

What is the Price of Freedom for Workers?

Joseph Heath

Department of Philosophy

University of Toronto

Abstract: Philosophical discussions of market failure typically focus on three canonical causes: externalities, information asymmetries, and insufficient competitiveness. These three causes are important in part because of their generality, since the defects in question can arise in any market. There is, however, another extremely important source of market failure, which is sometimes overlooked because it lacks the same generality. The market failures in question arise from the non-alienability of labor (or the constraint that human capital can only be rented, not purchased). Non-alienability is institutionalized through a set of constraints on contracting, which directly inhibit the formation of certain markets. But these constraints also have downstream effects, causing other markets to fail. This paper describes these effects in the markets for education and training, credit and investment, and childrearing services. Understanding these market failures, in turn, helps us to better understand the various non-market institutions that arise in order to address these problems.

A very large fraction of state intervention in the economy is undertaken with the goal of correcting one or another form of market failure. Economic analysis of the welfare state is therefore focused on the three most well-known sources of such failure: externalities, information asymmetries, and natural monopoly. This leads to a set of familiar claims about the welfare state: environmental regulation is a response to the overproduction of negative externalities by private economic actors; the provision of public and club goods, such as weather forecasts or lighthouses, is a response to the underproduction of positive externalities; the social safety net, including health insurance and pensions, is a response to the failure of the corresponding insurance markets due to moral hazard and adverse selection problems, themselves a downstream consequence of information asymmetries; and the provision of common infrastructure, such as roadways or the electrical grid, is due to the impossibility of organizing a competitive market for these goods. I take no issue with this analysis of state activities; on the contrary, I consider it to be both correct and important (Heath 2011). My objective in this paper is to examine a fourth, somewhat neglected source of market failure, and to argue that certain important welfare state programs are best understood as a response to it. The market failures in question are a consequence of restrictions on labor contracting that are essential to the preservation of “freedom” in these markets.

It has frequently been observed that although human labor is bought and sold in private markets, and the wage rate is essentially a market price, there are various respects in which labor does not function as an ordinary commodity. Apart from the fact that it is, as Karl Polanyi (1957) observed, a “fictitious commodity,” in the sense that it is not produced for sale in the market, its conditions of sale are also subject to various restrictions. For example, although it has become common to refer to a worker’s skills or capabilities as “human capital” (Becker 1993) this sort of capital is unlike ordinary capital in that it cannot actually be purchased, but can only be rented (Ellerman 2024a, 7). From the worker’s perspective, this is often expressed as the claim that labor is inalienable, due to the prohibition

on “slavery contracts” or “involuntary servitude” (Sterk 1993). Beyond this, there are practically no futures markets for labor. Most contracts to provide a labor service at some future date are unenforceable, because courts will not compel specific performance (Steinfeld 2001, 41). These restrictions on contracting are typically seen as a benefit to workers, but they also have a cost. They produce a market failure, in the obvious sense that they directly prohibit certain mutually advantageous transactions from occurring, but they also have downstream effects that cause additional markets to fail. Most importantly, restrictions on alienability cause certain failures in credit markets, because they prohibit human capital from serving as collateral for loans.¹

There are clearly arguments to be made in support of these restrictions, and most people are likely to see the inefficiencies they produce as all-things-considered justifiable.² It is important, nevertheless, to recognize the extent to which they push market economies away from any background model of pure capitalism. They have structuring effects on the entire economy, since labor is involved in the production of practically every good. Thus the deviations from pure private contracting caused by these restrictions are far from insignificant. I will provide three examples of this, the first involving purchase of educational services, the second involving access to credit, and the final one involving lifetime consumption smoothing and childcare expenses. In each case, I should note, workers are subject to some disadvantage through the restrictions on contracting, because they are prevented from adopting specific precommitment strategies with respect to their labor, and are thus unable to offer the assurances that would be required to enter into various cooperative schemes. A variety of non-market institutions arise that offer a work-around to these problems, including certain features of the welfare state. I will focus in particular on the set of programs often described as “human development,” in order to show how they respond to this market failure

1. Free labor

Although the idea of a market for labor, in which individuals can agree to work for others in return for monetary payment, may seem obvious, the institutional arrangement has not existed in most human societies throughout most of human history. In particular, the idea of an “at will” employment contract, in which both the employer and the employee agree to exchange a certain number of hours of work for a specified wage, with no obligation on either side to continue or renew the contract, is a very uncommon arrangement. Historically, employment relations have been encumbered by a very large number of legal, social and moral restrictions, which have had the effect of treating labor relations more on the model of social relationships than commercial transactions. In feudal societies most agricultural production was undertaken by peasants, who normally paid rent, rather than being compensated directly for their labor. Because the economy consisted overwhelmingly of agricultural production, employment relations were relatively uncommon. At the beginning of the 19th century in England, employees were divided into three general categories: domestic servants, apprentices, and agricultural laborers (Wood 1886, 3). The development of proletarian occupations, such as coal mining and factory labor, largely occurred through extension of the conventions governing agricultural labor. The most noteworthy feature of these labor contracts is that they were quite long term, with the shortest

1 There is an extensive literature on market failure in credit markets, yet most of it treats the restrictions on contracting over future labor as given, rather than as a source of this failure (e.g. Besley 1995, Armendáriz & Morduch, 2005, McHugh, Magli, Biosca & Donaldson 2025).

2 Although see Sterk (1993) and Wonnell (1993).

contractual term being for a year. (Apprenticeship contracts were much longer, with the standard term being seven years [Steinfeld 2001, 25; Wonnell 1993, 116].) This made sense in the context of agricultural labor, where a “farm hand” would normally be hired for an entire seasonal cycle of production. Since the intensity of the work varied considerably over the course of the year, farmers would want to protect themselves from the threat of laborers quitting (or demanding higher wages) at harvest time, when the workload was highest, just as workers would want to protect themselves from the threat of dismissal during winter months, when there was relatively little to do. So unlike the contemporary world, in which the hour serves as the basic unit in terms of which labor is purchased and wages are calculated, at the beginning of the 19th century the standard unit was the year.

Because the one year basic term served the important function of protecting both master and servant from the opportunistic behavior of the other, breach of contract in this domain was judged quite harshly. Most importantly, failures of performance by workers were subject to criminal sanction, with many being imprisoned and sentenced to hard labor, sometimes for offenses as slight as missing a day of work or disobedience in the workplace (Steinfeld 2001, 48). The 1823 Master and Servant Act in England prescribed prison terms of up to three months for such breaches of contract. Even though courts refrained from imposing specific performance, the sanctions imposed often amounted to the same, since they would often impose additional sanctions on workers who failed to return to work at the end of their prison term, in the event that their contracts extended further than three months. This was significant, because contracts for terms of five years or longer were not uncommon.

Proletarianization put pressure on these practices, in part because the contracts became overly inimical to the interests of workers. This was most obvious in cases where workers were paid piece rates, which were pervasive in 19th century manufacturing and even mining. This created an enormous asymmetry in these contracts, because there was no guaranteed wage, and in many cases employers were not even obliged to provide work, yet workers were prevented from seeking employment elsewhere. Furthermore, employers themselves increasingly wanted to be able to lay off workers on short notice, and so wrote contracts that were highly asymmetric, constraining workers but not employers. British courts began refusing to enforce such contracts, on the grounds that they lacked mutuality, or even consideration, in their terms (Steinfeld 2001 106-112). Long-term contracts also came to be seen as an interference with the competitiveness of labor markets (Steinfeld 2001, 62). And finally, under the system of criminal penalties for employee absence, strikes were straightforwardly illegal. Yet as the union movement became more powerful, it became increasingly infeasible to imprison large segments of the working class for engaging in work stoppages.

Between the economic interests at stake, along with the reticence of British courts to enforce many of the conventions of “master and servant” relations, many employers simply began to offer shorter-term contracts. By the mid-19th century, for example, so-called “minute contracts,” which amounted to employment at will, predominated in Scottish coal mines, while in English mines fortnightly or monthly contracts became standard (Steinfeld 2001, 168). Many of these practices received statutory reinforcement by the Employers and Workmen Act of 1875, which despite failing to eliminate criminal sanctions for breach of contract entirely, created a sufficiently elaborate process for the imposition of such sanctions that it gave rise to de facto abolition (Steinfeld 2001, 217). This created the conditions of modern free wage labor, which as Robert Steinfeld defines it, “is generally taken to mean labor working under agreements that are determinable at will or that are not

determinable at will but in which the legal system prohibits certain remedies for breach, particularly criminal sanctions and specific performance” (Steinfeld 2001, 167).

It is interesting to note that these developments, which evolved quite gradually in Britain, occurred much more rapidly in the United States, because of the desire on the part of the white working class to draw a clear distinction between its own condition and that of African slaves. For example, indentured servitude was a common arrangement for the importation of immigrant labor from both Europe and Asia in the 18th century – workers would accept passage to North America, thus incurring a debt, in return for a commitment to repay it by working for the lender for a period of several years. Because these “indentures” could often be resold (and thus the worker’s contractual obligation transferred) the distinction between slaves and indentured laborers could be quite ambiguous, and their working conditions were sometimes indistinguishable. (In non-slave states, it was still common for traders to go down to the docks to purchase recently-disembarked servants arriving from Europe [(Steinfeld 1993, 88-90]. Masters were also entitled to impose corporal punishment on their servants, although with some legal restrictions on severity [Galenson 1984, 8].) In part because of this, the import of indentured labor became increasingly stigmatized and was effectively abolished by the 1830s. Furthermore, even before the abolition of slavery in the U.S. itself, repugnance in northern states toward the institution led courts to be quite proactive in their refusal to enforce anything resembling forced labor upon members of the working classes. And finally, the 13th amendment to the U.S. Constitution, adopted in 1865, prohibited both “slavery” and “involuntary servitude,” with the latter phrase usually being interpreted quite broadly to include prohibition of any significant compulsion of workers to fulfill any long-term contractual labor obligations, including debt peonage (Soifer 2012). (This was motivated, in part, by the desire to stop former slave-owners from reproducing major features of the institution through long-term contracting with former slaves possessed of few outside options.)

The phrase “involuntary servitude” is often glossed as a prohibition on “slavery contracts,” although it is not difficult to see the problem generated by these phrases. All contracts create a form of servitude, in the sense that parties restrict their own future freedom in some mutually agreed upon way. Labor contracts are not unique in this regard. The mere fact that a contracting party, after having received agreed-upon benefits, is reluctant to maintain his side of the bargain, is obviously not sufficient to render that performance involuntary. Thus an obligation to perform a particular, contractually agreed-upon task does not become either “involuntary” or “servitude” from the mere fact that the worker would rather not do it at the time of performance. One can see this difficulty in the well-known discussion of “contracts of slavery” in John Stuart Mill’s *On Liberty* (1978 [1859]). He begins by declaring that such contracts should not be considered binding upon the individual, because “it is not freedom, to be able to alienate his freedom.” This is obviously not a satisfactory formulation. Thus Mill winds up scaling back the objection, claiming only that contracts cannot be irrevocable, and should be for a “limited duration of time” (without specifying how long). He does not appear to have taken issue with the five or seven year labor contracts that persisted in certain trades during his time.

The basic structure of interests in a labor contract is that employers would like it to be easy to fire workers, but difficult for them to quit, whereas employees would like it to be easy to quit, but difficult to be fired. The original rationale for the imposition of sanctions against workers, but not employers, for breach of contract, is that workers were more likely to be insensitive to financial

penalties. Thus with the development of “free labor,” or what might better be described as a “right to quit,” considerable asymmetry arose in labor contracts.³ Although workers are still subject to some financial penalties for quitting in some jurisdictions, these tend to be quit modest. The requirement to give two week’s notice of resignation has become largely a convention. Although in principle employers could pursue workers for damages, in practice courts have not been very receptive to such suits, and even when they are, juries have been exceedingly unsympathetic. As a result, with certain exceptions involving individuals with unique talents, such as athletes and recording artists, workers are free to exit most labor relationships at will.⁴ The prohibition on involuntary servitude has become roughly equivalent to the requirement that labor be undertaken voluntarily *at the time of its performance* (Steinfeld 1991, 147).

These legal development are often portrayed as a victory for workers, on the grounds that they make it easy for workers to quit their jobs. It is certainly a reversal of the 19th century pattern, in which contracts clearly favored the interests of employers. There is, however, a downside, which is that the very ease with which workers can exit employment relations rules out certain commitment strategies. Stylizing somewhat, one might say that workers wind up being limited to contracts in which their performance comes first. They are able to make credible commitments to contracts that have the structure: “I’ll do this for you, then you do that for me,” but they have enormous difficulty persuading others to accept contracts with the structure “you do this for me, then I’ll do that for you,” because the latter obligation will not be enforced by the courts when it takes the form of a labor performance. This has the potential to generate a familiar set of collective action problems (Rose 2011, 18-38). By guaranteeing workers the right to act opportunistically, the free labor arrangement prevents workers from entering into cooperative arrangements that could be undermined by their own opportunism (see Figure 1). Some have claimed, on these grounds, that “free” labor is not really free, but is better described as a type of “contractual disempowerment” of workers, since the power to make binding commitments over the disposition of their own labor is taken away from them. Whether or not this is good or bad on balance, the one thing that should be clear is that the institutional arrangements associated with “free labor” were created through the imposition of constraints on contracting, not from their removal.

3 Wonnell describes free labor as “the right to break one’s labor contract without meaningful penalty.” (1993, 126).

4 In a series of high-profile cases, U.S. courts have refused to enforce contracts binding television personalities and fashion models (Conrad 1987; Wonnell 1993, pp. 114-115).

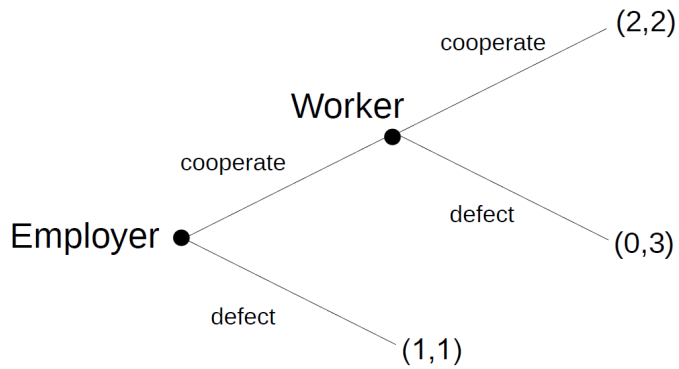


Figure 1. Opportunism prevents cooperation

Finally, a brief note on terminology: these constraints on contracting over labor are sometimes described in terms of the inalienability of human capital (Sterk 1993, Ellermanb 2024).⁵ In the background is the distinction between a stock and a flow in the understanding of financial capital. Having \$100 in a savings account constitutes ownership of a stock of capital. Investing this capital stock at a rate of 5% generates a payment stream of \$5 per year, which constitutes a flow of income. At a sufficiently high level of abstraction the two are equivalent: at that interest rate, owning \$100 amounts to having a claim on a flow of income equal to \$5 per year, and vice versa. The concept of human capital is based on an analogy to this relationship, where the wages that can be earned from working constitute the flow of income, and the “human capital” constitutes the (hypothetical) stock sufficient to generate that flow. So anything that increases one’s future wage rate can be seen as increasing one’s present stock of human capital. Similarly, legal constraints that prohibit contracting over one’s future labor can be described as restrictions on the present disposition of one’s human capital. For the most part, the effect of the prohibition on voluntary servitude is to establish a type of individual sovereignty over one’s human capital stock, so that no other person can make any legally enforceable claim on it. Most importantly, individuals enjoy broad protection against the claims of those who may have contributed to its development (e.g. creditors, employers, spouses, parents).⁶ The flip side of the coin is that individuals are unable to make certain credible commitments to these same persons, which may make the latter reluctant to undertake such contributions. Thus the protection against claims is not an unqualified benefit; it also has the potential to generate collective action problems.

2. Education

Anyone who has spent time teaching at an American university will have no doubt encountered students who are members of the U.S. military’s Reserve Officer Training Corps (ROTC) – they are particularly conspicuous on the days that they are obliged to wear full dress uniform. The program pays a student’s college tuition and fees in return for a post-graduation service obligation of eight years in a

⁵ Human capital is also sometimes described as a “nontraded asset,” e.g. Zeldes (1989, 311).

⁶ The inalienability of human capital becomes a significant issue in family law, especially when it comes to the division of marital assets in divorce (Sterk 1993, 433-444). These issues are unfortunately outside the scope of the current paper.

selected branch of the U.S. military. Many other countries offer comparable programs; what is striking about these programs is not that they exist, but that they are offered only by the military. In principle, there is no reason that a private employer might not want to sponsor a similar program, picking out talented high school students and sending them to college, in return for a commitment to work at the firm for several years post-graduation. The difference, of course, is that private corporations are not in a position to enforce such service obligations, and no court would be willing to impose them. Indeed, it is noteworthy that not even civilian branches of the state offer such programs, only the military. The explanation, presumably, is that the military already maintains systems to enforce compulsory service (e.g. against desertion) and courts accept the legitimacy of mandatory military service (e.g. conscription).

Given the general human tendency toward improvident choice, not to mention optimism bias, there can be little doubt that many people have been rescued from serious error through this prohibition on contracting. Committing oneself to years of service in the relatively distant future may seem like a slight cost at the time the commitment is undertaken, especially to a young person, and yet many would no doubt come to greatly regret the choice when it came time to fulfill it. It is nevertheless clear that a prohibition on such commitments is going to have very significant effects on labor markets. There are many situations in which workers will have an incentive to act opportunistically toward their employers, and unless they are able to provide some binding commitment to refrain from doing so, employers will simply refuse to enter into the relevant contractual relations. Certain employment relations, for example, involve an early loss for the employer, with the possibility that this will be compensated for over the longer term. In other cases, the employer may expect to suffer a loss from most employees, but with the possibility that this will be compensated for by one or two highly successful ones. All of these arrangements will be much more difficult to arrange without precommitment on the part of workers

Consider, for example, the case of individuals who may possess very rare and difficult-to-discern talents, as is the case with many athletes, writers, musicians, actors, philosophers, and so forth. Publishing houses, for example, lose money on most books written by first-time authors, but use the proceeds from the occasional successful one to defray the losses incurred by the others. If these firms could tell in advance which authors would be successful, they would of course publish only those, but public taste is difficult to anticipate and so the truth is usually revealed only after publication. Thus firms that engage in “talent scouting” often try to sign their prospects to exclusive, long-term contracts (which may or may not be enforced by courts). Prospects who turn out to be successful, especially in winner-take all markets with disproportionate rewards, have an obvious incentive to move to another firm (which will be willing to pay more for them as known prospects). If they cannot be constrained from doing so, there is likely to be an inefficiently low level of talent scouting by firms, unless some alternative arrangement can be devised to cross-subsidize between unsuccessful and the successful. This generates certain well-known exceptions to free labor constraints, such as athletes on multi-year contracts or musicians with exclusive recording contracts.

The more standard circumstance in which employers would value the assurances of a long-term contract involves work relations where a certain amount of costly or time-consuming training is required before employees are able to make a productive contribution to the firm (see Figure 2). The arrangement only becomes break-even in the long term, when the employee can use the surplus product

generated by the highly trained worker to defray the losses incurred during the period of training. Once trained, however, the worker has an obvious incentive to defect, by seeking employment at another firm, which will be willing to pay higher wages because it is not trying to recoup previous losses. Unless workers are able to commit to refraining from this sort of opportunism, employers will not be willing to pay for their training, and so there will be an inefficiently low level of investment in human capital formation (Meese 2022). Constraints on labor contracting, however, prevent workers from making such commitments, by guaranteeing them a right to quit at any time with minimal penalty.

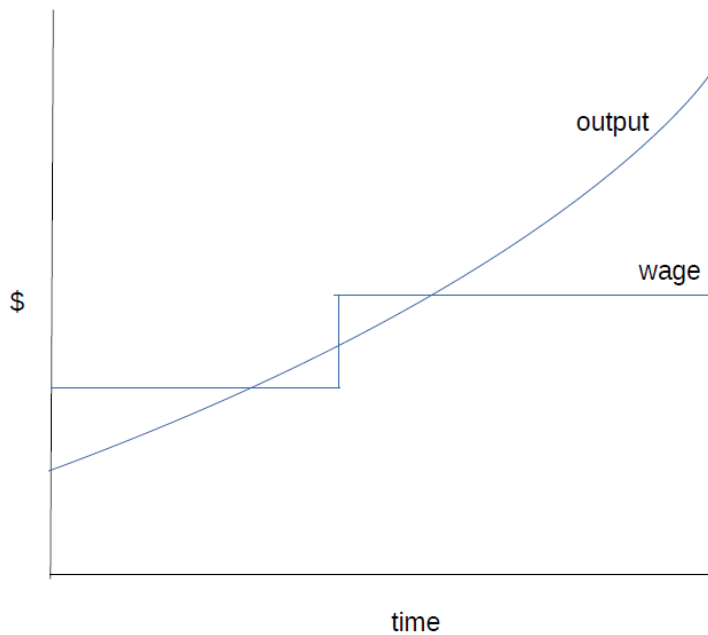


Figure 2. Employee output rising over time

The standard seven-year apprenticeship contract, which was a central feature of the skilled trades for centuries in Europe, resolved this problem in a straightforward manner, by giving the employer ample time to recoup the losses incurred during the training stage. Under a free labor arrangement, on the other hand, employers and employees may find themselves in an inefficient equilibrium, where both could benefit from training, but where employers are not willing to provide it, because workers are unable to assure them that they will not act opportunistically, undergoing the training and then quitting. Note that the severity of the problem will depend on the attractiveness to other employers of the skills acquired, which will depend at least in part on their generality. There is a difference between training an employee to navigate an inventory system that is specific to the employer and training an employee to use a generic software package. Since the former is of little value to other employers, it is unlikely to raise the worker's expected wage elsewhere, and so there will be little incentive for the worker to act opportunistically, which in turn makes the employer more likely to provide the training. With general skills, on the other hand, the incentive to defect is much greater, and so employers are far less likely to be willing to finance it.⁷

⁷ I am simplifying a complex literature here. Becker (1993, 34-36) argued that high-generality training will be provided by employers, because employees will accept a much lower wage, knowing that the training increased their outside

It is worth noting that the resulting shortfall in education spending is contrary to the interests of both workers and employers, giving both parties an incentive to find ways of working around the constraints on contracting that generate the problem. Perhaps the most common contractual work-around is the non-compete agreement. Although workers cannot commit themselves to working for a particular employer for a period of years, then can commit themselves to not working for that employer's direct competitors (and courts have been more-or-less willing to enforce such agreements). This offers a partial solution, with respect to training at an intermediate level of generality, but of course it does nothing to prevent workers from leaving the sector, or accepting employment at a firm that is not a direct competitor. Another common work-around involves intrafirm seniority systems, whereby worker salaries increase over time, regardless of productivity, but rather as a reward for staying at the firm (Blair 1999). Such systems are however vulnerable to employer opportunism, especially if there is a change in ownership, which may result in the firing of older "unproductive" employees. Equity-based compensation schemes such stock options are also used to reward employees for remaining at the firm.

The other option, of course, is for workers to pay for their own training, which is what they do with respect to most general skills. Colleges and universities are full of students acquiring not just job skills, but also more general competences in mathematics, reasoning, languages, and writing ability, which greatly enhance their future productivity. Practically none of this is directly funded by employers, although a great deal of the cost is subsequently transferred to them, in the form of the wage premium enjoyed by graduates. The central problem, however, is that students generally lack access to credit to pay for this training (for reasons that will be discussed in the following section). As a result, a purely private exchange system is likely to suffer significant deadweight losses, in the form of workers whose productivity could be significantly increased through training, but where neither party is willing or able to finance that training.

One important consequence of this market failure has been significant public intervention in the sector. The state directly finances human capital development by heavily subsidizing education focused on the development of the most general skills. With respect to "applied" education and job-relevant skills, states normally shift more of the burden onto students, but seek to overcome limitations of the credit market by offering student loans and bursaries, often with income-contingent repayment terms. And finally, with respect to workers who are beyond the period of formal education, many states offer a variety of active labor market policies aimed in particular at providing retraining for workers in response to changes in the skills that are needed in the workforce. All of this can be understood as a response to market failure. In principle, workers and employers should be able to work out private arrangements to finance beneficial forms of human capital development. It is only because of the constraints on long-term contracting over labor that they are unable to do so, creating the opportunity for the state to intervene in efficiency-enhancing ways.

3. Investment capital

Hernando de Soto's book *The Mystery of Capital* (2003) attracted considerable attention, when it was published in 2000, for suggesting that a major problem in many underdeveloped countries was

options on the labor market. There are clearly some examples of employees accepting very low wages in return for training benefits, with the most obvious being unpaid internships. The existence of minimum wage legislation obviously constrains such practices in ordinary labor markets.

not that people were poor, but that too many of them lacked legal title to their property.⁸ All of the houses in the favelas, barrios and slums that surround urban areas *belong to someone*, it is just that the norms governing these ownership systems are informal, because technically none of the occupants have legal title to the land on which their houses are built. And yet these informal systems often sustain a thriving local economy. The problem is that these economic systems cannot expand beyond the local level, because the lack of formal title prevents the owners of these assets from pledging them as collateral to obtain investment capital. He refers to their wealth as “dead capital,” because it cannot be used to further expand production. Economic development is stalled, he argues, since “most people cannot participate in an expanded market because they do not have access to a legal property rights system that represents their assets in a manner than makes them widely transferable and fungible.” (2001, 223).

The situation diagnosed by de Soto, with respect to informal real property, is structurally quite similar to that of human capital possessed by workers. Because it cannot be alienated, human capital cannot be pledged as collateral, which in turn limits the access that workers have to credit markets. Prohibition of “debt bondage” (or peonage) directly rules out compelling labor to repay debt, which is further strengthened by modern provisions for personal bankruptcy. This makes human capital another form of “dead capital” in de Soto’s sense of the term.⁹ The restriction has a number of effects on the ability of workers to smooth consumption over the course of their lifetime (which I shall discuss in the following section). Here I would like to focus on the way that constraints on the alienability of human capital limit access to investment capital. This has several major effects on the economy, perhaps the most important of which involves limitations on the ability of workers to exercise ownership over firms. Specifically, it creates what is known as the “capital conundrum” for worker cooperatives (Chieh & Weber 2017).

When it comes to the provision of credit, it is important to observe that the risk of default can easily eliminate any potential gains from the transaction for the creditor, because of the enormous asymmetry between the potential loss and the potential gain. Lending \$100 to someone at an annual interest rate of 5% generates the potential for a gain of \$5 at the end of the year, but a potential loss of \$100 if the borrower fails to repay the principal. This is a structural feature of all lending – the downside is much greater than the upside. In the example given, it means that even a 1% risk of default eliminates \$1 of the expected gain (or 1% off the effective interest rate). As a result, even a very slight default risk is enough to obviate any gains from the transaction. This makes most lenders unwilling to lend even relatively small sums unless the borrower provides some form of collateral, which the lender becomes legally entitled to seize in the event of non-payment (of either interest or principal).

There are two general sources of collateral. In the first type of case, the owner of some valuable good, who does not want to sell it, uses it to obtain a loan, by granting the lender title to it in the event of non-payment. A traditional pawn shop, for example, allows individuals to take ordinary items of personal property (such as jewellery) and use them as security to obtain small loans. In the second type of case, the loan will be earmarked for the purchase of a specific good, with the good that is purchased

8 For a measured evaluation of de Soto’s conclusions, see Woodruff (2001).

9 Frank Knight at various points expressed the same point by observing that workers are unable to “capitalize” their labor. He observed, somewhat obscurely, that “it is one of the defects of our civilization that mechanism has not been invented to enable human ability to hypothecate its productive power in procuring resources to make it effective under its own direction and responsibility” (Knight 1921, 350). For discussion see Ellerman (2024, 10-11).

itself serving as collateral for the loan. The mortgage loan used to purchase a home is the best-known example of the latter. In both cases, the interest rate charged will reflect, not just the risk posed by the particular borrower, but also the quality and security of the collateral. Automobile loans, for example, have become much more widely available as the resale value of cars has improved, although the interest rates charged are much higher than for mortgages, because automobiles depreciate more quickly than houses (and almost never appreciate).¹⁰

Constraints on the alienability of human capital impose significant limitations on its use as collateral of the first type. The most immediate consequence is that most workers are not able to obtain credit commensurate to their ability to repay, except in the case of home mortgages and automobile loans. (Note that homes can also be used as type one collateral, to finance consumer spending, in which case the loan is usually known as a home equity line of credit.) Beyond this, workers are able to access only relatively small unsecured consumer loans, usually in the form of credit card debt, at a high rate of interest. Unpaid creditors are able to secure some repayment, in cases of default, through court-ordered wage garnishment, but garnishment is stayed in the case of consumer bankruptcy. And yet the fact that mortgage foreclosure rates are quite low (less than 0.25%), shows that most U.S. workers have the ability to repay relatively large loans (Statista 2025). They are able to access only a small fraction of these amounts in consumer credit markets, because they are unable to provide adequate security.

One can see here the “missing market” – many potential borrowers have future earnings adequate to repay a loan, but are unable to credibly commit their future earnings to repayment (which is equivalent to saying that they cannot use their human capital as collateral), and so lenders are unwilling to lend to them. Indeed, the various experiments with subprime lending, including securitization of consumer loan portfolios, were based on the conviction that large segments of the public were, and continue to be, underserved by traditional bank credit. There have also been discussions, following a suggestion made by Milton Friedman (1955, 138), that equity investors might be more willing to lend against future labor income, and so workers should be able to sell shares in their own future earnings. The hope is that the potential for windfall gains from earning a percentage of the worker’s future income would mitigate the downside risk of non-payment, although many economists remain skeptical of these schemes, based on the expectation that adverse selection in the market for labor shares would undermine the expected benefits (Herbst & Hendren 2024). These initiatives, however, all focus on reducing risk on the lender side, or else attracting a more risk-tolerant class of creditors, rather than providing greater security on the borrower side. (A crucial question, often left unaddressed by proponents of these schemes, is whether these obligations would be discharged in bankruptcy [e.g. Bieber & Brouwer].) Thus there remains an important market failure with respect to the availability of credit for workers, and no obvious way of contracting around the constraints that lead to it.¹¹

Apart from its direct effect on workers, a major consequence of this market failure is the downstream effect it has on the governance of firms. Since Paul Samuelson observed, back in 1957,

10 This has generated a significant improvement in the lives of many working Americans, many of whom require an automobile in order to travel to work. The need for an automobile historically created a “poverty trap” that was described as a Catch-22: you need a car to get a job, but without a job you can’t afford a car. The problem, of course, would not have arisen if workers had been able to borrow against their future earnings to finance the automobile purchase. The problem was ameliorated through correction of market failure in the used car market, as well as technical improvements in mechanical reliability, which made it easier to borrow against the automobile itself.

11 Idea of legislating a right to credit. Underwritten by the state. Might as well just provide.

that at a sufficiently high level of abstraction it is a matter of indifference whether capital hires labor or labor hires capital, there has been a puzzle over why the ownership of firms exhibits such a strong asymmetry between the two factors of production. In most modern capitalist economies, over 90% of firms are owned by the providers of capital, while less than 10% of firms are cooperatives. This statistic itself is potentially misleading, because of these cooperatives, only about 1% are worker cooperatives (Deller, Hoyt, Hueth & Sundaram-Stukel 2009). So even just focusing on non-capitalist firms, worker ownership is an extremely uncommon arrangement. (Instead of asking why capitalists are more likely to own the firm than workers, one might just as well ask why *customers* are so much more likely to own the firm than workers.) There have been many explanations proposed for this, with perhaps the most widely accepted being that worker-owned firms are constrained in their access to credit by their inability to deploy the input provided by their owners as collateral.

When approaching this question, it is important to avoid a fairly common fallacy, which involves thinking that investors own corporations because they are rich, while workers are excluded from owning them because they are poor. In reality, investors often do not use their personal wealth to purchase shares.¹² Acquisition of large firms almost always involves significant amounts of credit. In a leveraged buyout, for example, a company uses its own stock as collateral to obtain credit, which it then uses to purchase the firm. Most private equity acquisitions are similarly leveraged. If the firm is profitable, and this is reflected accurately in the valuation, then the flow of income generated by the firm should be sufficient to service the loan. This means that workers should also be able to buy the firm, if they had access to credit. The problem is not that they are poor, it is that their primary input to the firm cannot serve as collateral, because of the restrictions on contracting over labor.

It is important to recognize, in this context, that when a limited liability corporation acquires a bank loan, it is not using the personal wealth of investors as collateral, but only the equity that they have supplied to the firm. The best way to conceptualize the contribution of shareholders is to compare them to bondholders. A person who purchases a corporate bond is essentially lending money to the firm at a contractually specified interest rate, with a fixed repayment date. A person who purchases a newly minted share is also lending money to the firm, but in this case without a specified interest rate or fixed repayment date. Instead, the shareholder acquires a democratic say in firm governance, and the firm gets to decide what periodic payments to make (in the form of dividends) and when to repay (in the form of a stock buyback). Structurally, therefore, shareholders are lenders to the firm, but because they supply capital on such easy terms – specifically, without requiring any commitment on the part of the firm to repayment – this equity capital can be used as collateral to secure additional loans (because it can be seized by creditors).

A similar financing mechanism can be used by cooperatives as well. If the constituency exercising ownership is willing to supply its input on easy terms (as is normally the case in cooperatives), the value generated can in principle be used to collateralize a loan. Several interesting examples of this can be found among firms that engage in renewable energy generation, which are often organized as customer cooperatives (Toronto Renewable Energy Cooperative, 2025). The Toronto Windshare Co-operative, for example, is a customer cooperative, which raised funds through an “initial public offering,” in which electricity consumers were invited to precommit to purchasing their

12 Furthermore, the reason that an investment is required in order to obtain an ownership share is because investors form the ownership group. In a consumer cooperative it is often possible to become a member, and hence an owner, without making an investment, but simply by purchasing something from the firm.

electricity from the firm. The long-term contracts that they signed were used as collateral to obtain a bank loan, which was then used to finance construction of the wind turbine that subsequently supplied the electricity. This illustrates an important point, which is that collateral need not take the form of money. There is economic value in the relations that the firm enjoys with each of its constituencies, and so if it is possible to devise a contract that captures some of that value and makes the claim on it transferable, then it can serve as a form of collateral.

From this perspective, it is easy to see how the constraints on labor contracting make it difficult for worker cooperatives to obtain credit, given that they are unable to pledge their human capital as collateral. While it is perfectly reasonable for a renewable energy cooperative to lock its customers into five-year electricity supply contracts at above-market prices (and some customers were happy to make such commitments), it is not possible for a worker cooperative to lock its employees into five-year work contracts at below-market wages (even if some workers would be willing to make such commitments). As a result, there is no legal impediment to workers simply walking away from a failing cooperative, exercising their right to quit and taking their human capital with them. Indeed, since cooperatives enjoy limited liability in most jurisdictions, there is nothing to stop a failing worker cooperative from taking out a large loan, using it to pay wages, and then declaring bankruptcy when the money runs out – indeed, there are examples of cooperatives doing precisely this (Gunn 1992). As a result, worker cooperatives have very limited access to credit. In some lines of business, they can secure type two collateral, by using the loans to purchase durable goods (such as plant and equipment). They may also be able simply to rent equipment. But failing that, worker cooperatives face a very high cost of capital.

Because of this problem, many worker cooperatives are forced to self-finance, by using retained earnings to build up an equity reserve. This creates all sorts of difficulties, because it means that workers are essentially accumulating their savings within the firm (Miller 1989, 83-90). Generally speaking, they will be reluctant to do so unless they are given some claim upon the balances, allowing them to cash out their share when they leave. Lack of individual claims will also make the cooperative reluctant to admit new members, if doing so involves giving away a fraction of the accumulated capital stock of the firm. For these reasons, equity contributions made by members are typically kept in individualized accounts. Apart from blurring the distinction between worker and investor ownership, this can create other difficulties, including liquidity problems in cases where workers leave the firm. Theoretically, the simplest way to address this would be to make new members buy their way into the cooperative, by contributing an equity stake sufficient to cash out a departing member (Dow 1992, 148-9). Again, this would not be a problem if credit markets were perfectly efficient, as a new worker would be able to secure a loan to cover the upfront cost of joining the cooperative, to be repaid from the benefits of working there. But because workers are not able to pledge their own future labor as security, such loans will typically not be forthcoming (or will be at a very high interest rate). As a result, these schemes have the effect of limiting cooperative membership to workers who are relatively wealthy.

There are, of course, other reasons that worker cooperatives fail. Risk aversion and heterogeneity of interest within the ownership class are two other important contributing factors (Hansmann, 1996). Nevertheless, lack of access to capital on competitive terms is an enormous handicap. It is also not one that can easily be corrected, because it is a consequence of the constraints

on contracting that protect labor freedom. Indeed, many contemporary political philosophers believe that the existing right of exit for workers is too costly, and so should be modified to make it even easier for them to quit (Anderson 2017). And yet it is precisely the freedom of workers to exit the firm that results in the prevalence of investor ownership as the preferred governance structure. This arrangement is often felt to be unintuitive, in part because it generates significant agency problems. Although workers are the ones expected to cooperate with one another in often complex systems of team production, those who are charged with directing this system of production owe allegiance to a constituency that has practically no role in the day-to-day operations of the firm. This lends support to the mildly conspiratorial view that because “capitalists” are the ones appropriating the profits under this arrangement *and* they are the ones denying credit to worker cooperatives that there must be some sort of opportunity-hoarding going on. The mistake lies not in the perception that the prevailing state of affairs is unintuitive, but in the failure to recognize that this state of affairs is a distortion caused by a set of constraints on contracting, which for the most part no one has any interest in lifting.

Again, there are many welfare state programs that attempt to alleviate the effects of these market failures. Governments fund a complex array of interventions in credit markets, including small business start-up loans and loan guarantees, as well as home equity assistance programs. States also engage in significant tax expenditures aimed at making individuals more creditworthy. Although thoroughly excoriated in the wake of the 2008 financial crisis, the involvement of U.S. government agencies in promoting subprime lending was intended to overcome some of the limitations of credit markets, which were correctly seen as overly restrictive in their willingness to lend. Several states also have programs that subsidize worker cooperatives, primarily through tax expenditures.¹³ Finally, in developing countries, the provision of “microfinance” is primarily aimed at individuals who seek to make productivity-enhancing investments, but are locked out of traditional credit markets (Armendáriz & Morduch 2005).

4. Consumption and childrearing

Popular perceptions of the welfare state vastly overestimate the amount of redistribution that it undertakes. Graphs showing the distribution of income before and after “taxes and transfers” encourage the impression that a major function of the state is to achieve greater equality, by taking money away from some (through taxation) and giving it to others (through program spending). Nicholas Barr (2001) refers to this as the “Robin Hood” model of the welfare state. If one examines the data more carefully though, it quickly becomes apparent that the most important forms of redistribution undertaken by the welfare state track differences in age, not socioeconomic status (Vanhuysse, Medgyesi and Gal 2021). And if one examines this distribution pattern more carefully, it becomes apparent that most of these transfers are only redistributive in the short term (Falkingham and Hills 1995). Individuals, over the course of their lives, typically wind up financing through their tax payments the bulk of the transfers they receive. What the state is doing, in these age-based transfers, is primarily redistributing income across different periods of their citizens’ own lives. The term normally employed for this is *income smoothing*. Barr (2001) refers to this as the “piggy bank” function of the welfare state, a phrase that is, in one sense clearly apt, but in another sense potentially misleading. It points to the way that the

¹³ Miller argues that special public lending institution should be created to finance cooperatives (1992, 95-96). He does not say how these loans should be collateralized, or if they are not to be, how the moral hazard problems are to be addressed.

welfare state functions as a vehicle for savings, but ignores the role that the state plays as a de facto lender. This in turn obscures the way that these state functions are complementary to the market, responding to market failures affecting the availability of credit.¹⁴

Early efforts by economists to model savings behavior treated it as a type of altruistic conduct, involving individuals foregoing consumption in order to make productive investments, largely to the benefit of future generations (Ramsey, 1928). As life expectancy increased, however, and pension plans became an increasingly important source of investment capital, it became clear that a great deal of savings is not motivated by any eleemosynary concern for future generations, but constitutes an effort on the part of individuals to achieve a relatively stable level of consumption over the course of their lifetimes. This led to the formulation of “life cycle” savings models in the 1950s, most importantly Milton Friedman’s (1954) “permanent income hypothesis,” and Franco Modigliani’s “life cycle hypothesis” (1957). The motivating suggestion was that during relatively long stretches of a typical individual’s life there is a mismatch between that person’s income potential and the desired consumption level. Whereas income typically peaks toward the end of middle age, the ideal consumption level is relatively constant (or perhaps rising slightly) over time. Figure 3 shows a highly stylized representation of this mismatch.

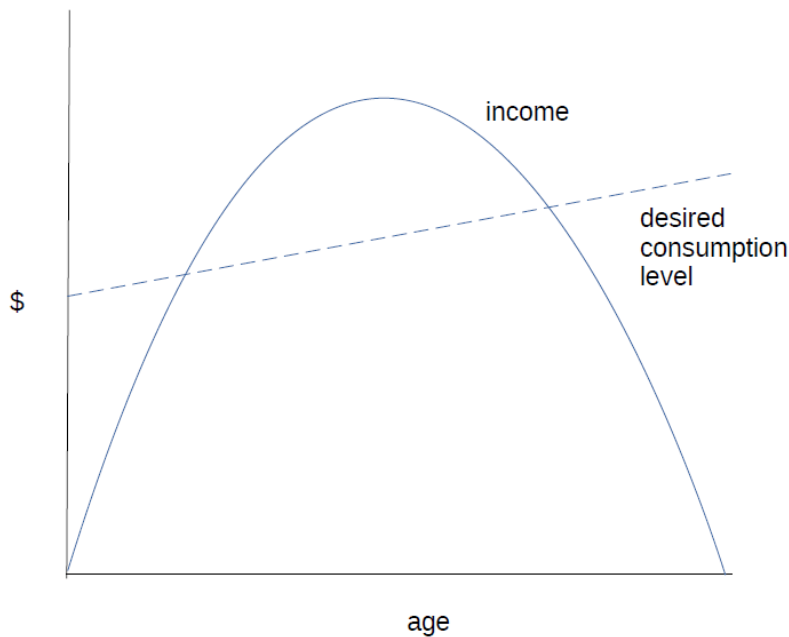


Figure 3. Consumption smoothing over lifetime

¹⁴ Barr (2001) also combines under this label both the insurance functions and the life-cycle transfer functions of the welfare state. Certain types of insurance, such as pensions, and so a large degree health insurance, have a savings-like structure, many other insurance schemes, such as disability or unemployment insurance, are primarily redistributive between persons.

This gives individuals an interest in *consumption smoothing* over time. In the early literature, the primary focus was on how this motivated individual savings.¹⁵ In effect, individuals save in order to shift some fraction of their income forward in time, to finance later consumption (in Figure 3, this involves shifting it to the right). In principle, individuals should also be able to shift income to the left, in order to finance consumption in earlier time periods. This would require credit, but as we have seen, credit can be difficult to obtain. Labor income can be saved, to finance consumption in old age, but it cannot be borrowed against, in order to finance consumption during one's nonage. Workers can push present income into a future period, but they face significant constraints when it comes to using future income to fund the present period. As a result, individuals may be subject to considerable misallocation of income over their lifetimes (in general, to the detriment of their younger selves) (Morduch 1995).

This issue did not receive a great deal of attention in early work, in part because of the widely-shared assumption that the gap between income and consumption on the left-hand side was closed by parents, who can be expected to support their children. This "solution" to the unavailability of credit against future labor income obviously exacerbates inequality, but it creates additional problems in the consumption pattern of adults trying to achieve lifetime income smoothing. In a sense, it merely pushes the consumption-smoothing problem off the child onto the parents. In particular, childcare expenses become a serious challenge for single parents and dual-income families. This has been further exacerbated by the development of high-intensity parenting practices, which demand significant spending on extracurricular activities. This leaves individuals facing a spike in their desired consumption level in early middle age. A stylized but slightly more realistic representation of the ideal consumption level would look more like Figure 4.

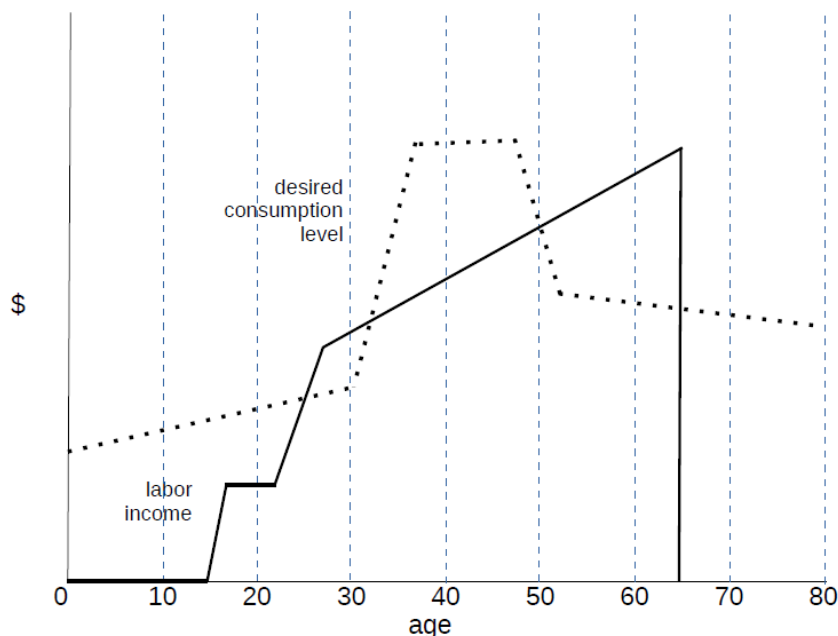


Figure 4. Slightly more realistic lifetime consumption/income pattern

15 The issue arose in the context of a rather polemical debate over Keynesian models, which had typically assumed that savings would be a fraction of income, and so would be subject to cyclical variation. Because the debate arose in this context, the issue of savings received a great deal more attention than that of credit.

One can see here the familiar “crunch” that many individuals encounter, during their early twenties, when their income first exceeds their consumption needs. There are, at this time, strong reasons to save – keeping in mind that the major way that later-life consumption is sustained is through home ownership, which allows the individual to enjoy the flow of services from owner-occupied housing (untaxed in most jurisdictions). This creates pressure to buy a house as early as possible. At the same time, most people *should* be saving to support expenditures on children (which they often do for later-life expenditures, in the form of a college or educational savings fund). Of course, if one could borrow against the child’s future income this would not be necessary.¹⁶ It sounds somewhat absurd to say that the inability of many struggling parents to afford daycare is due to an underlying failure of credit markets, caused by the prohibition on precommitting the child’s future labor income to repayment. It is, however, an empirically accurate description of the state of affairs. Most people undoubtedly support the prohibition, and so from an all-things-considered perspective are willing to tolerate the market failure. It is important to recognize, however, that it does have serious consequences. Most importantly, it encourages people to defer childbearing, and perhaps also limit the number of children they have. It also contributes to a general pattern of misallocated spending in the lifetime of many consumers, in which “empty nesters” find themselves with an embarrassment of riches, when they pay off their mortgage around the same time that their children graduate from university.

In certain poor countries, income smoothing may be achieved by workers through long-term labor contracting (e.g. so-called “tied-labor” contracts), which level the peaks and troughs of wage fluctuations (and “are often cemented by the provision of consumption credit or homestead by the employer” [Bardhan 1983, 502]). These are precisely the contracts that are prohibited in developed countries by free labor arrangements. There are, of course, still many private sector workarounds to these constraints (along with the limitations they impose on credit markets). Large corporations that offer long-term employment, for example, who have little to fear from employee opportunism, will often offer credit (such as home equity loans) to workers as an employment benefit. Provision of subsidized childcare services performs a similar function. These remedies, however, are available only to a subset of workers, and so large segments of the population rely upon welfare state programs to achieve these outcomes. The most obvious are “family allowance” or “child benefit” programs, which simply make cash payments to the parents of children. Since these payments are often not prorated by income, they may seem quite puzzling from a redistributive standpoint. If one construes the transfers rather as loans, to be paid back through the tax payments made after the child reaches working age, the rationale becomes more plausible.

More generally, most welfare states provide a combination of programs aimed at supporting parents of young children, starting with paid parental leave, transitioning to subsidized daycare, then early childhood education. The generosity of the benefits, the level of subsidy, along with the level of state involvement in the provision of the relevant services, varies enormously from one jurisdiction to the next. Many of these programs are controversial, in part because their effects are so varied, resulting in a variety of different egalitarian justifications being proposed. They are often construed as transfers

¹⁶ In poor countries, of course, this is one of the major factors that encourages child labor. In wealthy countries, by contrast, there are strict legal restrictions on the ability of minors to earn labor income.

to the parents (aimed, for example, at achieving gender equality for working women). The analysis developed here suggests that they should be construed as transfers to the child, given to the parents only in their capacity as guardians or caregivers. The primary objective of these transfers is to achieve consumption smoothing over the lifetime of the individual, given the inadequacy of credit markets.

5. Conclusion

It has often been observed that large segments of the population are inadequately served by credit markets. Several proposals have been made to implement a state-sanctioned “right to credit,” intended to improve access for all “creditworthy” borrowers (Meyer, 2017; Hudon, 2009). More specific proposals have been made to create a public lending facility to originate or guarantee loans to worker cooperatives (Miller 1989). The *prima facie* plausibility of these proposals stems from the gap that exists between the ability to pay of many working class people and the availability of credit on non-usurious terms. The weakness of these proposals stems from a failure to consider the default risk posed by these individuals and to investigate the underlying causes of that risk. The problem is not that lending institutions are routinely turning down creditworthy customers, but that individuals whose primary asset consists in their human capital are not creditworthy, despite their ability to earn income sufficient to service a loan. This is due to the default risk they pose, which is significantly increased by the prohibitions on contracting that form the cornerstone of labor freedom. This is further exacerbated by personal bankruptcy statutes, which typically include provisions for discharge of all privately incurred debt. The market failure that arises in credit markets, and by extension, in education markets, along with the distortions of corporate governance, are a downstream consequence of these morally motivated constraints on contracting.

Since these market failures are largely a consequence of public policy, they could be eliminated through removal of the relevant legal restrictions. Despite appeals from certain libertarians, this is unlikely to occur, simply because there is so little appetite for the reintroduction of compulsory labor, indentured servitude, peonage, or imprisonment of debtors. Indeed, the prevailing sentiment among political philosophers seems to be that even under present conditions workers are insufficiently free to quit their jobs, and so public policy should aim to improve their outside options (Jonker & Rozebloom 2023). In principle, one might explore private sector work-arounds, such as Friedman’s proposal for labor-shares, or perhaps an extension of non-compete agreements. The increasing displacement of traditional employment relations by subcontracting (i.e. “gig” work) might also make new pre-commitment strategies available to workers.

Given these limitations on private solutions, the prevailing system of public sector arrangements seems likely to persist, even though it stops far short of resolving the basic problem. Indeed, because the primary market failure, caused by the direct prohibition on contracting over human capital, remains untouched, policy is focused on remedying the more peripheral market failures that arise as a downstream consequence. These welfare state policies include major interventions in the education system; parental leave, family support and childcare policies; employment law; as well as myriad interventions and subsidies in credit markets. (Several of these policies, it should be noted, are likely to remain public because they are coercive in ways that most societies are not be willing to countenance in purely private relations – with perhaps the more prominent example being that student loans are not dischargeable in bankruptcy.) Because they are so disparate, the unifying thread that connects them has

seldom been articulated, as a result of which the market failure rationale for these programs has been largely overlooked.

References

- Anderson, E. 2017. *Private Government*. Princeton: Princeton University Press.
- Armendáriz, B. & Morduch, J. 2005. *The Economics of Microfinance*. Cambridge, MA: MIT Press.
- Bardhan, P. K. 1983. Labor-Tying in a Poor Agrarian Economy: A Theoretical and Empirical Analysis, *The Quarterly Journal of Economics* 98:3: 501-514.
- Barr, N. 2001. *The Welfare State as Piggy Bank*. Oxford: Oxford University Press.
- Becker, G. S. 1993. *Human Capital*. 3rd edn. Chicago: University of Chicago Press.
- Besley, T. 1994. How Do Market Failures Justify Interventions in Rural Credit Markets? *The World Bank Observer*, 9(1): 27-47.
- Bieber, F. and Brouwer, H. 2025. The Ethics of Selling Shares in Your Future Income. *Politics, Philosophy and Economics* (online first).
- Blair, M. M. 1999. Firm-specific Human Capital and Theories of the Firm. In M. M. Blair and M. J. Roe, eds. *Employees and Corporate Governance*, Washington, DC: Brookings, pp. 58-90.
- Chieh, T. S. and Weber, C. T. eds. 2017. *The Capital Conundrum for Co-operatives*. Brussels: International Co-operative Alliance.
- Conrad, M. 1987. Wolf and Wilhemina: Giving Entertainers a License to Breach Contracts. *Golden Gate University Law Review*, 17(2): 169-196.
- de Soto, H. 2001. *The Mystery of Capital*. London: Black Swan.
- Deller, S., Hoyt, A., Hueth, B., and Sundaram-Stukel, R. 2009. *Research on the Economic Impact of Cooperatives*. Madison: University of Wisconsin Center for Cooperatives.
- Dow, G. K. 2003. *Governing the Firm*. Cambridge: Cambridge University Press.
- Ellerman, D. 2024a. Is ‘Capitalism’ a Misnomer: on Marx’s ‘Capitalism’ and Knight’s ‘Civilization’. *European Journal of the History of Economic Thought* (online): 1-13.
- Ellerman, D. 2024b. The Historical and Modern Arguments Against Contractual Slavery. In M. K. Kapardis, C. Clark, A. Warria and M. Dion, eds. *The Palgrave Handbook on Modern Slavery*. Cham: Palgrave Macmillan, pp. 157-177.
- Falkingham, J. and J. Hills. 1995. Lifetime Incomes and the Welfare State. In J. Falkingham and J. Hills, eds. *The Dynamic of Welfare: The Welfare State and the Life Cycle*. Hemel Hempstead: Prentice Hall, pp. 204-217.
- Friedman, M. 1955. The Role of Government in Education. In Robert Solo, ed. *Economics and the Public Interest*. New Brunswick, NJ: Rutgers University Press, pp. 123-44.
- Friedman, M. 1957. *A Theory of the Consumption Function*. Princeton: Princeton University Press.
- Galenson, D. W. 1984. The Rise and Fall of Indentured Servitude in the Americas: An Economic Analysis. *The Journal of Economic History*, 44(1): 1-26.
- Gunn C. 1992. Plywood Co-operatives in the United States: An Endangered Species. *Economic and Industrial Democracy*, 13(4): 525-534.
- Hansmann, H. 1996. *The Ownership of Enterprise*. Cambridge, MA: Harvard University Press.
- Heath, J. 2011. Three Normative Models of the Welfare State. *Public Reason* 3(2): 13-43.
- Herbst, D. and Hendren, N. 2024. Opportunity Unravveled: Private Information and the Missing Market for Financing Human Capital. *American Economic Review*, 114(7): 2024-2072
- Hudon, M. 2009. Should Access to Credit be a Right? *Journal of Business Ethics*, 84(10): 17-28.
- Jonker, J. D. & G. J. Rozeboom, eds. 2023. *Working as Equals*. Oxford: Oxford University Press.

- Knight, F. H. 1921. *Risk, Uncertainty and Profit*. Boston: Houghton Mifflin.
- Knight, F. H. 1947. *Freedom and Reform*. New York: Harper and Row.
- McHugh, N., Magli, E., Biosca, O., Donaldson, C. 2025. The Pervasiveness and Consequences of Market Failure in UK Sub-Prime Credit Markets and Challenges for Social Policy. *Social Policy and Society*. Online:1-14.
- Meese, A. J. 2022. Don't Abolish Employee Noncompete Agreements. *Wake Forest Law Review*, 57: 631-709.
- Meyer, M. 2017. The Right to Credit. *The Journal of Political Philosophy*, 26(3): 304-326.
- Mill, J. S. 1978 [1859]. *On Liberty*. Indianapolis: Hackett.
- Miller, D. 1989. *Market, State, and Community*. Oxford: Oxford University Press.
- Modigliani, F. & Brumberg, R. 1954. Utility Analysis and the Consumption Function: An Interpretation of Cross-section Data. In K. K. Kurihara, ed. *Post-Keynesian Economics*. New Brunswick: Rutgers University Press, pp. 388-436.
- Morduch, J. 1995. Income Smoothing and Consumption Smoothing. *Journal of Economic Perspectives*, 9: 103-114.
- Polanyi, K. 1957. *The Great Transformation*. Boston: Beacon Press.
- Ramsey, F. 1928. A Mathematical Theory of Savings. *The Economic Journal*, 38(152): 543-559.
- Rose, D. C. 2011. *The Moral Foundations of Economic Behavior*. New York: Oxford University Press.
- Samuelson P. 1957. Wages and Interest: A Modern Dissection of Marxian Economic Models. *American Economic Review*, 47(6): 884-912.
- Soifer, A. 2012. Federal Protection, Paternalism, and the Virtually Forgotten Abolition of Voluntary Peonage. *Columbia Law Review*, 112(7): 1607-1639.
- Statista. 2025. Foreclosure Rate in the United States from 2005 to 2024, <https://www.statista.com/statistics/798766/foreclosure-rate-usa/>
- Steinfeld, R. J. 1991. *The Invention of Free Labor*. Chapel Hill: University of North Carolina Press.
- Steinfeld, R. J. 2001. *Coercion, Contract, and Free Labor in the Nineteenth Century*. Cambridge: Cambridge University Press.
- Sterk, S. E. 1993. Restraints on Alienation of Human Capital, *Virginia Law Review*, 79: 383-460.
- Toronto Renewable Energy Cooperative. 2025. Reports & Research, <https://www.trec.on.ca/reports/>
- Vanhuyse, P., Medgyesi, M. and Gal, R. I. 2021. Welfare States as Lifecycle Redistribution Machines: Decomposing the Roles of Age and Socio-economic Status Shows that European Tax-and-benefit Systems Primarily Redistributive Across Age Groups *PLOS One*, 16(8): e0255760.
- Wonnell, C. T. 1993. The Contractual Disempowerment of Employees. *Stanford Law Review* 46:1: 87-146.
- Wood, H. G. 1886. *Master and Servant*. San Francisco: Bancroft-Whitney.
- Woodruff, C, 2001. Review of de Soto's The Mystery of Capital, *Journal of Economic Literature*, 39: 1215-1223
- Zeldes, S. P. 1989. Consumption and Liquidity Constraints. *Journal of Political Economy*, 97(2): 305-346.