guesses, concerns the efficiency loss that would be sustained by equalizing the distribution of soci-

⁵⁴ Richard Freeman (1996-97) recently advanced a proposal very similar to Roemer's, although he did not label it market-socialist.

ety's aggregate corporate profits. The most equal distribution of that common pool can be achieved when there is a single owner of firms, the federal government; such an ownership structure would arguably preclude a successful solution to the monitoring problem. On the other hand, proposals like Stauber's and Bardhan's divide up property rights in aggregate profits, giving them to institutions of intermediate size. Here, the problem of who monitors the monitors is at least somewhat attenuated: citizens in a local community (Stauber) or employees of a firm (Bardhan) can more easily overcome free-rider problems involved in monitoring the monitors than can the entire citizenry. At the other extreme are proposals in which individuals become direct but limited owners of firms, and monitoring is entrusted to banks. The general claim of the market socialists is that the unrestricted private ownership of firms, with its consequence of highly concentrated wealth, represents only one point on a possible spectrum of property rights, and that there is no a priori reason to believe that this institutional form is the socially optimal one.

5. *The Political Economy of Equality*

5.1 *Why Does Inequality Persist in Democracies?*

Many classical political economists believed that democracy and capitalism were incompatible. They advocated extending suffrage only "to that part of [the people] which cannot be supposed to have an interest in overturning the right to property" (David Ricardo), pictured universal suffrage as "the end of property and thus of all civilization" (Thomas Macaulay), or believed that the combination of democracy and capitalism was "only a spasmodic, exceptional state of things . . . impossible as

a normal form of society" (Karl Marx).⁵⁵ Yet the twentieth century has witnessed universal suffrage, capitalism, and significant inequality as an apparently stable trio.

There has been more equalization of income distribution through the welfare state and social democracy in European democracies than in the U.S. How is relatively large inequality maintained in the United States? There is, of course, the historical view of American exceptionalism: the existence of an unsettled frontier making possible the vision of America as the land of opportunity, where only those who do not help themselves remain poor. This "opportunity" view, with its mutual feedback to and from the ideology of rugged individualism, may be responsible for America's never having had a significant labor party or electoral socialist movement (in contrast to its European counterparts).

But for political economists, these historical observations do not constitute arguments but symptoms. The question remains: if equalization of the distribution of wealth is possible through the electoral process, and if it is in the interest of the large majority of people (as would appear to be the case since median wealth is far below mean wealth in all capitalist democracies), why is it not implemented through political action by rational citizens? Explanations fall into six categories: the inefficiency of redistribution, the costs of transition, the free rider problem, the costs of information and belief formation, the view of future wealth as a gamble, and the multidimensionality of electoral politics. All six of these categories of explanation locate the stability of inequality in democracies as the outcome of a pol-

⁵⁵ Full references are found in Adam Przeworski and Fernando Limongi (1993).

ity of rational actors confronting their political-economic environment.

(i) Perhaps the view most adhered to among economists is that significant redistribution of wealth would entail such a diminution of the size of the pie that the real incomes of the great majority of voters would fall. Voters understand this economic fact, if it is one, and hence rationally choose to attenuate their demands for redistribution.

(ii) Even if a massive redistribution of property would bring about a new steady state in which the vast majority of citizens were better off, the costs of transition may be reckoned as too large by those in the present generation who must vote for the change (Przeworski 1985). Advocates of (i) generally believe that more egalitarian distributions of wealth are simply not compatible with acceptable rates of innovation and growth. Advocates of (ii) hold that, in principle, egalitarian wealth distributions are reproducible at acceptably high levels, but the costs of getting there from here are just too high: in particular, if the transition were undertaken in one or a few countries only, the flight of capital and talent would impoverish the generation that implemented the change.

(iii) The view that democracy expresses the will of the people is naive, according to the public choice school, because of the formation of interest groups. Due to free rider problems, it is easier for relatively small groups of citizens, who each stand to gain a lot from political change, to organize and influence the legislative and executive process, than for large groups, whose members each stand to gain a little (Mancur Olson 1982). Democracies become "captured" by those interest groups capable of organizing.

(iv) The first three categories of explanation are all consistent with the

view that citizens have complete and correct knowledge of how the economy works. But the next three categories of explanation all exploit the ignorance of voters. The "costs of information" explanation of the stability of inequality says that, were voters knowledgeable about how the economy works, then an egalitarian transformation would be possible; voters, however, rationally remain ignorant. The cost of informing oneself about how the economy works is greater than the expected beneficial effect of one's vote: hence, rational ignorance. Moreover, the media, which influence the beliefs of voters, are owned and closely controlled by large capitalist interests that benefit from convincing voters that egalitarian political projects are self-defeating (Noam Chomsky and Edward Herman 1988). Voter opinion is very much influenced by the statements of "elites" (John Zaller 1992), and the elites in question tend to be those who benefit from the maintenance of a relatively unfettered process of wealth accumulation.

The process by which voters form beliefs about how the economy works, and about candidates, is key. Suppose there are two political parties, one (Conservative) representing a coalition of rich voters, the other (Labor) a coalition of poor voters, and the political issue is the rate of taxation to finance a public good, which effectively redistributes income from the rich to the poor. Voters are ignorant about some economic parameter in the mapping from tax rates to the value of the public good: for instance, the efficiency of the process by which the government converts tax revenues into the public good. Parties will attempt to influence the beliefs of voters in regard to the value of this parameter. Under a mild assumption regarding the effect of such propaganda on voter beliefs, it follows that the party

representing the rich will argue that the government is inefficient, while the party representing the poor will argue that the government is efficient (Romer 1994c).

Many belief-formation arguments take the following form: the wealthy or the elites or the capitalists have both the motivation and the capacity to influence public opinion and to finance electoral campaigns. They influence public opinion in a direction friendly to the preservation of the present inegalitarian system of distribution. Some of those who put forth these views maintain that voters are gullible, and not rational, but some (e.g., Joshua Cohen and Joel Rogers 1983, and Samuel Popkin 1991) argue that voters are rational. Lawrence Bartels (1996) attempts to study empirically the extent to which voters are rational, in the sense of having opinions which induce them to vote in their real interests. In a survey, interviewers asked respondents a variety of questions on political issues, and simultaneously evaluated how "intelligent" and "informed" respondents were. Bartels finds that approximately 6 percent of respondents were both intelligent and informed, and takes the views of these respondents as reflecting the true interests of persons with their socioeconomic profile. He partitions the set of respondents into socioeconomic groups, and calculates, for each group, the extent of deviation of mean views (on each political issue) from the views of those whose views reflected (as deduced) the true interests of the group. There are large deviations.

The arguments summarized thus far have either concluded that voters are irrational, or that they are rational and form inferences, reaching either correct or incorrect conclusions about the relationship between policies and their own interests, from a sample of data. In the

political-science literature, that sample is said often to be polluted by interest groups who provide it (e.g., the elite-dominated media). Recently, Thomas Piketty (1995) has formalized the voter's learning process in a Bayesian manner. Piketty's voters are not entirely self-interested: they vote for redistribution not only to improve their own financial situations, but owing to a sense of justice. (Some will challenge this assumption, but there is a literature on "socio-tropic voting" which claims to affirm it.) Voters' sense of justice entails that citizens should be compensated (through redistributive taxation) to the extent that their low incomes are due to bad luck, but not compensated to the extent that their low incomes are due to lack of effort.

A citizen's income is a random variable, which can be realized as either high or low in a given period. Each voter has a prior belief about the relative importance of effort and luck in the income-generating process. Each period, each individual expends a chosen amount of effort, and then updates his priors about the parameters of the income-formation process by observing the relation between his realized income and the effort he expended. If a citizen places a high probability on the event that effort is relatively important and luck relatively unimportant (in generating income), she is "right-wing," and votes for low tax rates, since a low income, under this view, is most likely owing to the person's not having expended much effort. If, however, she believes the opposite, then low incomes are due mainly to bad luck, and should be compensated for by significant redistributive taxation. (In this case, she is "left-wing.") The stochastic process of income, so determined, converges to a stationary distribution of beliefs and incomes.

There are two interesting observations: first, in the limit distribution, different households hold different beliefs. Second, there may be two economies with different initial beliefs, but in which the income-formation process is identical (i.e., same causal roles of income and luck), and in which the limit distribution of beliefs is different. In particular, we may observe two economies with the same underlying economic parameters in which most people are "right-wing" or in which most people are "left-wing." The novelty of the argument lies in the endogeneity of belief formation, through the voter's own experience with effort choices and income realizations, not through the influence of elites.⁵⁶

(v) Most citizens who apparently would benefit from much higher taxes on wealth do not vote for such, because individuals with low wealth may believe either that they—or more realistically—their children may strike it rich, and wish not to tax the future good luck of their dynasty (Putterman 1996). Absent incentive considerations (which were dealt with in category (i) above), from a rational viewpoint, most family dynasties must be made better off by a purely redistributive wealth tax. So voting against wealth taxation to preserve the possible good fortune of one's dynasty in the future cannot be part of a dynamic rational expectations equilibrium, unless the deadweight loss from redistribution is expected to be large or voters are risk loving over some range.

(vi) The models of political competition in the literature cited thus far all include a median-voter mechanism. But

the median voter claim—that electoral equilibrium consists in all parties putting forth the ideal position of the voter with median wealth—is only true under a set of highly unrealistic assumptions: that there are just two parties or candidates; that each party (or candidate) has the objective of maximizing its probability of victory, and has no preferences over policies; and that parties know with certainty the distribution of voter preferences.⁵⁷ (This is the classical Hotelling-Downs environment.) The first assumption is patently false for many European democracies, and the second assumption is false, we would maintain, for all democracies: that is, parties and candidates have ideological views or represent particular interests in the polity, and are not simply machines for delivering offices and income to candidates. It is well-known that if parties have policy preferences (they are "partisan" or "ideological") and if there is uncertainty about the distribution of voter characteristics (preferences), then the median voter theorem does not hold: parties announce different policies in electoral (Nash) equilibrium. (See, for example, Donald Wittman 1983.)

One explanation for why democracy may not deliver equalization of income through taxation or changes in property rights concerns the multidimensionality of issues in electoral politics. Suppose there are two issues, redistributive taxation, and some noneconomic issue, such as religion, family values, or racial policy. Many political scientists argue that, indeed, democratic politics are best seen as being multi-issue.⁵⁸ For con-

⁵⁶ Beliefs regarding the moral legitimacy of holding wealth, once acquired, are also discussed by Putterman (1996), who suggests that they may differ considerably across societies and may have an important impact on the amount of wealth leveling that a society undertakes.

⁵⁷ Note that it is the voter, not the citizen, with median wealth whose ideal position is put forth by both parties in the Downsian model; these two individuals are, in general, different.

⁵⁸ See Keith Poole and Howard Rosenthal (1991); Herbert Kitschelt (1994), and W. Ben Hunt and Michael Laver (1992).

creteness, call the noneconomic issue religion. Suppose the electorate consists of a citizenry characterized as a probability distribution of preferences on the two-dimensional issue space. One party (Social Democrats) represents a coalition of voters who are poor and anticlerical, and the other (Christian Democrats) represents a coalition of voters who are well-off and proclerical. A political equilibrium consists of a pair of two-dimensional platforms—a tax rate and religious position for the government—which is a Stackelberg equilibrium in the game between the two parties, where the challenger moves first, the incumbent moves second, and each party aims to maximize the expected welfare of its constituent coalition. (The expectation is taken because parties are uncertain about the exact distribution of voter preferences and, hence, which party will win the election.) Under a plausible and testable condition on the distribution of voter preferences, if the “salience” of the religious issue is high, then the Social Democrats (a fortiori, the Christian Democrats) will propose a low tax rate (even zero, possibly) in equilibrium (Roemer, in press). The intuition is that, under the stipulated condition, maximizing the expected welfare of its constituents requires the Social Democratic party to attract a significant number of relatively wealthy but anticlerical voters, if there are a sizeable number of poor but proclerical voters who detest the SDP on that account. But it cannot attract those well-off voters if it proposes a too-high tax rate. An empirical test shows that the condition in question appears to hold for preferences of the U.S. electorate in the 1980s, where the noneconomic issue is taken to be “race.” Thus, the model’s predictions are consistent with the claim that, in the U.S., the Democratic Party has be-

come more conservative as the noneconomic issues have become more salient for voters. More generally, because parties must put forth a vector of issue positions, even parties representing the poor (or labor) will not necessarily advocate radical redistribution when a majority of voters prefers it.

5.2 *Inequality and Growth*

The classical view is that inequality is necessary for growth: if income were equally distributed, most people would consume their entire income, with very little left for investment. As put most baldly by members of the Cambridge (England) school such as Joan Robinson and Nicholas Kaldor, impoverishment of the masses is necessary for the accumulation of a surplus over present consumption. The growth experiences of the East Asian “tigers,” however, which have involved substantial state intervention and have been relatively egalitarian, are often cited as contrary evidence (see World Bank 1993).

A new, revisionist literature attempts, by bringing in a political process which implements the ideal policy of the voter with median wealth, to provide support for the contention that equality is, in fact, conducive to growth. Suppose the distribution of wealth is highly skewed (the ratio of median to mean wealth is significantly less than one). Then the median voter wants a high tax rate, to redistribute wealth toward himself. This discourages saving and investment, decreasing the growth rate. With a less skewed initial distribution of wealth, the median voter will not desire such a high tax rate. The argument appears in this basic form in Torsten Persson and Guido Tabellini (1994), who also observe that an empirical correlation between skewness and growth holds in a cross section of countries. Roberto Perotti (1996) shows, however, that the

negative correlation between tax rates and skewness, predicted by Persson and Tabellini's model, fails to hold empirically; so although the negative correlation of skewness and growth appears to be empirically supported, the mechanism of the Persson-Tabellini model is not.

While the negative relationship between inequality and growth appears fairly robust (see, for instance, Nancy Birdsall, David Ross, and Richard Sabot 1995) we think that the political-economic models proposed for explaining it must be taken with a grain of salt because of their reliance on the median-voter model of political competition. That model, as we have seen, is an oversimplified description of politics in a democracy: it is stretching credibility excessively to apply it to non-democracies.

6. Further Topics

We shall not repeat our main conclusions, expressed in Section 1.4, but rather list important issues that, owing to lack of space and competence, we have not discussed.

1. *Human capital formation.* In market economies, the equalization of wage income must be accomplished primarily through raising the skill levels of the lower quantiles of the distribution. But even if redistribution in support of education could enhance efficiency, raising the funds for that investment is problematic in a democracy.
2. *Globalization.* The extent to which individual states can effect redistribution through fiscal policy may well be limited by increasingly frictionless international capital and commodity markets.
3. *Decline of unionization.* Mass unionization may well have been a phenomenon of industrial capitalism. Decreased

union density, accompanying a change in the sectoral composition of output, may be significantly responsible for lower incomes of low-skilled workers.

4. *The skilled-unskilled wage gap and technological change.* It is widely agreed that in some OECD countries the skilled-unskilled wage gap has increased significantly. To what extent is this due to technological change versus the previous two causes?

5. *Executive compensation.* The ratio of executive to other employee compensation has increased dramatically in the last generation. Is that ratio socially efficient, especially in the United States?

6. *Intergenerational distribution.* Perhaps, due to differential political participation by age groups, welfare state institutions in many countries redistribute too much from young to old.

7. *Racial and sexual economic inequality.* How should one evaluate the continuing debates on affirmative action and comparable worth?

8. *The future of the advanced welfare state.* To what extent is the egalitarian Nordic experiment over, and, if it is not, to what extent can it be reproduced in larger and more heterogeneous societies?

9. *Economic equality and regime costs.* Economic equality may be an efficient substitute for police, prison, and property protection expenses (see, for example, Curtis Eaton and William White 1991; Herschel Grossman 1994). Lindbeck, who is frequently critical of welfare state excesses, writes that "it may . . . be argued that welfare state policies have helped make the western economic system . . . more acceptable to the general public. In this way [they] may have contributed to a degree of social harmony that is an important prerequisite for a reasonably smoothly functioning, and hence efficient, economic system" (1994, p. 3).

10. *Preferences for equality*. The cost of sustaining a social welfare "safety net" may depend on moral preferences that can be influenced by economic institutions (Lindbeck 1995). The intersection between work on endogenous value formation (Ben-Ner and Putterman, eds. 1998) and that on income and wealth distribution may prove a fertile area for future research.

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