

The Efficiency-Equality Tradeoff in Welfare State Economies

Non-Technical Executive Summary

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January 2, 2002

One of the important differences between individual countries is the degree to which governments protect citizens from idiosyncratic losses of income or well-being. For example, unemployment benefits during the first year of unemployment amount approximately to two-thirds of the average income in European countries but only to one half of the average income in the non-European OECD countries. Correspondingly, social protection expenditures aggregate to 25-40% of gross domestic product in Europe while only to 10-20% in the United States and other OECD economies. The goal of this research is to characterize the effects of different levels of social insurance on efficiency and the distribution of resources in a general equilibrium model with moral hazard.

In order to evaluate the effects of social insurance on distribution of resources, I study steady states of economies with a stationary distribution of heterogeneous agents. The degree of welfare state protection (social insurance) is modelled as a level of consumption guaranteed to each agent in a case of low realization of income. Thus the steady states differ only in this level of minimal guaranteed consumption: from almost no insurance at all ('low welfare regime') to a guaranteed consumption amounting to fifty percent of the average consumption in the economy ('high welfare regime').

The economy is populated by a continuum of agents operating stochastic neo-

classical technologies with capital and labor inputs. In order to insure against bad realizations of output, the risk-averse agents enter into insurance contracts with a zero profit insurance agency, modelled as a government (social planner). Since labor supply is private information of each agent, the government overcomes the moral hazard problem by conditioning each agent's insurance transfer on the entire history of his output realizations by rewarding high realizations of past and current output with high current, as well as future, consumption levels.

The main result obtained from numerical simulations does not support the alleged efficiency-equality tradeoff attributed to welfare state economies. On the one hand, efficiency does fall monotonically as the social insurance provided by the government increases. While the efficiency loss is relatively small for the low and medium levels of social insurance, it grows rapidly to 17% of steady state's GDP in the case of the most generous welfare regime. On the other hand, equality improves only at the low and medium levels of minimal guaranteed consumption. When the level of social insurance becomes very high the equality measure worsens: the Gini coefficient equals 0.32 in the low welfare regime, it equals 0.23 in a welfare regime guaranteeing 36% of average consumption, and then it rises to 0.26 in the high welfare regime.

The main forces behind these efficiency and equality outcomes are the labor supply incentives and the general equilibrium effects of different market-clearing interest rates associated with each welfare regime. That a high level of guaranteed consumption is less efficient is natural since it is a constraint on optimal government policies. High levels of guaranteed consumption do not allow the government to use the low consumption levels as incentives to enforce high labor supply.

In equilibrium, different levels of social insurance imply different market-clearing prices and different distribution of resources. I show in the research paper that the average welfare increases in the level of social insurance while the welfare of median agents decreases. Second, the market-clearing interest rate declines in the level of minimal guaranteed consumption as the planners find it optimal to accumulate more capital in order to obtain higher output with a lower incentive compatible labor supply.

In order to evaluate how a reduction of social insurance affects the well-being of agents, I compute the expected discounted utility during transitions between the welfare regimes' steady states. These transitions can be interpreted as social insurance reforms recently considered and implemented in some European countries in order to improve economic performance. I find that a reduction of welfare regimes' generosity is generally welfare improving if the efficiency gains to such a reform are redistributed back to the agents. These transfers are generally large enough to compensate the agents for increased labor supply and risk.

This feature has important consequences for evaluating welfare state reforms. For example, Freeman et al. (1997) conclude that "much of Sweden's welfare state went beyond what was necessary to eliminate poverty" and that solution to the Swedish crisis in 1990's "necessitates contraction of the welfare state". This model supports their claim that "reductions in [unemployment insurance] programs will not seriously affect the income distribution." If the level of social insurance is very high the inequality measure might even improve.

Is there an optimal level of social insurance that would minimize inequality without worsening the efficiency of the economy too much? The answer depends on a society's priorities. The simulated economies point to a reasonable compromise between the efficiency loss and inequality with a minimal guaranteed consumption between 25-35% of the average consumption. Such levels of social insurance balance the efficiency loss at around 1-3% of GDP for about 30% reduction of inequality and poverty compared to the least generous and most efficient welfare regime. Finally, reducing the most generous social insurance to this level seems to be a great improvement to economic efficiency as well.