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Freedom, Servitude and Voluntary Labor

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Freedom, Servitude and Voluntary Labor

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Introduction

In this chapter we present an economic framework to revisit and reframe some important debates over the nature of free versus unfree labor and the economic consequences of emancipation. We use a simple general equilibrium model in which labor can be either free or coerced and where land and labor will be exchanged on markets that can be competitive or manipulated or via other non-market collusive arrangements.¹ By working with variants of the same basic model under different assumptions about initial economy-wide factor endowments and asset ownership we can compare equilibrium distributional outcomes under different institutional and contractual arrangements including markets with free labor and free tenancy, slavery, and tenancy arrangements with tied labor-service obligations. This last type of arrangement has been ubiquitous throughout history (Morner 1970) and we argue was central to the organization of production under serfdom. Even today labor tying is seen in many regions of the developing world and a careful analysis of this case provides important clues for understanding the nature of other voluntary yet servile labor arrangements including several forms of bonded labor.

Analysis of these different contractual and organizational forms yields insights that accord with common sense, but that are often overlooked or downplayed in academic debates, particularly amongst economists. Three insights are particularly important. First, landlords at times forego an opportunity to enslave peasants. This may happen when peasants need incentives to apply certain talents and skills to productive tasks. Second, landlords often have the means and motive to collude to limit employees outside opportunities. We show how landlords' efforts to structure land and labor contracts as a complex bundle of tied or linked contracts may be an essential element of such a strategy. Landlords' frequent insistence in such contexts that labor be 'servile' works for similar reasons. Third, state-led efforts to 'emancipate' workers by banning voluntary or involuntary tied-labor contracts may raise laborers' incomes but may also drive landlords to reach for other less effective but more distorting market manipulation mechanisms that can lower total output and continue to severely cap the growth of peasant incomes.

These insights contrast with conventional wisdoms from both the modern and classical liberal traditions. Modern liberal thinkers hold that too much power in the hands of a few might lead inevitably to coercion, and forget that coercion has an opportunity cost. The powerful may sometimes be more interested in managing the choices of free laborers than compelling labor from a reluctant slave or serf. Likewise, ending coercive relationships may improve by little the welfare of those formerly coerced, as landowners have at their disposal techniques for extracting value from freed laborers. Classical liberal thought holds that voluntary transactions must be welfare improving, and often downplays the importance of market manipulation and collusion in restricting the set of transactions available by assuming that collusion is fragile and will be undermined by competition. Yet banning the voluntary linked contract-- forbidding a certain kind of freedom to contract – can raise peasant incomes by making collusion more difficult. Much like Adam Smith, then, the analysis presented here suggests that an embrace of freedom of contract should be tempered by an appreciation of the importance of guaranteeing self-ownership and ensuring competition.

The chapter is a frank exercise in persuasion armed by these three insights. Our reading of the literature on unfree labor and emancipation is that it has been dominated by two purported paradoxes; a paradox of immiserizing emancipation and a paradox of immiserizing bans on freedom.² Together, of course, they form a double paradox: the first suggests that people may become materially worse off when freed to sell their own labor, the second says they are better off without restrictions on their freedom to sell their labor. Elements of both of these paradoxes are evoked in another chapter of this book by Stanley Engerman (2003) in which he first agrees with Amartya Sen that a ban on certain forms of bondage can at the same time expand both freedom and material welfare of laborers but later cautions that at other times “freedom [has] meant a lowering of material well-being, and living conditions of ex-slaves (p. 204),” and that “[t]here are conditions, generally at low levels of income, where tradeoffs between such freedoms might become necessary (p. 204).”

Our effort here is to suggest that these paradoxes, while certainly valid, nonetheless sometimes miss the larger picture. In many post-abolition situations (that is, where coerced labor is forbidden) poor laborers might be offered, and might accept, contracts

that tie land rental to labor service. While these voluntary contracts have the potential to enhance efficiency and may be individually rational to accept as has so often been stressed in the literature on ‘interlinked-contracts’ (Braverman and Stiglitz 1982; Bardhan 1989), we argue that once general-equilibrium interactions are considered, these contracts may paradoxically reduce welfare for laborers as a class. That is because tied contracts can act as a barrier to competition, limiting peasants’ outside opportunities and therefore increasing the share of output that landlords can extract out of voluntary relationships. In our model tied contracts or ‘servility’ are ‘necessary’ only as a strategy to help landlords sustain a collusive arrangement to pay workers wages below their marginal product and not because laborers are poor. This can be seen by noting that an equally efficient (but less favorable to landlords) allocation of resources can always be sustained via competitive factor markets without the need for any tying.

Before examining the details of the model framework, the next section places our analysis within a broader academic literature on unfree labor. This section reviews some of the arguments that have been made for why the *material* well-being of unfree laborers might fall following emancipation and why a ban on bonded labor and other forms of voluntary servitude could also do more harm than good. We turn then to the presentation of a simple general equilibrium model designed to pinpoint how different institutions of unfree labor might emerge as factor endowments, technology and distribution of resources in an economy change. A final section concludes.

Debates over unfree labor

Free and unfree persons are quite different. Even in very poor societies, free persons are typically able to choose their place of residence, seek work with more than one employer, accumulate property, and seek credit and insurance from the most favorable source. They can also make choices about whether to sleep late, chat the morning away, enjoy or refuse the company of others if they so desire, and consume unhealthy beverages during breaks from work. Unfree laborers rarely enjoy these freedoms except in stolen moments or at the whim and discretion of their masters or employers.

Unfree persons are those persons constrained by forced labor arrangements such as slavery or serfdom, or by ‘voluntary’ but servile labor relationships such as indentured or

debt-bonded labor. Persons in these various categories have lost part of the everyday control over time and body that is so characteristic of the free person. Often with the explicit sanction of laws and societal norms these individuals have found their opportunities for advancement sharply limited by the obligation to remain at the constant beck and call of their masters or employers. Even today, according to a 2005 ILO report, as many as 12.3 million people worldwide remain trapped in unfree labor relationships.

Unfreedom in the form of a forced labor arrangement is easy to define and to condemn, where constraints have resulted from the use of force or from obvious deceit or illegality. Since 1930 the ILO has defined the term forced labor by treaty as “work or service which is exacted from any person under the menace of any penalty and for which the said person has not offered himself voluntarily.” Few today would disagree that such practices ought to be banned and violations ought to be rigorously enforced.

Yet many commentators argue that seemingly forced and servile forms of labor should not be so quickly and comprehensively condemned and banned. They fear that over-zealous reformers might prevent poor workers from entering into long-term arrangements that improve their welfare.

The argument for caution has two components. The first is that banning a voluntary and hence mutually agreeable arrangement may reduce well-being. Arrangements entered into voluntarily, by revealed preference, mean that the individual who chose the relationship must have been choosing something that improved their situation. Circumstances make the person poorly off; the arrangement makes them better off. This argument is used frequently in discussions of child labor, where the benevolent parent chooses between two bad options: commit the child to a servile labor relationship or suffer the possible long-term harm of not being able to furnish the child with adequate nutrition (Basu 1999). The policy implications of this analysis are few for, as a very recent economics survey of the topic concluded “[w]hether anything other than economic development is an effective, long-term solution to the widespread incidence of child labor is an open question (Edmonds and Nina 2005).”

This first component is taken to be self-evident by many economists, who often dismiss the argument that persons have to be “forced to be free” by a benevolent and wise

polity. Negligible is the possibility that people make systematic mistakes, or might act against their long-term or objective interests as one of their many irrational selves outmaneuvers the more rational selves. A voluntary agreement is always a meeting of reasonable and rational minds, in this view, and arguments to the contrary have a whiff of “moral fastidiousness” about them (Krugman 1997). If we respect the dignity of each human, should we not also respect his or her choices?

Yet, as shown below, a new literature on the “paradox of bans” suggests that bans on contracts that are Pareto-improvements at the bilateral level may be paradoxically improving of welfare at the general equilibrium level. This literature is a new and interesting application of the theory of multiple-equilibria and second-best arguments that, in the absence of complete markets, further limits on the set of incomplete markets can, in theory, improve well-being.

The second component of the argument for caution examines and theorizes present and past economies, suggesting they may not involve coercion. In this view historical and present-day arrangements such as serfdom, sharecropping, labor-service tenancy, and other ‘tied’ labor arrangements are not self-evidently the result of the application of force by the employer, as some have claimed. Rather, these may perhaps be contractual adaptations that help individuals sustain commitments in a milieu where asymmetric information, costly enforcement and the absence of effective and impartial courts make commitments difficult or costly to sustain.

Hundreds of thousands of poor European migrants, for example, used indentured servitude contracts to finance their passage to the Americas in the 17th and 18th centuries (Bush 2000; Galenson 1984). Often after five years of service the indentured servant earned his ‘freedom dues’ and became a settler and possible property owner. These poor Europeans did not possess sufficient resources to finance the voyage and purchase land and did not have collateral to assure a lender of compensation in the event of default. Given the distances and arduous passage, and the ease of movement to an ever-expanding frontier, lenders had reason to fear that loans would not be repaid. In this environment, voluntary relinquishment of rights for a temporary period of time seemed quite reasonable; a lender could sell the loan to an employer in the New World who might then

collect repayment out of wages. The penal code helped enforce these contracts. A ban on indentured servitude would then have made the poor European workers who could not afford the voyage, worse off. Studies by Bauer (1979) and Knight (1986) of debt-bonding in Latin American agriculture, and larger comparative surveys by Northrup (1995) and Bush (2000) each emphasize the ways in which these contracts often responded to migrants' and peasant farmers' economic demands and often led to their advancement, even if they do agree that abuses did often occur.

In a similar vein, North and Thomas (1973) saw serfdom emerging as a contractual arrangement that exchanged "labor services in return for the lord's protection (p.20)" and other public goods in a dangerous world. They rationalized the labor service component of these contracts as a substitution for money rents in an incompletely monetized economy.

While discussions on indentured servitude and serfdom have been broadly empirical in approach, a related debate of labor tenancy has been largely theoretical. The issue has been to show that situations where tenants receive a plot of land but in addition to rent must deliver a labor-service obligation may be explicable as voluntary contracts rather than as examples of forced exploitation. The basic argument is that in a world of asymmetric information (or 'transactions costs' in earlier parlance) bonding and tying may emerge as devices to help contracting parties to enforce commitments to expand trade, and therefore to expand the size of the economic pie.

Each part of the argument for caution in public action with regards to servile labor arrangements- that voluntary arrangements are welfare improving and that many labor arrangements are more likely to be voluntary than previously thought- resonates with an extensive corpus of writing on the subject. But the argument for caution also has its zones of contention. The theoretical argumentation relies on particular assumptions, and the major purpose of this paper is to show that under other reasonable assumptions some of the intuitions of the argument for caution in public action may be unwarranted.

Likewise, empirical approaches rely on selective presentation of facts and statistics. Finding exceptional cases of voluntary servitude might obscure the more important fact of involuntary servitude. There is no shortage of reliable accounts of how persons have

been threatened with bodily harm were they not to ‘consent’ to an involuntary labor bond (Bales 2000). The threats sometimes emerge in the course of deliberate raids to capture labor, and sometimes as a judicially sanctioned punishment for failure to repay as debt. Sometimes children are rendered into the status of unfree labor as compensation or punishment for unpaid debts of the parents. In the same vein, commenting on North and Thomas’ interpretation of serfdom as an efficiency enhancing contractual exchange of tribute for protection and other public goods historian Robert Brenner (1996) has half-seriously agreed by comparing the services rendered by lords to those of a protection racket- serfs were given a contract they *could not* refuse.

A model of labor and tenancy

The following pages analyze variants of a simple general equilibrium model of an agrarian economy, modified and extended to focus attention on the interacting roles of factor endowments, technology, and the initial distribution of assets. These shape opportunities and incentives that elites have to use extra-economic coercion and market power to generate patterns of agrarian organization and distribution to their advantage. The framework is meant to be general enough to nest and allow for comparisons across several alternative institutional arrangements including the standard textbook model of competitive and efficient land and labor markets, an economy with slavery, economies with both voluntary and involuntary tied labor-service contracts, and an economy where large landowners withhold land from the lease market, giving rise to a ‘latifundia-minifundia’ agrarian structure.

This framework will permit a quick tour of several hypotheses and debates that have engaged political economists, economists, and historians for a long time. For example, we will state and analyze the Nieboer/Domar hypothesis on the causes of slavery or serfdom and mention some elements of the critique that Robert Brenner and others offered of this and other neo-classical demographic hypothesis (Aston and Philpin 1985). The model also provides a framework for understanding debates concerning the economic and political consequences of emancipation and the nature of the transitions or “paths” toward more free and competitive land and labor contracts (Byres 1996; de Janvry 1981).

We begin with an economy that has $\bar{T} = 100$ units of land. There are $M = 2$ identical landlord households that together own 80 percent ($\theta = 0.8$) of the total land area, or 40 units of land each. There are also $N = 80$ peasant households that together own (or have customary property rights to) the remaining 20 percent of the land mass, or 0.25 units per household. Each peasant household owns $H = 1.25$ units of household labor and we assume landlords do not supply manual labor. The total labor force consists therefore of $\bar{L} = N \cdot H = 100$ units of labor and the overall land-to-labor ratio is $\bar{t} = \bar{T} / \bar{L} = 1$ units of land per laborer.

Landlord and peasant households have knowledge of the same crop production technology that would allow them to produce a staple agricultural product sold at unit price set by world markets. In our first scenario however we assume that landlords begin with a higher initial endowment of non-traded farm management skills. Farm production technology is summarized by a standard constant-returns-to-scale (CRS) Cobb-Douglas production function $q = T^\alpha L^\beta S^{1-\alpha-\beta}$ where T and L are land and labor farm inputs and S is the household's *non-traded* level of farming skill or labor supervision ability. By normalizing the peasant's endowment of factor S to $S_p = 1$, we can represent the peasant's technology more compactly by the restricted production function $F(T, L) = T^\alpha L^\beta$ which has decreasing returns to scale in land and labor input as long as S plays any significant role in production (i.e. as long as $\alpha + \beta < 0$). The importance of non-traded skills in agricultural production is widely used to explain the lasting prevalence of family farming and tenancy in many contexts (Hayami and Otsuka 1993).

Landlords employ the same production technology but have a larger endowment of the non-traded input, $S_r > 1$. The landlord's technology can then be represented as $G(T, L) = A \cdot F(T, L)$ where $A = S_r^{(1-\alpha-\beta)}$. Intuitively, the landlord's assumed higher level of managerial skill can be thought of as raising the productivity of the land and labor inputs in the restricted farm production function. For the simulations below we shall assume $\alpha = 0.45$, $\beta = 0.45$ and that landlords start with $S_r = 10$, or ten times more of the non-traded factor compared to a peasant household.³

If land and labor markets are allowed to be fully competitive then households will allocate their own factor inputs and hire in or hire out land and labor until the marginal value product of each factor is equalized to a common market land rental or labor wage. Suppose the efficient equilibrium level of peasant land and labor use is denoted (T_p^e, L_p^e) . The equilibrium level of input use can be easily deduced by noting that the equalization of marginal value products across farms implies that farms will operate using the same factor proportions (i.e. same land-to-labor, skill-to-land, and skill-to-labor ratios). Since landlords have $S_r = 10$ times more management skill in an efficient equilibrium they must also operate using 10 times more land and labor compared to peasant farms. In equilibrium labor demand from the M landlord farms ($M \cdot S_r \cdot L_p^e = 10L_p^e$) plus the labor demand from the N peasant farms ($N \cdot L_p^e = 80L_p^e$) must add up to the economy's total labor supply ($\bar{L} = 100$). From this (and applying similar reasoning to the land market) it is easily calculated that

$$L_p^e = \frac{\bar{L}}{M \cdot S_r + N} = 1 \quad (0.1)$$

$$T_p^e = \frac{\bar{T}}{M \cdot S_r + N} = 1 \quad (0.2)$$

Hence in the competitive economy each of the 80 peasant households would operate a farm with one unit land and one unit of labor, while each of the two landlord households would run a larger farm with 10 units of land and labor.

Given the assumed distribution of ownership over land and labor, we could view this equilibrium as consisting of *each* landlord leasing out 30 units of land (0.75 units of land to each of 40 sub-tenants) while operating their own *demesne* or plantation on the remaining 10 units of land using in 10 units of labor by hiring 0.25 units of labor from each of 40 households.

Note that the competitive equilibrium distribution of *operational* farm sizes is unique and is determined independent of the initial distribution of land or labor ownership. Operational farm sizes are affected only by the distribution of *non-traded* factors and by the *overall* land to labor ratio. Market factor prices, equal to marginal products, are easily calculated to be

$$\begin{aligned}
w &= F_L(\bar{t}, 1) = \beta \left[\bar{t} \right]^\alpha \\
r &= F_T(\bar{t}, 1) = \alpha \left[\bar{t} \right]^{\alpha-1} \\
\pi &= (1 - \alpha - \beta) \left[\bar{t} \right]^\alpha
\end{aligned} \tag{0.3}$$

where w , r and π are, respectively the market wage and rental rates and the shadow price of a unit of non-traded S . This last quantity is also the value of peasant farm profits. The wage rate w increases monotonically with \bar{t} as labor becomes relatively more scarce (or, what is the same thing, as land becomes more abundant) while the competitive land market rental rate falls. Total income to household g is given by the sum of farm profits plus factor sales:

$$\Pi_g(\bar{t}, 1) = S_g \left[F(\bar{t}, 1) - r\bar{t} - w\bar{l} \right] + w\bar{L}_g + r\bar{T}_g \tag{0.4}$$

At the initial land-to-labor labor ratio of $\bar{t} = 1$, landlords in our simulated economy will be essentially rentiers, deriving 95 percent of their income, or 19 units, from their 40 units of land valued at the market rental rate $r = 0.45$, and only 1 unit of income from farm profits.

Since all farms face a common market wage, a peasant laborer should be, on the margin, indifferent between working another hour for a landlord or on their own farm or tenancy. This implies that there should be no compelling reason for any party to tie labor and tenancy contracts. Some peasants might of course rent from and work for the same landlord, but this would just be by chance. Landlords might want to clock their laborers hours on the job (one could perhaps interpret S as a required input into this monitoring process), but a landlord should not care about what any given laborer does on their own family farm or tenancy. This is because each hour of work that that laborer withdraws from the landlord can be easily and immediately replaced by hiring another laborer at the same spot market wage.

Labor scarcity and coerced labor: the Nieboer/Domar Hypothesis

Suppose that due to discovery or conquest the economy's land endowment is now expanded from 100 to $\bar{T} > 100$ units while the labor force remains constant at $\bar{L} = 100$.

Assume furthermore that it is either the peasant households, or some third party such as the government or a previously non-landowning military service class that establishes property rights on the newly expanded land frontier. We assume this third party does not have the required skill to operate a farm themselves so they will simply turn around and rent out (or sell) any newly acquired land to existing landlord and peasant farmers at the new competitive market rental rate.

A new efficient equilibrium might emerge where every existing household production unit with farming ability S expands its use of land proportionately to absorb the economy's increased acreage. Since the labor supply has not increased, each farm employs as many labor units as before (one unit per operational farm unit). From (0.3) and intuition it should be clear that the higher land to labor ratio $\bar{t} = \bar{T} / \bar{L}$ leads to higher equilibrium labor market wages and farm profits and lower land rental rates. Unless the original M landlords are able to appropriate significant amount of this frontier land for themselves at below market prices, their total incomes Π_r will decline. The red line in **Error! Reference source not found.** indicates how the income to a landlord who owns 40 units of land falls as a function of the economy's land to labor ratio \bar{t} in this parameterized example.

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A well known economic explanation of the rise and fall of coerced labor systems is Evsy Domar's 1970 essay "On the Causes of Slavery or Serfdom: A Hypothesis." Building on earlier ideas by H.J. Nieboer (1910) and descriptions by V.O. Kliuchevsky (1968) of imposition of Russian serfdom in the 16th-century after the great expansion into the steppes, Domar conjectured that coerced labor arrangements were most likely to emerge in economies where labor became scarce relative to land precisely for the reason just seen: – in such an economy expanding incomes would accrue to those who controlled labor rather than land. Hence Domar wrote that as, "the central areas of the [Russian] state became depopulated because of peasant migration into the newly conquered areas in the east and southeast," serfdom emerged, "under the pressure of the serving [landlord] class...[as] the government gradually restricted the freedom of peasants ... to move." In a review of competing hypotheses, Kolchin (1987) concludes that Domar's intuition

probably “was the most basic element” behind the rise of slavery and serfdom in several important cases including Russia and the slave labor plantations in the Americas and the US South.

Domar was however not very clear about the nature of the difference between slavery and serfdom, or about how technology or the initial distribution of property rights over land might shape these institutional transformations, but the model of this chapter can be adapted to probe some of these issues in further depth. For the sake of brevity and clarity we begin by modeling the imposition of slavery in an extremely simple way. We later extend the model to allow for a richer pattern of voluntary and involuntary contracting relationships involving both land and labor, which we shall argue, provides a better characterization of the kind of serfdom that Domar was describing.

Consider the following first crude way of modeling a slave economy. Suppose that landlords can, as a result of campaign of violence and intimidation, kidnap *half* the existing peasant population and compel them to supply their labor at a subsistence wage \underline{w} per unit. We assume that the new slave owner can compel a slave to provide manual labor but the slave owner cannot compel the slave to supply non-traded farming skill, although we will in a moment consider how elites might try to recruit that resource as well.

Although this economy clearly violates slaves’ rights, we shall assume that property rights over slaves are secured and tradable and that both land and labor are transacted on competitive markets. The competitive renting or selling of slave labor was commonplace in many slave economies such as that of the southern United States. To simplify, slave labor and free labor are assumed to be perfect substitutes in production so that an hour of slave labor will trade on the market at the same market wage w . Given these assumptions, the principal (but not the only) difference between this slave economy and the earlier described competitive equilibrium with free land and labor contracting lies in the distribution of property rights over labor.

Total landlord income is, as before, given by the sum of farm profits plus factor market sales:

$$\left[G(T_r^s, L_r^s) - r \cdot T_r^s - w \cdot L_r^s \right] + r\bar{T}_r + (w - \underline{w})\bar{L}_r$$

The latter includes the ‘exploitation rents’ the slave owner receives from expropriating w worth of labor services from each unit of slave labor but paying each slave only \underline{w} for those services. In our numerical example each landlord now owns 10 slave households, or 12.5 (=10*1.25) units of slave labor.

Landlords face a tradeoff in choosing between a slave and a free labor and tenancy economy. Domar and Nieboer focused on the direct costs of enslaving and maintaining coercion, which could be significant. If these costs were low, though, it might seem that landlords could only gain by enslaving a fraction of the population. Landlords in essence simply steal and reap the rewards from owning somebody else’s labor.

There is another tradeoff, though, apparently not considered by either Domar or Nieboer. It arises because equilibrium land rents may fall due to the shrinking number of peasant producers putting their non-traded skills to efficient use. Even if slaves had been imported from outside of the economy, a landowner must always ask themselves whether they could earn more by continuing to use unskilled workers as slaves on a plantation or instead transform those workers into tenants or serfs so as to extract some of the returns the economy enjoys from bringing the non-traded farming skills S that new peasant-tenants would supply via higher land rents.

This tradeoff is diagrammed in **Error! Reference source not found.** comparing landlord income under free tenancy and labor market arrangements (solid line) to that under a slave economy (dashed line) for different land-to-labor ratios.⁴ As computed with the parameters given above, landlords earn higher incomes in the free economy when the land-to-labor ratio is somewhere approximately below 1.25, but prefer the slave economy in more labor-scarce environments. This comparison does not net out the costs that slave owners might have to pay to coerce a slave labor force, nor does it consider the possibility that slave laborers could be either more or less productive than free laborers.⁵ As drawn, landlord incomes at first fall but later rise as the land-labor ratio increases. This reflects the tug of war between falling income from land rents and rising income from owning slaves.

The dispossession and enslavement of half of the peasant population means that land and labor that these households had employed in a free economy are now put on the market for the remaining production units to absorb. In the new 'efficient' equilibrium, the size of landlord farms and the remaining free farms must expand proportionately to absorb these resources, both wages and land rental rates must fall (factor productivity falls as less S is being used) and farm profits must rise (as S is now more scarce). Total output would fall compared to an efficient free and competitive equilibrium.⁶ Independent farm producers who are not enslaved may either gain or lose from this change in factor prices, depending on the importance of wages and farm profits in total household income. The political economy implications are rather interesting, as it suggests for example a reason why slavery would have been supported by white small farm producers in the U.S. South even if they did not own slaves—land and labor is now available at a lower rent and farm profits increase as farm management skills S has now been made a more scarce resource amongst the remaining free farmers.

The roads to and from serfdom: tied labor contracts

The Russian landlords and the Tsars did not establish slavery. What instead occurred was the slow but steady growth of legislation over the course of the 16th and 17th centuries that made it increasingly more difficult for laborers to move from one landlord to another. This transformed existing modes of 'voluntary' tied labor contracting including varied forms of 'voluntary' bondage, 'self-pledging' and labor-service tenancy into the involuntary tied arrangements that came to constitute Russia's new serfdom (Kliuchevsky 1968; Kolchin 1987).

Conversely, when centuries later the Russian Tsar abolished serfdom by decree in 1861, or when slavery was abolished in the sugar economies of the Americas and the U.S. South, these economies did not snap into new competitive tenancy and labor markets of textbook analysis. Instead, in almost all cases these societies transitioned to economies where indenture, debt-bonding and varied forms of labor-service tenancy emerged.

Our model provides a simple explanation for the widespread use of voluntary, tied labor contracting. Tying labor can serve as a device to help landlords collude and

improve their ability to extract land monopoly and labor monopsony rents. Collusion is difficult to sustain in practice because laborers will naturally seek higher returns by contracting outside of the collusive arrangement, or by more intensively utilizing whatever own or common property resources they have available. Anticipating this, elites will seek to pre-empt these outside options and try to either limit labor mobility outright (in which case the system becomes involuntary serfdom) and try to strictly regulate peasant access to other resources and trading opportunities in the ‘free’ economy. Hence, almost universally, we find elites in post-abolition societies rushing to sponsor anti-vagrancy laws, limits or prohibitions on the ability of freedmen to own land, to obtain credit, to move or settle in certain ‘white’ areas or frontiers, and in general discouraging peasant production through the imposition of taxes (Ransom and Sutch 2001) (Binswanger, Deininger, and Feder 1995; Lundahl 1992).

The question arises as to what determines whether an economy that bans coercion and abrogates restrictions on mobility will transition to the efficient competitive equilibrium described above, or to some other type of equilibrium. Suppose slavery or serfdom were suddenly abolished. To add a touch of realism, suppose also that the transition were somewhat disruptive so for a brief period households retreated to a semi-autarkic equilibrium. Recall that the ‘slave economy’ of the last section was privately profitable to the slave-owners but it was also inefficient in so far as slaves’ non-traded skills S were not being utilized. Whether this efficiency cost is large or small depends on the importance of S in production and the extent to which S is held by slaves.

Rather than allow the emergence of a competitive market where landlords have to compete for labor by offering the highest wage or for tenants by offering the lowest land rent, they would much prefer a more collusive arrangement. Consider the following collusive contracting arrangement: landlords agree to divide up the peasant population equally amongst themselves and to not contract with each other’s peasants. Each landlord then offers each peasant household a take-it-or-leave-it contract with the following clauses:

1. The landlord will lease $T_p^e = \bar{t}$ units of land (i.e. the efficient level described in the competitive equilibrium above) to a peasant in exchange for a lump-sum rent or tribute payment R (value set as described below).

2. The lease is provided on condition that the tenant additionally agrees to supply 0.25 units of *labor service* to the landlord.
3. The tenant shall not sublease or allow any other workers to work the land without the landlords' explicit consent.

To insure that the contract remains an entirely voluntary transaction for the peasant the landlord cannot set the tribute payment R above the tenant-laborer's reservation utility. The peasant's reservation utility depends on the availability of alternate contracting opportunities and their ownership of land (defined broadly to include customary land rights or access to common property areas). If all other peasants in the economy are accepting similar contracts, then the only alternative to contracting with the landlord becomes to remain or retreat into autarkic (Chayanovian) production. In either case, the most a peasant household can earn is what they could get from using their available land and labor endowment in our numeric example is $\bar{T}_p = 0.125$ and $\bar{L}_p = 1.25$, in home production to yield income $F(\bar{T}_p, \bar{L}_p) = 0.434$.⁷ To assure voluntary participation the tribute rent R must be chosen to make sure that the peasant earn slightly more from accepting than from rejecting the contract:

$$F(\bar{t}, 1) - R \geq F(\bar{T}_p, \bar{L}_p)$$

The colluding landlord therefore can set the rent/tribute payment as high as just below

$$R = [F(\bar{t}, 1) - F(\bar{T}_p, \bar{L}_p)]$$

or $[\bar{t}]^\alpha - 0.434 = 0.566$ per tenant when $\bar{t} = 1$.

As long as landlords can sustain a collusive equilibrium, this set of voluntary tied labor-service contracts reproduces the efficient competitive production allocation exactly except that here landlords take a far larger share of total output. Since each landlord contracts with 40 peasants, they earn a total income of

$$G(S_r, \bar{t}, S_r) + 40R$$

or 32.65 in our numerical example when $\bar{t} = 1$, which is well above the 19 units that they would earn under a competitive equilibrium in the same economy.

No doubt some economic historian many decades later looking back at the records left of these voluntary transactions would be led to proclaim that these contracts had all been ‘Pareto enhancing’ and therefore to the advantage of the peasants involved. As evidence they would point to the certain fact that *compared to what a subsistence peasant earned* those ‘lucky’ to obtain these contracts were made better off. While the logic of the arguments seems impeccable, the economic historian’s conclusions are in fact quite misleading in our example economy. The historian’s problem here is not a failure of logic but one of imagination -- the failure to imagine the counterfactual of what the distribution of payoffs would look like in a truly competitive economy if landlords had to compete and every factor were paid its marginal product. When this is the counterfactual, labor-service contracts can be instead interpreted as a strategy by landlords to limit competition and sustain collusion, and therefore something that *immiserizes* rather than improves peasant lives.

It should also be obvious that, starting from the proposed collusive equilibrium, a peasant household with a labor-service tenancy contract would want to breach the contract and divert labor from the landlords’ *demesne* to his rental plot. That is because his marginal return from extra labor on his own plot is $F_T(\bar{t}, 1)$ compared to zero on the landlords’ farm where his labor is obligated. If the application of labor time or effort could not be perfectly observed on the landlords’ farm, the situation would essentially become a classic principal-agent or moral hazard problem. The landlord would complain that his peasants’ lacked a work ethic and were diverting resources to their individual plots rather than fulfilling their contractually agreed-upon legal obligations to provide labor service. Landlords would also argue, again on seemingly very firm liberal grounds about the importance of property rights and voluntary contract, that harsh penal codes and strict legal enforcement were important, not just for their own good, but so as to also help peasants to make the credible commitments necessary to enter into Pareto-improving trades.

Without legal enforcement, the argument would go, landlords might have little choice but to respond to this situation of moral hazard by under-investing in agriculture and rationing peasants to smaller than efficient tenancies with a consequent fall in total

output. This moral hazard problem is a very familiar one that has been at the center of important explanations of the choice of contract forms. The crucial point to note here however is that the ‘problem’ emerges primarily as a consequence of the fact that landlords are trying to get away with paying labor a wage far below its marginal product. Since the wage for each extra hour of work on the landlords’ demesne is essentially zero, peasants are strongly tempted to cut back on an hour of labor service and divert that labor to their own tenancy where on the margin they earn $F_T(\bar{t}, 1)$. A peasant therefore has strong incentives to feign sickness or find other ways to cut back on labor service hours under the collusive arrangement.⁸ There is no similarly strong incentive to avoid wage labor in a competitive economy because the marginal gain they earn by using that labor on their own farm would then be exactly offset by the wage $w = F_T(\bar{t}, 1)$ they lose by working an hour less for the landlord.

Can this collusive equilibrium be sustained? The terms of the contract themselves act as a barrier to competition for several reasons. Clearly stipulated and strictly enforced labor service obligations aim at stopping labor from being diverted to peasant plots as well as to other landlords. In actual practice a way to control labor’s outside opportunities was to mark class differences and insist that the servant adopt a servile and deferential attitude and to remain attentive to the master’s every ‘beck and call.’ Although historians have sometimes sought to root such behaviors in cultural and military traditions, these obviously also served the useful economic purpose of limiting a peasant’s chances of discovering or utilizing outside ‘moonlighting’ opportunities. Similarly, the stipulation that the peasant not hire outsiders without the landlords’ explicit consent is aimed at making sure that a competing market for wage labor does not develop within the peasant sector. Without this clause a peasant that refused to accept a labor-service tenancy on the landlords’ terms might be able to find work as a laborer on another tenant’s plot (where the marginal product of their labor exceeds what landlords are offering as wages).

The important point of this discussion has been that the ‘moral hazard problem’ and the attendant conflict that the landlord must work so hard to control is deeply rooted in the landlords’ attempts to sustain a collusive arrangement that pays demesne labor a wage

well below its marginal product (essentially zero in our simple example) and charges tenants tribute rent well above the shadow factor price of land. If the collusion were broken and landlords were forced compete to hire in labor and lease out land at competitively determined factor prices then the ‘need’ to tie or to insist upon a servile labor force would disappear or be greatly reduced.⁹

Even if the terms of labor service contracts could be perfectly enforced by ‘the law’, the collusive equilibrium could be undermined by competition between landlords. Since each contract is highly lucrative, landlords might be tempted to poach each other’s peasants by offering labor-service contracts with lower tribute R , or by simply hiring away workers at a wage. Serfdom solved this problem by imposing lordly jurisdiction that strictly limited mobility and controlled and regulated peasants’ freedom to engage in activities that might divert labor or effort away from tasks that could be subjected to lordly taxation (Brenner 1996).

Where laborers’ movement could not be perfectly limited through coercion landlords often found it convenient to employ the device of a credit advance to bring tenants under the purview of the law and penal codes to enforce the terms of labor service. The voluntary contract above could be modified to provide the peasant with an up front credit advance, ostensibly to compensate the landlord for the cost of the peasant’s dwelling or perhaps ‘the cost of passage’ that the landlord has provided. For example, prior to the imposition of involuntary servitude in Russia, peasants often ‘self-pledged’ by accepting a loan backed by a promissory note in which they agreed to pay off their obligation by serving the landlord as a servant or a labor service tenant (Kliuchevsky 1968). It was not unusual for a contract to have a worker “serve for usury,” or in other words, work merely to pay off the accumulation of interest, leaving the level of the principal or the bond unchanged. Any pledger who broke service or was declared insolvent by a court could be turned into a permanent bondsman who could then only be freed at their masters’ will, a condition of service that became hereditary. These arrangements still remained ‘voluntary’ and contractual so long as the law generally allowed the peasant to ransom their freedom and, although only during officially sanctioned days of the year, to change employers.

This system of voluntary bonding evolved into bondage in perpetuity or involuntary serfdom over the course of the late 16th and 17th centuries as new laws were introduced that made it increasingly difficult for peasants to change employers or to ransom their freedom. V.O. Kliuchevsky saw these restrictions as a landlord reaction to the conditions of “acute labor shortage” that developed as “masses of the peasantry” started to flee the central Russian provinces in search of land and opportunities in the newly expanded frontier (p.182).”¹⁰

As this discussion suggests, the dividing line between voluntary and involuntary tied labor contracts has oftentimes been blurred. Economists often assume that a ‘voluntary’ contract must, almost by definition, lead to improvements to the class of laborers who accepts them, yet as we have argued here this need not be the case once the possibility of landlord collusion and general equilibrium interactions are considered.

History is replete with other examples of laws and state action aimed at facilitating collusion amongst landlords to keep ‘voluntary’ labor arrangements from becoming too competitive (Binswanger, Deininger, and Feder 1995). For instance, after the Thirteenth Amendment to the Constitution was adopted in 1865 banning involuntary servitude in the United States, southern legislatures rushed to immediately pass ‘Black Codes’ to limit freed slaves’ outside opportunities by making it more difficult for them to switch employers, own land, access forests and other common property resources, or even to remain idle. This legislation was often quite naked in its obvious attempts to sustain collusive arrangements. Consider the following excerpt of a law passed by the Louisiana Legislature in December 1865 as cited by Ransom and Sutch (2001) in their classic study of the post-bellum Southern economy. The legislation limited the ability to switch employers by requiring “all laborers to make contracts for the following year by January tenth” and by stipulating “that laborers leaving employers would forfeit all wages due them and could be imprisoned as alien against any alleged losses (p. 67).” Just as importantly the law also threatened that anybody who should

... entice away, feed, harbor, or secrete any person who leaves his or her employer ... shall be liable for damages to the employer, and ... shall be subject to pay a fine of not ... less than ten dollars, or imprisonment in the parish jail for not ... less than ten days, or both.”

Even if such types of legislation have been by now generally taken off the books in many nations, servile labor and other forms of voluntary bondage (ILO 2005) still persists where local laws, customs and norms of behavior help sustain collusive arrangements that severely limit workers outside opportunities, often on the basis of race, caste, nationality, ethnic or gender differences.¹¹

Property rights, asset inequality and the paradoxes of bans

Figure 2 is useful for summarizing and explaining how income and distribution change in our model economy under different institutional arrangements and initial distributions of property over land. If overall factor endowments consist of 100 units of land and labor the efficient allocation of resources under our assumed technologies should yield a total of 100 units of output for the economy, regardless of the initial distribution of land. This efficient potential level of income is indicated by the horizontal ‘Total-efficient’ line passing through point E in the figure. As we have argued, this could be achieved in principle either through competitive factor markets or via a collusive but ‘efficient’ system of voluntary or involuntary tied labor-service contracts that extracts surplus from peasant households via lump sum tribute and labor service obligations. The peasant household sector’s share of total output is obviously very different under these two alternative scenarios. In a competitive market total peasant income – given by the sum of farm profits plus the market value of factors owned – is indicated by the solid line labeled ‘Peasant – competitive’ passing through point C. This has slope of minus the competitive rental rate on land r because the value of land owned by peasants declines as the fraction of total land owned by landlords θ increases. Point C on the diagram indicates that when landlords own 80 percent of the land stock, the peasant sector nonetheless still takes home 62 percent of total income in the economy by virtue of their ownership of labor and other factors.¹²

Under a collusive arrangement of tied contracts peasant incomes could in principle be pressed down to their autarky levels. That would leave the peasant sector earning just slightly more than they would from withdrawing from transactions with landlords and instead making use of their own land ($\bar{T}_p = (1 - \theta)\bar{T} / N$) and labor (H) resources. This would earn them their Chayanovian farm income $F(\bar{T}_p, H)$. Point A indicates that at

$\theta=0.8$ where the typical peasant household has access to $\bar{T}_p = 0.25$ units of land, this income would be $F(0.25, 1.25) = 47.4$, which is considerably below their income with competitive markets. The figure also shows that gap between competitive incomes and incomes in an economy with ‘tied contracts’ rises rapidly as initial land ownership becomes more concentrated in landlords’ hands. This is because as θ rises peasants have ever smaller autarky plots and therefore worse and worse fall-back positions.

Suppose the distribution of property rights were such that the economy was at collusive equilibrium A in the diagram. The arrangement may have been sustained by limits on labor mobility. Consider what might happen next if a newly emboldened state intervened to limit all forms of landlord coercion and lift all barriers to peasant mobility within the agrarian economy. The State declares that existing property rights over land will be respected and enforced but that involuntary servitude and coercive barriers to peasant mobility are prohibitive. The one and only interference with the freedom to contract is that tied voluntary labor-service obligation contracts will be effectively banned via the legal stipulations that all land and labor transactions must be remunerated at ‘market determined’ wages and rental rates. Legislation of this sort has been common in Asia or Latin America as part of efforts to regulate or suppress bonded labor and labor-service contracting arrangements.¹³

Does a ban on tying lead to a quick transition to a new efficient competitive equilibrium at C with much higher peasant incomes or somewhere else? Historical evidence suggests that the most common immediate outcome of slave and serf emancipation was the significant collapse of output in many societies (Bush 2000; de Castro 2000) and perhaps even a decline in some of the material conditions of the now free workers (Engerman 2003). This question, on the nature the transition paths and the kinds of agrarian capitalism that may emerge following expansion into a new territory or the abolition of coerced labor and other forms of voluntary ‘servile’ labor, has been one that has vexed and exercised Marxist and non-Marxist historians for several generations (Byres 1996). When does the economy follow an ‘American Road’ leading close to a Jeffersonian ideal in which production is dominated by family-farmers and very active and competitive land and labor markets, and when does it follow a ‘Prussian’ or ‘Latin

American' road where production instead becomes dominated by wage labor plantation agriculture or Latifundia in which peasant incomes remain compressed and peasant production remains limited to small tenancies or minifundia.

A simple extension of the model above suggests why the economy may very well not snap to a new competitive equilibrium, but rather settle on a distorted one with lower total output and only a scant improvement in peasant welfare. The argument, which is laid out in some more detail in the appendix and in (Conning 2004) is that landlords' reaction to a ban that deprives them of the use of tied-contracts as an efficient mechanism for surplus extraction, may be to turn to other privately profitable but socially inefficient mechanisms to earn rents.

As discussed above, elites frequently acted to close down the outside income generating opportunities of their newly untied laborers using both legal and illegal means. Our argument here is that that landlords would likely also seek to limit peasants' outside opportunities via economic *market* mechanisms, without the need for (but in practice very likely in addition to) this kind of extra-economic barrier building.¹⁴

Suppose that following emancipation the economy temporarily moved to the competitive equilibrium indicated by C in Figure 2. Starting from this efficient outcome, can landlords change resource allocations to raise their incomes? If landlords control a large enough amount of land, the answer is they can. Consider the simplest case where our $M=2$ landlords collude but cannot use tied contracts, so they must transact at 'market' wages and rental rates.¹⁵ As discussed previously, competitive landlords would be rentiers as the bulk of their income is from leasing out large amounts of land to tenants, and only secondarily from farm profits. If in such a context landlords have enough land to be able to exploit market power they should limit the amount of land they lease to the market to push up land rents. This is the classic partial-equilibrium argumentation for a monopoly markup on land rents. But in this general equilibrium context there is an additional important effect that landlords must also consider. Landlords maximize profits plus the value of owned land. As they restrict land leased out they increase earnings from land but also end up pushing down the land to labor ratio in the peasant sector. With less land to work with, the marginal product of labor declines on peasant farms leading

peasant households to optimally increase their supply of labor to the market at any given wage. Since landlords are the largest (and in our constructed case, the only) net employer of wage labor this benefits them by increasing profits. In short, the exercise of monopoly power over land also creates monopsony rents from labor.

Viewed slightly differently, landlords strategy is to push down the land to labor ratio on peasant farms to lower their wage bill and at the same time raise land rents. The one thing limiting how far this strategy can be pushed is that there is a cost to running inefficiently large and land-intensive farms because of their fixed holding of the non-traded factor S . Landlords will expand the size of their farms up to the point where the marginal gain from earning higher monopoly rents on land and/or monopsony rents from labor equals the marginal increase in this cost.

The dashed line running through point D in figure 2 shows total income in the distorted economy at different levels of initial land inequality under the assumption that the two landlords perfectly collude. The line passing through V in figure 2 indicates the level of peasant sector income in the post-abolition distorted economy. Peasant incomes remain well below their competitive market potential and scarcely above what they earned in their serf-like existence. Note that at higher levels of inequality θ , where landlords find it easier to exercise market power, the market distortion becomes even more pronounced. The gain to the peasant sector from a ban on voluntary or involuntary tied labor-service tenancy is smaller in an economy where peasants have few property claims to land, as landlords can then easily find ‘market’ mechanisms to compel their labor at low cost.

Taking stock of the argument so far, the model can be used to demonstrate that although it may be individually rational for a peasant to accept a tied contract when all other peasants have entered into similar contracts (their payoff can be raised from A to some small amount above A), paradoxically a general ban on *all* tied contracts can raise peasant wages and incomes. Peasant welfare gain can be as large as moving from A to C if the ban leads to a new fully competitive equilibrium, but the gain is likely to fall considerably short of this if landlords react with new distorted allocations to extract rents. Peasant welfare then rises only from A to V. Landlord income and total output falls if

the ban leads to a new distorted equilibrium. Although we have argued that peasant income rises, it is not too hard to imagine situations where peasant welfare could actually end up falling if the landlord reaction extended to include extra-economic measures such as those described above and by Ransom and Sutch, or if as described below it creates new property rights conflicts over land.

The model offers a plausible alternative or complementary explanation to why output should fall following abolition that is different from Fogel and Engerman's (1974) explanation that it was because coerced labor produced more output per hour than free workers. The model shows that the size of the distortions, and therefore the size of the output collapse and peasant welfare following emancipation are affected by several factors including the initial distribution of property rights over land, the ability of elites to collude and peasants to organize, and the role of non-traded factor S .

Consider further the role of land inequality. While the efficient way to produce 100 units in our numerical example was to allocate 80 percent of total production to peasant farms and the remaining 20 percent to landlords, simple simulations for our benchmark parameters show landlord farms expanding to account for more than 50 percent of output by at $\theta = 0.8$ and expanding ever more rapidly at higher levels. As one increases θ to higher and higher levels tenancy suppression becomes more active until the point where (at around $\theta=0.87$) landlords find it optimal to close down the tenancy market completely. At this point landlords have already decided that they earn more from monopsony rents on labor (they've pushed the market wage far below the marginal product of a hired laborer) that they feel free to simply ignore land rent earnings (Conning 2004).

At yet higher levels of initial land concentration θ simulations show that landlords will actually start to encroach on peasant lands via reverse tenancy – large landlords will be observed hiring in land from small minifundistas. This behavior may make sense in a model where we have assumed that peasant property rights to land are scrupulously protected by the state, since landlords then only have markets to use as a strategy to manipulate factor prices and obtain the land they desire. In more realistic contexts, where property rights cannot be assumed to be costlessly enforced by a third party one is likely

to instead see the flaring up of conflict, for example land-hungry peasants squatting on landlord farms and common lands, or perhaps landlords hiring thugs not only to drive off squatters but also to restrict peasant access to frontier lands or off village lands.¹⁶ One might interpret the drive to enclose common lands as responding in part to a similar logic.

The discussion suggests that an ‘American road’ trajectory, with active tenancy markets and prosperous family farmers is likely to take root only following emancipation or the opening of a new frontier where land is distributed in a more egalitarian fashion (θ is low). A more distorted ‘Prussian Road’ such as that followed in Russia, Prussia, and many parts of Latin America is quite likely when initial land inequality is high.

Recasting debates

The freedom to sell labor is a touchstone of classical liberal philosophy. Social conservatives and libertarians agree on this, even as they disagree over the value of freedom to decide what to do with one’s leisure time. By contrast, some modern liberals question whether certain contracts to sell labor should be regarded as inviolable privileges of personal freedom. Perhaps some kinds of freedom result in unfreedom. Some kinds of trade liberalization, it has been argued, may render a people worse off (Deardorff 1997). And democratic triumph by an undemocratic party may destroy a democracy. Clearly, constructing models or hypotheticals of exceptions to a basic intuition is a perilous pursuit. Special interests are always seeking justifications for anti-liberal restrictions on freedom. One thinks, for example, of the many restrictions on women’s employment that favored male union workers (**Goldin** 1988, 1991). In the political domain, a stance of refusing to grant exceptions to the principle of freedom of contract may be a healthy strategy.

But in very poor countries people are living generation after generation in miserable drudgery and early death. Asset inequality is high political and economic power is often locally concentrated. These human beings, and the economies they inhabit, are of special interest. Might an otherwise healthy political strategy render disservice to the very poor and newly free? Sometimes former slaves, serfs and bonded laborers have been emancipated into a daunting world of freedom of contract. Exceptions to the intuition of the desirability of freedom to contract labor matter more for them. Models

and hypotheticals demand careful attention rather than cavalier dismissal; it is vital to think carefully about whether a poor laborer should be allowed or forbidden to accept a contract to bond his labor for a decade to an employer.

Models that analyze the choices that people make when they are free to buy and sell labor presuppose a broader account of the determinants of self-ownership and control over earnings of others. A model of an agrarian economy, examined in this chapter, reveals that enslavement and voluntary contracting may be thought of as possibilities along a continuum of strategies, and discerning that continuum of strategies is especially relevant when understanding the welfare of laborers following their emancipation from unfree arrangements. Several factors may determine which strategies might be chosen; among them are the overall ratio of land to labor, the concentration of land holdings, the ease of collusion, the importance of non-tradable skill or managerial talent, the role played by outsiders and the state and other political factors.

We argued that a large variety of institutional settings can arise out of the interactions of landlords and peasants as the ratio of land to labor changes. Because of this, it may not be the case that liberating formerly coerced laborers always unleashes their productive potential so that economies grow over time. Moreover, it may be the case that there may at times be good reasons to regulate the freedom of contract. Prohibiting a landlord and a peasant from contracting would appear to stand in the way of gains from trade. Yet in a purely competitive market there is no need for tied contracts. Landlords use tying as a way to control laborers' outside opportunities. A prohibition on tying may result in less efficient collusion, but delivers a greater share of the lower output to the hands of the laborers.

This is another example of the general theory of the second-best that is well-used in economics: since labor markets may not be competitive and may have considerable moral hazard, and many other markets (i.e. for insurance) may not be perfect, then government regulation of voluntary contracts may improve general well-being or redistribute well-being in socially desirable ways. Stopping one household from using bonding or child labor worsens their welfare but a uniform ban on bonded labor contracts (Genicot 2002) or child labor produces general equilibrium effects that may lead to a

better equilibrium (Basu 1999; Baland and Robinson 2000). Our explanation is related, yet in an important sense also different from these other accounts. They focus on externalities on labor and/or credit markets and the role of public policy in helping to solve the coordination failure that may stop society from choosing a better equilibrium of the multiple available. Our account focuses on the *strategic* action of local power holders to limit the outside opportunities of laborers. Society must overcome not just a coordination problem but also challenge local power structures to raise peasant welfare closer to its competitive level.

The discussion of an exception to the intuition that free contracts are invariably socially desirable should not make one sanguine about public policy. Governments are more likely to be handmaids of welfare worsening institutions regulating labor relations, as in Russia where the state prevented serfs from changing employers.

The analysis of freedom and contracting in the context of labor must proceed dialectically, asking how an initial distribution of freedom generates a pattern of contracts, and how this pattern might then change subsequent distributions of freedom. A famine might induce many laborers to willingly become serfs; their serf status may drive down the wage in the normal, non-famine economy, inducing still more laborers to enter serfdom. An expanding frontier might induce laborers to leave their ancestral homes and employers in search of higher returns. Their former employers might respond to the rising cost of labor by using force or collusion to limit the opportunities available to laborers, and extra-economic coercion and anti-competitive labor-tying might emerge as a reprehensible strategy in these circumstances. The limited freedom of laborers that comes from enslavement is however not necessarily the best choice for employers, who may occasionally find that less aggressive tactics garner greater returns. So the bright line between involuntary and voluntary labor arrangements is better redrawn as continuous shading.

Appendix

Here we provide some additional details and derivations. The reader is referred to Conning (2004) for a more detailed and general presentation of the problem.

Efficient competitive equilibrium

In an efficient equilibrium the marginal value product of each factor must be equalized across farms. If (T_p^e, L_p^e) is the equilibrium level of land and labor on a peasant farm then efficient landlord farm inputs must be $(T_r^e, L_r^e) = (S_r T_p^e, S_r L_p^e)$ since landlords use the same technology and have S_r times more of the non-traded factor. Factor market balance requires

$$M \cdot S_r \cdot L_p^e + N \cdot L_p^e = \bar{L} \quad \text{and} \quad M \cdot S_r \cdot T_p^e + N \cdot T_p^e = \bar{T}$$

from which we obtained expressions (0.1)-(0.2) for factor use $(T_p^e, L_p^e) = (\bar{t}, 1)$.

Peasant output is then $q_p = F(\bar{t}, 1, 1) = [\bar{t}]^\alpha$ and equilibrium factor prices are

$$w = F_L(\bar{t}, 1) = \beta [\bar{t}]^{\alpha-1} \quad \text{and} \quad r = F_T(\bar{t}, 1) = \alpha [\bar{t}]^{\alpha-1}$$

At $\bar{t} = 1$ we have $q_p = 1$, $w = \beta = 0.45$ and $r = \alpha = 0.45$. The shadow price of a unit of the non-traded factor S , which is also the value of peasant farm profits, is

$\pi = (1 - \alpha - \beta) [\bar{t}]^{\alpha-1}$, which is 0.1 for our parameters.

The slave economy

If 40 peasant households are enslaved and the other 40 remain free, equilibrium production must now take place on two landlord and 40 peasant farms. Given the distribution of S , we must have $T_r^s = 10T_p^s$ and $L_r^s = 10L_p^s$ and land market equilibrium now requires

$$2 \cdot 10T_p^s + 40T_p^s = \bar{T}$$

$$T_p^s = \frac{\bar{T}}{60} = \frac{10}{6} \bar{t}$$

A similar calculation using the labor market equilibrium equation reveals that $L_p^s = 10/6 = 1.67$. The institution of slavery blocks 40 households from becoming direct producers which then makes room for each of the remaining farm units to expand approximately 67 percent compared to the equilibrium without slavery. Wage rates and rentals must fall as slaves' non-traded farming skills are no longer being utilized as in the competitive economy.

The market-power distorted economy when landlords cannot use tied contracts

When tying is not allowed landlords must transact hire in labor at a 'market' wage w and land rental rate r . A 'landlord cartel' would however collude to distort resource allocations to manipulate prices to their advantage. They would act to choose factor use on the typical landlord farm (T_r, L_r) to maximize

$$\left[G(T_r, L_r) - r(T_r, L_r) \cdot T_r - w(T_r, L_r) \cdot L_r \right] + r(T_r, L_r) \theta \bar{T} / M$$

where factor market prices $w = F_L(T_p, L_p)$ and $r = F_T(T_p, L_p)$ can be written as functions of landlords' choices (T_r, L_r) because by the factor market balance equations $T_p = \bar{T} / N - MT_r / N$ and $L_p = \bar{L} / N - ML_r / N$. In short market factor prices are determined by the marginal product of factors on peasant farms, but these can be manipulated because landlords' internalize how their own production choices affect the availability of land to the peasant sector. The pair of equations that make up the first-order conditions for this problem are highly non-linear but the optimal solution to maximize landlord cartel income are easily found numerically for given parameter values, as discussed in the text.

Figure 1: Landlord Sector Income as a function of the land-labor ratio, Free Markets vs. Slavery

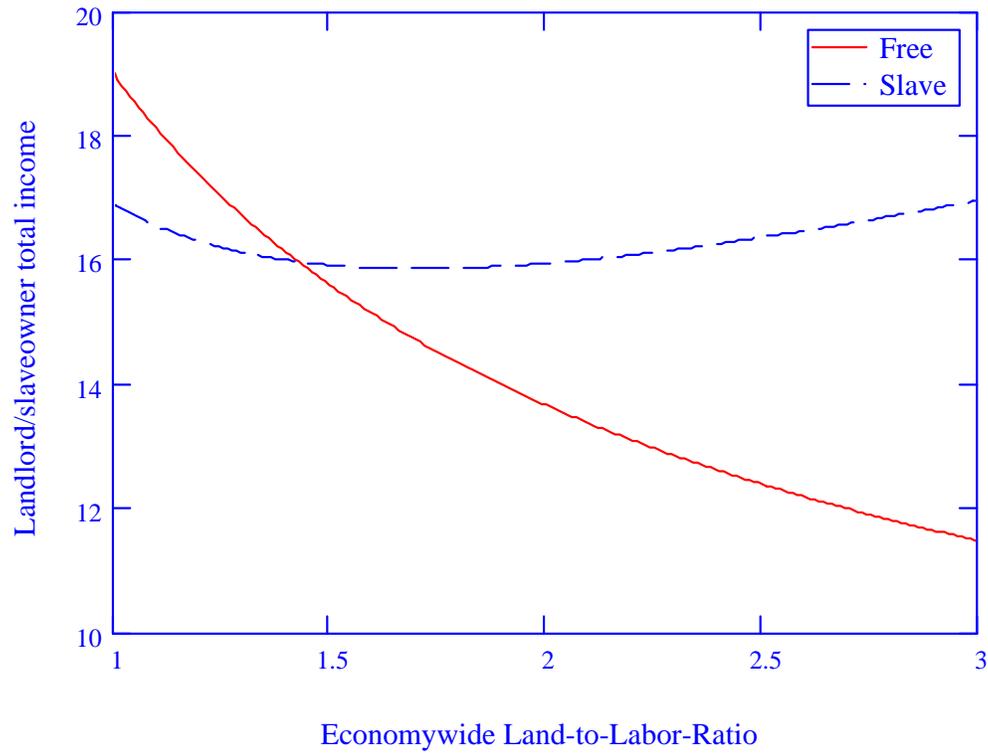
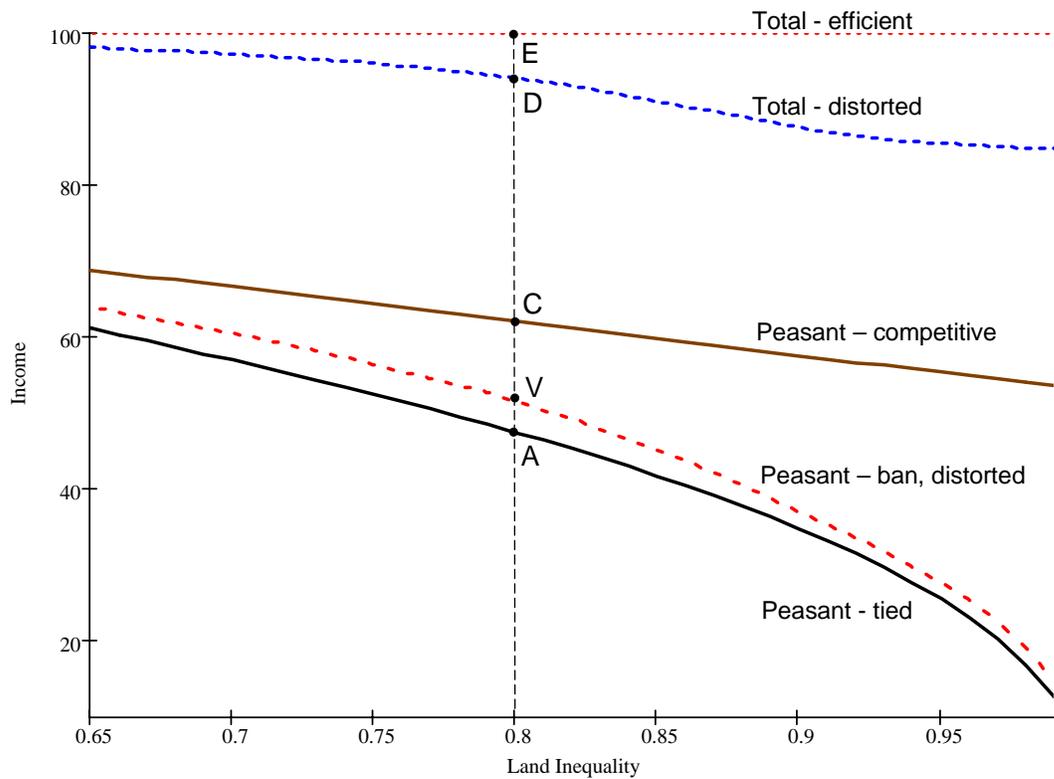


Figure 2: Total & Peasant sector income under different regimes
(as a function of initial land inequality, θ)



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Endnotes

¹ The presentation builds upon and extends Conning (2004).

² The observation that GDP per capita fell in post-emancipation societies including the US South, Brazil and sugar economies of the Caribbean is a widely noted and largely accepted empirical fact (Bush 2000; de Castro 2000). Fogel and Engerman (1974) argued that the dietary and health well-being of slaves in the US South may have been comparable or along certain *material* dimensions even superior to that of contemporary free laborers.

³ We've chosen S_r such that $MS_r + N = \bar{L}$. This is without loss of generality, and mainly a convenient normalization to help simplify later expressions.

⁴ The parameters are as described so far in the text and $\underline{w} = 0.45$, the free labor market wage when $\bar{t} = 1$. Raising \underline{w} simply raises the costs of owning each slave, lowering landlord income in the slave economy and therefore raising the cutoff level of \bar{t} above which slavery becomes financially more lucrative.

⁵ A large literature has debated this latter question. Adam Smith and many abolitionists often argued that slave labor was by its very nature less efficient than free labor because a slave who could not own and accumulate property would have less incentive to supply quality labor. Fogel and Engerman (1974) have argued however that slave labor in the antebellum South produced more output per worker than free labor because of the extra labor and 'economies of scale' that they argue could be achieved under a coercive gang labor system. Although David and Temin (1979) and others have criticized their methods, the dominant view amongst economic historians seems to be that American slavery was on the whole a profitable institution to slaveowners at the time of its abolition (Kolchin 2003). The model can be easily adapted to either assumption.

⁶ If slave owners could extract sufficiently more output per worker from a slave compared to a free man through coercion then total measured output could fall following the abolition of slavery, the explanation suggested by Fogel and Engerman (1974). Without denying that this effect could have been at work, we shall suggest an alternative explanation.

⁷ Transacting with other peasants who have not accepted landlord contracts offers no better alternative over this reservation payoff, since we have assumed these other peasants have the exact same endowment.

Throughout this discussion we continue to assume that $\bar{T} = \bar{L} = 100$, $\theta=0.8$ and all other parameters are as described above.

⁸ The solution is not to extend a larger tenancy to the laborer and extract rents through a higher lump-sum tribute payment because this would fail to fully utilize the landlords' own farming skill S .

⁹ We are well aware, of course, of a large literature that makes clear that ex-ante commitments to limit an agent's outside opportunities may be Pareto-improving to both landlord and peasant in many moral hazard contexts (Holmstrom and Milgrom 1990; Braverman and Stiglitz 1982). Virtually all of this literature starts however from the partial-equilibrium, bilateral contracting approach that takes agents' reservation payoffs as given, and therefore ignores the primary focus of our analysis here: how contracts terms may affect those reservation payoffs in general equilibrium.

¹⁰ Kliuchevsky underscores how landlords used the legal device of debt bonding to tie down their workers, for instance by converting practically all the remaining servants who had previously worked for wages and without promissory notes into bondsmen. The terms of bondsmen's contracts also became more and more onerous as time passed, adding clauses in which bondsmen had to for example agree to "live as a peasant under my master for the rest of my life and not run away anywhere," and which obliged the peasant to now pay damages on top of his debt for leaving.

¹¹ Modern economic theories such as the theory of indefinitely repeated games with reputational equilibria (Kandori 1992), models of asymmetric information and stigma (Akerlof 1976), or evolutionary game theory and agent-based analysis of social dynamics (Durlauf and Young 2004) have provided solid micro-

foundations upon which to explain the emergence and persistence of collusive arrangements and discriminatory norms might be sustained over long periods of time.

¹² Recall that the efficient competitive equilibrium had $w=r=0.45$. Total imputed income from the peasant sectors' ownership of 20 units of land is therefore $9=0.45*20$, their income from owning 100 units of labor is $45=0.45*100$, and total farm profits (or returns to the non-traded S) from the 80 peasant farms equals $8=0.1*80$. This sums to 62.

¹³ For example de Janvry (1981) discusses some of the 20th century legislation in Chile and other Latin American countries that required landowners to pay agricultural labor in cash rather than kind as well as enforcing minimum agricultural wage laws.

¹⁴ In this sense the model offers microfoundations to help explain the pattern of elite behavior described by Ransom and Sutch and others, by providing a framework within which to identify and quantify the costs and rewards elites stood to gain via political and economic actions. It also offers a microeconomic explanation for the kind of inverse relationship between asset inequality and political and economic outcomes that Engerman and Sokoloff (2000) and others have identified in explaining the divergent growth paths of regions.

¹⁵ Similar results, albeit in somewhat more muted form, emerge if we instead model landlord interaction as a non-cooperative Cournot game Conning (2004).

¹⁶ Conning and Robinson (2005) explore a related model that shows how endogenously determined property rights conflicts would further suppress the operation of market for tenancies.