Limited Liability and Investment: Evidence from Changes in Marital Property Laws in the U.S. South, 1840-1850

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November 13, 2018

Abstract

We study the impact of marital property legislation passed in the U.S. South in the 1840s on household investment. These laws protected the assets of newly married women from creditors in a world of virtually unlimited liability. We compare couples married after the passage of a law with couples from the same state who were married before. Consistent with a simple model of household borrowing that trades off agency costs against risk sharing, the effect on household asset holdings was heterogeneous: if most household property came from the husband (wife), the law led to an increase (decrease) in total assets.

JEL codes: G33, D14, N21
Keywords: Bankruptcy, Household Finance, Economic History

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1 Introduction

Most developed nations have laws limiting personal liability. If an individual is unable to repay his debts, he can file for personal bankruptcy and obtain at least a partial discharge of unsecured debts, while being allowed to keep certain assets. How does such a legal regime affect individual borrowing and investment? In theory, limited liability has both costs and benefits. On the one hand, it creates incentives for borrowers to shirk, engage in risk shifting or simply walk away from a project. These agency costs might reduce access to credit and make it harder for individuals to invest in profitable projects. On the other hand, if markets are incomplete, limited liability allows for risk sharing between lenders and borrowers. This may stimulate investment in risky projects, especially if lenders are better able to bear risks than borrowers. In other words, when considering the impact of limited liability on investment, there appears to be a trade-off between agency costs and risk sharing.

This paper studies whether this trade-off is empirically relevant. In addition, the paper seeks to understand how the net effect of limited liability on investment varies with the degree of protection offered. The basic intuition – which we formalize with a simple model of investment under moral hazard – is that agency costs are limited when a small share of household assets are shielded from liability, leading to an increase in investment (relative to the case of unlimited liability); however, as the degree of protection grows, agency costs become more severe, causing household investment to decline. While intuitive, such a relationship between limited liability and investment is not straightforward to show empirically. One needs variation in the degree of protection that is sufficiently large to show both the possible negative impact of tighter credit constraints and the possible positive impact of increased risk sharing. Ideally, one would need a setting in which otherwise similar individuals are presented with substantially different degrees of liability, including unlimited liability. Such a setting is difficult to find. There are large cross-country differences in the amount of debtors’ protection, but these may reflect deeper economic, cultural, or institutional differences (Efrat 2002). Within the U.S., there is variation in state homestead exemption limits, which generates differences in bankruptcy protection across states (studied in the seminal work by Gropp, Scholz and White [1997]). However, arguably the most important part of the bankruptcy code – the possibility to get unsecured debts discharged – is the same for everyone.

In this paper, we study a unique historical setting in which far-reaching debtor protection was introduced in an environment with virtually unlimited liability. In our setting, the amount of debtor
protection differed greatly across households, allowing us to measure the net impact of different
degrees of limited liability. In particular, we study the introduction of the first class of Married
Women’s Property Acts (MWPAs henceforth) in the U.S. South during the 1840s. During this
period, American common law held that married women had no economic independence from their
husbands. Virtually all assets women brought into the marriage (usually acquired as marriage
settlements or inheritance) became the property of the husband and, by extension, were liable for
his debts. The MWPAs we study in this paper protected the wife’s assets from seizure by creditors.
This provided the couple with a safety net – if a husband became insolvent, a family could fall
back on the wife’s assets for shelter, food, and school tuition fees. At the same time, it reduced the
amount of assets a couple could pledge as collateral, potentially reducing the availability of credit.
Since the laws only sheltered the assets of the wife, the actual amount of protection differed greatly
across households depending on the wife’s share of total family property. In other dimensions, the
economic environment was one of virtually unlimited liability – there was no bankruptcy procedure
that could lead to a discharge of debts and all loans were full recourse. The MWPAs therefore led
to a significant change in the liability regime.

The consensus in the literature is that the first class of MWPAs were primarily intended as
debtor protection and did not give married women economic independence (Chused [1983]; War-
basse [1987]; Kahn [1996]; Priest [2006]). Under traditional common law, only the husband had
the legal capacity to contract and married women could not borrow money in their own name. The
eye MWPAs did not change this feature of the law. The capacity to contract and borrow remained
exclusively with the husband: the acts merely shielded married women’s separate property from
seizure by creditors; it did not grant them autonomy over this property. In legal terms, the early
MWPAs kept the doctrine of coverture in place. Since married women remained unable to write
contracts, their separate property could not be used to guarantee loans. As such, they effectively
removed married women’s property from any interaction with credit markets.\footnote{Later laws passed in the second half of the 19th century would give married women more economic independence
over their separate property (Geddes and Lueck [2002], Doepke and Tertilt [2009], Hazan, Weiss and Zoabi [2017]).}

We study the impact of the Southern MWPAs on household asset holdings; namely, real estate
and slaves, as reported in the 1850 census. The passage of the acts provide a unique source of
exogenous variation in the amount of debtor protection enjoyed by households. Crucially, law
changes only applied to newlyweds: a retroactive application would have been unconstitutional, as
it would have violated the terms of existing marriage contracts (Kelly [1882]). We can therefore

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compare couples in the same state, in the same census year, who were married before and after the enactment of a law; only those married after were affected. The passage of a MWPA could have also affected the willingness of a state’s creditors to take on risk. By doing in-state comparisons we ensure that this is not driving our results. As states introduced laws at different points in time, we can also control for the year of marriage, making sure that the time since marriage (and age effects more generally) are not driving the results. Importantly, we can explore heterogeneity in the effect of the laws on households. Couples in which the wife was relatively rich compared to the husband were faced with a much higher level of protection than couples in which the wife was relatively poor. Variation in the fraction of a household’s assets brought in by the wife allows us to implement what is essentially a differences-in-differences-in-differences design. In addition, because the laws only applied to couples married after the date of enactment (a relatively small group of people), general equilibrium effects are unlikely to be first order in the short term, allowing for a straightforward partial equilibrium interpretation of results.

The starting point for our analysis is a simple model of household borrowing and risky investment. Following the literature on financial contracting, we model a household’s borrowing decision as a moral hazard problem. We assume that if a project is successful, the household can strategically default and divert some of the returns. To enable lending, the loan contract has to be set up in such a way that the household never has an incentive to do this. There has to be sufficient skin-in-the-game to warrant a certain loan size. This generates an endogenous collateral constraint: the household can only borrow against pledgeable assets. Crucially, following the literature on bankruptcy protection (see White [2011] and Livshits [2014] for overviews), we assume that the only financial instrument available is a simple debt contract. This is a reasonable assumption in the context of the U.S. South in the 1840s. Appendix A provides a detailed analysis of credit markets in the Antebellum U.S. South. There is no evidence for rich credit arrangements that allowed for risk sharing. Simple debt seems to have been the norm. If households are risk averse, this market incompleteness can create inefficiencies. On the one hand (as is standard in these class of models) simple debt relaxes the collateral constraint. On the other hand, it removes any possibility of risk sharing (Holmström 1979).

We show that the introduction of a MWPA can move the household’s investment decision closer to what it would be if contracts were not limited to simple debt. By protecting the wife’s assets, the household will optimally decide to increase borrowing to scale up investment. This is consistent
with the insights of Dubey, Geanakoplos and Shubik (2005), Zame (1993) and Rampini (2005), who argue that limited liability can make markets more complete. We show that this will only happen if a wife’s property accounts for a relatively small fraction of the total. If a wife’s share of total assets is high, the collateral constraint becomes so restrictive that investment will fall after the enactment of a MWPA.

To test these predictions, we compile a new database that links records of marriages contracted in southern states between 1840 and 1850 to the censuses of 1840 and 1850. Though we do not observe credit, this database does allow us to observe the gross value of real estate and slave holdings at the household level in 1850. We can compare this measure of family assets for couples in 1850 who were married before and after a married women’s property law. Links to the 1840 census allow us to construct a measure of premarital familial assets: the average value of slave holdings among people with a certain surname from a certain state. As slave holdings were strongly correlated with other forms of property, this measure serves as a proxy for the affluence of grooms’ and brides’ families at the time of marriage, which in turn approximates the quantity of assets husband and wife brought into a union. We focus on the U.S. South because we can cannot compute a measure of premarital familial assets for the non-slave holding North.

Using our quasi differences-in-differences-in-differences approach, we find strong support for our simple model. Married women’s property laws had a heterogeneous effect on 1850 real estate and slave holdings: they increased asset holdings when the bulk of a couple’s premarital assets came from the husband; however, they had the inverse effect when most of a couple’s premarital assets came from the wife. Since the MWPAs’ primary motive was to protect married women’s property from creditors, it is likely that the laws affected asset holdings primarily through credit markets.\footnote{In related work, Koudijs, Salisbury and Sran (2018) show that banks managed by men married after the passage of a MWPA had more leverage, confirming the link between the MWPAs and credit.}

We confirm this by showing that the effects are larger for households who relied more heavily on credit and who were more likely to be credit constrained.

Nevertheless, the MWPAs may have affected asset holdings through different channels. We consider a number of such alternatives, including shifts in the marriage market, changing bargaining power within the marriage, and different bequest decisions by parents. We show that none of these can fully account for our main results. Generally, it is hard to find an alternative mechanism that can explain both a decrease in asset holdings for couples with richer wives and an increase for couples with richer husbands.
These results are important for two reasons. First, they indicate that models focusing on borrower moral hazard are empirically relevant. Second, they suggest that limited liability in incomplete markets leads to more risk sharing and can increase household investment. We estimate that the optimal amount of protection lies around 25%. If the fraction of protected assets is too large – according to our estimates, more than 45% – the beneficial impact of protection disappears.

This paper is directly related to the literature on the consequences of bankruptcy protection on household borrowing and investment decisions. There is a large literature in macroeconomics that analyzes the trade-off between risk sharing and access to credit using structural models (see for example Athreya [2002], Livshits, MacGee and Tertilt [2007], and Chatterjee et al [2007]). In these papers, households use credit markets primarily to smooth consumption and changes in debtor relief only affect investment indirectly (Li and Sarte [2006]). Closer to our paper, there is an extensive micro-econometric literature on the topic using cross-state variation in exemptions. Conclusions about whether higher exemptions increase or decrease credit and investment differ across studies. Gropp, Scholz and White (1997), the seminal paper in this literature, find that larger homestead exemptions tend to redirect credit to individuals with more assets. On the other hand, Severino and Brown (2016) look at a recent wave in changes in exemptions and show that higher exemptions are associated with an increase in unsecured debt that is mainly driven by low-income households. Berkowitz and White (2004), Berger, Cerquiero and Penas (2011) and Cerquiero and Penas (2011) focus on small-business owners and show that higher exemptions lead to less credit. Fan and White (2003) find that the probability of starting a small business does go up. Cerqueiro et al (2014) document that higher exemptions are related to less innovative activity, emphasizing the importance of external financing for innovation.

Relative to this literature we make the following contributions. First, we study a change in the personal liability regime that enables us to compare households who face large differences in debtor protection. Second, since the new marriage laws only applied to newlyweds, we can base our estimates on couples living in the same state who got married before and after the law change. This means that our results do not rely on state-level variation that might reflect deeper underlying economic differences (Hynes, Malani and Posner [2004]). Third, in our setting the eventual amount of protection varies across individuals depending on the relative wealth of husband and wife. This contrasts with the literature using (homestead) exemptions. Since the property debtors get to keep in bankruptcy is defined in absolute dollar terms, within-state variation in the fraction of
assets protected comes from differences in total wealth. This is likely correlated with other factors, such as access to investment projects or credit worthiness. Finally, again due to their prospective nature, the new marriage laws only affected a small fraction of households, suggesting that general equilibrium effects are not of first order importance in our setting. This enables us to interpret the results in a straightforward partial equilibrium way. In contrast, Lilienfeld-Toal, Mookherjee, and Visaria (2012) argue that higher exemption levels might change the credit market equilibrium in a state, redirecting credit to the most reliable borrowers, and that this could explain Gropp et al’s finding that richer households benefit more from higher exemptions.

There is also a large literature in financial economics on the relation between creditor rights and access to capital (La Porta et al. 1998). For example, Vig (2013) evaluates a legal change in India that strengthened the rights of secured creditors. He finds that this reduced the take-up of secured debt. This is consistent with our finding that, for some households, the more creditor-friendly environment pre-MWPA was associated with lower asset holdings, although the mechanism Vig has in mind is somewhat different. Mann (2016) explores the use of patents as collateral and shows that stronger creditor rights to patents are associated with more firm borrowing and investment. Haselman, Pistor and Vig (2010), in a sample of 12 transition economies, show that if banks have better recourse to collateral, they increase lending.

Finally, this paper is related to a growing literature on credit and household investment in the antebellum South. Bolton and Rosenthal (2001) develop a theoretical model to explain the introduction of (temporary) debt moratoria by American states in the aftermath of the Panic of 1819. Similar to our paper, they argue that when debt contracts are incomplete, such moratoria may improve ex ante efficiency. González, Marshall and Naidu (2016) show that free whites in Maryland between 1860 and 1863 were more likely to start a new (mercantile) business if they owned slaves. They suggest that slaves served as collateral and improved access to credit. Feigenbaum, Lee and Mezzanotti (2017) show that counties affected by Sherman’s march were slow to recover and they link this to increased financial frictions after the Civil War and the abolition of slavery.

The remainder of this paper is structured as follows. Section 2 provides more historical background. Section 3 introduces a simple model of borrowing and investment. Section 4 describes the dataset underlying our analyses. Section 5 presents the empirical specification and the main

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3Hazan, Weiss and Zoabi (2017) provide compelling evidence that new marriage legislation could have important financial consequences. They study the impact of a later wave of MWPAs that gave women more economic independence. They find that this had an important effect on households’ portfolio decisions, and subsequently on states' financial development.
results. Section 6 has a detailed exploration of alternative mechanisms that may generate these results. Section 7 concludes.

2 Historical Background

This section provides necessary background information on the historical setting we analyze in the paper. We first discuss the antebellum South’s financial system, emphasizing the importance of credit for the region’s economy. We then discuss the introduction of the Married Women’s Property Acts (MWPAs). This section gives a broad overview of the relevant topics; Appendices A and B provide more detail, including a detailed list of references.

2.1 Credit in the antebellum South

Cooper, Terrill and Childers (2017, p. 206), in their standard textbook on the history of the South, document that “credit was just as essential as sunshine and rain”. Most free southern households relied on it to run their businesses. They borrowed working capital to plant, grow and market their crops and relied on long term credit to purchase land and slaves. Appendix A provides an overview of other secondary literature documenting the importance of credit in the antebellum South.

The majority of the free southern population consisted of comparatively small “yeoman” farmers who owned a plot of land and often a few slaves. Banks did not directly lend to them. Instead, yeoman farmers obtained credit from country stores and rich plantation owners. The stores lent the working capital necessary to operate the farm. This allowed farmers to direct their own savings toward capital investment, such as slaves and land. In this form, their net wealth could serve as collateral. This enabled them to purchase more slaves and land on credit, which was often provided by rich local planters.

Local merchants, usually organized as country stores, played an important role in the antebellum economy. They would market the farmers’ crops and provide planting supplies. This gave them access to detailed information about their clients’ creditworthiness and gave them a competitive advantage to act as their banker. In particular, they provided advances on the commercial crops that farmers had in their fields (or were about to plant) and they sold planting supplies on credit; around 80% of all store sales were on credit. In theory, debt claims were to be settled once a year

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4 In the 1850 census, around 2/3 of respondents worked in agriculture, mainly cotton. In the 1840 federal census approximately one third of white southern households report owning slaves. In the 1850 census this had dropped to approximately one quarter.
after harvest, but in practice farmers’ open accounts were often rolled over from year to year. Like commercial banks today, stores actively lent out money and relied on the income made on the interest rate spread. Credit extension could be substantial and country stores were often involved in debt collection (Atherton [1949], McCurry [1995], Byrne [2006], Marler [2013]).

Rich plantation owners were another important source of credit, especially for the purchase of slaves and land. Slaves were often sold on credit. A purchaser typically paid down a third, and the seller required a high net-worth individual, such as a rich planter, to endorse (guarantee) the remaining balance. When this loan came due (usually after one to three years), rich planters often provided the credit to make the payment (Tadman 1987, Martin 2010). Planters also provided farmers with credit to purchase additional land, often land that they themselves had sold. The typical down payment on land was 50% (Kilbourne 1995). Many planters were borrowers and lenders at the same time, and they would tap into their credit facilities to lend out money to local farmers in their network. The richest planters would lend out their own capital, often through the intermediation of local merchants (Kilbourne [1995], Martin [2010, 2015], David [2011]).

Both country stores and plantation owners were embedded in a complex system of credit intermediation. Country stores obtained credit from the wholesale merchants and manufacturers who supplied their inventory and the commission merchants or “factors” who bought the crops the stores had accumulated (Olegario [2006], Rockman [2011]). Planters obtained credit from their own factors. For their part, the factors, often located in larger commercial towns and cities, had access to a wide ranging credit network spanning the entire Atlantic economy through the intermediation of international merchants and private bankers (Woodman [1968], Killick [1977], Schweikart [1986], Kilbourne [1995], Bodenhorn [1997]). Appendix A has more details.

The South featured a number of large state chartered banks who played an auxiliary role in this credit system. In general, banks would not directly lend to farmers and planters. Instead, they provided credit to factors and private bankers, who in turn made it available to their clients (Green [1972], Schweikart [1987], Ransom and Sutch [2001]). This way, the banks’ credit trickled down to all layers of free society. Bodenhorn (2003, p. 226-7) argues that there was no need for banks to develop extensive branch networks to provide credit directly. They could simply rely on local intermediaries such as country stores and factors who were well informed about borrowers’ creditworthiness and whose involvement made loans safer.

The fact that credit was “as essential as sunshine and rain” does not mean that credit markets were frictionless. From the supply side, credit appears to have been constrained. There was a
significant risk that planters and farmers would try to evade their obligations to creditors. In particular, cash crops might be sold to a third party, and the farmer and his family could then take the revenues and walk away. As a result, creditors were only willing to provide loans if the borrower had sufficient collateral that could be seized in case of default (Woodman [1968], p. 401, 181). Sometimes a creditor’s claim on a particular piece of collateral was formalized with a mortgage, but usually credit was simply secured by “the operation of the law” (Kilbourne [1995], p. 73, Martin [2010], p. 828-9, Rockman [2011], p. 28). All loans were full recourse and as long as a creditor could prove the existence of a loan, he could file suit against a debtor and lay claim on his assets (Priest [2006]). There was always a risk that defaulting debtors would try to walk away with their slaves, often their most valuable form of property. In response, southern states had introduced “attachment laws” that gave creditors the right to “attach” (seize) slaves and other movable property if they were afraid a debtor might try to abscond. Together with the liquid secondary market that existed for slaves, this made them an important form of collateral (Jaynes [1986], Kilbourne [1995], Ransom and Sutch [2001], Wright [2006], González, Marshall and Naidu [2016], Beckert and Rockman [2016], Martin [2016]).

In addition to restrictions on the supply of credit, planters’ and farmers’ demand for credit was constrained due to limited debtor protection. The law was relatively harsh on debtors. In the case of default, creditors could lay claim to virtually all assets, and all future income remained liable for outstanding debts. After financial crises, states sometimes introduced stay laws to protect debtors, but these only provided temporary relief (Coleman [1974], Balleisen [2001], p. 12, 86, Friedman [2005], p. 180, Bolton and Rosenthal [2001]). In some cases, the only escape available for debtors appears to have been moving to another state. Roger Ransom (2005, p. 38) calls this “walk-away” farming; contemporaries spoke of “GTT” (Gone to Texas, Rothman [2016], p. 138). In such cases, borrowers usually lost ownership of any remaining assets to their creditors. It is likely that debtors tried to avoid such scenarios by limiting their indebtedness (McCurry [1995], p. 64). Gavin Wright (1978, p. 66-67) argues that yeoman farmers’ key objective was to keep ownership of their farm and slaves. Excess indebtedness put this at risk (Kunreuther and Wright 1975, p. 530-1). It is likely that this strategy of “safety first” limited the overall take-up of credit, even if this meant foregoing profitable (but risky) investments.

The U.S. economy was hit by two financial “Panics” in 1837 and 1839. The subsequent economic depression exposed the problems associated with limited debtor protection, especially in the South. Indebted planters and farmers defaulted on their loans and lost their property to creditors (Roberts
2012). The Federal government introduced a bankruptcy act in 1841 to deal with the fallout from the Panics, allowing borrowers to discharge the debts that remained after the liquidation of their assets. However, the act was short-lived and was repealed within a year (Coleman [1974], Balleisen [2001]). Many Southern states favored the introduction of more permanent debtor relief to deal with future crises. The complication was that direct debtor relief had to be implemented at the Federal level. It would take until 1898 for the U.S. to introduce a permanent federal bankruptcy code; in the meantime, state governments’ room for action was limited. Most loans were part of long strings of credit transactions that crossed state borders, and individual states had no jurisdiction to regulate such interstate transactions. Furthermore, the contracts clause of the Federal constitution prohibited states to interfere with existing contracts (Coleman 1974, p 32-4).

In order to provide some level of debtor protection, a large number of Southern states introduced Married Women’s Property Acts (MWPAs) during the 1840s (Priest 2006, p. 456). The primary aim of these acts was to protect a wife’s assets from her husband’s creditors. They were a form of debtor relief that fell within states’ limited legislative jurisdiction. The acts applied to newly wedded couples only; thus, in line with the constitution’s contracts clause, existing debt contracts were not affected. Furthermore, the exemption of certain forms of property would not directly interfere with interstate contracts. The MWPAs also encountered less opposition in state legislatures than other forms of debtor relief as they emphasized the protection of family life, an important issue at the time.

The MWPAs did not give women economic independence; this would only be achieved by later laws that are outside the scope of this paper (Thurman [1966], Lebsock [1977, 1984], Speth [1982], Chused [1983], Warbasse [1987], Kahn (1996), Olegario [2006], p. 107-8). Friedman (2005, p. 148), in his textbook on the history of American Law, writes that

[State legislatures] did not aim at revolution inside the little kingdom of the family. They aimed mainly to keep ordinary families solvent in parlous economic times.

Contemporaries saw it the same way. In 1843, a Georgia proponent of a MWPA argued for the act’s salutary effect on debtors and emphasized that under the new law, husbands would retain control over their wives’ property. He concluded: “the truth is, that no man should wish for more than this”.

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2.2 Women, Property and the Common Law

The property that the MWPAs were meant to protect could be significant. At the time of marriage, parents often conveyed property to their daughters in the form of a marriage settlement. Moreover, women obtained property through inheritance. After Independence, U.S. states abolished primogeniture and moved to a system of partible inheritance. They also passed so-called intestacy laws that guaranteed that, in the absence of a will, sons and daughters would receive equal shares in the inheritance from their parents. As a result, women often acquired a significant inheritance (Blackmar [2012]). The MWPAs protected this property, even if it was obtained after marriage.

Before the passage of the MWPAs, marriages were governed by traditional common law. Under this system, the wife’s assets were liable for the husband’s debts. Husband and wife were regarded as one and the same legal person. The husband obtained all legal authority and the wife became a feme covert. Under coverture, the wife lacked the legal capacity to contract. The husband obtained control over all property that the wife owned at marriage or acquired afterwards. The law made a distinction between movable and real property. All movable property vested absolutely in the husband. Creditors could seize it without any restrictions. Regarding the wife’s real property, the husband obtained a “life” or “freehold” estate. This limited his possession to the duration of his life, after which it would pass on to the couple’s children. During this period, the husband could use the property as he saw fit and was entitled to all income it generated. Creditors could not seize the real estate itself, but did have a claim on all the income it generated (Rabkin [1975]).

In theory, couples could sign a prenuptial agreement to protect the wife’s assets from outside claims. However, such agreements were of limited value. Legal costs were high, and in many places there was significant uncertainty about whether the courts would enforce prenuptial agreements. Because of the presumed legal unity of husband of wife, the common law did not support any contracts between husband and wife, including prenuptial agreements. The couple had to rely on another legal system that existed parallel to common law: equity. This alternative body of law was not codified – it relied on case law only – and was only well established in some states. It was heavily influenced by British cases and, after Independence, American legal scholars who wanted to build a new codified law appear to have actively undermined it. As a result, prenuptial agreements were rare and predominantly used by wealthy couples in states on the Eastern seaboard (Lebsock [1977], Hoff Wilson [1979], Salmon [1982, 1986], Warbasse [1987]).
2.3 The Married Women’s Property Acts

The MWPAs adopted by Southern legislators in the 1840s protected a wife’s assets from her husband’s creditors but left all other traditional coverture rules in place. In particular, both before and after the passing of the acts, married women lacked the legal capacity to contract; husbands kept full control over their wives’ assets and the income it generated. This meant that married women’s property could not be made liable for a loan. The only person in the household who could contract debt was the husband, and the primary goal of the law was to separate the wife’s assets from these debts (Lebsock [1977], Speth [1982], Chused [1983]).

The MWPAs were prospective; only newlyweds were affected by their passage. Marriages officiated before the passage of the acts were still governed by traditional common law. The MWPAs were readily enforced by courts, but judges interpreted the acts narrowly. They held that marriages were governed by traditional common law, unless a MWPA had explicitly changed something (Thurman [1966], Chused [1983]).

Both under common law and the MWPAs, husband and wife could not contract with each other or transfer property. In fact, the MWPAs often stipulated explicitly that gifts from husband to wife would not be protected. This made it harder for men to defraud their creditors by transferring assets to their wives. A couple married after an act could still sell the wife’s assets. Generally, the proceeds had to be reinvested “for the wife’s benefit”, but if the husband could not support his family out of his own pocket they could also be used to provide for the family’s “necessaries”.

Table 1 provides an overview of the relevant MWPAs. Appendices A and B have more details, including references to the relevant case law, and reproduce the acts in full.

Families actively used the MWPAs in economic downturns. For example, after the Civil War, a large number of Southern households defaulted on their debts and many used the MWPAs to retain ownership over some of their property (Thompson [2004], p. 26-7). At the same time, creditors were well aware that the MWPAs could reduce their claims on debtors and took this into account when making lending decisions. In 1852, a notes collection agent reported on a Texas businessman: “[he] is said by some to be a rascal; others say he is a very honest man and has considerable property said to own forty [slaves] which some say is not come-at-able as they are in his wife’s name” (Rockman [2011], p. 26). In response, the Mercantile Agency, a credit reporting agency, was well aware of the MWPAs to reduce the pledgeability of the husband’s assets as well. This attenuates the positive impact MWPAs could have had on household borrowing and investment.

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6There is qualitative evidence that this did not entirely reduce the scope for fraud (details are in Appendix A, Section A.6). As a result, the passage of a MWPA may have reduced the pledgeability of the husband’s assets as well. This attenuates the positive impact MWPAs could have had on household borrowing and investment.
kept track of property that was in the wife’s name. For example, one agent noted that most of the wealth accruing to Vicksburg, Mississippi, storekeeper William Biggs was in his wife’s name, so that there was “little of his own the law could reach” (Byrne [2006], p. 24, 222-3). Another agent reported that one P.J. Avery “has some property; all of which I think is in [the wife’s] name and would be difficult to reach if a collection were forced.” (Olegario [2006], p. 108).

3 Theory

In this section, we develop a simple model to characterize the way in which MWPAs affect household borrowing and investment. The starting point is the observation that the only financial instruments available to households at the time were simple, non-contingent, debt contracts. In this case, offering downside protection through the exemption of the wife’s property likely has two countervailing effects. First, it may reduce the overall amount of credit and investment because households have less pledgeable collateral after the passage of a law. Second, it may increase overall investment because households are risk averse: the downside protection makes potential insolvency less disastrous and thus could encourage a household to borrow and invest more. Effectively, limited liability helps to make markets more complete (Dubey, Geneakoplos and Shubik [2005], Zame [1993], Rampini [2005]). In what follows, we explore the circumstances under which each of these two effects dominates.

Following the large theoretical literature on (financial) contracting, we model the household investment decision as a moral hazard problem. A risk averse household can invest in a risky project with positive net present value. If the project is successful, the household has the option to divert some of the project’s returns. The project’s outcome is fully verifiable to the outside financier, who can attempt to obtain legal recourse. Diverting cash flows is therefore costly, as the household would, for example, need to abscond to a different state to evade legal action. To prevent this inefficient outcome, the household needs sufficient skin-in-the-game. This endogenously generates a collateral constraint.\(^7\) This is a crucial element of our model as it implies that there will always be households who will face binding constraints on the amount that they can borrow.

We first solve the model assuming that markets are complete, that is borrowers and lenders can write any contract possible. This serves as a useful benchmark to better understand the efficiency

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\(^7\) This simple form of moral hazard greatly simplifies the analysis. The same economic intuition should hold for different moral hazard problems related to effort provision (Innes [1990], Holmström and Tirole [1997]), semi-verifiable income (Townsend [1979]) or non-verifiable income (Hart and Moore [1989] and Bolton and Scharfstein [1990]).
implications of the MWPAs. We then solve the model when only simple debt contracts are available. A key result is that investment levels will always be lower compared to the complete contracts case if the household is risk averse. Finally, we introduce a law into the model that protects the wife’s assets from creditors. We show that if the fraction of household assets that belongs to the wife is significant, but sufficiently small, protection will move the household closer to the complete markets solution and investment will increase. All proofs are in Appendix C.

3.1 Setup

Husbands and wives enter a marriage with premarital assets $w_M$ and $w_F$, respectively. The household allocates total premarital assets $w = w_M + w_F$ between consumption today ($c_0$) and an investment project, the proceeds of which will be consumed “tomorrow” ($c_1$). We can think of $c_1$ as an amalgam of the couple’s future consumption and a bequest to children. The household has log utility over current and future consumption:

$$U(c_0, c_1) = \log c_0 + \theta E[\log(c_1)]$$ (1)

The household invests in a risky project, which yields a return of $\tilde{R} \in \{R, \bar{R}\}$ with equal probabilities, where $\bar{R} > 1$ is the return if the project succeeds, and $\frac{1}{2 - \frac{1}{R}} < \bar{R} < 1$ is the return if the project fails. The lower limit on $\bar{R}$ ensures that, in an incomplete markets world without protection, the household will always want to borrow a strictly positive amount to invest in the risky project and does not want to store any wealth in a risk-free asset.\(^8\) We define $r \equiv E(\tilde{R}) = \frac{\bar{R} + R}{2} > 1$, so the project has a positive expected value. Further, we define $\Delta r \equiv \bar{R} - R$. We set the risk-free rate of return to zero.

Households can obtain outside financing to scale up investment. We assume that a portion of the project’s return can always be seized by the financier; for simplicity, we assume that this is $R A$, where $A$ are the total assets invested in the project. We can think of this as the value of the underlying land, buildings, slaves and tools. These assets are (1) likely to retain a large fraction of their original value, even if the project fails, and (2) are relatively easy to confiscate by the outside financier. This means that, if the project fails, households can be forced to hand over all their remaining assets. If the project succeeds, there will be an additional $(\bar{R} - R)A = \Delta r A$ on the table that cannot be easily seized and which the household can divert. We can think of this as the cash

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\(^8\)Throughout, we make the assumption that, in case of default, risk-free assets, such as government bonds or balances with (merchant) banks, can always be seized by creditors.
proceeds of the project. Diversion is costly, and the household will only be able to keep \( \beta \Delta r A \), where \( \frac{2(r-1)}{\Delta r} < \beta < 1 \). In order for an outside financing contract to be incentive compatible, the amount of money households are left with in the event of success must at least be as big as \( \beta \Delta r A \). The lower limit on \( \beta \) ensures that the moral hazard problem is always serious enough that it leads to a cap on outside investment. We assume that financiers are risk neutral and competitive.

### 3.2 Complete and Incomplete Markets Without Protection

We first consider the case in which markets are complete, and the household can pick from an unconstrained menu of contracts to obtain outside financing, \( e \). Total assets invested in the project are given by \( w - c_0 + e \). The incentive compatibility constraint (IC) is given by

\[
\mathcal{R}(w - c_0 + e) - \rho_g e \geq \beta \Delta r (w - c_0 + e)
\]

while the financier’s zero profit condition implies that

\[
\rho_g + \rho_b = 2
\]

where \( \rho_g \) (\( \rho_b \)) is the return to the outside investment in the good (bad) state of the world.

**Proposition 1** Suppose that \( \frac{2(r-1)}{\Delta r} < \beta < 1 \) and \( \frac{1}{2-1/R} < \frac{R}{1} < 1 \). Under complete markets, the IC constraint is binding, and households will choose the following values of \( c_0, e, \rho_g \), and total asset holdings \( w - c_0 + e \):

\[
c_0^* = \frac{w}{1 + \theta}
\]
\[
e^* = \frac{2r - 1 - \beta \Delta r}{\beta \Delta r - 2(r-1)} \frac{\theta}{1 + \theta}^w
\]
\[
\rho_g^* = \frac{\mathcal{R} - \beta \Delta r}{2r - 1 - \beta \Delta r}
\]
\[
w - c_0^* + e^* = \frac{1}{\beta \Delta r - 2(r-1)} \frac{\theta}{1 + \theta}^w
\]

If the household is risk neutral, the optimal contract would involve simple risk-free debt. Since the project has positive net present value, it is optimal to loosen the IC constraint as much as possible. This means minimizing the payment the household has to make in the good state of the world. In the bad state of the world it pays as much as it can. Proposition 1 implies that this
changes when the household is risk averse. In that case, the optimal contract strikes a balance between incentive compatibility and risk sharing. The household will have a positive payout in the bad state of the world. To satisfy the financier’s zero profit condition, this implies a higher payment in the good state of world.

Next, we solve the model assuming that only simple debt contracts are available. In this case, the household borrows an amount \( l \) and the lender charges a fixed interest rate \( \rho \). Total assets invested in the project are given by \( w - c_0 + l \). If the household is able to repay the lender in the bad state of the world, the loan is risk-free and \( \rho = 1 \). If the loan is risky, the household is forced to give up the entire project’s return in the event of failure. The lender’s zero profit condition dictates that

\[
\rho l + R(w - c_0 + l) = 2l
\]  

(8)

The IC constraint is similar to before.

**Proposition 2** Under incomplete markets with no protection, the IC constraint is never binding, and the household will choose the following values of \( c_0, l, \rho, \) and total asset holdings \( w - c_0 + \ell \):

\[
c_0^* = \frac{w}{1 + \theta}
\]  

(9)

\[
l^* = \frac{R R - r}{(R - 1)(1 - R)} \frac{\theta}{1 + \theta} w
\]  

(10)

\[
\rho^* = 1
\]  

(11)

\[
A^* = w - c_0^* + l^* = \frac{r - 1}{(R - 1)(1 - R)} \frac{\theta}{1 + \theta} w
\]  

(12)

The household decides to contract a risk-free loan. It will never want to borrow more than it can repay in the bad state of the world, as the lender can seize the entire return, driving the household down to zero consumption. Therefore, with a risk-free loan, the IC constraint will never bind. Outside financing and total investment in the project always fall relative to the complete markets case:

**Lemma 3** For a given \( w \), outside financing \( (e^*) \) and total asset holdings \( (w - c_0^* + e^*) \) under complete markets are greater than borrowing \( (l^*) \) and total asset holdings \( (w - c_0^* + \ell^*) \) under incomplete markets with no debtor protection.

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9For other models in which incentive compatibility is traded off against risk sharing see Holmström (1979) and Holmström and Ricart-i-Costa (1986).
3.3 Incomplete Markets With Protection

The introduction of a MWPA can partly remedy the inefficiency caused by market incompleteness. Under the new law, the proceeds from investing $w_F$ can never be seized by the outside financier. By guaranteeing a minimum level of consumption in the bad state of the world, the household might find it optimal to contract a large risky loan, leading to more investment in the project. At the same time, the protection of a wife’s property can also further amplify the inefficiencies through the tightening of the IC constraint. Which of these two effects dominates depends on the relative proportions of $w_M$ and $w_F$ in total premarital assets.

Under protection, a household contracts a (possibly) risky loan $l$ and total assets are given by $w_M + w_F - c_0 + l$. If the loan is indeed risky, the lender’s zero profit condition yields that

$$\rho l + R(w_M - c_0 + l) = 2l$$

(13)

The IC is given by

$$R(w_M - c_0 + l) - \rho l \geq \beta \Delta r(w - c_0 + l)$$

(14)

Note the absence of $w_F$ in both expressions. In line with the MWPAs (see Section 2.3), we assume that the household can only consume $w_F$ in $t = 0$ after the husband’s premarital assets $w_M$ have been exhausted.

**Proposition 4** Suppose that $\frac{2(r-1)}{\Delta r} < \beta < 1$ and $\frac{1}{2-1/R} < R < 1$. There exist $\phi_1$ and $\phi_2$, where $\phi_2 > \phi_1$, such that under incomplete markets with $w_F$ protected, the household will choose the following equilibrium values of $c_0$ and $l$, and total asset holdings $w_M + w_F - c_0 + l$:

**Case 1.** $w_M/w_F < \phi_1$:

$$\hat{c}_0 = \frac{1}{1 + \theta}(w_M + w_F)$$

(15)

$$\hat{l} = 0$$

(16)

$$\hat{A} = w_M + w_F - \hat{c}_0 + \hat{l} = \frac{\theta}{1 + \theta}(w_M + w_F)$$

(17)
Case 2. \( \phi_1 \leq w_M/w_F < \phi_2 \):

\[
\hat{c}_0 = \frac{2}{2 + \theta} \left\{ w_M + \frac{R(2 - 2r + \beta \Delta r)}{2\beta \Delta r} w_F \right\} \tag{18}
\]

\[
\hat{l} = \frac{2r - \beta \Delta r}{2 - 2r + \beta \Delta r} \frac{\theta}{2 + \theta} w_M - \frac{R(2r - \beta \Delta r)}{2\beta \Delta r} \frac{2}{2 + \theta} w_F \tag{19}
\]

\[
\hat{A} = w_M + w_F - \hat{c}_0 + \hat{l} = \frac{2}{2 - 2r + \beta \Delta r} \frac{\theta}{2 + \theta} w_M + \left\{ 1 - \frac{R}{\beta \Delta r} \frac{2}{2 + \theta} \right\} w_F \tag{20}
\]

Case 3. \( w_M/w_F \geq \phi_2 \):

\[
\hat{c}_0 = c_0^* = \frac{w_M + w_F}{1 + \theta} \tag{21}
\]

\[
\hat{l} = l^* = \frac{RR - r}{(R - 1)(1 - R)} \frac{\theta}{1 + \theta} (w_M + w_F) \tag{22}
\]

\[
\hat{A} = A^* = w_M + w_F - \hat{c}_0 + \hat{l} = \frac{r - 1}{(R - 1)(1 - R)} \frac{\theta}{1 + \theta} (w_M + w_F) \tag{23}
\]

Under Case 1, the husband’s premarital assets are relatively small, and the household would like to consume more than \( w_M \) in \( t = 0 \). As a result, it will exhaust all of its pledgeable assets and it will be unable to obtain any credit. In this case, protection will unambiguously decrease asset holdings. Under Case 3, the wife’s premarital assets are relatively small, and the household is better off selecting pre-law consumption and investment levels (which are feasible). Case 2 is most interesting. For intermediate values of \( w_M/w_F \), the household always picks a risky loan, and the IC constraint holds with equality. In other words, the household borrows to the limit. The larger \( w_M \) is relative to \( w_F \), the bigger the loan size and total asset holdings. Above a critical level of \( w_M/w_F, \phi^* \), total assets will (weakly) increase compared to the non-protection case.

In Figure 1, we illustrate the theoretical impact of the property laws for different values of \( w_M/w_F \), for a particular set of parameter values. These key results are summarized by the following two lemmas:

**Lemma 5** Define \( A^* \) to be total asset holdings under incomplete markets with no protection, and \( \hat{A} \) to be total assets under incomplete markets with protection.

a. Define \( \epsilon^*_i \) to be the elasticity of \( A^* \) with respect to \( w_i \), and \( \hat{\epsilon}_i \) to be the elasticity of \( \hat{A} \) with respect to \( w_i \), where \( i \in \{M,F\} \). Then, \( \hat{\epsilon}_M \geq \epsilon^*_M \), and \( \hat{\epsilon}_F \leq \epsilon^*_F \). A corollary is that the elasticity of \( \hat{A} \) w.r.t. \( w_M/w_F \) is greater than the elasticity of \( A^* \) w.r.t. \( w_M/w_F \).
b. There exists a $\phi^*$ satisfying $\phi_1 \leq \phi^* < \phi_2$ such that $\hat{A} - A^* < 0$ for all $w_M/w_F < \phi^*$, and $\hat{A} - A^* \geq 0$ for all $w_M/w_F \geq \phi^*$. The latter inequality is strict for $\phi^* < w_M/w_F < \phi_2$.

The intuition is straightforward. If a wife’s premarital assets are relatively large, the household has limited collateral available. The first order impact of a MWPA is to make the IC constraint so tight that the household is forced to borrow less. If the wife’s premarital assets only account for a small (but non-trivial) part of the total, the household will benefit from protection. The IC constraint is relatively loose, and the downside protection provided by the wife’s assets is still sufficient to make it optimal to borrow at the constraint. Note that the MWPA can never implement the exact complete markets allocation. Total asset holdings will only increase when $w_F$ is relatively small; in that case, consumption in the bad state of the world is lower than it would be under complete markets. Nevertheless, as long as $w_M/w_F \geq \phi^*$, post-law asset holdings will be (weakly) closer to the complete markets case. In the empirical section, we explicitly test for Lemma 5a. and provide an estimate for the $\phi^*$ defined under Lemma 5b.

4 Data

We link data from four sources: (1) county records of marriages contracted in the South between 1840 and 1850 from familysearch.org; (2) the complete count 1850 federal census from the North Atlantic Population Project; (3) slave schedules from the 1850 federal census from ancestry.com; (4) a complete index to the 1840 census from Ipums. Appendix D has more details about our data sources and linking procedures, here we discuss the main issues. Additional figures and tables are in Appendix E.

4.1 Household assets in the 1850 census

We begin by extracting information from approximately 250,000 marriage records from southern states dated between 1840 and 1850 from the genealogical website familysearch.org. These electronic records contain the full name of both the bride and the groom, the date of marriage, and the county of marriage. Once we have obtained these marriage records, we match them to the population census and slave schedules of 1850. The 1850 data contain information on place of residence, birth place, birth year, household composition, occupation, literacy, the value of real estate assets and slave holdings. Real estate assets included all land and buildings a household owned, irrespective of its location. No adjustments were made on the account of mortgages or other forms of debt. That
is, if a property of $1000 had a mortgage of $500, the census would report the full $1000 value (Ruggles et al 2010).

The measure of household assets in the 1850 census that we use in this paper is the total value of real estate and slave holdings, where we multiply the number of slaves each household owns by the average slave value in 1850 of $377 (Carter et al 2006). Since most households in the South were active in agriculture and slaves were the most valuable form of property, our measure should capture the lion’s share of household assets (Wright 2006, p. 59-60). We primarily miss other forms of movable property, including farm equipment, cattle, furniture and financial instruments such as bonds. We use county-level data from the published census of 1860 to evaluate the precision of our measure.10 In 1860, census enumerators asked households about the value of real estate and all movable property. We calculate slave assets in the same way as we do for 1850. The correlation between slave assets and all movable property is 0.85. The ratio of real and slave assets to total assets lies somewhere between 70 and 85% (interquartile range).11 The census numbers are self-reported and might misrepresent the actual value of assets. Bleakley and Ferrie (2016, Appendix F) document that for a representative county in Georgia asset values reported in the census closely correspond to tax records. Table A1 lists the real estate and slave holdings reported in the 1850 census of 16 borrowers for whom Kilbourne (1995) reports the details of a mortgage contract. The table shows that the number of slaves reported in the census correspond closely to the number of slaves pledged in the mortgage contract.

4.2 Linking marriage records to the 1850 census

Linking marriage records to the census of 1850 is complicated by the fact that we have relatively little information to make these links. The conventional approach to linking census data is to use information on name, sex, race, birth year and birth place.12 However, our marriage records only give us information on names; this makes it difficult to identify correct matches from a set of potential matches. We choose a methodology that aims to maximize the probability that a link is correct at the expense of a high linkage rate. We begin by identifying married couples residing in the South in 1850.13 We do this using age, surname and location within the household, which is similar

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10 Full count household-level data for the 1860 census (with information on real and personal property as well as slaveholdings) is not available in digitized format.

11 Another 10% is represented by farm equipment and cattle.


13 This residency restriction on our target sample is helpful because of the lack of precise information we have that can be used for matching. Couples married in the South are unlikely to have left the region within less than 10 years. So, this location restriction (or some version of it) will help us distinguish between some of the multiple matches that
to the approach taken by IPUMS (Ruggles et al 2010); this is necessary because the 1850 census does not explicitly ask about marital status. We then search these couples for potential matches to our marriage records based on husband’s and wife’s first initial and a phonetic surname code.\textsuperscript{14} We then evaluate the similarity between all three name variables in the marriage record and census record using the Jaro-Winkler algorithm (Ruggles et al 2010), and we drop all potential matches that score below a defined threshold. Finally, we keep only unique matches, in which complete first names are given for both the husband and wife in the 1850 census; we discard potential matches if there is an additional possible match in the 1850 census with information on only first initials. For example, “John and Mary Smith” would be discarded if there was another couple named “J and Mary Smith”. This approach maximizes accuracy at the expense of sample size; it heavily favors individual with unusual names.

Table E1 contains statistics on our linkage rates, separately by state. We collect marriage records from all southern states (broadly defined) besides Delaware, Maryland, and South Carolina. Delaware has too few marriage records to be worthwhile; Maryland and South Carolina do not have available marriage record data. The fraction of marriage records we are able to link uniquely is 16\%, which is on the low side. This appears to be due to the high frequency of multiple matches: approximately 50\% of our marriage records can be linked to at least one 1850 census record (including those with first initials only) and 40\% can be matched to at least one record with full first name entries.

To narrow down information on multiple matches, we use information on the implied age at marriage and discard potential matches with highly improbable ages. We assume that our unique matches are all true, and we compute $Pr(A = a|T)$, which is the probability that a man’s age at marriage is equal to $a$ given that a link is true; we do the same thing for women. Then, for each potential non-unique match, we compute a weight $\pi$, which is equal to the probability that each match is true given the implied age at marriage of the husband and wife using Bayes rule. For a marriage record with $K$ potential matches, we compute $p_k = \frac{\pi_k}{\sum_{i=1}^{K} \pi_i}$, and define a match as “true” if $p_k \geq 0.95$. This raises our overall match rate by almost 5 percentage points, to just over 20\%.

The validity of this procedure depends on the accuracy of our unique matches. Table E2 and Figure E1 suggest that these matches are typically accurate. Recall that we are matching marriage records when matching on name alone. There is also a well documented tendency for southern born individuals to migrate along an east-west axis within the South, and not to the North (Steckel [1983]).\footnote{We use NYSIIS codes, which are commonly used in record linkage. See Atack and Bateman (1992), Ferrie (1996), and Abramitzky et al (2012) for examples.}
records to census records from southern states based on names only; we are not using information about state of marriage to refine these matches. So, if couples who were married in Alabama, for example, are more likely to reside in Alabama in 1850 than a randomly selected southern couple, this suggests that our matches are relatively accurate. Table E2 compares the probability of residing in or being born in the couple’s marriage state with the probability of residing or being born in that state for a randomly selected southern couple in 1850. These probabilities are typically an order of magnitude higher for couples married in state than for all southern couples, suggesting that our matches are typically accurate.

Figure E1 plots the distribution of age at marriage for men and women in our uniquely matched sample. We compute age at marriage by combining information on age in the 1850 census with information on marriage year from our marriage records. Again, recall that we are not using any of this information to create our unique matches. So, if our matches were completely random (i.e. inaccurate), our estimated “age at marriage” would be typically 9 years younger for individuals married in 1840 compared with those married in 1849. In the top two panels of Figure E1, we plot the distribution of age at marriage for men in our uniquely matched sample who were married in 1840 and 1849, and we plot the same distribution for a “placebo” sample of randomly matched data. In our matched data, the distribution of age at marriage looks very similar for men married in 1840 and 1849, suggesting that the matches are relatively accurate. The same picture emerges when we look at age at marriage for women, in the bottom two panels of Figure E1.

Throughout the analysis, we impose that couples be resident in their state of marriage. A series of Mississippi court cases from the 1840s reveal that it was highly uncertain which state’s law would apply if a couple got married in a state different from where they lived, often depending on an individual judge’s interpretation of the law (1 Miss 480; 9 Miss. 48; 19 Miss 445; 46 Miss 618). Since we cannot infer the exact expectations of these couples regarding their protection status, we drop them from the analysis. Table E6 shows that all our results are robust to including these couples, assuming that either the law of the state of marriage would apply or the law of the state of residence.

4.3 Socioeconomic status from the 1840 census

The final data source we use is a complete index to the 1840 census. We use this to measure the premarital socioeconomic status of husbands and wives. The underlying assumption of our

\[15\] This is done by randomly selecting couples and then randomly assigning them to be “married” in 1840 or 1849.
analysis is that husbands and wives received property from their family around the time of marriage (Appendix B, Section B.1 has more details) and that their family’s socioeconomic status is correlated with these transfers. The only socioeconomic information available in the 1840 census is slave holdings. Specifically, each 1840 census record is taken at the household level, and contains information on the name of the household head as well as the number of free and enslaved persons residing in the household. So, we calculate the value of 1840 slave holdings at the household level as the number of enslaved persons residing there, multiplied by the average slave price in 1840, which was $377 (incidentally identical to the 1850 average, Carter et al 2006). Again, slaves were the most valuable form of property in the South and should therefore provide a good measure of people’s socioeconomic status. In our 1850 household level data, slave and real estate values have a correlation coefficient of 0.49.

We compute a measure of “familial assets” by averaging the value of households’ slave holdings by state and surname, and we link this to our matched sample by birth state and surname (using women’s maiden names stated in the marriage records). This measure is only available for individuals born in the South. The average number of households in each surname-state is 77. This measure is meant to capture husband’s and wife’s general socio-economic background; it is not meant to capture the number of slaves they expect to get from their parents.\textsuperscript{16} We discuss additional properties of this surname based measure of familial assets in Appendix D.

By now, there is a well established literature that uses surnames to infer socioeconomic status in different contexts. In seminal work, Clark (2014) follows this approach to study social mobility in England. Guell, Rodriguez Mora and Telmer (2015) study social mobility in Catalonia in the 2001 census. Bleakley and Ferrie (2016, p. 1470) use surnames to infer socioeconomic status in their study of Georgia’s Cherokee land lottery in 1832 and argue that “surname averages (...) are statistically significant predictors of individual-level behavior even controlling for a variety of other covariates”. Olivetti and Paserman (2015) and Olivetti, Paserman and Salisbury (2018) use the socioeconomic content of first names to study intergenerational income mobility in United States from 1850-1940.

In our case, our surname-based measure of familial socioeconomic status turns out to be highly correlated with total 1850 assets. The elasticity of 1850 assets with respect to our measure of 1840 assets is between 0.5 and 0.6 for both men and women, even conditional on state and year

\textsuperscript{16}Because we do not have detailed demographic (or even first name) information on household members, it is not possible to link our couples to their precise 1840 households.
of marriage fixed effects. In Figure 2, we include a binscatter plot of log 1850 assets against log total premarital assets, based on our surname-based measure, controlling for state and year of marriage fixed effects. Panel A uses the entire sample, Panel B omits common surnames (surnames with 20 or more households in a state). There is a strong and positive relationship between these two variables, suggesting that our measure is strongly correlated with the assets that individuals actually bring into a marriage. This relationship is similar for both samples. As we will show later, our main empirical results are virtually unchanged if we omit common surnames. In fact, our effect is strongest if we omit surnames with more than 20 households in a state.

4.4 Final sample

Table 2 contains summary statistics for our matched data. We can match approximately 50,000 couples between marriage records and the 1850 census. Of these, we can determine slave ownership status using the 1850 slave schedules in 75% of cases. In approximately 88% of cases, both the husband and wife are southern born. Of these, we are able to obtain an 1840 assets measure for 76%, using the method described above. Thus, approximately 40% of all couples linked from our marriage records to the 1850 census appear in our core sample.\textsuperscript{17}

Approximately 19% of the couples in our sample are married after the passage of a MWPA. In Table E4, we perform a balancing test in which we compare the characteristics summarized in Table 2 of couples married before and after the passage of a MWPA. We do a simple means comparison, and we regress $LAW_{s,t}$ on each characteristic as well as state and year of marriage fixed effects. With the exception of wife’s age at marriage, we do not find that pre-1850 characteristics predict being married before or after the passage of a law. The difference in wife’s age at marriage is statistically significant but very small: conditional on state year of marriage fixed effects, this amounts to less than one day.

5 Empirical Approach

5.1 Hypotheses and Specifications

Our model generates predictions about the impact of a MWPA on borrowing and investment. The outcome variable we use to test these predictions is a couple’s 1850 real estate and slave holdings. This is meant to capture total household assets invested in a risky project (in this case,\textsuperscript{17} We show in Appendix E that the main results are robust to relaxing some of these sample restrictions.)
agriculture). Holding premarital assets constant, we interpret variation in household assets as coming from variation in household borrowing. We think this is a natural assumption because the primary motive of the MWPAs was to protect a wife’s assets from creditors. In Section 5.3, we confirm that our effects are stronger for households who relied more heavily on credit and for whom credit constraints were more likely to bind. In Section 6, we consider a number of alternative channels through which the MWPAs could have affected asset holdings; none can fully explain our results.

Based on our theoretical model (Lemma 5), we pose two hypotheses about the impact of the passage of an MWPA.

1. The elasticity of total household assets should increase with respect to the husband’s premarital assets and decrease with respect to the wife’s premarital assets.

A higher (lower) elasticity indicates that the household borrows and invests more (less) against premarital assets. We do not have a direct measure of premarital assets and approximate it with husband’s and wife’s socioeconomic status, as captured by our measure of 1840 familial slave holdings.

2. Total household assets should be strictly smaller if the wife accounts for a relatively large share of the couple’s joint premarital assets and (weakly) higher if the husband accounts for a relatively large share.

In the absence of a direct measure of premarital assets, we take the ratio of a husband’s and wife’s 1840 familial slave holdings as a proxy. The higher the wife’s socioeconomic status compared to the husband, the larger we expect her share in joint premarital assets to be.

To test Hypothesis 1, we estimate the following regression

\[
\log(1 + A_{i,j,s,t}) = \alpha_1 \log W_{i,1840} + \alpha_2 \log W_{j,1840} + \beta LAW_{s,t} + \gamma_1 \log W_{i,1840} \times LAW_{s,t} + \gamma_2 \log W_{j,1840} \times LAW_{s,t} + \delta_1 \log W_{i,1840} \times D_s + \delta_2 \log W_{i,1840} \times D_t + \delta_3 \log W_{j,1840} \times D_s + \delta_4 \log W_{j,1840} \times D_t + \zeta_1 X + \zeta_2 X_j + \phi_1 D_s + \phi_2 D_t + u_{i,j,s,t}
\]

where \(A_{i,j,t,s}\) is the value of real estate and slaves belonging to husband \(i\) and wife \(j\) (married
in year $t$ and in state $s$) reported in the 1850 census. $W_{i,1840}$ and $W_{j,1840}$ are husband’s $i$’s and wife’s $j$’s familial slave holdings in 1840. The variable $LAW_{s,t}$ is 1 if a MWPA has been enacted in state $s$ by year $t$. The vectors $X_i$ and $X_j$ are individual characteristics of husband $i$ and wife $j$, including literacy, age fixed effects, and birthplace fixed effects. Vectors $\bar{D}_s$ and $\bar{D}_t$ contain state and year-of-marriage dummies, respectively.

The coefficients $\alpha_1$ and $\alpha_2$ give the elasticity of households’ 1850 assets with respect to husbands’ and wives’ 1840 familial slave holdings. Coefficient $\beta$ indicates to what degree households married after the passage of a MWPA hold more or less assets. Of key interest are $\gamma_1$ and $\gamma_2$, the coefficients on the interaction terms between $W_{i,1840}$ and $LAW_{s,t}$, and $W_{j,1840}$ and $LAW_{s,t}$. These indicate whether the elasticity of total assets with respect to a husband’s or wife’s familial slave holdings changes after the passage of a MWPA. In some specifications we combine the two interaction terms and include $\Delta \gamma \log \left( W_{i,1840}/W_{j,1840} \right) \times LAW_{s,t}$. This allows us to directly compare households with a different relative values of husband’s and wife’s premarital assets. The model predicts that $\gamma_1 > 0$, $\gamma_2 < 0$ and $\Delta \gamma > 0$.

One attractive feature of our data is that we observe couples who got married in the same state before and after a MWPA. We also have cross-state variation in the timing of these acts. Our data therefore allow us to include both state and year-of-marriage fixed effects ($\bar{D}_s$ and $\bar{D}_t$). To allow for the possibility that premarital assets affect 1850 assets differently in different states and years of marriage, we also include interactions between premarital assets and the state and year-of-marriage dummies (captured by vectors $\bar{\delta}_1$ to $\bar{\delta}_4$). In this specification, coefficients $\alpha_1$ and $\alpha_2$ are elasticities for the omitted state and year-of-marriage. They have no general interpretation and are not reported in the regression tables.

Approximately 45% of our households have zero real estate and slave assets in 1850. For our OLS estimates, we add $1 to household assets in order for the log to be defined. For robustness, we rerun the regressions adding different dollar amounts, ranging from $0.10 to $50 (the lowest value for real estate that regularly appears in the 1850 census). Figure E3 reports the resulting estimates of the key coefficient $\Delta \gamma$. We also estimate Equation (24) as a Tobit, in which observations with $A_{i,j,t,s} = 0$ are treated as censored.

To test Hypothesis 2, we estimate regressions similar to (24), dropping the terms associated with $\gamma_1$ and $\gamma_2$, for different quintiles of the $W_{i,1840}/W_{j,1840}$ distribution. The key coefficient of interest is $\beta$, which tells us whether, conditional on 1840 familial slave holdings, couples married after a MWPA have more or less household assets than couples married before. The model (Figure 1)
predicts that $\beta$ is different for different parts of the $W_{i,1840}/W_{j,1840}$ distribution: negative for lower quintiles and positive for higher quintiles. Depending on whether there are a sufficient number of matches between rich men and poor women, $\beta$ might be zero for the highest quintile.

5.2 Main Results

Figure 3 illustrates the paper’s main results. It uses binscatters to present the relation between husband’s and wife’s 1840 familial slave holdings (a proxy for premarital assets) and total household assets in the 1850 census. All four panels control for state and year-of-marriage fixed effects. Panel A shows that, keeping a wife’s premarital assets constant, an increase in husband’s premarital assets increases 1850 asset holdings. Consistent with Hypothesis 1, this sensitivity is stronger for couples married after the passage of a MWPA. Panel B varies the wife’s premarital assets and, again consistent with Hypothesis 1, shows the opposite result. Panel C combines the preceding two panels by looking at the log-ratio of husband’s and wife’s premarital assets. The relation between $\log(W_{i,1840}/W_{j,1840})$ and 1850 assets is virtually flat for couples married before a MWPA, but upward sloping for couples married after. Consistent with Hypothesis 2, couples for whom the husband’s share in premarital assets is relatively small have fewer assets in 1850 if they are married after the passage of an act; couples for whom this share is relatively large have more assets. This difference in asset holdings dissipates in the right tail of the $W_{i,1840}/W_{j,1840}$ distribution. Panel D includes additional controls; results are virtually unchanged.

Tables 3 and 4 provide a more formal test of Hypothesis 1. They report the OLS and Tobit estimates of equation (24). All (continuous) independent variables are demeaned and normalized by their standard deviation. Odd numbered columns include $\log(W_{i,1840} \times LAW_{s,t})$ and $\log(W_{j,1840} \times LAW_{s,t})$ separately; even numbered columns include $\log(W_{i,1840}/W_{j,1840}) \times LAW_{s,t}$. All estimates include state and year-of-marriage fixed effects. In columns (3) and (4) we include age-at-marriage, state-of-birth and literacy fixed effects. We also control for the commonness of family names. As we explain in Appendix D, error in the measurement of a person’s premarital assets is positively correlated with the commonness of surnames. To ensure that this does not affect our results, we calculate the prevalence of husbands’ and wives’ family names in their state of birth in 1840. We then divide husbands and wives into 10 bins where the first bin includes the rarest family names and the tenth bin the most common ones. We include bin fixed effects effects for both husbands and wives; estimates therefore capture the effect within groups of people whose family name is more or less equally prevalent in the population. Finally, in columns (5) and (6) we include a state specific
time-trend estimated on the time of marriage. This way we control for state-specific changes in total asset holdings over time.\footnote{For example, suppose that for a certain state the assets of married couples are increasing over time due to improving macro-economic conditions, such that a married couple in 1849 is on average richer than a couple married in 1841. Further suppose that this state introduced a married women’s property law some time between 1841 and 1849. In that case, we would mechanically find that couples married after a law change have more property in the 1850 census. As long as these macro-economic developments can be captured by a linear trend, a state-specific linear time trend should control for this. We explicitly control for a number of potentially important macroeconomic conditions in the next section.}

The results are consistent with the predictions from our simple model. In line with Lemma 5, the interaction terms indicate that the 1850 asset holdings of couples who got married after the passing of a MWPA are increasing in husbands’ premarital assets, decreasing in wives’ premarital assets and increasing in the log-ratio of the two. Husband’s and wife’s premarital assets are highly correlated and including them both as interaction terms with \( \text{LAW}_{s,t} \) leads to relatively large standard errors (although both are statistically significant). Using the log-ratio of premarital assets results in tighter estimates. Economic effects are sizeable. The OLS estimates in Table 3 indicate that a one standard deviation increase in \( \log[W_{i,1840}/W_{j,1840}] \) leads to 1850 asset holdings that are around 23% higher if a couple is married after a MWPA. In the Tobit estimates of Table 4 the comparable number lies around 28%.\footnote{The Tobit estimates report both simple coefficients, measuring the impact on the (uncensored) latent variable, and the marginal effect on our censored measure of household assets. The latter is estimated at the mean value of our explanatory variables and is what we refer to here.} All continuous variables are demeaned and the estimate of \( \beta \) – the coefficient on \( \text{LAW}_{s,t} \) – therefore measures the effect of a MWPA on a couple with an average husband’s share in premarital assets. \( \beta \) is close to zero. This implies that couples married after a MWPA have more assets in 1850 if the husband’s share in premarital assets is above average. Couples have fewer assets if the husband’s share is below average.

Figure 4 provides a more formal test of Hypothesis 2. We split the sample into five groups, based on the ratio of husband’s to wife’s premarital assets. The cutoffs are dictated by the quintiles of this distribution. For clarity, we express these quintiles in terms of the fraction of joint premarital assets coming from the husband \( (W_{i,1840}/(W_{i,1840}+W_{j,1840})) \). For each subsample, we estimate our regression equation and plot the \( \beta \)’s – the coefficients on \( \text{LAW}_{s,t} \) – with 95% confidence intervals. Among couples in which the husband’s property accounts for less than 26% of joint premarital property, the MWPAs are associated with a significant decline in 1850 household asset holdings by about 50%. Among couples in which the husband brings in 55-72% of joint premarital assets, the acts are associated with a significant increase in household assets of about 50%. There is no effect for couples in which the husband’s property accounts for 26-54% of premarital property. These
results are consistent with Hypothesis 2. Total household assets are smaller if the wife accounts for a relatively large share of the couple’s joint premarital assets and higher if the husband accounts for a relatively large share. Among couples in which the husband brings in more than 72%, the laws have no effect on asset holdings. This is in line with our model (Figure 1). If the degree of protection offered is too low, it has no effect on the household’s behavior; the protection offered will be insufficient to induce the household to take on more risk, borrow, and purchase more assets.

5.3 Heterogeneous Effects

If the impact of MWPAs on asset holdings is driven by the credit market effects described in our model, we would expect the impact to be most pronounced for households who relied more heavily on credit or who were more likely to be credit constrained. To this end, we explore heterogeneity in our main effect by characteristics of the couple, or the county the couple was married in. We use data from the earliest possible year (1840, 1850, or 1860) given the information available in each census.

In panels A and B of Figure 5, we analyze differences in our main effect by reliance on credit. The secondary literature reviewed in Appendix A suggests that households relied most heavily on credit if they were engaged in agriculture, especially in cotton production. We therefore test whether the effect is greater in more rural or more cotton intensive counties. We divide our sample into terciles of the cotton intensity (panel A) or population density (panel B) distribution, and we estimate the specification from column (6) of Table 3 on each subsample.\(^{20}\) We plot the coefficients on \(\log(W_{i,1840}/W_{j,1840}) \times LAW_{s,t}\) for each tercile. We find that the main effect of interest is most pronounced in the most cotton intensive and least densely populated counties.\(^{21}\)

In Panels C through F we consider differences in credit constraints. In the simple model we present in Section 3, every household married after a MWPA wants to borrow as much as possible and is therefore at the constraint. In reality, it is likely that some households had ample collateral available to fund their desired level of investment. For these unconstrained households, the issue of whether assets were in the husband’s or wife’s name would have been less relevant, and we would expect to find weaker results. Constraints are less likely to bind on wealthy families. In Panel C,

\(^{20}\)Cotton intensity is defined as the ratio of the value of cotton output to the value of total agricultural output at the county level (Haines et al 2016). Population density is defined as a county’s white population per square mile (Haines et al 2010).

\(^{21}\)We emphasize that these results are suggestive, but there are certainly other mechanisms that may drive them. For example, our measure of premarital assets may simply be most accurate in rural and cotton-intensive counties, as it is based on slave holdings. Thus, focusing on rural or cotton intensive counties may simply remove attenuation bias.
we estimate our baseline specification on terciles of the groom’s premarital wealth distribution; in Panel D, we use terciles of the distribution of county-level real and slave wealth per household. In both cases, we find that the effect is most pronounced in the lowest (poorest) tercile, where credit constraints are most likely to bind. Credit constraints are also less likely to bind if a household has access to a larger set of financial intermediaries who have the capital and expertise to provide ample credit against a given amount of collateral. As we explain in Appendix A, Section A.1 country retail stores and large plantation owners were the most common sources of credit for southern households. We measure the amount of capital invested in country retail stores per household, and the number of plantations larger than 500 acres per household, at the county level.\textsuperscript{22} We estimate our baseline specification using terciles of these distributions in panels E and F. In both cases, the effect is greatest in the lowest tercile where we believe credit constraints are more likely to bind.

Finally, we expect our effect to be strongest in counties that were on the frontier and grew the fastest. In these counties, households presumably both had a greater need for credit, and were more likely to face financial constraints. In panels Panels G and H, we estimate our baseline specification for terciles of the growth rate of the free and slave population. We find that the effect is largest in counties experiencing the fastest growth between 1840 and 1850.

6 Alternative Mechanisms

In this section, we explore a number of alternative mechanisms that may drive our main findings. We discuss (1) changes in the marriage market, (2) changing preference for safe and liquid assets, (3) changing bequest behavior on the part of a couple’s parents, (4) the introduction of state level homestead exemptions, (5) state-varying macro conditions, which may have been correlated with the timing of adoption of MWPAs, and (6) potential measurement error in our measure for premarital assets. We argue that none of these alternative mechanisms can account for our main findings.\textsuperscript{23}

\textsuperscript{22} Data on farm size is not available until 1860. So, we calculate the latter measure using 1860 data. This measure of proximity to plantations is accurate to the extent that there is continuity in the presence of large plantations over time.

\textsuperscript{23} In addition to the sensitivity analysis described here, Appendix E presents a series of other robustness tests. In Table E7, we add interactions between husband’s and wife’s name frequency bins and state and year fixed effects and we drop states that never pass a MWPA from the analysis. In Figure E3, we plot the main coefficient of interest after adding different dollar amounts to our measure of 1850 household assets before taking logs, ranging from $0.10 to $50 (the lowest value of household assets that regularly appears in the 1850 census). Finally, in Figure E4 we present the results from a placebo test, in which we randomly assign marriage dates to couples and re-estimate our core specification. This is intended to address the concern that the passage of the property laws is somehow endogenous to household investment: perhaps couples living in states that passed property laws early differed systematically from
6.1 Changes in the Marriage Market

It is possible that the passage of a MWPA led to a change in the unobserved productivity of marriages along the $W_{i,1840}/W_{j,1840}$ dimension. If this is the case, our results may be biased. We consider two sources of bias: (1) unobservably productive couples optimizing over protection regimes, by moving between states or selectively timing their marriages; (2) property laws changing the value of wealth in the marriage market, which may change the distribution of unobserved productivity conditional on spousal wealth.

6.1.1 Endogenous timing and location of marriage

The first concern is that the property law under which a couple is married is at least partly endogenous. For example, according to our model, a couple with a relatively rich husband and a relatively poor wife is better off marrying in a state with a MWPA in place. So, such a couple might find it optimal to relocate to a state that has already enacted a law; or, if the couple foresees a law being enacted in its home state, it may find it optimal to postpone marriage until after the law has been passed. This is only a threat to identification if couples who are able to optimize in this way are also systematically more productive on unobservable dimensions. In fact, we do find evidence of a certain amount of optimizing behavior.\(^{24}\)

To address this concern, we estimate our baseline model by two stage least squares, using instruments for $LAW_{s,t}$ and the interaction between $LAW_{s,t}$ and the gap between husband’s and wife’s log premarital assets. We use the following instruments for $LAW_{s,t}$: an indicator for a law having been passed in the bride’s state of birth by year $t$; an indicator for a law having been passed in the groom’s state of birth by year $t$; an indicator for a law having been passed in state $s$ by the year in which the bride turns 22 (the average female age at marriage in our sample); and an indicator for a law having been passed in state $s$ by the year in which the groom turns 27 (the those living in states that passed them late or not at all, and our results merely reflect this underlying difference. We do this 10,000 times and plot the distribution of our key coefficient on $\log(W_{i,1840}/W_{j,1840}) \times LAW_{s,t}$ in the figure. The coefficient from these placebo specifications is centered around zero, and the coefficient we estimate from the true data is in the far right tail of the distribution.

\(^{24}\)In particular, we find that, among couples in which the wife comes from a state without a property law in place at the time of marriage, a one standard deviation increase in $\log(W_{i,1840}/W_{j,1840})$ is associated with a 0.1 percentage point increase in the probability of the couple marrying in a state that does have a property law (this is conditional on state of marriage, wife’s state of birth, and year of marriage). This is an economically small but statistically significant effect, and we find a similar effect on the probability of leaving the husband’s state of birth for marriage. Looking at a narrow band of $\pm 1$ year from the passage of a married women’s property law, we find that a one standard deviation increase in $\log(W_{i,1840}/W_{j,1840})$ is associated with a 2 month increase in the wife’s expected age at marriage after the passage of a law. This is consistent with couples with wealthier men and poorer women being more likely to delay marriage until after a law has been enacted. Again, this is a small (and very local) effect, but it is significant at the 10% level.
average male age at marriage). We use interactions between the above instruments for $LAW_{s,t}$ and $\log(W_{i,1840}/W_{j,1840})$ to instrument for $LAW_{s,t} \times \log(W_{i,1840}/W_{j,1840})$. The instruments based on birth state deal with selective migration into states with or without protection, and the instruments based on birth year deal with selective timing of marriage.

Our 2SLS results are presented in Table 5. In column (1), we repeat our main OLS specification, with the full set of controls. In the remaining columns, we use instruments based on birth year and/or birth state. The 2SLS results are consistent with a certain amount of optimizing on the part of couples – the coefficient on the interaction between $LAW_{s,t}$ and the spousal wealth gap declines in magnitude – but the coefficient is still economically important and significant at the 10 percent level. This indicates that our main finding is not purely an artifact of selection.\(^{25}\)

6.1.2 Changing match quality

A related concern is that the MWPAs had a direct effect on the marriage market, which may bias our results. In particular, the MWPAs may have affected the distribution of $w_M, w_F$ pairs. We analyze and account for the marriage market effects of the MWPAs at length in a companion paper (Koudijs and Salisbury 2018).\(^{26}\) Here, the salient question is whether or not changes in the marriage market can generate the change in the relationship between pre- and post-marital assets that we document in this paper.

First of all, a change in the distribution of spousal wealth pairings cannot on its own explain our findings, as we explicitly control for premarital assets in our regressions, and these have common support before and after the passage of a MWPA. We also control for a host of other individual characteristics, namely age, literacy, and birth place, which may have changed after the passage of a law. So, changes in the marriage market can only explain our findings if unobservable match quality changed in a way that is correlated with spousal premarital assets. In particular, if couples in which the man is wealthy relative to the woman become more (unobservably) productive after a MWPA, and couples in which the woman is wealthy relative to the man become less (unobservably) productive after a MWPA, then the coefficient on the interaction between $LAW_{s,t}$ and $\log(W_{i,1840}/W_{j,1840})$ declines slightly in magnitude, but it remains positive and significant.

\(^{25}\)To address concerns about the selective timing of marriage, we do an additional test. We assume that the timing of marriage is relatively local – couples may postpone marriage by up to, say, a year in anticipation of the passage of law, but not more. Outside of a year, postponing marriage will be costly, and the ability to accurately forecast the passage of a law is limited. So, we drop all couples who marry less than a year before or after the enactment of a property law. The coefficient on the interaction between $LAW_{s,t}$ and $\log(W_{i,1840}/W_{j,1840})$ declines slightly in magnitude, but it remains positive and significant.

\(^{26}\)In brief, we find evidence that these laws were associated with an increase in assortative mating, or the tendency for men and women from similar socioeconomic backgrounds to marry. We also find heterogeneous local effects in different regions of the joint $w_M - w_F$ distribution, which are consistent with the mechanism we explore in the current paper.
productive after a MWPA, this may generate our findings.

We use a proxy for marriage match quality – marital separation – to explore this possibility. Intuitively, couples that have better unobserved match qualities are less likely to separate. While divorce was uncommon during the 1840s, marital separation was not. Cvercek (2009) estimates that approximately 10% of marriages were “disrupted” during the mid to late 19th century, most often during the first five years of marriage, with husband and wife ending up at different addresses. As such, co-residence in 1850 should be positively correlated with match quality.

In Figure 6, we plot coefficients from regressions of an indicator for having linked the couple to the 1850 census on an indicator for the couple marrying after the passage of a MWPA, estimated on different quintiles of the husband’s share in premarital assets distribution. All regressions include state and year of marriage fixed effects, as well as controls for the commonness of the bride’s and groom’s surnames. The figure shows that couples in the tails of the husband’s share in premarital assets distribution are more likely to be together in 1850 if they were married after the introduction of a MWPA; for couples in which the husband and wife have roughly the same premarital assets there is no difference. This pattern looks very different from what we find for 1850 asset holdings, which suggests that changes in unobserved match quality cannot explain our key findings.28

6.2 Safe and liquid assets

Our outcome variable captures total assets invested in a risky project, that is, real estate and slaves. We do not observe safe and liquid assets, such as cash, bonds issues by state government bonds, or money held on account with local merchants. Even though such assets only contributed to between 5 and 20% of total assets at most (Section 4.1 has details), it is possible that the choice between safe and risky assets was different for couples married after the passage of a MWPA and that this affects our results.

There are at least two reasons for why the choice between safe and risky assets might be different.

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27 This ensures that simple linkage error is not the driver of this pattern.
28 This pattern is plausibly consistent with the increase in assortative mating documented in Koudijs and Salisbury (2018). An increase in assortative mating implies an increase in the systematic value of marriages between men and women of similar means. This means that men and women of different means have to cross a higher unobserved match quality “bar” in order to marry. If the longevity of a relationship is determined primarily by unobserved match quality, we should expect to see fewer separations among couples from different backgrounds married after the passage of a MWPA. A limitation is that we cannot be sure why a couple is not linked to the 1850 census. For instance, couples not linked to the census may have been highly fertile – another commonly used measure of marital match quality (Stevenson 2007) – and not linked due to maternal mortality. In Appendix Table E5, we explicitly test whether couples linked to 1850 are more likely to have children if they are married after an MWPA, and the husband is relatively wealthy. We find the opposite, again indicating that changes in marriage match quality are not responsible for our findings.
First, it is possible that women married after a MWPA had more bargaining power. Even though the acts primarily provided debtor protection and left married women’s coverture untouched, they may have changed spousal bargaining indirectly. A MWPA made it less attractive for a husband to abandon his family. Before passage, he could simply take his wife’s movable property with him; after passage this was impossible. This reduced the risk of abandonment and may have made the wife more assertive in voicing her demands. If women were more risk averse than men (Croson and Gneezy 2009), they might have favored investments in safe assets. Second, couples married after a MWPA may have been more concerned with liquidity shocks. The wife’s assets had to be invested “for her benefit” and could only be consumed if the husband was unable to provide for his family’s necessaries out of his own pocket. If the household suffered a liquidity shock, the husband would have been forced to sell his own assets. To insure against such shocks, couples married after a MWPA might have held more liquid assets.

What does this mean for our findings? Both arguments predict that all couples married after a MWPA would hold relatively less risky assets. This is not what we find in the data. In particular, couples where the husband was relatively rich compared to the wife hold more rather than less slaves and real estate. Since no woman should have experienced a decline in bargaining power after the introduction of a MWPA, it is difficult to square this with an explanation based on bargaining power alone. The same argument holds for insurance against liquidity shocks: no household should have seen the liquidity of its slaves and real estate increase after the passage of a law. Even though a stronger preference for safe and liquid assets cannot fully account for our findings, it might still be a contributing factor. In particular, it might partially explain the lower level of risky asset holdings for couples where the wife is relatively rich compared to the husband, for whom both bargaining power and the impact of liquidity shocks would have changed the most. However, since safe and liquid assets only accounted for between 5 and 20% of total assets, we expect this effect to be quantitatively small.

Illiquidity was primarily a concern for real estate; the market for slaves was relatively liquid. Appendix A, Section A.4 has details.

Following Doepke and Tertilt (2009), we also consider a richer (formal) model of intra-household bargaining power, incorporating a trade-off between producing physical output and investing in children’s human capital. We adapt their model to consider the effect on asset holdings through this channel. Similar to the discussion in the main text, this alternative model cannot explain why asset holdings are smaller or larger for different parts of the \( W_{i,1840}/W_{j,1840} \) distribution. Results available upon request.

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6.3 Bequests to children

Next, we investigate whether differences in 1850 real estate and slave holdings are actually the result of changes in bequest behavior on the part of couples’ parents. For this to explain the baseline results in Tables 3 and 4, it would need to be the case that parents bequeath less to their daughters and more to their sons after the passage of a MWPA. This is plausible, as assets in the hands of married daughters become less valuable, as they can no longer be used as collateral. The first thing to note is that this not an obvious outcome. For example, in 1846 the Alabama legislature argued that the passing of a marriage law did not only protect a woman against a husband’s insolvency, but also against his “intemperance or improvidence”. If parents valued this protection, they might have become less reluctant to bequeath assets to their daughters.

We can test for this more formally in the following way, starting with the 1840 census. For each surname in each state, we calculate the mean fraction of children in households with that surname that are male ($\% \text{Children Male}_{j,1840}$). For a wife with maiden name $j$, this is a measure of the fraction of her siblings that are male. This is a useful metric because it captures a family’s scope for shifting bequests away from daughters and toward sons. We test whether there is any interaction effect on 1850 household assets between $\% \text{Children Male}_{j,1840}$, $\text{LAW}_{s,t}$, and $W_{j,1840}$.

If our baseline results are driven by changing bequest behavior, we should expect the coefficient on this interaction to be negative: women with brothers should experience a larger decline in bequests than women without brothers, so women with brothers should experience the largest decline in the elasticity of 1850 investment with respect to premarital assets.

The first three columns of Table 6 presents the results. Contrary to the above conjecture, the coefficient on the interaction between $\% \text{Children Male}_{j,1840}$, $\text{LAW}_{s,t}$, and $W_{j,1840}$ is positive and significant. In other words, women with brothers receive more transfers out of parental assets after the passage of a law than women without brothers. This is likely a response to the fact that wealth conveyed to a daughter is now better protected against a husband’s “improvidence”. The implication of this finding is that changing bequest behavior cannot account for our baseline results: rather, it seems to work in the opposite direction. The legal change seems to favor bequests to

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31 Similarly, in 1839, a newspaper from Vicksburg, Mississippi argued, somewhat less eloquently, that “the property of ladies should be guarded against the squandering habits of a drunken and gambling husband. The ladies are virtuous and prudent creatures – they never gamble, they never drink, and there is no good reason why the strong arm of legislation should not be extended to the protection of the property they bring into the marriage bargain” (quoted in Warbasse [1960], p. 150 and 170).

32 We estimate our main specification, adding $\% \text{Children Male}_{j,1840}$, and interactions between this variable and $\text{LAW}_{s,t}$, $\text{LAW}_{s,t} \times \log W_{j,1840}$, state and year of marriage fixed effects, and the interaction between $\log W_{j,1840}$ and state and year of marriage fixed effects.
women, and we would therefore expect the interaction between a wife’s familial assets and the Post Law dummy to be positive, not negative. This suggests that the baseline results in Tables 3 and 4 are actually a lower bound on the effect of increased debtor protection on investment.

6.4 Other debtor protection measures

Next, we look at whether the introduction of other forms of debtor protection, in particular homestead exemptions, affect our empirical results. Although most states waited until the 1850s, some states already introduced homestead exemption laws in the 1840s. These laws protected a minimal amount of real estate property in case of insolvency. In 1850, the average amount protected was $363, about $11,500 in today’s money. Details are in Table A2 in Appendix A. Note that our estimates are based on investment in 1850 and included state fixed effects. Differences in homestead exemptions between states therefore have no direct effect on our results. However, it is possible that material investment decisions are made around the time of marriage, and that the contemporaneous exemption level matters for this decision. If changes in exemption levels are correlated with the timing of the married women property acts, this might explain our findings. For each couple we determine the level of state exemptions in the year of marriage based on the information provided by Farnam (1938) and Coleman (1974). The first three columns of Table 7 shows that exemption levels at time of marriage are negatively and significantly correlated with household investment in 1850, and they interact negatively (if at all) with the log-difference between husband’s and wife’s premarital assets. Most importantly, the interaction effect between the Post Law dummy and the difference between husband’s and wife’s premarital assets is unaffected by the inclusion of state exemption levels (compare Table 7 with the coefficients in Tables 3 and 4).

6.5 Macro conditions

In this subsection, we address the possibility that the timing of the enactment of a MWPA is correlated with the state’s economic performance in the aftermath of the Panic of 1837. If so, this may bias our results. First of all, we consider this possibility unlikely. If we were relying exclusively on cross-state variation in protection, then the endogeneity of laws would be a first order concern. However, because these laws apply only to newlyweds, we have variation in protection within a state in 1850. If states passed property laws because of economic distress, then we should expect to see fewer assets held by all couples residing in a state that has passed a law, not just couples married after the passage of a law. Granted, it is possible that couples make important investment
decisions at the time of marriage, which depend on macro conditions, so couples who were married in different economic climates may fare differently later on. Still, this should affect all couples married in the same year equally. Moreover, there is no reason for the effect of macroeconomic conditions on investment to be contingent on the fraction of premarital assets brought into the marriage by the husband or wife. In this sense, our triple difference specification circumvents the issue of different macro-economic conditions altogether.

To address any remaining concerns, we test whether or not our results are affected by economic performance after the Panic of 1837. The main driver of this crisis was a drop in cotton prices, which precipitated a drop in slave prices. So, states that relied more heavily on cotton and slaves should have fared worst. In Appendix Figure E5, we plot Kaplan-Meier survival estimates, which capture the probability of not having passed a property law in each year. We estimate these separately for states with “high” and “low” cotton intensity – measured as the ratio of pounds of cotton picked in 1840 per white population – and for states with “high” and “low” slave intensity – measured as the ratio of slaves per white population in 1840. Some cotton- and slave-intensive states passed laws early on (Florida, Mississippi, Alabama), but other states with low cotton and slave intensity did too (Maryland, Kentucky). Moreover, low cotton- and slave-intensity states passed laws in 1849 and 1850 (North Carolina, Tennessee) while states with higher cotton and slave intensities (Georgia, South Carolina) did not. This suggests that there is no strong link between macro conditions and the timing of the laws. To explicitly test whether or not this affects our results, we control for annual cotton and slave prices, interacted with state fixed effects; in addition, we control for state-level cotton and slave intensity according to the 1840 census, interacted with year fixed effects. These results are presented in the last three columns of Table 7. Our results are not sensitive to these controls.

6.6 Measurement Error

Finally, we test that our results are not sensitive to error in the measurement of premarital assets. We are imputing a person’s premarital assets as average slave holdings among households with the same name from the same state; thus, this measure is more noisy for individuals with more common names.\(^{33}\) We address this by overweighting uncommon names; these results are presented in Table E6. We also test the sensitivity of our results to dropping households with husbands and wives who have common names. In Figure 7, we plot the OLS coefficient on \(LAW_{s,t} \times \{\log W_{i,1840} / W_{j,1840}\}\)

\(^{33}\)For a detailed discussion of error in the measurement of this variable, see Appendix D.
obtained by estimating our preferred specification (column (6) of Table 3), omitting households in which the husband or wife has a name occurring more than a certain threshold. The threshold varies from 3 to 100; we have fewer than 500 observations in which both the husband and wife have a name occurring only once or twice. Our estimate does not appear to be sensitive to omitting frequently occurring names. The effect is strongest when we omit names occurring more than 20 times. When we restrict the sample to names occurring fewer than 8 times, our sample shrinks to fewer than 2,000 observations and our estimates become quite volatile.

7 Conclusion

In this paper, we study the impact of the introduction of Married Women’s Property Acts (MWPAs) in the U.S. South in the 1840s on household investment. These laws gave households downside protection (by shielding a wife’s property from creditors) in an environment that lacked virtually any other form of limited liability. The exact amount of protection depended on husbands’ and wives’ premarital assets and differed substantially across households. This allows us to evaluate the impact of different degrees of protection on investment.

We find that the introduction of the MWPAs increased household investment when husbands were wealthier than wives; however, they decreased investment when husbands were poorer. This suggests that there was an important interaction between the acts and credit markets. For some couples, a property law offered significant protection in downturns, thus increasing the amount of debt they were willing to take on. For others, it mainly imposed credit constraints, reducing investment. This is consistent with the finding in the pioneering work of Gropp, Scholz and White (1997) that richer households benefit more from state-level bankruptcy exemptions, possibly because exemptions are defined in absolute dollar terms and therefore make up a smaller fraction of total assets for wealthy individuals.

These results confirm the economic intuition (formalized in a simple model) that the increased risk sharing between debtors and creditors enabled by limited liability will only increase investment if the amount of protection is modest. We estimate that the optimal amount of protection is about 25% of assets. In the presence of moral hazard, too much protection tightens credit constraints and reduces investment relative to a situation of unlimited liability. In our setting, we find that if more than 45% of assets are protected, the beneficial impact of limited liability disappears. This is obviously a context-specific result, but it highlights the significance of borrowers’ skin-in-the-game
for getting access to credit. Limited liability can facilitate investment, but too much of it leads
to agency problems and limits the availability of outside funding. Since these underlying frictions
extend well beyond our particular historical setting, we believe that our findings are important for
understanding the impact of limited liability on investment decisions more generally.

The key advantage of our historical context is that we can analyze the impact of dramatically
different degrees of protection in a setting where other forms of debt relief, like the availability of
Chapters 7 and 12, were virtually non-existent. As a result, we are able to document both the
benefits and costs of limited liability in one single setting. We are also able to address a number of
econometric and conceptual issues confronting the existing literature. First of all, due to the forward
looking nature of the MWPAs (existing marriages were unaffected) we can compare couples in the
same state and in the same year who were married before and after the passage of the law. Relying
on within state-year variation allows us to keep many potentially confounding factors constant.
This enriches the existing micro-econometric literature that predominantly relies on cross-state
variation in bankruptcy exemption levels. Second, we can calculate a clean measure of the fraction
of assets protected in case of insolvency: the share of total assets standing in the wife’s name.³⁴
Third, since only newlyweds were affected by the legal changes, we can practically rule out any
general equilibrium effects that might, for example, provide an alternative explanation for why rich
households seem to benefit more from higher exemption levels (Lilienfeld-Toal, Mookherjee, and
Visaria [2012]).

References

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A General Personal Computer-Based Matching Program for Historical Research.” Historical

State University Press


³⁴ Due to the fact that exemptions are defined in absolute dollar terms, most variation in the fraction of assets
protected within a state comes from variation in wealth levels. This might be correlated with many other factors
such as access to investment projects.


Figures and Tables
Note: This figure shows how the law change affects A. Total investment, B. Utility, C. Borrowing or outside investment, D. Consumption at $t = 0$, E. Consumption at $t = 1$ if the project fails, F. Consumption at $t = 1$ if the project succeeds for couples with a different distribution of assets between partners, while keeping total wealth constant. Parameters: $w = 1$, $\bar{R} = 1.6$, $R = 0.9$, $\beta = 0.9$, $\theta = 1$. 
Figure 2: Relationship between 1850 Assets and Premarital Assets

Panel A: All

Panel B: Excluding Common Names

Note: This figure explores the relationship between the sum of husband’s and wife’s premarital (1840) assets and the household’s total 1850 assets using binscatters, grouping premarital assets into 25 bins. All panels control for state and year-of-marriage fixed effects. The left panel uses the entire sample, and the right panel only uses couples in which the husband and wife have uncommon names, defined as a name that occurs fewer than 20 times in a given state.
Figure 3: Total Assets and Protection

Note: This figure explores the relation between the difference in spousal familial assets and 1850 household assets using binscatters grouping the following x-variables in 25 bins: Panel A: husband’s 1840 familial assets; Panel B: wife’s 1840 familial assets; Panels C and D: the ratio of husband’s to wife’s 1840 familial assets. Panels A and B show how much total assets changes keeping spousal 1840 familial assets constant. All panels control for state and year-of-marriage fixed effects. Panel D includes additional controls, see notes to Table 3 for details. All variables are in logs.
Figure 4: Total Assets and Protection: Net Effects

Note: This figure plots coefficients from a regression of log 1850 assets on an indicator for the couple having been married after the passage of property law, restricting the sample to couples in which the husband owns a particular share of the couple’s premarital assets. All regressions contain a full set of controls (see notes to Table 3 for details). 95% error bars included, where standard errors are clustered on three levels: state × year-of-marriage, groom’s surname-birthplace, bride’s surname-birthplace.
Figure 5: Total Assets and Protection: Heterogeneity in Main Effect by County and Individual Characteristics

Panel A. Cotton Intensity, 1840
Panel B. Population Density, 1840
Panel C. Husband’s Familial Wealth, 1840
Panel D. Total County Wealth, 1850
Panel E. Capital Invested in Country Stores, 1840
Panel F. Plantations > 500 Acres, 1860
Panel G. Free Population Growth, 1840-1850
Panel H. Slave Population Growth, 1840-1850

Note: This figure plots coefficients from regression of log 1850 total assets on log($W_{M,1840}/W_{F,1840}$) × $LAW_{s,t}$ when the sample is restricted to couples in different terciles of the following distributions: (A) the ratio of a county’s value of cotton output to that county’s total agricultural output, (B) the white county population per square mile, (C) mean slaveholdings among families with the husband’s surname from his state of birth in 1840, (D) the sum of real and slave property in a county, (E) the amount of capital invested in country retail stores in a county in 1840, (F) plantations with more than 500 acres in a county, where the sorting variables in Panels D, E, and F are scaled by a county’s number of white males over 20, (G) free population growth, and (H) slave population growth, both at the county level. All regressions contain a full set of controls (see notes to Table 3 for details). 95% error bars included, where standard errors are clustered on three levels: state × year-of-marriage, groom’s surname-birthplace, bride’s surname-birthplace. Sources: Haines et al 2016, Haines et al 2010, Ruggles et al 2017.
Figure 6: Match Quality and the Distribution of Spousal Assets

Note: This figureplots coefficients from regressions of an indicator for the couple being located in the 1850 census on an indicator for being married after a MWPA, for different quintiles of the husband’s share in premarital assets distribution. Regressions include state and year of marriage fixed effects and controls for the commonness of grooms’ and brides’ names. 95% error bars included, where standard errors are clustered on three levels: state × year-of-marriage, groom’s surname-birthplace, bride’s surname-birthplace.
Note: Plots the OLS coefficient on $LAW_{s,t} \times [\log W_{i,1840} - \log W_{j,1840}]$, and 95% confidence intervals, using the specification from Column (6) in Table 3. At each point, the coefficient and confidence interval are estimated under the restriction that neither the husband or wife has a name occurring more than the threshold indicated on the horizontal axis. The figure also plots the sample size associated with each sample restriction.
### Table 1: Dates of Key Married Women’s Property Legislation in the 1840's

<table>
<thead>
<tr>
<th>State</th>
<th>Date Main Law Change</th>
<th>Main Protection of Wife's Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>Mar 1, 1848</td>
<td>All property owned at time of marriage, or acquired afterwards</td>
</tr>
<tr>
<td>Arkansas</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Florida</td>
<td>Mar 6, 1845</td>
<td>All property owned at time of marriage, or acquired afterwards</td>
</tr>
<tr>
<td>Georgia</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Kentucky</td>
<td>Feb 23, 1846</td>
<td>Real estate and slaves owned at time of marriage, or acquired afterwards</td>
</tr>
<tr>
<td>Louisiana</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Mississippi</td>
<td>Feb 28, 1846</td>
<td>Real estate owned at time of marriage and all other property required for the maintenance of the plantation (incl. slaves)</td>
</tr>
<tr>
<td>North Carolina</td>
<td>Jan 29, 1849</td>
<td>Husband’s interest in the wife’s real estate (i.e. profits or rents) not liable for his debts</td>
</tr>
<tr>
<td>Tennessee</td>
<td>Jan 10, 1850</td>
<td>Husband’s interest in the wife’s real estate (i.e. profits or rents) not liable for his debts</td>
</tr>
<tr>
<td>Texas</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Virginia</td>
<td>–</td>
<td></td>
</tr>
</tbody>
</table>

Notes: We omit Maryland and South Carolina from this table as we do not have a sufficient number of marriage records to include these states in our analysis. Due to their French and Spanish heritage, Louisiana and Texas had community property systems in place that, by default, allowed men and women to have separate estates. Sources: Kahn (1996), Geddes and Lueck (2002), Warbasse (1987), Kelly (1882), Wells (1878), and Chused (1983). The text of the original acts can be found in Appendix B.
Table 2: Summary Statistics, Linked Data

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Panel A. Sample Restrictions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Husband &amp; wife born in south</td>
<td>0.88</td>
<td>0.32</td>
<td>0</td>
<td>1</td>
<td>50809</td>
</tr>
<tr>
<td>Household linkable to 1850 slave schedules</td>
<td>0.75</td>
<td>0.43</td>
<td>0</td>
<td>1</td>
<td>50809</td>
</tr>
<tr>
<td>Resident in marriage state in 1850</td>
<td>0.77</td>
<td>0.42</td>
<td>0</td>
<td>1</td>
<td>50809</td>
</tr>
<tr>
<td>Surname/birthplace matched to 1840</td>
<td>0.76</td>
<td>0.43</td>
<td>0</td>
<td>1</td>
<td>44949</td>
</tr>
<tr>
<td>Meets all above sample restrictions</td>
<td>0.39</td>
<td>0.49</td>
<td>0</td>
<td>1</td>
<td>50809</td>
</tr>
<tr>
<td><strong>Panel B. Sample Characteristics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Husband's age at marriage</td>
<td>26.99</td>
<td>8.82</td>
<td>15</td>
<td>91</td>
<td>19672</td>
</tr>
<tr>
<td>Wife's age at marriage</td>
<td>21.86</td>
<td>6.73</td>
<td>13</td>
<td>78</td>
<td>19672</td>
</tr>
<tr>
<td>Husband literate</td>
<td>0.84</td>
<td>0.37</td>
<td>0</td>
<td>1</td>
<td>19672</td>
</tr>
<tr>
<td>Wife literate</td>
<td>0.78</td>
<td>0.41</td>
<td>0</td>
<td>1</td>
<td>19672</td>
</tr>
<tr>
<td>Total assets, 1850</td>
<td>1477.11</td>
<td>4423.83</td>
<td>0</td>
<td>191847</td>
<td>19672</td>
</tr>
<tr>
<td>Fraction of assets held in slaves</td>
<td>0.29</td>
<td>0.37</td>
<td>0</td>
<td>1</td>
<td>10980</td>
</tr>
<tr>
<td>Nonzero slave assets, 1850</td>
<td>0.24</td>
<td>0.43</td>
<td>0</td>
<td>1</td>
<td>19672</td>
</tr>
<tr>
<td>Zero assets in 1850</td>
<td>0.44</td>
<td>0.5</td>
<td>0</td>
<td>1</td>
<td>19672</td>
</tr>
<tr>
<td>Employed in agriculture</td>
<td>0.67</td>
<td>0.47</td>
<td>0</td>
<td>1</td>
<td>19672</td>
</tr>
<tr>
<td>Married after law change</td>
<td>0.19</td>
<td>0.39</td>
<td>0</td>
<td>1</td>
<td>19672</td>
</tr>
<tr>
<td>Resident in marriage county in 1850</td>
<td>0.71</td>
<td>0.45</td>
<td>0</td>
<td>1</td>
<td>19672</td>
</tr>
<tr>
<td>Groom’s 1840 log slave assets</td>
<td>2.65</td>
<td>1.99</td>
<td>0</td>
<td>10.68</td>
<td>19672</td>
</tr>
<tr>
<td>Bride’s 1840 log slave assets</td>
<td>2.69</td>
<td>1.79</td>
<td>0</td>
<td>11.17</td>
<td>19672</td>
</tr>
<tr>
<td>Groom’s - Bride’s 1840 log slave assets</td>
<td>-0.04</td>
<td>2.42</td>
<td>-10.25</td>
<td>9.84</td>
<td>19672</td>
</tr>
<tr>
<td># families per state-surname (bride &amp; groom combined), 1840</td>
<td>76.70</td>
<td>166.89</td>
<td>1</td>
<td>1593</td>
<td>39344</td>
</tr>
</tbody>
</table>

Panel A documents what fraction of couples, for whom we linked the marriage and 1850 census records, satisfy the other sample restrictions we impose (see Section 4 for details). Panel B presents summary statistics for our final sample.
Table 3: Effect of Married Women’s Property Laws on 1850 Assets - OLS

<table>
<thead>
<tr>
<th>Dep. var.</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post Law</td>
<td>-0.032</td>
<td>-0.029</td>
<td>-0.064</td>
<td>-0.062</td>
<td>-0.107</td>
<td>-0.104</td>
</tr>
<tr>
<td></td>
<td>(0.101)</td>
<td>(0.099)</td>
<td>(0.098)</td>
<td>(0.096)</td>
<td>(0.121)</td>
<td>(0.117)</td>
</tr>
<tr>
<td>Husband’s log(Wealth), 1840</td>
<td>0.176</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>× Post Law</td>
<td>(0.081)**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wife’s log(Wealth), 1840</td>
<td>-0.198</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>× Post Law</td>
<td>(0.090)**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[Husband’s log(W) - Wife’s log(W), 1840] × Post Law</td>
<td>0.236</td>
<td>0.227</td>
<td>0.227</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.068)***</td>
<td>(0.068)***</td>
<td>(0.069)***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adj-R²</td>
<td>0.095</td>
<td>0.095</td>
<td>0.197</td>
<td>0.197</td>
<td>0.198</td>
<td>0.198</td>
</tr>
<tr>
<td>Obs</td>
<td>19672</td>
<td>19672</td>
<td>19672</td>
<td>19672</td>
<td>19672</td>
<td>19672</td>
</tr>
</tbody>
</table>

|            | N   | N   | Y   | Y   | Y   | Y   |
| Age at marriage FE |       |       |       |       |       |       |
| Birthstate and literacy FE | N   | N   | Y   | Y   | Y   | Y   |
| Frequency names, bin FE | N   | N   | Y   | Y   | Y   | Y   |
| State specific lin. time trend | N   | N   | N   | N   | Y   | Y   |

OLS estimates. All regressions contain state and year of marriage fixed effects, husband’s and wife’s 1840 premarital assets, and interactions between premarital asset variables and state and year of marriage fixed effects. Total Assets: value of household’s real estate and slave holdings in 1850 census, gross of debt. Dependent variable: log(1+ Total Assets). Husband’s/Wife’s 1840 assets: average log value of slaves (log(# slaves ×377 + 1)) of individuals with the same surname as the husband and wife in their respective states of births in the 1840 census. Frequency names, bin FE: we calculate the relative prevalence of husband’s and wife’s family names per state. We summarize this information in 10 bins, where bin 1 includes the rarest family names, and bin 10 the most common ones. All (continuous) independent variables are normalized by their standard deviation; reported coefficients therefore indicate by what % gross investment changes in response to a one standard deviation increase in the right hand side variable. All interactions with the 1840 premarital asset variables are in deviations from the mean. The coefficient on Post Law therefore measures the effect of the passage of a Married Woman Property Act on a household with average premarital assets or an average premarital assets difference. Standard errors (clustered at three levels: state × year-of-marriage, groom’s surname-birthplace, bride’s surname-birthplace) are reported in parentheses: * p < 0.10, ** p < 0.05, *** p < 0.01.
<table>
<thead>
<tr>
<th>Dep. var.</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post Law</td>
<td>0.016</td>
<td>0.024</td>
<td>-0.041</td>
<td>-0.035</td>
<td>-0.216</td>
<td>-0.205</td>
</tr>
<tr>
<td></td>
<td>(0.182)</td>
<td>(0.182)</td>
<td>(0.165)</td>
<td>(0.164)</td>
<td>(0.190)</td>
<td>(0.190)</td>
</tr>
<tr>
<td></td>
<td>[0.010]</td>
<td>[0.016]</td>
<td>[-0.027]</td>
<td>[-0.023]</td>
<td>[-0.141]</td>
<td>[-0.134]</td>
</tr>
<tr>
<td>Husband's log(Wealth), 1840</td>
<td>0.281</td>
<td>0.287</td>
<td>0.280</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.137)**</td>
<td>(0.145)**</td>
<td>(0.147)*</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>[0.181]</td>
<td>[0.187]</td>
<td>[0.183]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wife's log(Wealth), 1840</td>
<td>-0.428</td>
<td>-0.389</td>
<td>-0.398</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.161)***</td>
<td>(0.142)***</td>
<td>(0.145)***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[-0.275]</td>
<td>[-0.254]</td>
<td>[-0.26]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[Husband’s log(W) - Wife’s log(W), 1840] × Post Law</td>
<td>0.440</td>
<td>0.422</td>
<td>0.422</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.112)***</td>
<td>(0.109)***</td>
<td>(0.110)***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[0.283]</td>
<td>[0.275]</td>
<td>[0.276]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pseudo-R²</td>
<td>0.021</td>
<td>0.021</td>
<td>0.047</td>
<td>0.047</td>
<td>0.047</td>
<td>0.047</td>
</tr>
<tr>
<td>Obs</td>
<td>19672</td>
<td>19672</td>
<td>19672</td>
<td>19672</td>
<td>19672</td>
<td>19672</td>
</tr>
</tbody>
</table>

Tobit estimates. All regressions contain state and year of marriage fixed effects, husband’s and wife’s 1840 premarital assets, and interactions between premarital asset variables and state and year of marriage fixed effects. Reported coefficients are marginal effects on the latent dependent variable, with standard errors in parentheses. Marginal effects on censored dependent variable (at mean level of explanatory variables) are reported in square brackets. Total Assets: value of household’s real estate and slave holdings in 1850 census, gross of debt. Husband’s/Wife’s 1840 assets: average log value of slaves (log(# slaves ×377 + 1)) of individuals with the same surname as the husband and wife in their respective states of births in the 1840 census. Frequency names, bin FE: we calculate the relative prevalence of husband’s and wife’s family names per state. We summarize this information in 10 bins, where bin 1 includes the rarest family names, and bin 10 the most common ones. All (continuous) independent variables are normalized by their standard deviation; reported coefficients therefore indicate by what % total assets changes in response to a one standard deviation increase in the right hand side variable. All interactions with the 1840 premarital asset variables are in deviations from the mean. The coefficient on Post Law therefore measures the effect of the passage of a Married Woman Property Act on a household with average premarital assets or an average premarital asset difference. Standard errors (clustered at the state × year-of-marriage level) are reported in parentheses: * p < 0.10, ** p < 0.05, *** p < 0.01.
<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dep. var</td>
<td>log(Total Assets), 1850</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post Law</td>
<td>-0.104</td>
<td>-0.544</td>
<td>-0.533</td>
</tr>
<tr>
<td></td>
<td>(0.110)</td>
<td>(0.121)***</td>
<td>(0.119)***</td>
</tr>
<tr>
<td>[Husband’s log(W) - Wife’s log(W), 1840] × Post Law</td>
<td>0.227</td>
<td>0.126</td>
<td>0.117</td>
</tr>
<tr>
<td></td>
<td>(0.063)***</td>
<td>(0.069)*</td>
<td>(0.068)*</td>
</tr>
<tr>
<td>F (Post Law)</td>
<td>-</td>
<td>858.3</td>
<td>956.5</td>
</tr>
<tr>
<td>F (Interaction)</td>
<td>-</td>
<td>147.6</td>
<td>151.1</td>
</tr>
<tr>
<td>Partial $R^2$ (Post Law)</td>
<td>-</td>
<td>0.695</td>
<td>0.729</td>
</tr>
<tr>
<td>Partial $R^2$ (Interaction)</td>
<td>-</td>
<td>0.578</td>
<td>0.621</td>
</tr>
<tr>
<td>Obs</td>
<td>19,672</td>
<td>19,672</td>
<td>19,672</td>
</tr>
</tbody>
</table>

Instruments = protection in:
- Wife’s birth st., marriage yr.
- Marriage st., yr. wife 22
- Husband’s birth st., marriage yr.
- Marriage st., yr. husband 27

2SLS estimates. Column (1) repeats the OLS estimate from Table 3, Column (6). Remaining columns contain 2SLS estimates instrumenting for Post Law and [Husband’s log(W) - Wife’s log(W)] × Post Law using the instruments indicated in the table, and the instruments interacted with [Husband’s log(W) - Wife’s log(W)]. Total Assets: value of household’s real estate and slave holdings in 1850 census, gross of debt. Dependent variable: log(1 + Total Assets). Husband’s/Wife’s 1840 assets: average log value of slaves (log(# slaves × 377 + 1)) of individuals with the same surname as the husband and wife in their respective states of births in the 1840 census. All regressions include the full set of controls (see Table 3, Column 6), with the following exceptions: (1) we omit state of birth fixed effects; (2) we omit controls for marriage year and we include linear and quadratic terms in the husband’s and wife’s age in 1850 instead of age fixed effects. All (continuous) independent variables are normalized by their standard deviation; reported coefficients therefore indicate by what % gross investment changes in response to a one standard deviation increase in the right hand side variable. All interactions with the 1840 premarital assets variables are in deviations from the mean. The coefficient on Post Law therefore measures the effect of the passage of a Married Woman Property Act on a household with an average premarital assets difference. Standard errors (clustered at the state × year-of-marriage level, or instrumented version thereof) are reported in parentheses: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. 

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### Table 6: Effect of Married Women’s Property Laws on 1850 Assets - Changing Bequest Behavior

<table>
<thead>
<tr>
<th>Dep. var.</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post Law</td>
<td>-0.041</td>
<td>-0.072</td>
<td>-0.097</td>
</tr>
<tr>
<td></td>
<td>(0.102)</td>
<td>(0.100)</td>
<td>(0.127)</td>
</tr>
<tr>
<td>Husband’s log(Wealth), 1840</td>
<td>0.158</td>
<td>0.165</td>
<td>0.162</td>
</tr>
<tr>
<td>× Post Law</td>
<td>(0.082)*</td>
<td>(0.093)*</td>
<td>(0.094)*</td>
</tr>
<tr>
<td>Wife’s log(Wealth), 1840</td>
<td>-0.219</td>
<td>-0.197</td>
<td>-0.204</td>
</tr>
<tr>
<td>× Post Law</td>
<td>(0.093)**</td>
<td>(0.090)**</td>
<td>(0.092)**</td>
</tr>
<tr>
<td>% Children male, 1840, wife</td>
<td>-0.033</td>
<td>-0.062</td>
<td>-0.062</td>
</tr>
<tr>
<td>× Wife’s log(Wealth)</td>
<td>(0.109)</td>
<td>(0.102)</td>
<td>(0.101)</td>
</tr>
<tr>
<td>--- × --- × Post Law</td>
<td>0.117</td>
<td>0.090</td>
<td>0.087</td>
</tr>
<tr>
<td>% Children male, 1840, wife</td>
<td>-0.153</td>
<td>-0.151</td>
<td>-0.150</td>
</tr>
<tr>
<td>× Post Law</td>
<td>(0.087)*</td>
<td>(0.092)*</td>
<td>(0.093)</td>
</tr>
<tr>
<td>% Children male, 1840, wife</td>
<td>-0.030</td>
<td>-0.013</td>
<td>-0.013</td>
</tr>
<tr>
<td>× Post Law</td>
<td>(0.076)</td>
<td>(0.075)</td>
<td>(0.076)</td>
</tr>
<tr>
<td>Adj-R² / Pseudo-R²</td>
<td>0.096</td>
<td>0.199</td>
<td>0.200</td>
</tr>
<tr>
<td>Obs</td>
<td>19541</td>
<td>19541</td>
<td>19541</td>
</tr>
</tbody>
</table>

**Notes:**
- Age at marriage FE: N Y Y
- Birthstate and literacy FE: N Y Y
- Frequency names, bin FE: N Y Y
- State specific lin. time trend: N N Y

**OLS estimates.** All regressions contain state and year of marriage fixed effects, husband’s and wife’s 1840 premarital assets, and interactions between all included 1840 variables and state and year of marriage fixed effects. **Total Assets:** value of household’s real estate and slave holdings in 1850 census, gross of debt. When estimating OLS the dependent variable is log(1+ Total Assets). **Husband’s/Wife’s 1840 assets:** average log value of slaves (log(# slaves × 377+1)) of individuals with the same surname as the husband and wife in their respective states of births in the 1840 census. **% Children male, 1840, wife:** percentage of children that are male in households with the same surname as the wife in her state of birth in the 1840 census. **Frequency names, bin FE:** we calculate the relative prevalence of husband’s and wife’s family names per state. We summarize this information in 10 bins, where bin 1 includes the rarest family names, and bin 10 the most common ones. All (continuous) independent variables are normalized by their standard deviation; reported coefficients therefore indicate by what % total assets changes in response to a one standard deviation increase in the right hand side variable. All interactions with the 1840 premarital assets variables are in deviations from the mean. The coefficient on Post Law therefore measures the effect of the passage of a Married Woman Property Act on a household with an average premarital assets difference. Standard errors (clustered at three levels: state × year-of-marriage, groom’s surname-birthplace, bride’s surname-birthplace) are reported in parentheses: * p < 0.10, ** p < 0.05, *** p < 0.01.
<table>
<thead>
<tr>
<th>Dep. var.</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post Law</td>
<td>-0.034</td>
<td>-0.068</td>
<td>-0.112</td>
<td>-0.005</td>
<td>-0.191</td>
<td>-0.036</td>
</tr>
<tr>
<td>[Husband’s log(W) - Wife’s log(W), 1840] \times Post Law</td>
<td>0.236</td>
<td>0.227</td>
<td>0.226</td>
<td>0.221</td>
<td>0.228</td>
<td>0.221</td>
</tr>
<tr>
<td>State exemption level</td>
<td>-0.001</td>
<td>-0.001</td>
<td>-0.002</td>
<td>(0.000)**</td>
<td>(0.000)**</td>
<td>(0.000)**</td>
</tr>
<tr>
<td>Adj-R²</td>
<td>0.095</td>
<td>0.198</td>
<td>0.198</td>
<td>0.196</td>
<td>0.199</td>
<td>0.197</td>
</tr>
<tr>
<td>Obs</td>
<td>19672</td>
<td>19672</td>
<td>19672</td>
<td>19372</td>
<td>19672</td>
<td>19372</td>
</tr>
</tbody>
</table>

**Notes:**

- **OLS estimates.** All regressions contain state and year of marriage fixed effects, husband’s and wife’s 1840 log premarital assets, and interactions between premarital assets variables and state and year of marriage fixed effects. **Total Assets:** value of household’s real estate and slave holdings in 1850 census, gross of debt. The dependent variable is log (1+ Total Assets). **Husband’s/Wife’s 1840 assets:** average log value of slaves (log(# slaves \times 377 + 1)) of individuals with the same surname as the husband and wife in their respective states of births in the 1840 census. **State exemption level:** $ amount exempt in case of insolvency. **Cotton & slave prices:** price per pound raw cotton; average price per slave; from HSUS. **Cotton & slave intensity:** pounds of cotton picked per white population in 1840, state level; number of slaves per white population, state level; from Haines & ICPSR. **Frequency names, bin FE:** we calculate the relative prevalence of husband’s and wife’s family names per state. We summarize this information in 10 bins, where bin 1 includes the rarest family names, and bin 10 the most common ones. All (continuous) independent variables are normalized by their standard deviation; reported coefficients therefore indicate by what % gross investment changes in response to a one standard deviation increase in the right hand side variable. All interactions with the 1840 wealth variables are in deviations from the mean. The coefficient on Post Law therefore measures the effect of the passage of a Married Woman Property Act on a household with an average premarital assets difference. **Standard errors (clustered at three levels: state \times year-of-marriage, groom’s surname-birthplace, bride’s surname-birthplace)** are reported in parentheses: * p < 0.10, ** p < 0.05, *** p < 0.01.