

1 Introduction

This course focuses on the shortcomings of traditional neoclassical economics when it comes to motivating public policy, and serves as a survey course of various subdisciplines studying the dynamics that require public policy and motivating potential solutions to policy problems.

2 Economic problems of economic policy

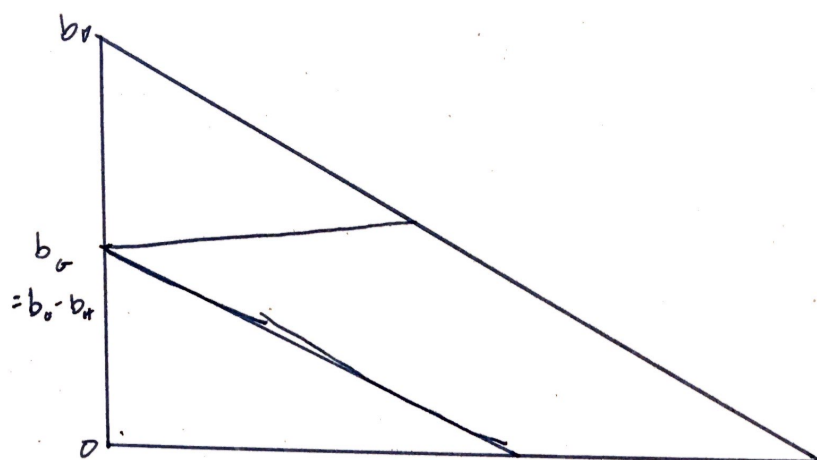
2.1 Economic man and collective action

In neoclassical economics, we assume the principal actor is *homo oeconomicus*, an entirely rational, foresighted, self-interested being. Because this actor is purely self-interested, overcoming collective action problems (such as investments in public goods or handling externalities) requires either some coordinating mechanism (the state), or perfect information and minimal transaction costs (the Coase world). Notably, if we allow actors to bargain about paying for externalities, it does not matter who the liability falls on (either the polluter pays to pollute, or those downwind pay the polluter not to pollute). In the Coase Theorem world, either outcome is efficient.

To model the difficulties that we encounter when trying to allocate public goods in this neoclassical framework, we use a *Shibata Box*. In this model, we have two consumers (call them George and Harriet), who must choose between consuming some private good b and some public good with a price of z . They each begin with some amount of private good b such that

$$b_G + b_H = b_0$$

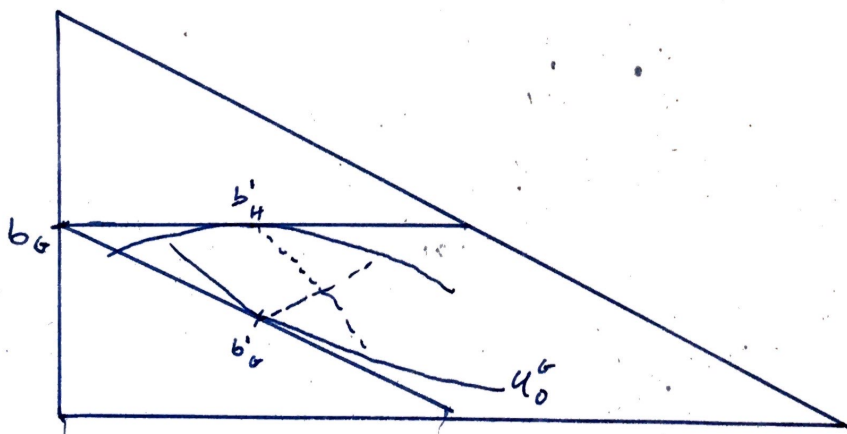
and can contribute any share of this towards the public good, sacrificing consumption. We assume the public and private goods are complementary, and that both consumers have convex preferences. The blank Shibata box looks like



George's private consumption is the vertical distance from George's bundle to the bottom line. Harriet's private consumption is the distance from the top line. Their consumption of the public good is the horizontal distance from the left of the box, and the box is triangular in shape because if all resources are allocated to the public good, there cannot be any private consumption. Note that public consumption must be the same

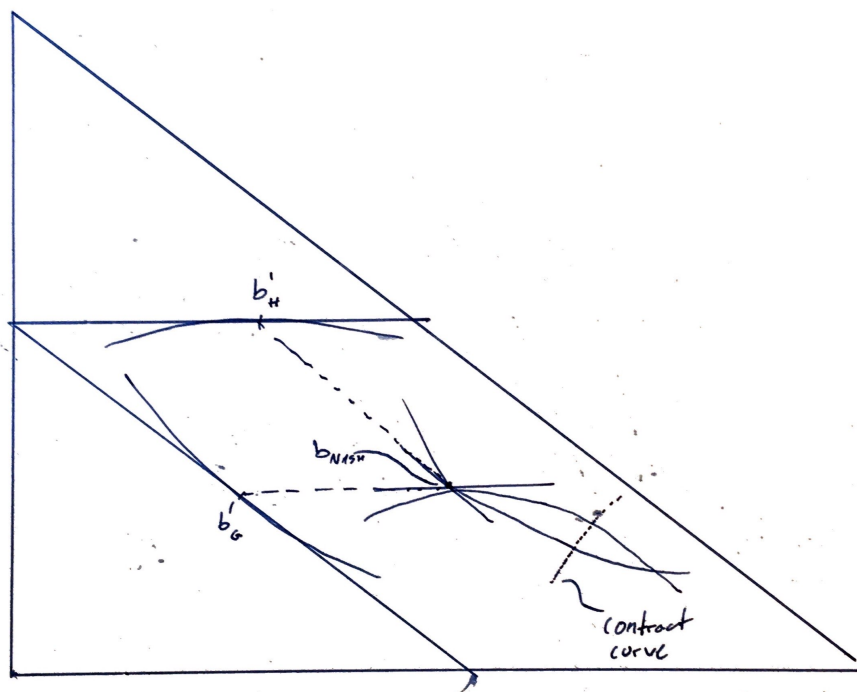
for both of them. The lines drawn in represent their initial budget constraints—assuming Harriet invests nothing in the public good, George is limited to points on the diagonal line (and v.v.).

Let's draw in some indifference curves:



If the other consumer invests nothing in the public good, George and Harriet's optimal bundles respectively are b_G^1 and b_H^1 . However, each consumer's budget constraint shifts as the other invests in public goods—George's straight to the right, Harriet's down right. The slopes are fixed. The dotted lines mark the succession of equilibria as George and Harriet continue investing in the public good. This cycle stops where the dotted lines cross—this is the Nash equilibrium, where each consumer has no personal incentive to further invest in the public good.

Let's sketch in the budget constraints and indifference curves at this Nash equilibrium:



Note that there's a region inside both indifference curves—a lens of Pareto improvement, exactly as seen in the Edgeworth box. Any point inside this lens is strictly preferable to the Nash equilibrium, and there

exists a contract curve of pareto optimal allocations, just as in the Edgeworth box.

The problem with reaching this contract curve is that it is not a stable equilibrium. Once sitting on the contract curve, both consumers can increase their utility in the short term by withholding payments to the common good (freeloading). The only way to reach this globally-optimal solution is some sort of enforcement mechanism between the players to punish defectors, or some governmental mechanism to ensure payments are fulfilled.

2.2 Allocation and exchange

We typically assume consumers prefer mixed bundles of goods over homogeneous ones, and that consumers may have different preferences. This suggests that, if two consumers start with some arbitrary collection of goods, they can both improve their situation through voluntary trade with each other. Specifically, we use an Edgeworth box diagram to illustrate both consumers' potential to improve their lot.

This diagram suggests the two laws of welfare economics:

1. From any initial allocation, the consumers can reach a point where their indifference curves lie tangent to each other, and no further exchange can take place without worsening one consumer's utility. This is true if there are no costs to trade. The set of all equilibrium points is called the *contract curve*, and stretches from the allocation where consumer 1 holds all the goods to the point where consumer 2 holds all the goods.
2. Every point on the contract curve is reachable from some initial allocation. This suggests that, if we want to reach a certain socially optimal outcome (say that the consumers have equal utility), it suffices to allow redistribution—we don't have to mess with the allocative efficiency of free exchange.

2.3 Distribution and conflict

So far, we've assumed that property rights are ironclad and the only way goods change hands is through voluntary exchange. This isn't realistic. Conflict economics suggests that consumers, instead of voluntarily trading, can invest in *conflict goods* and engage in conflict instead—note that by producing conflict goods, the size of the Edgeworth box shrinks, since there are less goods available. If one or both parties choose conflict, the allocation is divided up proportionally to their conflict strength. This also suggests that, under high inequality, conflict is inevitable, since the low-wealth actor has a strong incentive to invest only in conflict goods in the hope of achieving a more favorable distribution.

We define an *envy-free* distribution as one in which no member would like to trade bundles with any other member—every person considers their bundle “the best.”

2.4 Liberty and welfare

There are two flavors of liberty we consider in this course:

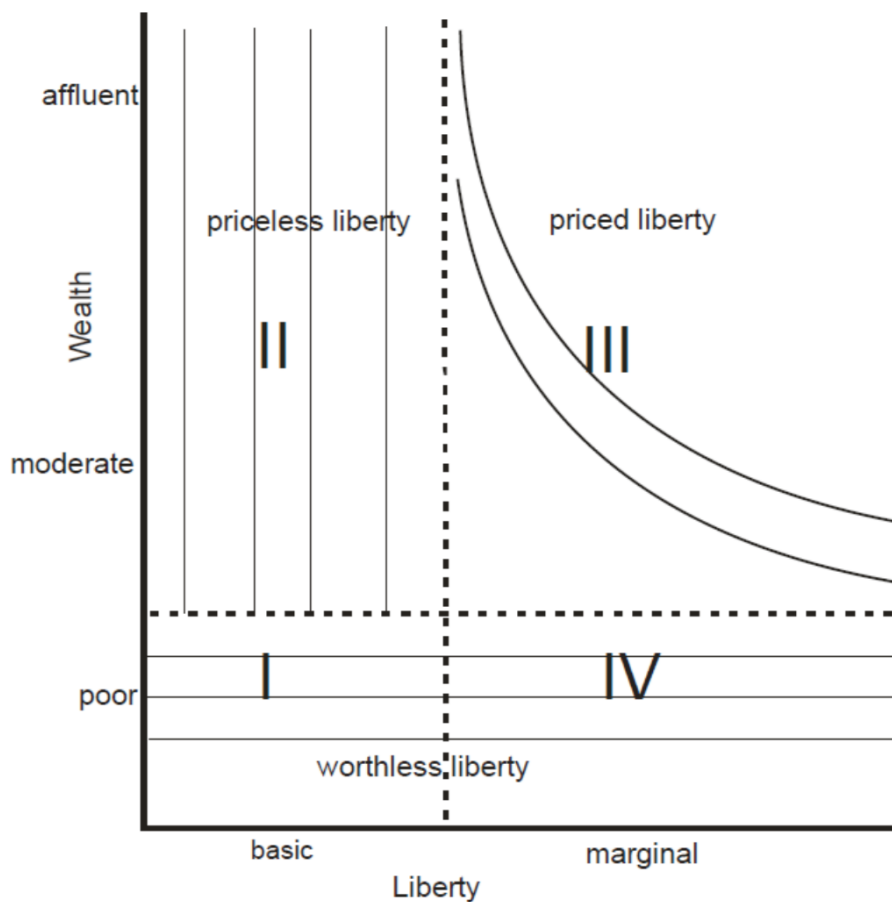
- Political liberties; or the freedoms required to live a life free of undue state interference; and to lobby the government without fear of retribution. These liberties include the classical liberal values of free speech, freedom of religion, freedom to protest, etc.
- Economic liberties; or the freedom to engage in economic activity without state interference. This includes freedom of job choice, freedom to start a company and employ workers without undue interference, freedom from overly high or targeted taxation, etc.

Both types of liberty include both positive and negative freedoms. Briefly:

- Negative freedoms protect you *from* government action. Free speech (as formulated in the American context) is a negative freedom—the state cannot (except with narrow exceptions) sanction you for speech, or offer different levels of benefits because of speech.

- Positive freedoms offer an affirmative right, and *oblige* the government to protect that right. For example, formulate the right to choice of employment as a positive right. If you are an ethnic minority, and are denied a position you are otherwise qualified for because of your race, the government is obliged to step in and sanction that employer.

We can ask how much people value their liberty, and how much material wealth it would take to get them to give up certain liberties. The following chart suggests that there are three kinds of liberty. When people are desperately poor, any liberties they enjoy are worthless and would happily be given up for an improvement in material conditions—the so-called “worthless liberty”. When people are well-off enough that the basic necessities are covered, no further increase in material wealth will induce them to give up basic freedoms—the so-called “priceless liberty”. Finally, if someone enjoys more than basic liberties and is moderately well-off, they can be persuaded to trade off between the two—the “priced liberties”. For example, someone may give up the freedom of not working on Saturdays (a minor freedom) in exchange for a substantial increase in pay.



The above chart has a chilling implication for the UBI and other welfare benefits under an authoritarian regime. It is possible to imagine an authoritarian regime offering benefits that lift citizens from quadrant I to quadrant II, under the condition that they do not agitate for further liberties (moving to quadrant III). This otherwise-benevolent policy can be used to stifle dissent and reinforce the ruling elites' hold on power.

2.5 Implementation and reform

2.6 Stability and sustainability

Any economic policy or structure of government depends on a high level of unanimity about the value of the structure (even if individual outcomes are more controversial). If individual actors' incentives lead to a strengthening of the institution, the institution is considered to be stable. If more than a minor share of power comes to believe better outcomes would be possible under a different institution, the stability of that institution is threatened.

3 The public choice of economic policy

3.1 Rational and behavioral public choice

Under neoclassical assumptions, we are rational beings. We make choices to maximize expected lifetime utility, and we have perfect knowledge of our own utility function and situation. Specifically, we have a constant time discounting factor, and stick to our decisions with full certainty.

This is of course unrealistic. We don't have perfect information, and we don't think through our decisions carefully or rationally—as seen in class, the vast, vast majority of our decisions (including those that later prove hugely consequential) are made in a split second, without our rational brain even playing a role. We also tend to have hyperbolic discounting functions, placing near-zero weight on outcomes that are beyond the immediate future. This leads to procrastination and a constant regret about yesterday's actions.

Good public policy and public choice theory needs to account for this nearsightedness, and may provide a case for more paternalistic policy in some cases (e.g. forced retirement or medical insurance). In particular, people are far more averse to losses (real or perceived) than they welcome equivalent gains, and this leads to things like the Allais paradox and a spread in willing-to-sell (WTS) price and willing-to-buy (WTB) price, even if both buyer and seller have identical preference curves. This is called the *endowment effect*, and can be used to guide policy decisions. In particular, people will miss money they never had less than money taken from them, so (for example) an income tax deducted from the paycheck will likely face less political pushback than an equivalent consumption tax.

3.2 Positive and normative public choice

There are broadly two types of economics:

- Positive economic thinking focuses on the world as it is now—finding theories to explain economic behavior as it exists, and collecting and analyzing data to determine how closely those theories match reality.
- Normative economic thinking focuses on the economy and society *as it should be*. Normative economists start with a goal (every child should receive a decent education, people should engage in conflict), often motivated by philosophical or theological precepts, and determine economic policies and incentives that further those goals.

4 Institutions and hierarchies of public choice

4.1 Authoritarian policy formation

In this course, we considered authoritarian governments to be revenue maximizers. They extract (via taxation) as much as possible from the populace, as to increase their private consumption. If they invest in public goods, it is only because they believe that the increased output will allow their private consumption to grow.

4.1.1 Leviathan governments

Hobbes' Leviathan government is all-powerful, and any liberties granted to the people are done conditionally—because they improve economic output without threatening the Leviathan's power. We justify this philosophically by invoking the specter of anarchy—a state of universal, unending war where material and spiritual conditions are worse than under even the most totalitarian ruler.

4.1.2 Autocratic regimes

Actual autocratic regimes obviously aren't as all-powerful and all-consuming as the Leviathan. However, it is reasonable to consider them revenue-maximizers, raising taxes to the greatest extent possible and only minimally investing in public goods (splitting the difference among the ruler and essential supporters). All else being equal, we should expect lower growth under autocratic regimes than democratic ones, since the democratic incentive is to invest purely in public goods.

4.2 Democratic organization and voting rules

4.2.1 Rational voting and basic voting systems

We assume voters are rational and, when voting, choose candidates or policies that they expect will maximize their lifetime utility (\approx weighted lifetime income). Candidates and policies can raise voter utility by investing in public goods, or by using tax proceeds to fund cash transfers to favored voters. The idea is that programmatic democracy is stable because, once the winning coalition is above a certain percentage of the population (well short of a majority), the marginal tax dollar increases voter utilities more when spent on public goods instead of transfers, so voters have an incentive to prefer public-good-politics.

4.2.2 Direct and representative democracy

In direct democracy, voters directly vote on proposed policies, either requiring unanimity (rare but appealing in theory) or a majority to enact policies. However, this puts quite a burden on voters and election officials, and voters may not (are not) equipped to make these complex decisions.

Under representative democracy, voters choose delegates according to some mechanism, and those delegates then vote on policies preferred by voters.

4.2.3 Legislature and Bureaucracy

The legislature is the collection of delegates, in theory representing the interests of the voters and pushing for policies that benefit them. However, the actual implementation of policies falls to the executive branch, which has a large, ideally nonpartisan group of workers (the bureaucracy) to carry out the legislature's wishes. However, the bureaucracy is unelected and (rationally) will seek to maximize its own power and budget. Without some sort of constraint, the bureaucracy can gain undue power and subvert the legislature's wishes.

4.2.4 Interest groups, rent-seeking and lobbying

Those affected by the government's actions (everyone, practically speaking) will push for favorable policies—forming interest groups that lobby the government for certain proposals or lobbying the bureaucracy for favorable treatment. This, if left unchecked, can be a subversion of the democratic prerogative, since individuals and groups with resources can more effectively lobby than those without.

An especially pernicious outcome of lobbying is the creation of economic rents. An economic rent is an exclusive license granted by the government to engage in a specific economic activity, limited supply in that market and letting the rentier act as a monopolist. There are often good reasons to grant these monopolies (such as the granting of IP rights, or the right to operate a natural monopoly), but without oversight consumers are left poorer and less free than they would otherwise be.

4.3 Spatial hierarchy

4.3.1 Federalism

A federal system in which lower levels of government are granted relatively high levels of autonomy and power, and state functions are delegated to the lowest level at which they can reasonably be carried out. For example, Germany's federal government delegates the state duty of education to the federal states (*Bundesländer*), while those states in turn delegate the operation of local public transport to the cities.

All governments delegate certain powers, but in nonfederal, centralized systems (like France or the UK), very little governing happens between the local and national level.

4.3.2 Supranational policy choice

A collection of sovereign states may decide to band together and delegate some of their responsibilities upwards, to some sort of supranational union. The best example is the European Union, which takes many prerogatives of its member states (immigration policy, regulatory authority, monetary authority) and manages them as a bloc. It remains to be seen whether this arrangement (to the extent Europe has implemented it) is stable—my personal belief is that the bloc will either evolve into a state in and of itself, or disintegrate back to its constituent states.

5 Liberal concepts of economic policy formation

5.1 Ordoliberal design and Constitutional political economy

Ordoliberal theory holds that we should take a deontological view of economic regulation and public policy. It is difficult, we say, to determine what the best action is in the heat of the moment, and we want a system to be resistant to political whims. We should therefore, *ex ante*, come up with a set of rules and guidelines that lead to good outcomes, and make following those rules a stable equilibrium.

Constitutional economics examines various methods of organizing a complex system. In general:

- Organizations are created by a central planner, and are created to fulfill a specific purpose. They operate through hierarchy, and are limited by the head's information and processing capacity. There is a limit to their complexity, but can be very efficient (in theory).
- A spontaneous order occurs when constituent actors, each pursuing their own incentives, create a system that is far more complex than any individual actor. There is no limit to the complexity of such a system, but it has no overarching goal and cannot be controlled by any one individual (only nudged).

5.2 Liberal paternalism

Given that human behavior is so far from the ideal of *homo oeconomicus*, we may think a government that genuinely has the best interests of the people in mind (a liberal (democratic?) government) would be justified in limiting peoples' liberties to protect them from their own worst impulses. For example, we may limit peoples' economic freedom slightly, to prevent them from falling for scams or bad deals. We may want implement tax incentives for retirement savings (despite this distorting the market), since people tend to have hyperbolic preferences and would not save otherwise.

5.3 New Ordoliberalism

Responding to increasing economic malaise and the spiritual challenges of modernity and contemporary capitalism, new ordoliberalism is a politic-theoretical framework being developed by (among others) Freiburg professors aiming to create better, more responsive institutions that promote more favorable outcomes than the status quo, that are not vulnerable to the populist backsliding seen in many Western democracies, and which foster the conditions for spiritual fulfillment that are neglected by existing institutions.

In many ways, it mimics the old ordoliberalism developed in Freiburg that serves as the foundation of the modern German state. However, the emphasis on encouraging fulfillment and (potentially) ecological

outcomes is new. For example: a neo-ordoliberal policy designed to counteract anti-EU sentiment would be a universal basic income or payment, funded by tapping some of the economic benefits of European integration (likely through a tax hike on corporations that have most benefitted from integration). This promotes good outcomes (people are more favorable to the European project, more financially secure) and is self-sustaining (since people will not agitate against the payments or European institutions).

6 Application to special policy issues

6.1 Redistribution in democracy

6.2 Organizing the just welfare state

6.3 Market regulation and privatization

6.4 Constitutional budget constraints and their effects on economic policy

7 Negative Income Taxes

In this course, we use the tools of public choice to consider two proposals for a negative income tax (or universal basic income) first proposed in the 1960s, and examine evidence from simulation studies and empirical trials to estimate the economic effects of a large-scale NIT implementation.

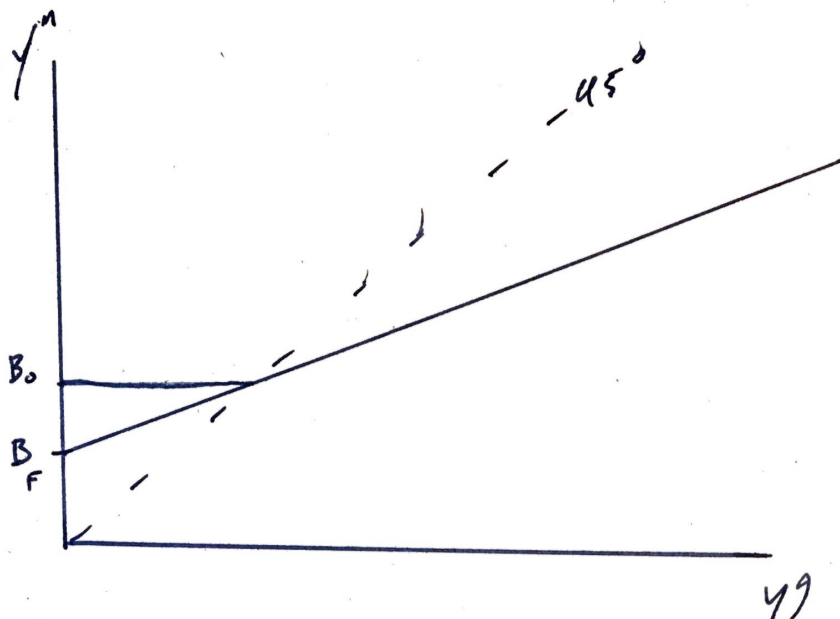
When examining these models, we assume that existing welfare benefits have a 100% phaseout rate—that is, below the value of the benefit B , every additional dollar of gross income has no effect on net income, since benefits are reduced by the same amount. This is not perfectly realistic, but is accurate enough and very simple to reason about.

7.1 The Friedman NIT

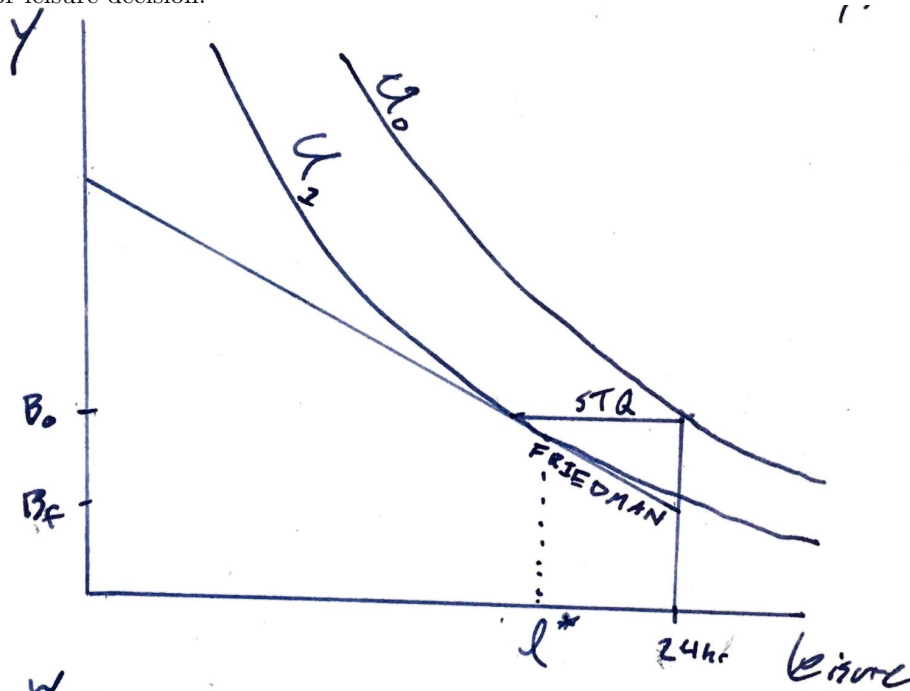
The first proposal studied is Milton Friedman’s proposal for a negative income tax. In this scenario, all existing benefits for the indigent are cut, and replaced with a cash payment typically about half as generous as the benefits it replaces. This benefit is then phased out at some rate less than 100% (typically about 50%), so the breakeven income is similar to that seen originally. Key to note is that this probably does not have a huge effect on budgets, and increases labor supply (and therefore wage). Politically, it may be difficult to implement—you are cutting benefits substantially, which will incur resistance.

Let’s run through the labor argument for the Friedman NIT real quick:

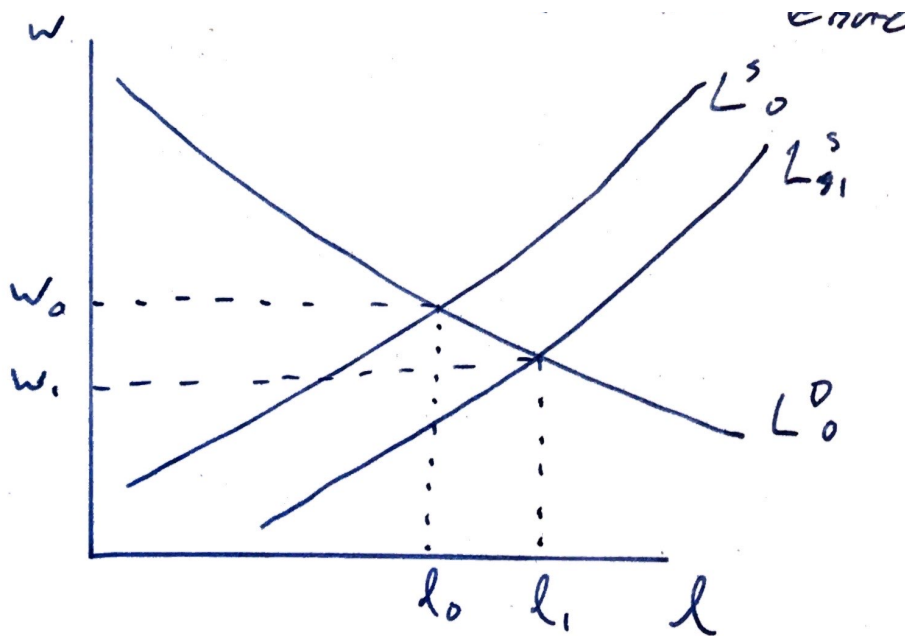
First, let’s look at the consumer’s net income for various gross incomes, both under the status quo and under the Friedman system:



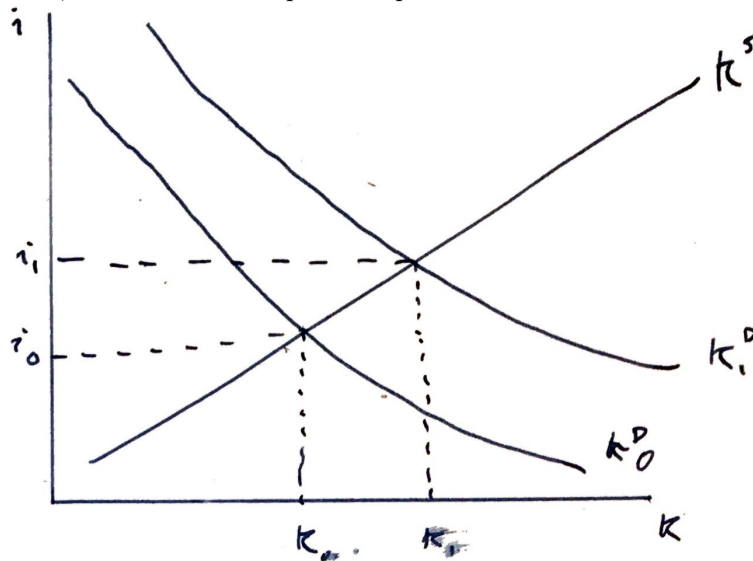
Under the status quo, a benefit of B_0 is paid out to the indigent with a 100% phaseout rate. Friedman proposes lowering that to B_F , with a 50% phaseout rate. Let's examine how that affects the consumer's labor-leisure decision:



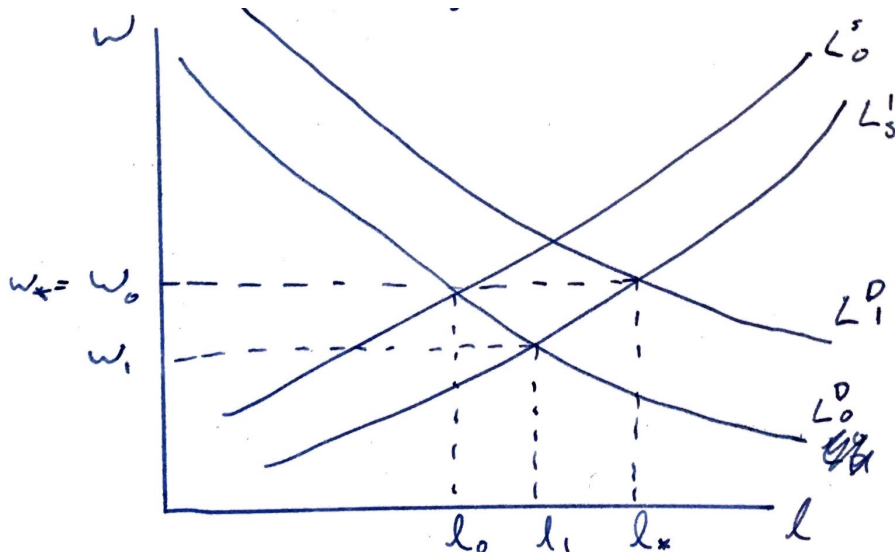
Under the status quo, the consumer did not work at all and lived off the benefits B_0 , sitting on utility curve U_0 . Under the Friedman proposal, the consumer chooses to work l^* , sitting on utility U_1 . As expected, the reduction in benefits reduces consumer utility, but increases their labor supply. Let's examine the labor supply implications more closely:



The increased labor supply shifts the curve from L_0^S to L_1^S , with equilibrium labor increasing from l_0 to l_1 and equilibrium wages dropping from w_0 to w_1 . So far, so bad. However, let's examine the effect on capital markets, since labor and capital complement each other.



Because firms hire on more labor, they'd like to buy more capital to make optimal use of that labor, so the capital demand shifts right from K_0^D to K_1^D . Assuming a constant capital supply, interest rates jump from i_0 to i_1 , and equilibrium capital goes from K_0 to K_1 . The increased capital (and increased price of capital) then increase firm's demand for labor:



Labor demand shifts right from L_0^D to L_1^D , shifting equilibrium labor to l_* and bringing wages back to the w_0 . This suggests that the Friedman proposal has no negative effect on wages and simply increases output and employment.

7.2 The Tobin NIT

The second proposal studied is James Tobin's proposal for a universal basic income. In this scenario, the canceled benefits are replaced with a cash payment of equal value, which is phased out at some reduction rate (often 50%.) Compared to Friedman's NIT, the costs are substantially higher, and the labor effect is likely negative (since it is more attractive for low-wage workers to decrease work and live partially off the UBI). Many people who were previously taxpayers now become net recipients, which further increases the fiscal burden. However, if it is affordable, the Tobin NIT does more to grant people freedom, which is one of the motivations for the NIT.

7.3 Microsimulations

Microsimulations are a tool useful for estimating the net effect of implementing a negative income tax (or other economic policy). Roughly, they work as follows:

1. We use a large set of real-world observations of consumer behavior to create a probit/mlogit model for peoples' behavior—what are someone's desired working patterns, given demographic information, wage, gross and net income, etc.
2. We use those models to create a pool of simulated consumers, and implement our desired policy. We can then see how they change their employment and consumption habits. Specifically, we use our estimate of their labor supply elasticity to determine the likely shock to labor supply.
3. We can use the results from the previous step to generate a transition matrix—under the new policy, an unemployed person will move to part-time work with probability $xx\%$, stay unemployed with probability $yy\%$, or move to full-time work with probability $zz\%$.

However, there are some limits to microsimulations. Notably:

- They are *ex ante* evaluations, and if a policy changes foundational dynamics of the economy, the simulation will not capture that. For example, if the UBI leads to large increases in educational attainment and many low-wage jobs are automated in response to that, that would not be captured in a microsimulation.
- Unknown behavioral responses will not be accounted for, and will change economic dynamics.

- General equilibrium effects (increase in capital demand, leading to increase in labor demand) are not accounted for.

7.4 Randomized Control Trials

Randomized Control Trials (RCTs) are the gold standard in empirical investigations of economic interventions. The experimenter randomly assigns subjects (individuals/households/communities) to either the treatment or control group (in this case, deciding whether they get a UBI or status quo benefits). Since the treatment and control groups are otherwise statistically identical, any differences between the groups can be attributed to the intervention.

There have been a number of RCTs focused on UBIs, including (as studied in class) the crowdfunded GiveDirectly program. These tend to find largely positive effects compared to traditional benefits, and substantial reductions in poverty even after benefits end.

However, also note that many UBI experiments do not meet the standard of a RCT, since subjects are not randomly assigned. For example, participants in the pilot program in Mannheim were recommended by their case worker, and there may be some variation between individuals referred to the program and those not.

RCTs, unless performed on the community level (which would be enormously expensive), also may not capture some of the policy's macro effects. If certain behaviors only arose when everyone or nearly everyone was receiving a basic income, household-level RCTs would not capture that effect. GiveDirectly is notable for operating on the community level, with some villages granted long-term (12 year) payments, some villages granted short-term (2 year) payments, and some granted no payment.