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LEAP LECTURE

American slavery and labour market power

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ABSTRACT

In this article I discuss the micro-economics of American slavery in light of recent research on monopsonistic labour markets. I argue that the defining characteristic of coerced labour, the threat of violence to prevent voluntary quits from a job, can be helpfully understood by contrasting it with free labour markets that are riven with imperfect competition and agency problems. American slavery looks closer to the textbook competitive model of labour markets than does free labour.

1. Introduction

The second chapter of 'Uncle Tom's Cabin' provides an illuminating view of the labour market for enslaved Americans. George, enslaved and hired out to a manufacturing job where he exercises his talents and innovativeness, is removed from the job at the whim of his owner, despite the manufacturer's willingness to bid a higher rate for George's services. The manufacturer was clearly labour constrained; he wanted George's services badly. The plantation owner was not in particular need of George's work in the fields, but was merely offended by the dignity expressed by George's capacities on the job. The owner then sums up antebellum slaveowner sentiment about liberty: 'It's a free country, sir; the man's mine, and I do what I please with him.' The difference in labour supply available to the manufacturer and the plantation owner hints at American slavery's institutional comparative advantage in large-scale agriculture: the highly elastic supply of enslaved labour to the farm.

In this short essay I want to make one, not terribly original, point: giving workers the absolute right to quit their jobs is technically *inefficient* in an otherwise highly commodified economy. When workers can quit, concerns about recruitment, retention, and incentives give employers both the room and the reason to set wages below marginal products, and the resulting distortions imply that turnover and unemployment are both higher than the competitive, market-clearing level. Slaveowners, like all employers, face problems of motivation and retention. But while employers of free labour have but one instrument at their disposal, the wage, with which to manage the many dimensions of the labour contract, a slaveowner has legal, state-sanctioned racial coercion as a flexible instrument with which to compel performance and capture absconding enslaved workers.

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It is *free* labour that is riven with market imperfections that create effective labour scarcity, relative to the highly commercial chattel slavery practised in the Antebellum US South, and so employers with enough capital and expertise to afford it would select into the latter. By *effective labour* I mean the combination of worker effort, retention, hours, and reliability that generates output. When labour is free to walk away, the price of labour must be potentially far away from the market-clearing level in order for firms to provide incentives and manage turnover. The free worker wage must be higher than a worker's outside option, so that the threat of firing is credible, but below the free marginal product because it is profitable to endure higher turnover in exchange for a lower wage. The free labour market will therefore rarely obey the 'law of one price', and wage dispersion and worker misallocation will be rampant. Slave prices do not have to be distorted to manage enslaved people's labour, and quitting is not an option, and so the price of enslaved people is free to equate supply and demand. American slavery is the historical labour market that looks closest to the textbook model of perfect competition, with perfectly elastic supplies of labour facing the farm, and the result is a labour force that is working harder, in worse conditions, and for less, and also one readily deployed to new lands, well-adapted to large-scale rural production, and a ready source of capital and collateral.

This argument, originally due to Fleisig (1976) needs some restating because it is relevant to two recent debates. One is a debate inside economics about the pervasiveness of imperfect competition even in unregulated, 'formally free', and putatively thick labour markets such as would characterize nineteenth-century markets for free workers. The other is a debate between economic historians and historians of capitalism over the 'capitalist' nature of the slave economy and the contributions it made to American economic development.

The argument here qualifies the Domar (1970) thesis that free land would make free labour too expensive to support an aristocracy. Even if workers' outside option is low, the *marginal* cost of free effective labour can be quite high. The worst thing an employer can do to a free worker is fire them, and well-known models of efficiency wages (Bowles and Gintis 1990; Shapiro and Stiglitz 1984) imply that wages be above the outside option of the worker, so a low outside option lowers the costs of deterring shirking, which is the logic of the Acemoglu and Wolitzky (2011) model discussed below. Monopsony also increases the marginal cost of labour above that of the wage, because the employer has to raise the wage for *all* workers in order to keep any one worker from quitting. For both of these reasons, the marginal cost of free labour is therefore potentially greater than the wage, and so free labour appears expensive relative to slave labour even in environments where labour is abundant.

Even Domar noted that under his model, Malthusian pressures would gradually cause forced labour to be abolished everywhere eventually. Yet there are plenty of examples of forced labour in labour abundant economies; the pervasiveness of bonded labour in the high population density Indian subcontinent surely counts as a counterexample. Competition among employers and the need to provide incentives make free labour costly even when the outside option of workers is low.

2. Labour market power and the Fleisig model

Let us begin with monopsony, and we will return to the problem of providing incentives below. Monopsony is not an artefact of company towns or few employers; instead it is a

pervasive feature of the labour market. First, it is hard to find a job while you have a job, because searching for employment takes time. Second, labour markets are also naturally thin, because occupations are pretty differentiated and people have to be able to commute to their employers from their houses, so there are not that many employers offering a suitable occupation in a given local vicinity.

The number of papers showing monopsony in contemporary labour markets in developed countries has grown considerably in recent years, but a survey of the literature can be found in Manning (2011). A number of papers have documented monopsony even in thick and unregulated labour markets. For example, Dube et al. (2018) show that employers on Amazon Mechanical Turk, an online labour market with many employers and workers, have considerable monopsony power. Naidu, Nyarko, and Wang (2016) show that even when restrictions on mobility are lifted for migrant workers in the United Arab Emirates, the labour supply elasticity facing the firm goes from 1 to 2.5, quite far away from, say, 10, which would approximate perfect competition.[1] Some of these papers use shocks to value-added to firms as instruments for wages, and then look at the resulting increases in firm-level employment to recover labour–supply elasticities. Estimates of nineteenth-century monopsony power can be found in Naidu and Yuchtman (2016), who estimate firm-specific labour-supply elasticities of around 2 in the Atack-Bateman sample of manufacturing firms between 1850 and 1880, using product market prices as instruments.

A main source of pervasive monopsony power, in my view, is the basic fact that people have diverse tastes for jobs, with some jobs being particularly good for some workers. But employers can take advantage of this fact, and are willing to pay a wage below marginal productivity, losing some (free) workers to other employers but extracting rents from the ones that stay. The fact that people are attached to their jobs for idiosyncratic personal reasons reveals an important source of welfare for free workers: the ability to leave your employer itself has an option value, because all the complexities of life make different jobs ideal for different people at different times. This is the basic job differentiation view of monopsony, and is widely used in the literature (Card et al. 2016).

The value of any given job depends a lot on social relationships with co-workers and supervisors, as well as how a job meshes with all the non-economic idiosyncrasies people have, such as commute times, tastes/abilities for particular tasks, scheduling, and proximity to childcare and spouses' employment. Employers know they can keep the ones who really want/need the job they are offering, even if they do not know who those workers are, and choose wages accordingly, sacrificing the marginal workers for lowered wages for the ones who stay. Thus employers are too small, and have too much turnover, relative to the 'efficient' level. There is no reason to think these basic properties of work were very different in the nineteenth century.

The job differentiation model of monopsony suggests two non-pecuniary values of free labour that are missed by focusing solely on the wage: the first is the simple role of non-wage benefits, which recent literature has shown plays a large role in determining the value of a job; enslaved workers are allocated harder and worse tasks and are located in more disease-ridden and unpleasant counties (Esposito 2015), separated from families and loved ones, all with no compensating increase in pay. The second is the option value

[1]Technically, perfect competition implies a residual labour elasticity (labour supply elasticity facing the firm) of infinity.

of leaving an employer or location as life circumstances or tastes change. Models of monopsony based on this heterogeneity in tastes for different employers also suggest formulas for welfare that account for the value of the option to leave that we will return to at the end.

Slavery has no monopsony distortion. The enslaved supply of effective labour was much more elastic than free labour, because the use of violence meant that market prices did not have to be distorted to secure retention and provide incentives, and so the market for enslaved people looked much more like a textbook supply and demand equilibrium. The legal and coerced separation of people from their particular attachments to places and people is what it takes to eliminate the fundamental sources of power in the market for labour. In his foundational comparative work on slavery, Patterson (2018) observed that across societies, slavery was a condition of 'social death', a condition of complete ostracism from the rights and standing of non-slave members of societies. Social death was marked by a variety of rituals, from name changes to specific dress codes and bodily markings, that symbolized the slave's abjection and complete dependence on his or her master. In the capitalist labour market context, without the 'social death' inflicted on the enslaved, the marginal cost of labour will be higher than the wage, and so free labour will be, on the margin, more expensive than coerced labour (even if the wage is lower than rental rates for slaves), but worth it for large enterprises and sufficiently skilled entrepreneurs and managers.

Enslaved labour was by no means *cheap* relative to free labour. It was instead *elastic* but *expensive*, with the profits capitalized into the price of the person. For large plantations, the marginal cost of enslaved labour was lower than the marginal cost of free labour, even as the average cost of slaves was far too high for small farms. The cost of labour was high in both North and South, but relatively scalable and location-independent in the latter, while contingent on homesteads and towns in the former. Further, in the production process itself, securely enforced property rights ensured that slave labour was largely immune to concerns of retention and shirking that plagued free labour, particularly in the presence of abundant land. That enslaved workers economize on turnover is obvious, and Hanes (1996) provides evidence that slaves were allocated to sectors (eg domestic work) where turnover was a particular problem for free labour.

The difference in supply elasticity means that slave labour was too expensive for low productivity farmers, who instead went to family labour or the few free agricultural workers. But if you were a highly productive, talented operator of large enterprises, your best bet would be to take out a big loan, purchase a few people on Baronne Street in New Orleans or Duke Street in Alexandria, and move to the new frontier near the Mississippi Delta or Texas Red River, purchase and have your enslaved workforce clear some land, and begin planting big-bolled, slave-shoulder-height cotton, that could be left to grow until the last minute and then harvested in a few weeks. Talented entrepreneurs in the US North entered manufacturing, solving problems of labour scarcity with urban agglomerations and capital (Goldin and Sokoloff 1984). Indeed, one source of labour scarcity for the early Puritan colonies was that they were in a global slave market; enslaved indigenous Pequot taken in wars were not profitably put to local production, but instead sold to much more productive plantations in the Caribbean (Reséndez 2016).

The expensive-but-flexible workforce of coerced Black Americans also explains a variety of features of the slave economy, including its financial sophistication, style of innovation,

and patterns of occupational and geographic allocation of enslaved labour. Heywood Fleisig in his 1976 article suggested that differences in economic structure between Southern and Northern antebellum agriculture could be explained by the monopsonistic *free* labour market. The lack of binding labour constraints explained why the most talented white entrepreneurs of the South entered plantation agriculture, operating farms much larger than any enterprise in the North, unconstrained as they were by labour supply. The summary of the predictions is laid out in Table 1.

Family farms were constrained by the local availability of labour, depending a lot on family labour and what local rural wage labour was available. The inelastic supply of labour facing the free farmer put a damper on both farm size and mobility, because farms could not grow beyond a certain size due to unavailability of labour, and households could not as easily profit from new land. Even manufacturing faced these labour constraints, although obviously urbanization alleviated them somewhat.

Fleisig pointed out that the slave economy was subject to none of these constraints. Instead the slave labour market looked closest to the frictionless, perfectly elastic supply of labour to the firm that Economics 101 teaches. My representation of Fleisig's model in Figure 1 highlights the triangle bounded between the high productivity marginal product curve and the price of slaves as the reason why slaveowners valued their institutions so much: the high, and highly elastic farm demand for slaves in agriculture meant that the costs of labour scarcity were potentially quite high. The source of the elastic demand are the returns to scale of the gang labour system, the ready availability of suitable land and the global market for cotton, all of which make the labour demand curve relatively high and relatively flat. Additional enslaved workers can be added to a plantation without reducing the average productivity of each hand very much, as the gang system could incorporate new workers easily, uncultivated land was abundant and the demand for cotton quite stable. The elastic supply of enslaved people comes from the extensive domestic slave trade (Tadman 1989), ubiquitous slave auctions at every Southern courthouse, as well as the rental market in slave hiring. The high level and elastic nature of labour demand then makes the value of a flexible, elastic source of labour, even at high prices, even higher than the exploitation of an unreliable and limited workforce.

Table 1. Predictions made about slave-free differences if free labour markets exhibit monopsony/labour discipline distortions.

Relative Slave-Free Economic Differences if Free Labour is Effective Labour
Constrained Ratio of agricultural/industrial entrepreneurs higher
Larger agricultural sector relative to industry
Higher mean farm output
Higher mean farm acreage
Higher mean farm capital (including buildings or not)
Lower land/labour, capital/labour, capital/output, worker/owner ratios
Dispersion of agricultural marginal products is lower
Price of labour does not vary with farm scale
Less farm savings invested in technical change
Less innovative activity
Technical change likely to be labour-augmenting rather than labour saving
Effect of higher slave farm productivity increases investment in coercion
Increasing ease of fugitives reduces output
Larger slave farms spend more on fugitives
Slave welfare is lower than free worker welfare, even if observed consumption is equal

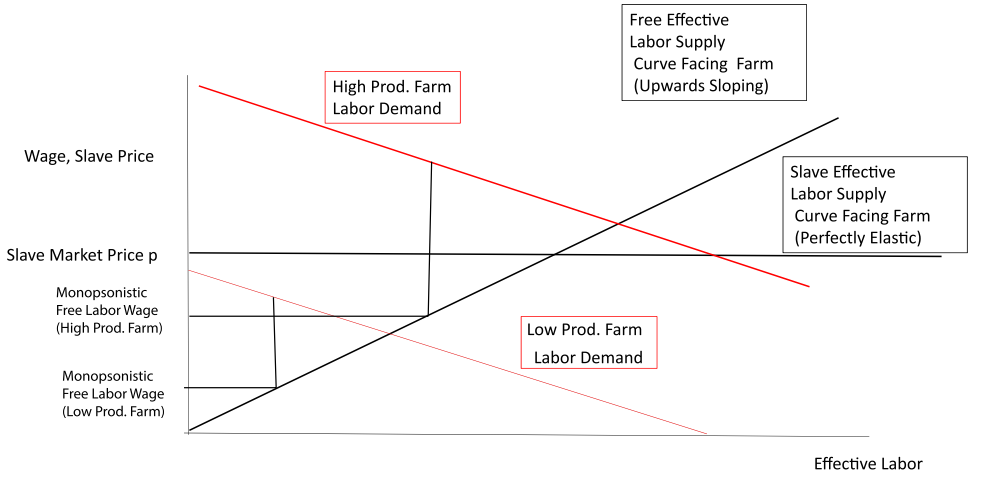

Figure 1. The Fleisig model of relative labor supply under slavery and free labor. High productivity entrepreneurs have higher marginal product of labor than lower ones, and thus will be willing to use slave labor rather than paying the high wage it would require them to use free-labor at the optimal scale. Low productivity producers can't afford slave labor and thus use free labor.

Importantly, entrepreneurs and skilled managers, able to run large enterprises, would select into the slave sector. In the antebellum South, the most precocious businessmen were plantation owners, operating plantations with up to 1000 slaves, with a variety of the most sophisticated organizational tools of their day. Management technologies like accounting books, as Rosenthal (2018) has shown, for example, were adopted by the largest slave plantations. Similarly, while slave plantations would use more total capital, the capital to labour ratio would be much lower than the Northern, non-slave farms. Another prediction of this view is that there should be a farm size-wage correlation in the free agricultural sector, but no correlation between farm size and value of slaves. While both of these are difficult to measure accurately, we can estimate slave values in agriculture using personal property, deducting farm equipment and livestock wealth, and see if this is uncorrelated with slave-holding size. Figure 2 shows this plot, and while admittedly only a proxy for the slave price, we see a flat or even downward sloping relationship, suggesting that the values of enslaved assets did not systematically vary with plantation productivity or size, evidence of a frictionless labour market for enslaved labour. In frictional labour markets, more productive employers want to employ more workers, but monopsony implies that those employers must pay a higher wage, and this implies a monotonically increasing 'firm-size wage' effect that has been widely documented in free labour markets (Brown and Medoff 1989), and its magnitude has been interpreted as the slope of the labour-supply curve facing the firm: a measure of monopsony power (Green, Machin, and Manning 1996). While data on farm-specific agricultural wages are not available for the antebellum period, Figure 3 shows the relationship between manufacturing firm size and wages paid in only *rural* locations, which likely reflects the same labour market constraints that faced free farms.

The theory has implications for the lack of innovation and industrialization in the slave economy. Just like entrepreneurial talent, capital would be more likely to be invested in slave plantations rather than industry. Because of imperfect credit markets, the rate of

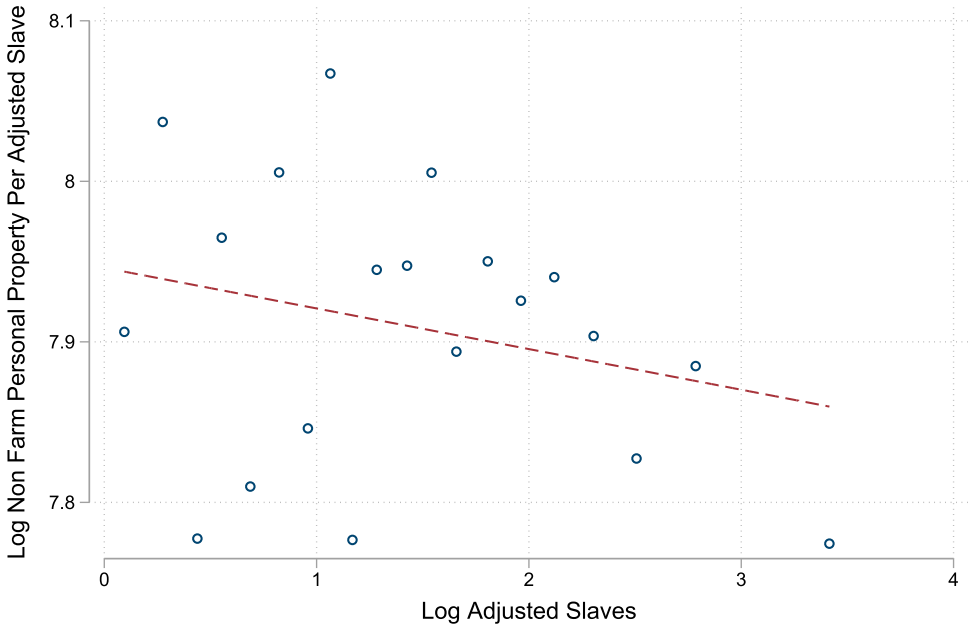

Figure 2. Binned scatterplot showing Gallman-Parker 1860 Southern farm data on personal property, minus estimated livestock wealth, plotted on effective slave holding size, following Fogel and Engerman adjustments for female and child enslaved people. The graph shows a slightly negative (and certainly not positive) relationship between plantation size and average slave value.

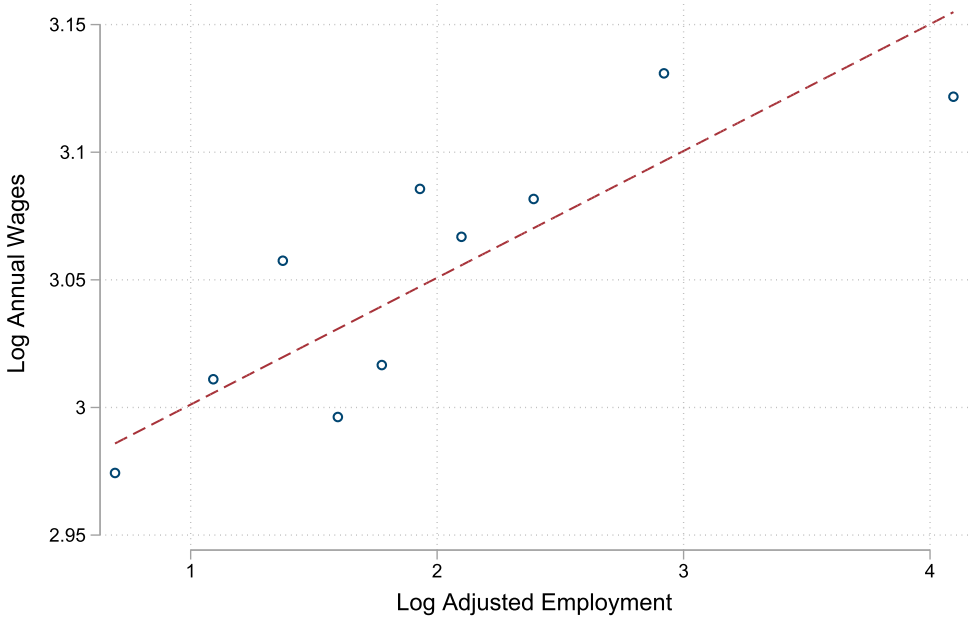

Figure 3. Binned scatterplot showing manufacturing wage plotted on firm employment, from Atack-Bateman 1860 census of manufacturing sample restricted to rural establishments. This graph shows a clear positive relationship between establishment size and wages.

return on investing in a business you directly own and manage is higher than the rate of return you get investing in someone else's business; because slave plantations could be operated at much larger scale (lack of a labour constraint), they could employ much more capital owned by the entrepreneur, and the collateral value of the enslaved workers would further alleviate any credit constraints. Free farms, on the other hand, would have to look for other outlets for their savings, as expanding the farm was not a viable option. One of these outlets would include new technologies and techniques, embodied in farm equipment.

The level of innovation in the slave economy would thus be lower for this lower equipment demand reason, as well as other reasons. The lack of a labour constraint would imply larger and fewer farms, holding population constant. Fleisig argued that the fewer farms meant that the 'size of the market' for innovations would be smaller, but this does not necessarily follow. What does follow is that the market for labour-saving innovations would be smaller relative to the labour-constrained free farm. It even informs what innovation *did* occur in the slave economy. Olmstead and Rhode (2008) have documented the extensive and rapid innovation in cotton bolls that occurred in the antebellum South. These innovations, allowing slaves to increase picking rates almost four-fold over the antebellum period, is clearly labour-augmenting rather than labour-saving, consistent with the lack of binding labour constraints in the South. In contrast, the pattern of innovation in Northern agriculture was towards labour-saving inventions. The Fleisig model shows why technological change for use in Southern plantations took the form of labour augmenting 'Planters hoes', customized for use in tobacco or sugar or rice (Evans 2012), and reinforced with steel rods in the back to keep from being broken (Rockman n.d.), while innovation in the North took the form of labour-saving devices like the McCormick reaper, pulled by draft horses (Habakkuk 1962).

Fleisig's view should be distinguished from Fogel and Engerman's (1995) *Time on the Cross*, the North Star of the economic study of slavery.[2] Fogel and Engerman put the specific difference of slavery in the production function, stressing the ability of plantation owners to assign slaves to a set of tasks that allowed extensive division of labour. Instead Fleisig's view is closer to (and contributes to) Wright (2006), who attributes much of the productivity of American slavery to its functioning as a system of property rights, rather than simply a method of organizing production. The property view of slavery makes the 'chattel principle' front and centre. Rather than focusing solely on how enslaved people were deployed in the work process, Wright and Fleisig invite us to consider the slave system as a whole, where the property rights in people enabled a spatial population allocation that looks radically different from free labour, and a political elite correspondingly more interested in maintaining financialized claims over mobile human assets than building infrastructure or courting manufacturing.

While slavery solved the retention problems with violence rather than incentives, it was never a closed system that worked perfectly. Fugitives were a regular occurrence, although extremely few escaped permanently. Using a dataset of fugitive slave ads, Dittmar and Naidu (2019) show that the average fugitive experience was a short spell, roughly six weeks long, before the enslaved person returned or was caught. Figure 4, from the same data, shows a 'plantation size-reward' effect, where larger plantations were willing

[2]Notwithstanding all of its many shortcomings, ably and thoroughly summarized in Haskell (1975).

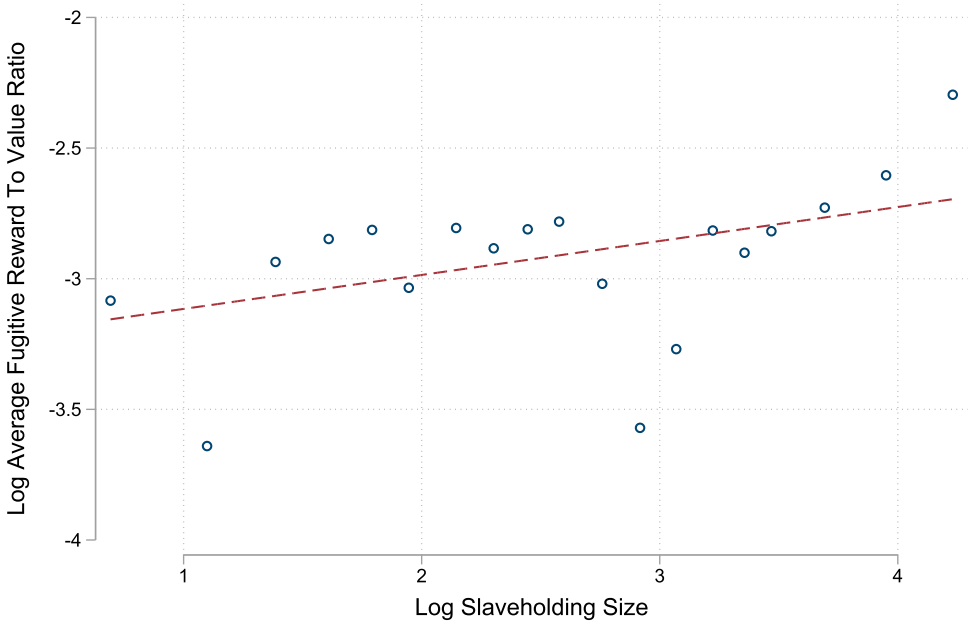

Figure 4. Binned scatterplot of posted ad rewards divided by imputed price of runaway, from Dittmar and Naidu sample between 1855 and 1860 as a function of owner slaveholding size in 1860. Larger plantations posted higher rewards for similarly valued enslaved people.

to pay higher rewards for slaves of the same value; fugitives were the labour-supply constraint facing individual planters, not labour market competition from other planters. Large employers faced an upwards sloping labour supply curve for recapturing fugitives, not for purchasing enslaved people. Nonetheless, these temporary absences were likely a minor cost to a plantation. A further constraint on slaveholder behaviour was the spectre of slave rebellion, but in the US context, these were staggeringly rare, with only three major rebellions[3] over the entire Antebellum period. These two constraints, running away and rebellion, were the operative limits of slaveholder exploitation, but did not bind very tightly.

As some empirical support for the proposition that slavery was indeed more 'allocatively X-efficient'[4] than free labour, we can calculate the extent of misallocation of slave labour relative to free labour using the Gallman-Parker data from the Census of Agriculture, linked to slaveholder data. Under the assumption of Cobb-Douglas production functions, we can estimate the marginal product of labour[5] on both free and slave farms in the US in 1860, shown in Figure 5. In a textbook competitive labour market, recall that there is one price of labour, and each employer buys labour until the marginal product of labour is equal to that price. A labour market that looks closer to competitive should have not just a higher estimated marginal product, but also a lower dispersion in marginal products (perfect competition would literally imply 0 dispersion). Figure 5 shows that the

[3]Gabriel's Conspiracy of 1800, the German Coast Uprising of 1811, and the Nat Turner rebellion of 1831.
[4]Note that the efficiency referred to here is purely X-efficiency or 'production efficiency' because the utility of slaves themselves is entirely discounted.
[5]The production functions are estimated with log net farm output regressed on (log) total labour, quality-adjusted land, and capital stock, with the Gallman-Parker sample cleaned following Schmitz and Schaefer (1978).

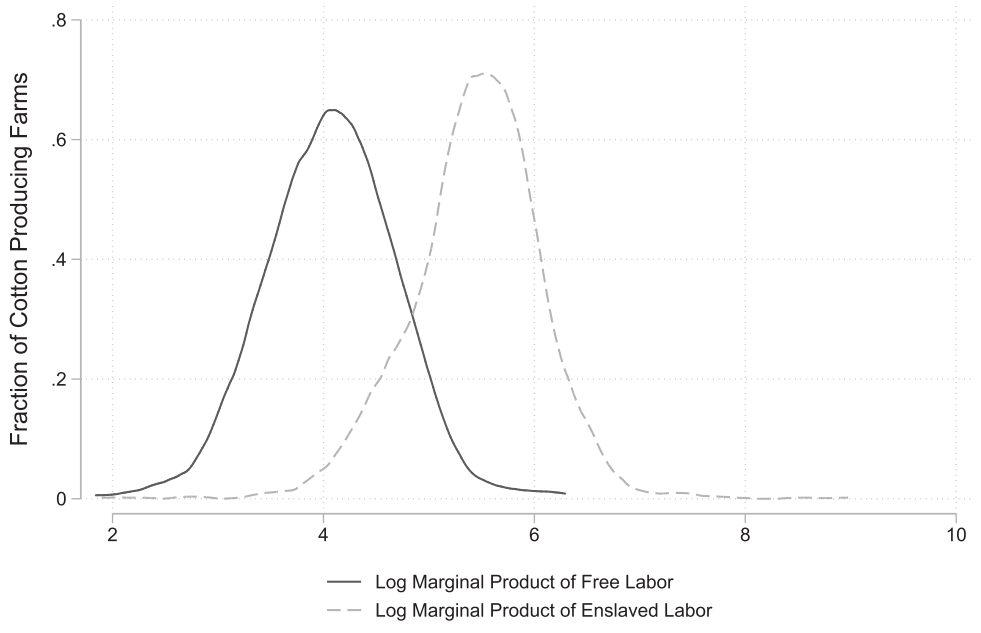

Figure 5. Dispersion of Marginal Products from production functions estimated on Gallman-Parker data from 1860 agricultural census. Farms that use enslaved labor have both higher marginal productivity, but also less dispersed.

distribution of estimated marginal products is both higher and less dispersed among slave farms relative to free farms, which is evidence that the slave labour market was indeed more 'allocatively X-efficient' than the free labour market, at least in agriculture. This superiority of productive allocation is a different source of slavery's high economic output than the one put forward by Fogel and Engerman. Fogel and Engerman emphasized the fast rate of picking enabled by the economies of scale of the gang labour system, where slave workers could be driven to work faster by coercion rather than higher pay. But the right of slave owners to allocate labour to where it was most productive, guided by accurate market signals of the relative scarcity of enslaved labour, also allowed slave owners to implement a higher productivity allocation of labour, where the most workers are working with the best land and overseen by the most talented entrepreneurs.

2.1. Financialization of property rights in people

A recent literature has documented the importance of the financial dimension of American slavery (Clegg 2018; Kilbourne 2015; Martin 2010). Since the market for property rights in the enslaved looked more like a commodity market than a labour market, it is natural to think that those rights would become stores of value. The financial dimension of American slave property is a byproduct of the tight enforcement of owner property rights and the thickness of the slave labour market. With such a reliable stream of labour encoded by law into a deed, with slave auctions at every courthouse throughout the South, it is unsurprising that enslaved people were financial assets, with part of their value determined by speculative trades as well as their value as collateral.

In a commercially advanced economy, assets are more than paper claims on future resources. They are also devices for securing loans. When you have a lot of wealth, people are more willing to lend to you because you can offer the wealth as collateral, to be given up in the event of inability to pay. The higher the value of what you can pledge, the larger the loan that you can secure. Enslaved people had a number of attractive properties as property; thick resale markets in ubiquitous slave auctions, spatially moveable (unlike land), and reliably used in a profitable endeavour (working on plantations). Besides being entries in university endowments and assets on the sheets of insurance companies, enslaved people had mortgages pledged against them to finance small-scale retail businesses as well as the lavish consumption of planters. Inevitably, settling these financial obligations occurred via foreclosure and court-ordered sales, multiplying the tragedies of family separation borne by African Americans under slavery. Bailey (2017) vividly documents the wrenching toll of family separations experienced by the 436 slaves sold on 2 and 3 March 1859, upon liquidation of the Butler estate in the wake of Butler's losses in stock market speculation and the crash of 1857.

Of course this means that when slave property rights are abolished during the Civil War, the collateralized human bodies lost any positions they had in credit networks. Gonzalez, Marshall, and Naidu (2017) study the credit market effects of abolition of slavery in Maryland. They find that slave owners were more likely than non-slave-owners to start businesses prior to abolition, even conditional on overall wealth, and this effect disappears after abolition. They argue that the liquid, mobile nature of slave wealth conferred an advantage in being used as collateral for securing credit. Upper South slaves likely lived in heightened fear of forced sale to the Deep South when their owners were highly indebted. Moses Grandy, an escaped slave, documented this in his narrative. Grandy's brother and wife were both sold because their owners found themselves in debt. Grandy subsequently wrote that

> proprietors, though they live in luxury, generally die in debt … At the death of a proprietor, it commonly happens that his coloured people are sold towards paying his debts. So it must and will be with masters, while slavery continues.

3. Labour discipline, effort, and monitoring

The previous section argued that slavery has no monopsony distortion in the price of labour, because the price of slaves does not have to be (and in equilibrium cannot be) set by slave traders in order to increase the probability of a labour market transaction. Exploitation is accomplished with coercion and without moving market prices from their competitive, market-clearing levels.

But monopsony is not the only problem facing employers of free labour. Efficiency wage models imply that free workers need to be paid more than their outside option to provide incentives not to shirk, even as monopsony implies that they will be paid below their marginal product (both imply underemployment). The above focus on allocation being the source of productivity of slave labour complements the basic point that enslaved people simply worked more and harder. As I mentioned in the introduction, effective labour not only encompasses the bodies and hours spent at work, but also the effort, attention, and care exerted by workers on the job, and this too was cheaper (under some conditions) with coerced labour.

Acemoglu and Wolitzky (2011)(AW) provide a variant of the efficiency wage model, where workers exert unobservable effort on the intensive margin, rather than the extensive margin (the supply of bodies). The AW model builds on a literature in economics that has considered the role of agency in coerced labour, and one which proposes that the demise of forced labour is concomitant with the importance of work that is difficult to monitor or requires investments by the worker themselves (Fenoaltea 1984). Findlay (1975) argues that the prospect of manumission gave slave owners a device to provide (dynamic) incentives; skilled enslaved workers who performed well got the prospect of manumission. However, the ability to commit to such an arrangement seems quite limited, and this likely contributes to the paucity of manumissions observed.

The AW model is closer to Fogel and Engerman's view of slavery, although it does not have the scale economies that were so important to Fogel and Engerman's story. In the AW model, employers can choose wages that depend on the output produced by the coerced worker, but can also choose a degree of coercion that reduces the worker's outside option (effectively, running away). The worst thing you can do to a worker who is shirking is reduce her well-being to her outside option. With free labor the outside option is employment at another firm or unemployment, so you need to make working at this job pay more than that outside option. Under labor coercion the outside option is being a fugitive, which planters individually and collectively spent considerable resources on credibly deterring. Since the outside option was so much worse, a given level of effort could be secured much more cheaply with coerced labor than with free labor.[6] In this sense the lash and the patrol are complements: an overseer can punish shirking more severely when running away is harder.

Acemoglu and Wolitzky focus on ex-post production process under coerced labour, abstracting from the issues above that are the focus of Fleisig's paper. Coercion in the model is increased when the 'cost' of coercion is decreased or when the price of output increases, and the welfare of the coerced worker decreases. In contrast, if utility from escaping increases, the welfare of coerced labour increases. The key component of the model is that employers do not need to pay workers anything in the event of a low level of output, they can punish the worker. Free workers have to have their no-shirking constraint satisfied, which involves giving them a rent above and beyond their outside option. Unfree workers face the prospect of the slave patrol should they try and leave, and this makes their outside option lower, and also reduces the rents needed to secure effort (because the employer can use punishments).

The model illuminates an old and classic debate between Marxists and Malthusians over the heterogeneous impacts of the Black Plague. The 1348 collapse in population clearly makes labour scarce. Malthusians argued that this decrease in labour supply would raise wages, and then as population recovered wages would fall. But, what Robert Brenner (Brenner 1976) observed is that the same Black Plague had different effects in eastern vs western Europe. In particular, East of the Elbe river an intensification of serfdom began, and West of the Elbe the destruction of serfdom was accelerated.

In the AW model, an increase in labour scarcity can have different effects depending on whether the scarcity of labour operates more through raising the outside option of

[6]Note that while AW think of reducing the outside option as 'coercion' the same logic makes sense for any reduction of outside options, eg lobbying to cut unemployment benefits.

coerced labour (Western Europe) or is a result of a high marginal product of labour (Eastern Europe). If it is the former, then labour scarcity makes it easier for workers to flee, and thus reduces the use of coercion. If the latter, then labour scarcity increases coercion, as employers want to wring more effort out of their workforce. In addition, the model can explain why slaves may have had high consumption: high rewards for high effort and high punishment for low effort amplifies the difference between high effort and low effort, inducing the worker to increase effort. Carrots and sticks work together in extracting effort from coerced workers when an employer can also reduce their outside option.

4. Jim Crow and monopsony

Emancipation destroyed Southern agricultural productivity.[7] Southern cotton yields per acre would not recover to their pre-slavery level until the early twentieth century. Emancipation created conditions for Black workers to threaten to leave one employer for another, drastically curbing planter extraction of Black labour.

> Planters who have failed to pay their hands this year, or who have earned a reputation among the freedmen as hard and unjust task-masters, by the manner in which they have treated them during the past year, cannot secure labor for the future at any price. (New York Times, November 19, 1866)

Indeed, at least one Union army general, Major-General Hartsuff explicitly forbade planters in Nottoway, Virginia, from meeting to "regulate the wages of freedmen" (New York Times, June 27, 1865), anticipating recent antitrust arguments about the pervasiveness of employer collusion.

The Slaughterhouse court opinion, for example, explicitly narrowed the interpretation of the Thirteenth Amendment to emancipate chattel slaves, and not a broad licence to prosecute labour market power. The claim made by the butchers was that monopolization of locations for butchers to practise constituted involuntary servitude. This was rejected by the court, but the claim is a natural one: it is not so far off to think that exploitation by an employer cartel might be thought of as a form of servitude. And yet the majority opinion writer, Justice Miller, concluded that 'while negro slavery alone was in the mind of the Congress which proposed the thirteenth article, it forbids any other kind of slavery, now or hereafter'.

But this raises the legal question of what constitutes 'kinds of slavery'? Balkin and Levinson (2012) argue that the language of the Thirteenth Amendment was harking back to a use of the term slave that included wage labour; that 'hirelings' were considered on a par with servants in the early nineteenth century. They further argue narrowing of the Thirteenth Amendment was inevitable; to see it unleashed would be far too radical. The Thirteenth Amendment is a 'dangerous' amendment, because slavery could be interpreted as referring to the broad revolutionary era use of slavery as any form of Republican denomination; for example the revolutionary insistence that Britain had enslaved the colonies with the Stamp Act. Further, the Thirteenth Amendment has no 'state action' requirement. It is the only part of the constitution that is addressed to interactions between citizens, not

[7]Wright (2019) shows that total cotton expanded following emancipation, but cotton per acre did fall; most of the increase is driven by the introduction of new lands.

between citizens and the state or the different branches of the state. Putting these two things together, a thirteenth amendment allowed to be invoked against all forms of private subordination would unleash a thousand revolutions.

A less well known extension of the Thirteenth Amendment is the 1867 anti-peonage law, which extended the Thirteenth Amendment to cover debt peonage in the recently acquired New Mexican territory. The statute struck down all laws that maintained or enforced the *voluntary* or involuntary servitude as peons.[8] The anti-peonage made promising labour as collateral for a loan illegal and unenforceable. The anti-peonage law means that I cannot sign contracts where you pledge to work for me in exchange for a loan. Interpreted literally, it is a *restriction* on labour-market contracting, explicitly forbidding voluntary servitude. Unfortunately, even peonage was interpreted very narrowly by the courts and legislatures.

The hemming in of the Thirteenth Amendment by the Supreme court, left Southern Black workers at the mercy of other legal devices to facilitate employer collusion. With the end of Reconstruction, Southern elites began to reimpose a system of de facto and de jure controls on the newly emancipated. The Southern labour regime had two components:

- The protection from background white violence and discrimination offered by paternalist landowners was an important amenity (as all protection rackets are) for Black Southerners, one that could be uniquely provided by powerful white employers. Thus the background threat of violence increased the supply of labour to any particular farm. Alston and Ferrie (1993) argue this paternalism was an important mechanism for reducing monitoring costs (as in the labour discipline model) and turnover (as in the monopsony model). While Alston and Ferrie do not discuss whether the amenity increased market power of employers, it is quite consistent with a model with employer market power.
- The active legal restrictions on Black labour are also a clear imposition of monopsony on African American workers. The years after the Civil War were characterized by a reinvigoration of Master and Servant laws, enforced by criminal (rather than civil) penalities. Du Bois noted 'Negroes' ignorance of the labour market outside his own vicinity is increased rather than diminished by the laws of nearly every Southern state'. These laws include contract enforcement laws, criminalizing breach of employment contracts, anti-vagrancy laws that criminalize unemployment, and an elaborate convict leasing system that took full advantage of the Thirteenth Amendment's criminal provision. There is a problem with knowing whether or not the laws mattered (and many were struck down); however, as law enforcement was likely to be on the side of planters regardless of whether or not so stipulated by the letter of the law, so enforcement would be obviously selective and biased.

[8]The statement of the law reads "all acts, laws, resolutions, orders, regulations, or usages of the Territory of New Mexico, or of any other Territory or State of the United States, which have heretofore established, maintained, or enforced, or by virtue of which any attempt shall hereafter be made to establish, maintain, or enforce, directly or indirectly, the voluntary or involuntary service or labor of any persons as peons, in liquidation of any debt or obligation, or otherwise, be, and the same are hereby, declared null and void."

Even the narrow interpretation of peonage was flaunted by the state of Alabama, which instituted a 1896 law criminally enforcing labour contracts.[9] The Federal government turned to the anti-peonage statute to prosecute egregious instances of contract labour in the South.

The Federal investigations culminated in a 1911 Supreme Court decision striking it down. Alonzo Bailey, a Black worker, contracted with a farm owned by the Riverside Company to work at $12 a month, together with a $15 dollar advance.[10] Under the Alabama contract enforcement law, Bailey's act was criminal, and he was sentenced to 136 days of hard labour under the Alabama peonage law. In its only major invocation of the Thirteenth Amendment for a labour case, the Supreme Court struck down this law.

While contract enforcement likely only rarely made it to formal legal system, there is a unique category of Jim Crow labour law that gives a window into the efficacy of the local legal regime in preserving employer market power. Anti-Enticement laws fined *employers* that poached other employers' workers. Because the law was binding on white employers and prosecuted by other white employers, it was much more likely to follow the letter of law. Its application was noted, for example in the 1890s by South Carolina congressman Miller

> In my State, if the employer states verbally that the unpaid laborer of his plantation contracted to work for the year no other farmer dares employ the man if he attempts to break the contract rather than work for nothing: for down there it is a misdemeanor so to do, the penalty is heavy, and the farmer who employs the unpaid starving laborer is a victim of the court.

Naidu (2010) estimates the effect of the anti-enticement fines on agricultural wages as well as the probability of Black farmer workers moving up the tenancy ladder from agricultural worker, to sharecropper, to fixed-rent tenant, to independent owner. Doubling the maximum enticement fine reduced agricultural wages by between 1 and 2%, and if, as is plausible, it is all coming from increased monopsony, with a baseline labour supply elasticity of 5 (which is high!), it would imply doubling enticement fine from its mean of 200 to 400 reduced the labour supply elasticity by roughly 2.

Note that the presence of substantial amounts of monopsony is consistent with some of the estimates of Black agricultural turnover that some scholars have produced. Wright (1996), Alston and Ferrie (2005), and Fishback (1989), among others, have all produced evidence of Black agricultural turnover during Jim Crow. But high turnover is consistent with considerable market power; employers use their market power to lower wages until turnover is too costly for them, and so the equilibrium observed turnover might be quite high precisely because employers are using their market power and driving workers to quit. Increasing monopsony via legal changes might even generate higher turnover, depending on how employers changed their wage policies.

In the presence of monopsony, racially hostile employers can survive in the market without losing all their workers, as the outside options for their poor Black workers are, again, few and far between. Further, these employers lower the terms of tenancy,

[9]The relevant text of the law read: 'Any person who, with intent to injure or defraud his employer, enters into a contract in writing for the performance of any act of service, and thereby obtains money or other personal property from such employer, and with like intent, and without just cause, and without refunding such money, or paying for such property, refuses or fails to perform such act or service, must on conviction be punished.'

[10]To put that number in context, $12 month in 1907 would be about a $1 a day in 2019 terms, which is roughly the world poverty line.

sharecropping or wages, for Blacks throughout the economy, as even non-racist employers realize they can pay Black workers less due to the circumscribed set of outside options faced by these workers. Low acquisition of schooling may partly be an outcome of this labour market structure; why invest in schooling if labour market returns are going to be so dampened.

Monopsony and the resulting rents can also explain the Southern hostility to the New Deal. Alston and Ferrie (1993) offered an explanation for Southern Democrat hostility towards expanding the New Deal into occupations traditionally staffed by rural Black workers. Part of the compensation white planters offered African-Americans was protection from violence and lynching at the hands of other whites, and even some degree of health care, pensions, and insurance against unemployment. In return, they were able to secure increased supply of Black labour without having to raise the wage. Because of the monopsony profit made off each Black worker, being the lone provider of these non-pecuniary benefits was worth a considerable amount to planters. Federal government programmes would have crowded out planter-provided insurance and reduced dependence of Black labour, and this would have been extremely costly.

While planters' appendages in the Federal government prevented extension of New Deal labour market regulation into the rural Black labour market, they could not thwart the Great Migration, which began the destruction of Southern labour market monopsonies. We can get a sense of how profitable Black labour repression was by looking at the incidence of exogenous decreases in rural Black population, for example driven by natural disasters. For example, Hornbeck and Naidu (2014) use the 1927 Mississippi Flood as a shock to obtain some empirical leverage on the effects of Black outmigration. Flooded counties experience an extremely large and persistent outflow of Black workers (which further confirm the barriers to labour market equilibrium), an increase in the use of capital and land (indicating agricultural modernization), and, most surprisingly, a weak decrease in land values. Some of this decrease in land value is due to lower quality land being brought into production, but some of the decrease reflects the higher cost of labour. Since land values reflect the capitalized profits from production, this suggests that agricultural modernization was not obviously more profitable than the labour-repressive agriculture that preceded it.

How profitable was the Jim Crow regime? We can get a sense by using the estimates from the Hornbeck and Naidu (2014) paper, which finds a short-run elasticity of per acre farm values to Black labour share of roughly 0.5, which implies that Jim Crow rural labour exploitation increased Delta land values by $16 an acre in 1930 dollars, or $229 to $500 in 2019 dollars. Once we account for these rates of exploitation under Jim Crow, then it is possible that any reparations calculation based on the full American history would be swamped by postbellum Jim Crow: while rates of exploitation were lower than under slavery, the population was much higher, and so the total amount extracted by planters may in fact be comparable.

5. Implications for recent slavery debates

The sources of productivity and distortions of the slave economy become a bit more transparent in light of the above models. What about the relevance to the sometimes rancorous debates between historians and economists over the 'capitalist' nature of the slave

economy and the contributions of slavery to American economic development? Let us briefly address these here, and see Clegg (2015) for a cogent discussion of the larger debate. Slavery was a moral horror, but also an economic system of buying and selling human labour, with all the complex emergent rationality that a sophisticated capitalist system exhibits.

A working definition of capitalism, as tendentious a word as it is, is an economic system where production is organized by privately owned firms buying inputs (especially labour and capital) on markets and selling products on markets with the goal of maximizing profits. This definition of capitalism is helpful in distinguishing markets, which are historically ubiquitous, from capitalism, where the simultaneous goal of production for profitable sale and capital and labour purchased on markets imply an extension of markets into the abode of production. It also does not distinguish between 'free' and 'unfree' labour bought and sold on markets, given that quasi-free forms of labour are quite coextensive with capitalism historically. Marx himself is writing in a place and time where Master and Servant law is still criminally penalizing workers for breach of contract! No doubt this omission of 'formally free labour' from the definition of capitalism is quarrelsome, but it fixes ideas and allows the concept to do empirical work in organizing differences among historical institutional arrangements. It also encompasses a wide variety of labour market institutions, while clearly ruling out others. So in this definition, pre-industrial small-scale societies are not capitalist, nor is European feudalism. Latin American *encomiendas* are not, but the *haciendas* are. Peasants mobilizing family labour to sell cash crops on global markets in order to obtain subsistence are explicitly not capitalist, and that is not changed by imposing despotic agrarian taxes.

Under this definition, obviously American slavery is capitalist, even as other forms of slavery, for example African pawnship or Native American war captives, are not. Slaves purchased for domestic work would not be capitalist, nor would slaves purchased for military service. Slaves may be owned without being traded for use in production, for example, which would exempt them from the capitalist label. But slaves purchased with the primary goal of profitable production for market sale most definitely are. The commercial and export driven plantation (eg palm oil) and textile sector slavery practised in West Africa in the nineteenth century (stimulated by the abolition of the slave trade) would be capitalist, while the ceremonial and religious sacrifices of slaves in central Africa (eg the Kuba kingdom) would not (Lovejoy 2011). Antebellum American slavery would certainly be considered capitalist by this definition.

The other part of the slavery debates is the contribution of slavery to American economic development. There is no space to do justice to the debate here, but clearly this is about counterfactuals. What would the economic structure of the United States of America look like without slavery? It would be hard to read either Eric Williams' classic or the contemporary historians of capitalism without seeing a claim that England/United States would be poorer were it not for slavery, even if modern historians would deny ever practising the dark art of counterfactuals. The 1619 project, and associated debates around it, could be thought of as a grand exercise in counterfactual reasoning; guessing what America would have looked like without slavery, in order to show that slavery *caused* various properties of contemporary American society (eg the extreme racial and class inequality, the criminal justice system, the high level of economic development, or its peculiar political institutions).

But the business of counterfactuals is essential, not just for historical understanding, but in the American slavery context it is particularly important for figuring out any implied reparations. A vibrant debate on reparations in the United States has been ongoing for decades, with notable contributions collected in America (1990) and a recent updating and concrete proposal provided in Darity and Mullen (2020). When the reparations debate is framed as a compensation for past injustice (the restitution, rather than atonement, motive), it inevitably poses a counterfactual question: how much richer would Black Americans have been if not for slavery or uncompensated freedom? How much poorer would all Americans be under the same counterfactual? Whether the counterfactual is 40 acres and a mule upon Emancipation or Emancipation at the time of the American Revolution, or the absence of any forced labour ever in the United States, a quantitative counterfactual seems unavoidable if the US is going to ever get serious about addressing its historical traumas by reallocating public and private wealth (which it should be noted is simply one mode addressing such traumas). What I want to conclude with is two points that may be relevant for the reparations debate.

- The non-pecuniary costs of slavery are legion, but they certainly include both more, worse, and harder work, as well as the denied option value of choosing a preferred job. A source of monopsony is the fact that the non-wage dimensions of different jobs are preferred by different people, so that employers know they can lower the wage and still retain some workers. Slavery denies workers the ability to choose employers based on their own preferences, eliminating the incentive for employers to bear additional turnover by lowering the price of labour but also robbing workers of the option value of another, more preferred employer. While no comprehensive accounting of the costs of slavery is truly possible, limiting attention to what can be measured in prices is to miss a great deal of what the slave economy extracted from its Black workers. Living in malarial environments, working terrible tasks, and enduring all the humiliations and tragedies of unfreedom come along with property rights to your body being held by somebody else, and any reparations calculation based on costs endured by the enslaved should incorporate them. The assumptions required would be heroic, but I would argue the reparation calculations that do not include these costs are already guesswork, so might as well do it comprehensively.
- If the normative case for reparations is built on redressing historical exploitation, then comparisons to free labour are complicated, as free labour was itself also exploited. This was raised by an essay by Feiner and Roberts in America's book (Feiner, Roberts, and America 1990). Almost all workers have been historically exploited by employers whose right to do so was protected by the government, so why privilege redressing the accumulated disadvantage due to the exploitation conducted under slavery? Pervasive monopsony implies that free labour markets are both exploitative and not as productive as possible, and so it is not clear that free worker wages provide an appropriate benchmark. Either the normative case for reparations is based on a counterfactual that does not involve anything about the 'proper' payment for labour performed by our ancestors (eg the sheer humanitarian catastrophe is the basis for reparations, not the economic cost), or we acknowledge something potentially even more radical than reparations for slavery: *all* wealth contains a drop of injustice.

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