Property Rights and Financial Access*

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Abstract

This paper investigates the effect of property rights on financial inclusion and subsequent changes in labor market participation and human capital investment. Using hand-collected savings bank data linked to the English census, I exploit the 1870 Married Women's Property Act, which granted married women ownership of their financial assets. A 10% increase in the population of married women is associated with a 1% rise in accounts and a 1.2% rise in deposit receipts after the reform, indicating greater financial inclusion. In districts with a savings bank, following the reform, female employment increases by ∼3 pp for married women and ∼6 pp for single women, with no change for men. The occupational structure shifts, with married women moving toward low-entry-cost work and single women moving into higher-skill roles that require greater human capital. Girls' school attendance rises by 9-12%, with no change for boys. These patterns align with an appropriability channel in which greater control over earnings raises the private return to work and skill investment, with savings banks making property rights operative by providing secure, interest-bearing deposits. I develop a theoretical framework emphasizing this complementarity between reduced expropriation risk and enforceable, remunerated savings. These results demonstrate an important role of property rights in encouraging financial participation, and the complementarity of property rights and financial access in employment and education outcomes.

Keywords: Financial access, property rights, household finance, economic development.

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1 Introduction

Property rights have long been recognized as foundational to economic development, reducing uncertainty and encouraging both market exchange and investment (see Coase (1937), Besley (1995), La Porta et al. (1998), among others). The ability to protect one's wealth, pledge it in financial transactions, and realize returns without the impediment of weak legal protections forms a critical basis for economic expansion (Acemoglu and Johnson, 2005). In this sense, legal and financial institutions are often mutually reinforcing; the clarity and security conferred by strong property rights broaden the scope of financial services, while well-functioning financial markets, in turn, encourage investments in assets whose ownership is well-defined (Grossman and Hart, 1986; Hart and Moore, 1990). Yet a central question remains: how do expansions in property rights interact with formal financial access to shape real economic outcomes? This paper addresses this question by investigating how property rights influence individual participation in the formal financial sector, the complementarity between legal rights and financial access, and the long-run real effects on labor force participation and human capital investment.

Empirically studying the impact of property rights on financial participation and the interaction of property rights and financial access is challenging due to the scarcity of settings that combine a clearly defined legal shift with rich individual and local-level data. In most contexts, changes to property rights occur infrequently, and even when significant legal reforms do take place, they are rarely accompanied by granular data. In addition, data on financial access and how individuals interact with financial institutions before and after being granted property rights are required. This paper addresses these empirical challenges by exploiting an instance of institutional change: the Married Women's Property Act of 1870 in England, which granted married women legal ownership and control over their financial assets. This reform introduced a sharp break in the legal status of a large subset of the population—married women—without altering property rights for other groups. I combine this natural experiment with manually digitized administrative records from local savings banks, the primary financial institution that the working-class population of England had access to in the 19^{th} century. These data provide detailed, spatially disaggregated measures of financial access across England, which I combine with census microdata from 1851 to 1891. This conjunction of a legal shock and comprehensive financial and demographic data enables a precise study of how legal rights and institutional access jointly shape economic outcomes.

The outcomes I study—labor force participation and human capital investment—are important channels through which property rights may influence economic development broadly. When individuals gain secure control over their assets, their incentives to invest in the future, including in their own or their children's education, and to supply market labor, may change because the returns be-

come privately appropriable. These decisions are forward-looking and rely on the ability to retain the returns from investment, which weak property rights often undermine. While existing work has shown that secure property rights increase physical investment (Besley, 1995; Goldstein and Udry, 2008), less is known about how they shape investments in skills or time allocation.[1] Access to formal savings technologies can potentially amplify these effects. In the setting I study, savings banks provide two features: security — deposits in a woman's name are physically safe and legally enforceable—and an interest-bearing return—a remunerated vehicle to carry value intertemporally. Together, reduced expropriation risk and intermediation raise the private payoff to the choices I analyze—opening and using accounts, working for pay, and investing in schooling—through an appropriability channel. Here, I study how property rights and financial access jointly influence long-run labor market and human capital outcomes.

I proceed in two steps. First, I employ a difference-in-differences (DiD) specification to measure how the Married Women's Property Act of 1870 affected women's participation in formal banking. Specifically, I compare bank-level outcomes—namely the number of open accounts and deposit receipts (account usage) made at a bank in a given year–between local districts that varied in the ex-ante presence of married women, before versus after 1870. This approach exploits the idea that local districts with a larger proportion of married women would be the most affected by new property rights over financial assets. I find that the number of bank accounts grows more in districts with a higher presence of married women following the Act, and that these accounts are actively used; deposit receipts rise alongside account uptake, indicating a pronounced increase in financial inclusion. I also demonstrate that this result is robust to different definitions for capturing the presence of married women locally, and that there are no observable pre-trends among high and low married women local districts. I supplement this with additional robustness checks such as alternate definitions of variables, balancing local districts using inverse probability weights, placebo timing of the event, among others. In addition, I provide micro-evidence supporting greater female financial inclusion through manually digitized and transcribed data on new accounts opened at a subset of banks between 1868 and 1872.

Next, I examine whether these improved property rights also generated broader shifts in women's employment and education by comparing outcomes in the English censuses over the years from 1851 to 1891. I focus on measures such as the female labor force participation rate, including the rates disaggregated by single and married women, along with changes in the count of female students and female employment in different occupation types. A large literature shows that property rights at the individual level can affect real outcomes such as labor decisions and mobility (e.g., Field (2007);

[1]Some exceptions include Field (2007) and Galiani and Schargrodsky (2010). In my setting, I focus on both human capital and labor participation outcomes, and study how property rights interact with financial access.

Galiani and Schargrodsky (2010); Adamopoulos et al. (2024)). I interpret my results through a collective-household lens in which the Married Women's Property Act shifts intrahousehold bargaining by making women's earnings privately appropriable, and savings banks provide the enforcement and return technology that renders legal rights actionable. Intrahousehold models examining women's labor supply suggest two opposing forces on the labor supply effect of increased property rights and bargaining of married women; reforms that raise marital insurance or non-labor resources for wives can generate income effects that lower their market work (Chiappori et al. (2002); Voena (2015)), whereas reforms that increase a woman's control over her own earnings and assets raise the payoff to own effort by improving appropriability and outside options, thereby increasing labor supply (e.g., Heath and Tan (2020); Field et al. (2021)). The 1870 Married Women's Property Act offers a setting tailored to this question of labor supply effects, as it increases the appropriability of financial assets for married women. In addition, a missing piece in much of this literature is the role of *financial access*; whether, and through which mechanisms, local bank access may shape the labor market outcomes that property rights might affect. In this paper I study that margin explicitly by examining how the Act's effects interact with access to savings banks, which provide an enforcement technology—*security* via deposits in a woman's name that are physically safe and legally separable within marriage—and an *interest-bearing* vehicle to carry value into future periods.

Using a difference-in-differences framework, I compare local districts before and after the reform with and without banks. I first compare female and male employment in the population censuses of 1851-1891, focusing on how effects vary by bank access. In districts with a bank, female employment rises by approximately 2-5 percentage points (pp) after 1870, while male employment is unchanged; the female-male employment gap increases accordingly. Decomposing by marital status shows gains for both married and single women, but larger effects for single women (about 2-6 pp) than for married women (about 1-3 pp). The rural-urban difference is also informative – effects are stronger in rural districts than in urban districts, suggesting bank presence may matter more in rural areas. Taken together, these patterns point to an appropriability mechanism in which legal control over earnings raises the return to market work for married women, and anticipated control post-marriage raises early participation for single women. The stronger response where a savings intermediary exists is consistent with the bank making the legal change operative by securing balances and paying interest, and suggests savings banks, even in the absence of a credit supply channel, can affect real outcomes.

I next study how the reform, interacted with bank access, reshaped which jobs women entered and whether human capital investment adjusted. The evidence points to distinct margins by marital status. Married women shift toward occupations with low entry costs or compatibility with home production (e.g., self-employment and lower skill occupations like domestic service), consistent with

household time constraints limiting movement into training-intensive work even when appropriability rises. Single women, facing fewer such constraints, reallocate toward higher-skill categories that require training or education investment such as occupations in teaching or nursing; in line with this, girls' school attendance increases by roughly 9-12% in banked districts after 1870, indicating a stronger incentive to invest in skills when future earnings are privately controllable and can be safely carried forward. To characterize sectoral composition, controlling for gender-neutral demand, I use the log female-to-male employment share by sub-sector and find gender-differential reallocation in banked areas of women toward agriculture and light manufacturing (e.g., textiles/apparel, millinery) on the one hand (low fixed costs of entry), and within the tertiary sector, away from food/hospitality and domestic service and toward retail/dealers and professional services on the other. Taken together, the patterns are consistent with two forces operating jointly. First, higher appropriable returns to skill, most visible for singles through schooling and entry into professional roles, and second, higher or binding household constraints for married women that channel adjustments toward low entry cost or home-based self-employment roles.

Broadly, my results on the labor market effects of the property rights reform interacted with financial access point to the importance of the security and interest accumulation that savings banks provide in realizing the real effects of the property rights reform.[2] Consistent with this channel, the post-1870 increase in bank activity is driven by the extensive margin of new accounts, as well as more frequent usage of bank accounts (rather than an increase in the average deposit size per account), and the largest employment and schooling gains appear only in bank local districts. This points to a strong complementarity between property rights and financial institutions in driving labor market outcomes.

Finally, I formalize the mechanism suggested by the evidence through a model of women's choices in a canonical two-period consumption-savings framework, with period 1 representing single marital status and period 2 representing married status. The effect of the Married Women's Property Act of 1870 is represented as a reduction in expropriation risk over assets and earnings in marriage, while access to a local savings bank provides a secure, interest-bearing storage technology. In the model, both lowering the expropriation risk and increasing the return on savings increase the marginal value of carrying resources forward and of earnings in marriage, which raises saving while single and strengthens incentives for education and employment. The framework highlights a property rights and financial access complementarity as secure property rights make pushing value into the future more worthwhile, and intermediation makes each unit moved to the future more productive. I map the model predictions

[2]Because these local savings banks did not extend credit, these patterns isolate a savings mechanism, which offers both physical security of funds and a return on deposits, rather than a credit supply story, where access to credit spurs increased consumption and local development.

across three institutional regimes – pre-reform (high expropriation risk), post-reform without a bank, and post-reform with a bank - which aligns with the larger post-1870 real responses in banked areas from the empirical results. This model highlights how financial participation and real responses to property rights materialize where banks are present, even in the absence of credit.

This paper contributes to three strands of the finance and economics literature. First, I contribute to the extensive literature in finance and development economics on financial inclusion (Ashraf et al., 2006; Bruhn and Love, 2014; Célérier and Matray, 2019; Dupas and Robinson, 2013; Schaner, 2018). Access to formal financial services remains a cornerstone of economic development, yet disparities in financial inclusion persist, particularly for women (Demirgüç-Kunt and Klapper, 2012). In many parts of the developing world, property rights are also limited, poorly enforced, or inaccessible to women due to legal, institutional, or cultural barriers.[3] These barriers may hinder women's ability to accumulate and manage wealth but also stifle broader economic potential by discouraging investments in human capital and entrepreneurial activities. In this paper, I investigate the novel role of well-defined property rights in facilitating financial inclusion, finding a strong effect on financial participation following married women being granted property rights. In addition, past literature on financial inclusion has limited evidence on what causes households to adopt and maintain bank accounts once access to banks is provided. Given the mixed results in the development literature on microfinance, including for micro-savings (Van Rooyen et al., 2012), it is important to consider what makes households choose to open accounts, and continue to use them once they have been opened. My setting benefits from being able to measure not just account uptake, but also bank usage as measured by deposits made at the bank, as well as examine outcomes over the long run with several decades of detailed savings bank data.

Second, I contribute to the literature on the real effects of property rights. In particular, my paper provides evidence on the importance of financial access in facilitating the observed benefits of granting property rights on subsequent investment in human capital and employment. Prior work shows that stronger rights shift labor decisions and mobility (Field, 2007; Adamopoulos et al., 2024), alter household behavior like risk-taking (Koudijs and Salisbury, 2020), and affect marriage choices (Koudijs and Salisbury, 2016). Unlike Hazan et al. (2019), who study aggregate deposits and lending across U.S. property rights reforms, I use district- and depositor-level records from the savings bank system in England—a pure savings intermediary that did not lend—to isolate a savings and appropriability channel through which property rights affect real outcomes – labor market participation, occupational choice, and human capital investment. The rise in women's schooling and employment occurs only where a savings bank operates, highlighting how secure, interest-bearing deposits convert legal owner-

[3]See, among others, Hallward-Driemeier et al. (2013) and O'Sullivan (2017).

ship into practical control over financial assets, as well as support wealth accumulation. In parallel to classic results on ownership for firm investment (Grossman and Hart, 1986; Hart and Moore, 1990), my findings show how well-defined ownership is important for individual investment in human capital, consistent with land-titling evidence on education that does not rely on credit (Galiani and Schargrodsky, 2010). I also show that the property rights-savings interaction is especially relevant where access to legal institutions, such as in more rural areas, is weaker. This interplay between property rights and financial inclusion is especially relevant in developing economies, where informal savings mechanisms often dominate, and formal savings by households—and women in particular—remain low, despite several advantages of formal savings including the accumulation of interest.

Finally, this paper speaks to the literature on the real effects of banks. Existing work shows that expanding banking access can shape real outcomes—through credit supply, payment and savings technologies, and information frictions—affecting firm entry, employment, and household decisions and outcomes (Aghion and Bolton, 1997; Bruhn and Love, 2014; Schaner, 2018; Célérier and Matray, 2019; Fonseca and Matray, 2024; Cramer, 2025). I contribute to this literature along two dimensions. First, I isolate a savings channel, as savings banks in 19$^{\text{th}}$ century England offered secure, interest-bearing savings technology but no credit, allowing a clean test of how intermediation via deposits and security alone maps into real outcomes, without increases in credit supply. Second, I show that banking intermediates the translation of property rights into real choices; where a bank is present, property rights that raise the appropriability of women's earnings lead to higher labor market participation, reallocation toward skill-intensive roles for single women, and increased schooling. In this setting, banks provide an enforcement technology – legal and physical security of funds in a woman's name – and a remunerated vehicle for intertemporal transfers and wealth accumulation. My results therefore highlight how legal reforms and bank access can jointly shape real outcomes.

The rest of the paper proceeds as follows. Section 2 describes the Married Women's Property Act in England and provides institutional details on the savings bank sector in the UK in the 19$^{\text{th}}$ century. Section 3 describes the savings bank and census data used in the analysis. Section 4 details results on savings bank usage following the passing of the property rights reform, and Section 5 discusses changes in education and employment for women following the reform, comparing areas with and without financial access. Section 6 presents a theoretical framework of single and married women's education and employment decisions in the presence of expropriation risk and a savings technology. Finally, Section 7 concludes.

2 Institutional Details

In this section, I first detail the primary regulatory reform I use to investigate the role of property rights on women's financial, education, and labor choices – the 1870 Married Women's Property Act. Next, I describe the retail banking landscape of the United Kingdom during the 19th century over which I examine the effects of the 1870 Married Women's Property Act.

2.1 Married Women's Property Act

I use a significant legislative reform from the 19th century that formally granted property rights to married women over financial assets for the first time in England.

Prior to the 1870 Married Women's Property Act, the legal regime in England and Wales was highly differentiated by marital status. Married women were legally subsumed under the doctrine of coverture, meaning that any property, income, or legal rights were controlled by their husbands; they had no independent legal personality to contract or own property. Prior to 1870, English common law dictated that a woman's property passed under her husband's control upon marriage. This principle derived from the doctrine of coverture, by which a married woman (a *feme covert*) could not own or manage property in her own name (Blackstone, 1765). As a result, her "personal property" — moveable assets like money, clothing, household furniture — became her husband's to use, sell, or even bequeath at death (Erickson, 1993). Property rights over real property differed - while the wife technically retained the title to land she brought into the marriage and legal ownership, she could not alienate it without her husband's consent (Holcombe, 1983). In contrast, single women and widows enjoyed full legal capacity of their personal and real property (Holcombe, 1983).[4]

Several historical sources document routine expropriation of married women's earnings and savings prior to 1870. A prominent example was that of Caroline Norton, an upper-class woman working as a writer. Upon separation from her husband George Norton, her literary income and even prospective royalties were treated in law as his property and diverted to him, despite being generated by her own work (Norton, 1855). Norton's own account of her legal cases following the separation from her husband, which she wrote in a published letter to Queen Victoria in 1855 in support of a bill on divorce, makes the legal mechanism explicit; her husband subpoenaed her bankers and publishers to direct her existing financial assets and future earnings away from her. "The "existent" husband subpoenaed my bankers; compelled them to produce their books, and sent his attorney to make extracts at their bank, of all sums entered in my private account. He also subpoenaed my publishers; to compel them to

[4]On the death of a husband, widows typically had only a life interest—known as "dower"—in one-third of their husband's freehold property, provided it had not been sold or devised beforehand, with the remainder allocated to children (Erickson, 1993).

declare what were the copyrights they held of me, and what sums they had paid me: for, (amazing to say,) the copyrights of my works are his, by law: my very soul and brains are not my own! And, when all was done, this great dictum was impressed upon my memory; that the contract was nil, because the fiction of the law is, that "man and wife are one,"—and not two contracting parties; and Mr Norton, therefore, was not bound "in law," only "in honour."" (Norton, 1855). In moving the 1869 Married Women's Property Bill in the House of Lords, Baron Penzance, James Plaisted Wilde who was then a senior divorce and probate judge, characterized this regime in practical terms, noting that the existing common law meant that if a husband "squandered the property possessed by her on her marriage she had no redress; and if, during her married life, she earned anything by her industry or talents those earnings became his absolute property," and emphasizing that magistrates and clergy attested the grievance was widespread among wage-earning wives (Hansard, 1869).[5] Contemporary press discussion likewise treated such seizures as the predictable consequence of the legal status of marriage rather than isolated abuses.

The late 19th century saw significant reforms to the legal rights of married women over their property. The first of these pieces of legislation addressed property rights of married women over their earnings and money – the Married Women's Property Act of 1870 applied to England and Wales and was the first meaningful legislative reform formally addressing the property rights of married women. The 1870 Act applied specifically to ownership over money, gained through inheritance or labor. This allowed, for the first time, savings held in formal bank accounts in the names of married women to be fully under their control. Specifically, the 1870 Act stated:

> "... any deposit hereafter made and any annuity granted by the said Commissioners under any of the said Acts in the name of a married woman, or in the name of a woman who may marry after such deposit or grant, shall be deemed to be the separate property of such woman, and the same shall be accounted for and paid to her as if she were an unmarried woman; provided that if any such deposit is made by, or such annuity granted to, a married woman by means of moneys of her husband without his consent, the Court may, upon an application under section nine of this Act, order such deposit or annuity or any part thereof to be paid to the husband."
>
> *(Married Women's Property Act 1870, Section 2)*

The Married Women's Property Act of 1870 was the culmination of a multi-year reform campaign

[5]Lord Penzance further spoke on the law: "Such a law, regarded in the abstract, could not be deemed satisfactory. According to the last Census there were 3,000,000 of married women in the kingdom, of whom about 800,000 were persons working for wages or earning money in some other way. Now, in a certain percentage of cases, the husband became a spendthrift or a drunkard, and preyed upon her earnings, sometimes seizing and pawning her goods or breaking up her home. The law stood by, leaving him entirely master of the situation, and the more determined a wife was to preserve herself and her children from poverty, the more certain he was to come down and seize upon the pittance she had secured" (Hansard, 1869).

aimed at addressing the legal doctrine of coverture, as part of a feminist reform movement starting in the mid 19th century (Holcombe, 1983). A bill was first introduced in Parliament in April 1868 by Liberal MP George Shaw-Lefevre, co-sponsored by Russell Gurney and John Stuart Mill (Hansard, 1868). Although the bill passed second reading in June 1868, it was shelved due to the general election later that year, which removed Mill from Parliament. The campaign regained momentum in 1869, when Gurney reintroduced the measure with broader political backing. The bill passed the Commons again in 1870, though only after further amendments by the House of Lords. Despite these setbacks, the bill was ultimately passed on August 9, 1870. While the legal change was debated publicly for several years, evidence suggests that the final passage of the Act—and particularly its specific provisions—remained uncertain until shortly before it became law. As Holcombe (1983) notes, expectations were buoyant after the bill's progress in 1868, but the election intervened, and the reintroduced bill faced opposition and amendment threats in both chambers until it ultimately passed.

2.2 The UK Savings Bank Movement and the Trustee Savings Bank System

To gather information on financial inclusion and savings behavior, I make use of the trustee savings bank system of the United Kingdom, which was the first formal financial institution offering savings accounts to the general population of the United Kingdom.[6] The trustee savings banks in the United Kingdom numbered 573 banks by 1850 with over a million depositors and approximately £30 million in deposits in nominal pounds. Figure 1 plots the geographic distribution of the trustee savings bank system across England, atop 1851 local district boundaries, illustrating the wide geographic distribution of the banks, which were spread across both areas of higher population density as well as smaller towns and rural localities.

[Insert Figure 1 here]

The vast majority of the trustee savings banks opened in the years just after the passing of the Savings Bank (England) Act 1817 as a benevolent movement aimed at encouraging the so-called "industrious poor" of the nation to save. They were initiated locally through their communities at the initiative of local district leaders or elites, with these reform-minded elites—often landowners, clergymen, or merchants—acting as trustees, volunteering their time and guaranteeing oversight without personal profit (Horne, 1947).

These banks differed from conventional banks across several dimensions. First, they promoted themselves to the working class to encourage the savings of small sums, including domestic and farm

[6]These banks were the predominant form of formal financial access the working-class population of England had available at this time.

servants and laborers. Banks also operated highly independently; bank managers worked locally at a bank, under a trustee who offered security, and all collected funds would go centrally to the Commissioners for the Reduction of the National Debt to be invested in government bonds. Finally, these banks did not issue credit, and invested all deposits in government securities (Horne, 1947).[7]

3 Data

This paper relies on three primary sources of data. First, I use the complete census data from England spanning 1851 to 1891 to extract demographic, occupational, and geographic variables, collapsed to consistent parish-level units (hereafter "local districts").[8] This allows for a mapping of employment, education, and population characteristics over time. Second, I manually compile a comprehensive dataset of Trustee Savings Bank (TSB) annual reports from 1851 to 1891 by digitizing and transcribing archival records. These banks were the primary formal financial institution that the working-class population of the United Kingdom could use to deposit their funds at this time. These reports include granular details on bank locations, deposit amounts, and depositor numbers. Finally, I also manually digitize new depositor records for a select number of trustee savings banks for which there are surviving records around the passing of the Married Women's Property Act of 1870. Together, these datasets provide a novel historical perspective on financial access during a period where property rights were first granted formally to married women.

3.1 Historical Census Data of England

I use the complete non-anonymized England census for the years of 1851, 1861, 1881, and 1891 available from the Integrated Census Microdata (I-CeM) at the UK Data Service.[9]

I extract variables on population, gender, and employment and occupation characteristics. Using the consistent geographic local district units defined in the data, I collapse the census to local district-level variables. Specifically, I exploit the occupation classification variable, "occode" to define an indicator variable for employed, as well as map the share of agricultural workers within a local district.[10]

[7] It was not until the passing of the Trustee Savings Bank Act of 1976 that credit was offered.

[8] A parish in Victorian England was a basic administrative and ecclesiastical unit, typically centered around a local church, which served both religious and civil functions. Parishes were responsible for maintaining records of births, marriages, deaths, and overseeing poor relief, and thus constituted fundamental geographic and administrative boundaries widely used for demographic and socio-economic analyses in historical research. From data on parish sizes used from Schurer and Wakelam (2024), the average 1861 parish size is around 2,728 acres.

[9] I supplement this data with a variable on the size of each local district in acres for England (available for the years 1851, 1861 and 1891) from Schurer and Wakelam (2024). Data for 1881 are not made available.

[10] This variable indicates detailed and consistent occupational names, e.g. those working within education are classified

I also use variables indicating age, marital status, and population density.[11] Table 1 presents summary statistics on this local district-level dataset for 1861 in Panel A, and for all census years available in Panel B.

[Insert Table 1 here]

For more details on data cleaning and variable construction, refer to Section A in the Internet Appendix.

3.2 Trustee Savings Bank Data

I digitize and manually transcribe annual reports on the Trustee Savings Banks from 1851 to 1891. Figure B.1 in the Internet Appendix provides an example of these reports. The data include information on the bank location, amount of deposits, number of depositors, and interest rates offered on deposits. These reports also contain data on bank management, including the number of paid and unpaid officers, the security offered by paid and unpaid officers, along with data on management expenses.

Bank Locations. To arrive at a complete list of over 500 bank locations and their opening and closing dates, I rely on the list in Appendix 1 of Horne (1947). As Appendix 1 of Horne (1947) does not list the local district or county that a bank is located in, and since many names for villages, towns, and cities may not be unique within the United Kingdom, I manually identify local districts for each bank location using newspaper articles from the British Newspaper Archive and other digitized historical records, and matching these with the closest geographic local district I can identify in the 1851 census of England.

Bank-Level Statistics. From the 1850s onwards, the central TSB office compiled annual data on individual savings banks which includes the number of depositors, amount of deposits and corresponding accounts, bank management information, expenses, among other items, for almost all savings banks in the UK. I focus on savings banks in England for all my analysis, where I have the most comprehensive data from the census and bank archives.

I restrict the transcribed bank annual report data to banks that are founded by 1861, the census year for which data is available prior to the passing of the Married Women's Property Act of 1870,

across several granular occupational categories such as *schoolmasters and teachers (default)*, *university teachers*, *school service (inc attendants and pupil teachers)*, *school service general, clerks, etc*, and *governesses (domestic)(resident)*.

[11] The local district-level dataset uses a geographically consistent definition of local districts over time from I-CeM, "conparid" to compare areas over time.

and exist until at least 1891.[12] This encompasses 190 unique banks across 187 local districts, with 7,867 bank-year observations.

Summary statistics of variables are presented in Panel A of Table 2. Most banks were founded in the first few years following the passing of the Savings Bank Act of 1817 which established the trustee savings bank system across England. On average, a bank has about 4,190 bank accounts open in a given year with £123,000 in nominal deposits, and receives approximately 4,750 deposit receipts. The average annual interest rate over the sample period is 2.91%.[13]

[Insert Table 2 here]

New-Accounts Depositor-Level Data. For a select subset of trustee savings banks with surviving depositor records, I manually digitize and transcribe data on new accounts opened over 1867 to 1873. These data are not standardized reports like the bank annual reports - instead, each bank recorded different information in a different format on new account openings. However, across the banks transcribed, at least the first and last name of depositors is available. Gender is manually inferred using the first name of new depositors.

Figure B.2 in the Internet Appendix gives examples of such records, and Panel B of Table 2 provides summary statistics on the count of new depositors at a given bank-month (14 depositors on average, 8 female depositors on average, and about 51% of new depositors being female). In total, the new depositor dataset contains 2,522 new depositors across three savings banks over the 1867 to 1873 period, covering 176 bank-month observations.

4 Property Rights and Financial Participation

This section investigates the effect of granting property rights on bank account usage. In particular, I examine how the use of bank accounts changes around the passing of the 1870 Married Women's Property Act. Section 4.1 details the empirical strategy and Section 4.2 presents the main results of the Act on financial inclusion outcomes. I also provide micro-evidence from manually digitized and transcribed depositor records on how new depositors at select banks changed around the passing of the Act.

[12] Note that results are robust to not including these sample restrictions.

[13] Note that there was minimal variation cross-sectionally in the interest rate at the trustee savings banks. Deposits were paid the return on gilts, and often subsidized by the government, and differences across banks in the return paid reflected differences in minimal operating expenses (Horne, 1947). Note that these banks were non-profit institutions.

4.1 Empirical Strategy

I employ a difference-in-differences (DiD) analysis comparing local districts with a higher ex-ante presence of married women before and after the passing of the 1870 Married Women's Property Act. Specifically, I exploit the fact that after 1870, the Married Women's Property Act differentially impacts local districts with a high ex-ante married female presence versus those with a lower presence.[14] Local districts with a higher presence of married women in 1861 were more legally constrained prior to the reform — they faced the greatest restrictions under coverture and thus had the most to gain. Hence, the 1870 Act constituted a stronger legal shift for these areas.[15]

The main identification assumption is that in the absence of the 1870 Married Women's Property Act, local districts with a higher ex-ante presence of married women (the "treatment" group) and local districts with a lower presence of women (the "control" group) would have had parallel trajectories in the outcomes of interest, for example, the number of accounts opened and the amount of deposits made. In addition, a second challenge in this setting could be that there may be systematic changes, beyond the Act, in the population composition of local districts that differentially affect the treatment and control group – local districts with a higher or lower presence of married women in 1861.

The identifying variation comes from cross-district differences in *1861* exposure to married women, interacted with the post-1870 period. Cross-sectional dispersion in 1861 exposure plausibly reflects demographic forces that shape the female marital distribution, and sectoral composition (e.g. agriculture and services/industry vs. heavy mining), and is unlikely to reflect strategic responses to a reform that occurred a decade later.[16] A key threat is that high-exposure districts differ systematically from low-exposure districts in ways that also predict post-1870 banking trends. Figure E.2 shows that, relative to low-exposure districts, high-exposure districts have slightly higher population density and a somewhat lower agricultural share, while employment rates are similar. To address this, I include local district and year fixed effects and control directly for the 1861 covariates in levels (also interacted with Post), so identification is off within-district changes relative to districts with different baseline

[14] I use the log count of married women as my main specification, however, the results using the population share of married women in a local district as the explanatory variable are also estimated in Section E.1 of the Internet Appendix. Results are robust to this measure.

[15] It is important to note that married women could and did open accounts at savings banks prior to the 1870 reform, however, funds in these accounts under the name of a married woman were the *legal property* and under the *legal control* of the husband.

[16] I do not observe direct evidence that districts selected their 1861 marital composition in anticipation of the 1870 reform. The argument rests instead on timing (the exposure is measured nearly a decade earlier), flat pre-trends in the event study, and robustness to controls for local economic activity and sectoral mix. For reference, the 1861 married-women share is tightly distributed in this sample, with a mean of 17.2%, 5^{th} percentile of 15.4%, and 95^{th} percentile of 19.0%.

exposure but similar observables. Most importantly, event-study coefficients are flat pre-1870. Taken together, these checks support interpreting the post-1870 differential changes as operating through the reform rather than through differential pre-trends.

Robustness is discussed further in Section 4.2.2, as well as Section E.1 of the Internet Appendix, where I report a comprehensive set of diagnostics, placebos, and alternative specifications.

4.2 Results

New Accounts and Deposit Receipts

The empirical strategy exploits the passing of the Married Women's Property Act in 1870 in England. In a difference-in-differences framework, I compare variation in the ex-ante log count of married women in a local district using the 1861 census, and measure differences in bank-level outcomes before and after the passing of the 1870 legislation.

I first estimate

$$\text{Outcome}_{dt} = \alpha + \beta_1 \left(1861\text{MarriedWomen}_d \times \mathbb{1}_{\text{Post}}\right) + \gamma' X_d + \lambda_d + \tau_t + \mu_c + \delta_{ct} + \phi'\big(X_d \times \mathbb{1}_{\text{Post}}\big) + \epsilon_{dt}, \tag{1}$$

where Outcome_{dt} refers to the outcome variable of interest for a bank in year t, $\mathbb{1}_{\text{Post}}$ is an indicator variable equal to one for observations in or after 1870, and $1861\text{MarriedWomen}_d$ refers to the log count of married women in the local district of a bank in 1861.[17] Note that counties are a broader geographic unit than local districts. Across different specifications, I include various controls and fixed effects. Namely X_d, a set of control variables, λ_d for local district fixed effects, τ_t for year fixed effects, μ_c for county fixed effects, and δ_{ct} for county $\times$ year fixed effects. The vector X_d refers to 1861 local district-level control variables for the local district of the bank. Specifically, I include a rich set of 1861 local district-level controls – including the total population and count of agricultural workers, the employment rate, the population density, as well as the bank-year interest rate (at the bank-year level) — to help alleviate several potential endogeneity concerns. First, local districts with larger populations or differing levels of agricultural employment may have had distinct financial infrastructures and economic opportunities that could influence both the pre-treatment married female share and subsequent bank account uptake. Second, local labor market conditions, as captured by the employment rate, may affect marriage market outcomes and financial behavior independently of the reform. Third,

[17] For expositional clarity I write the specification at the local *district*-year level (d, t). However, here I note that outcomes are recorded at the bank level, but treatment and all baseline covariates vary only by district. In the data, only three districts host two trustee savings banks; all others have one; the sample contains 190 unique banks across 187 local districts, so there are only a few local districts containing more than one bank. Hence, using bank or local district year effects yields effectively the same regression results.

differences in population density may proxy for urbanization, which can be correlated with both the level of financial inclusion and gender norms regarding property rights. Finally, differences in local interest rates may influence savings behavior and the uptake of new accounts.

In addition, I also control for the interaction of the baseline local district characteristics – the 1861 levels of population, agricultural population, the employment rate, and the population density – with an indicator for post-1870 through $X_d \times \mathbb{1}_{\text{Post}}$. While year fixed effects absorb average nationwide shocks, it might be the case that nationwide changes may have impacts that are not uniform and affect local districts with certain characteristics, in ways that are correlated with my exposure to the treatment – the married female presence in a local district. These interaction terms of the baseline controls with post-1870 let predetermined fundamentals load differently after the reform and thus absorb any coincident nationwide changes whose impact varies systematically with those characteristics (e.g., if more populous or more agricultural districts experience different post-1870 shifts for reasons unrelated to the Act). Hence, these terms along with local district and year fixed effects mean that my β_1 coefficient of interest is identified from comparisons among local districts that share the same 1861 fundamentals and face the same aggregate year shocks, but differ in their 1861 exposure to married women.[18]

I test the following bank-year level outcomes in the post-period, taken from the annual reports of the trustee savings banks: the log number of open accounts (a stock variable) and the log number of deposit receipts in a given year (a flow variable). Panels A and B of Table 3 present the results.

[Insert Table 3 here]

Local districts with a higher ex-ante married women population see a greater increase in open accounts and deposit receipts in the post period at their local banks. A 1% increase in the ex-ante married women population in a local district is associated with an approximately 0.1% increase in the number of accounts and an approximately 0.12% increase in deposit receipts. In the most saturated specification in Column 4, a one standard deviation higher 1861 log count of married women is associated with a 0.123 standard deviation larger post-1870 increase in log accounts, i.e. 14.2% more accounts. Likewise, a one standard deviation higher 1861 log count of married women is associated with a 0.131 standard deviation larger post-1870 increase in log deposit receipts, i.e. 17.9% more deposit receipts. This provides evidence of greater bank account uptake, as well as greater usage of bank accounts in terms of deposits made, following the reform in areas with a greater ex-ante

[18] To address potential serial correlation within the treatment unit, the local district in this setting, I cluster standard errors at the local district level – the unit at which the treatment of ex-ante married female presence is assigned (Bertrand et al., 2004; Abadie et al., 2023).

population of married women.[19]

In a second step, I also compute outcomes of log total deposits and the log average deposit size. Table 4 presents the results.

[Insert Table 4 here]

While Panel A of Table 4 indicates a positive and significant increase in deposits in areas with more married women after the reform, Panel B of the table demonstrates that the average amount of deposits per account falls in these areas. This is consistent with the notion that new account openings drive the increase in total deposits in these areas, however, those opening new accounts are depositing smaller than average deposit amounts. This is consistent with the results in Table 3 on greater account uptake and usage being driven by the *extensive margin* of financial participation, with women opening more accounts and making more deposits, rather than a substantial change in the volume of deposits being made per account. This is suggestive of married women moving *small* savings flows—e.g., wages and precautionary balances—into formal savings banks once balances became enforceable in their own name. Hence, the decline in average deposit size is consistent with the entry of new depositors with lower initial balances who are shifting funds from informal storage into secure, interest-bearing accounts.

Magnitude and monotonicity of treatment effect. In a second step, I also use quartiles of the ex-ante log count of married women to define treatment. Specifically, I estimate the specification below,

$$\begin{aligned}\text{Outcome}_{dt} = \alpha + \beta_1 \mathbb{1}_{\{\text{1861MarriedWomenQuar4}\}} \times \mathbb{1}_{\{\text{Post}\}} + \beta_2 \mathbb{1}_{\{\text{1861MarriedWomenQuar3}\}} \times \mathbb{1}_{\{\text{Post}\}} \\ + \beta_3 \mathbb{1}_{\{\text{1861MarriedWomenQuar2}\}} \times \mathbb{1}_{\{\text{Post}\}} + \lambda_d + \tau_t + \delta_{ct} + \epsilon_{dt}.\end{aligned} \tag{2}$$

In Equation (2), Outcome_{dt} denotes the same outcome variables (for example, the log number of accounts and deposit receipts) for a bank in year t. The treatment variable is defined by the interactions of the 1861 local district-level married women population quartile indicators and the post-1870 dummy variable. Local district and year fixed effects are included in some specifications (λ_d and τ_t, respectively), and local district and county $\times$ year fixed effects (δ_{ct}) are included in the alternate specification. Table 5 presents the results.

[Insert Table 5 here]

[19] These results are also consistent with Combs (2005), who shows using inheritance tax records that after this reform, wives reallocate wealth from real assets to personal property they could now independently own.

These results show that the effect on more open accounts is driven by local districts with the highest ex-ante married women share. Local districts in the top quartile of the 1861 married female distribution exhibit an approximately 30.4% increase in the number of open savings accounts relative to the lowest quartile after the reform in 1870. Similarly, there is a significant increase in deposits made at the banks in these areas after the reform.

Finally, Table 5 demonstrates that there is a monotonicity in the treatment effect – areas in the top of the married female distribution exhibit a stronger treatment effect, and there is a null effect below the median, providing more evidence that the presence of married women is an important driver of new accounts following the passing of the Married Women's Property Act of 1870. [20]

Parallel trends. The central identification assumption of the difference-in-differences specification outlined in Equation 1 is that in the absence of the Married Women's Property Act of 1870, local districts with higher or lower presence of married women would have had similar *trends* in the bank outcomes I consider.

To test the parallel trends assumption, I estimate the year-by-year effect of the married female local district share on savings bank outcomes in the years before and after the event in 1870, on the same bank annual report outcomes.

Specifically, I estimate

$$\text{Outcome}_{dt} = \alpha + \sum_{\substack{y=1860 \\ y \neq 1869}}^{1875} \beta_y \left(1861\text{MarriedWomen}_d \times \mathbb{1}\{t = y\}\right) + \lambda_d + \tau_t + \epsilon_{dt}, \tag{3}$$

In this specification, Outcome_{dt} is the log number of open accounts or the log deposit receipts at bank b in year t. λ_d refers to local district fixed effects, which absorb all time-invariant characteristics of each local district, and τ_t refers to year fixed effects. I interact this treatment with a set of year dummies, $\mathbb{1}\{t = y\}$ for each year $y = 1860, 1861, \ldots, 1875$, with the year 1869 omitted as the baseline. The coefficient β_y on each interaction term captures the differential effect in year y—that is, the additional impact on the log number of accounts and deposit receipts for local districts with higher or lower married women presence relative to 1869. Standard errors are clustered at the local district level to account for within-local district correlation over time. The figures below present the results.

[Insert Figure 2 here]

These figures demonstrate a rise in both the number of open accounts and deposits made following 1870, the year of the Act in Panels (a) and (b), respectively. In addition, the figure indicates no

[20] I estimate the same specification, but using quartiles of the ex-ante share of married women in Table E.3 of the Internet Appendix, which demonstrates similar results and the monotonicity.

pre-trends in the outcomes for local districts with higher or lower married women presence, with a notable rise for the local districts with a stronger married women presence only *after* the passing of the 1870 Married Women's Property Act. This strongly supports the parallel trends assumption of the main specification estimated by Equation 1.[21]

Urban and Rural Status. I also present additional results on heterogeneity along the urban and rural dimension in bank usage around the 1870 reform.[22] Table D.1 in the Internet Appendix presents the results. The estimates suggest that urban status does not change the direction or the magnitude of the effects on account openings, deposit receipts, and deposits and average deposit sizes.

4.2.1 Microevidence from Depositor Records

To complement the bank-year results on financial inclusion around the Act, I manually digitize and transcribe depositor declaration data at a subset of banks, which includes information on the names of *new accounts* opened. From the names, I manually infer the gender of the depositor. Figure B.2 in the Internet Appendix presents examples of the archival records.

I plot the annual count of *new* female depositors and the annual share of female depositors in Panels (a) and (b) respectively, of Figure D.1 of the Internet Appendix. These results demonstrate a notable rise in the average count and share of female depositors opening new accounts around the 1870 Act. In particular, the average count of female depositors in the post-period is 12% higher, while the average share of new female depositors in the post-period is 6% higher. Zooming in on the jump in 1870, the year the 1870 Married Women's Property Act passed, the share of female depositors among new depositors rises by 6 percentage points from the 1868-1869 period to 1870.

I formalize this in a regression setting, where I compile the new depositor data into a monthly panel for each of the banks in this sample. I estimate

$$s_{bm} \;=\; \alpha \;+\; \beta\,\mathbf{1}\{\text{Post}_m\} \;+\; \sum_{\tau=1}^{12} \gamma_\tau\,\mathbf{1}\{\text{MoY}(m)=\tau\} \;+\; \mu_b \;+\; \varepsilon_{bm}, \tag{4}$$

where s_{bm} is the female share, in percentage points, of *new* depositors at bank b in month m; $\mathbf{1}\{\text{Post}_m\}$ equals 1 for months in 1870 and later; $\mathbf{1}\{\text{MoY}(m)=\tau\}$ are month-of-year fixed effects that absorb seasonality in account openings; and μ_b are bank fixed effects.[23] The coefficient β measures the post-1870 shift in the female share of entrants. Table 6 presents the results.

[21] In Figure E.4 of the Internet Appendix, I estimate the count of new accounts and deposit receipts made in a Poisson framework. Results are robust to this alternate specification.

[22] Urban status is defined as local districts with an 1861 population density that is greater or equal to the 75$^{\text{th}}$ percentile population density within the sample of banked areas, which corresponds to a value of 9.47 people per acre. Results are robust to different thresholds.

[23] I weight each bank×month observation by the number of new depositors in that cell. This makes months with many

[Insert Table 6 here]

Table 6 demonstrates that there is a statistically significant increase in the female share of new depositors in the post-period from the microdata. Specifically, the post-period is associated with an approximately 3.4 percentage point increase in the share of women among new depositors. This microevidence from new accounts opened around the reform in 1870 indicates that more women did indeed open more accounts following the passing of the 1870 Act, consistent with the results from the difference-in-differences framework earlier.

Broadly, these patterns complement the work of Hazan et al. (2019), who show that expansions of married women's property rights were associated with financial deepening—higher bank deposits and loans and lower interest rates—consistent with greater participation in formal finance. In my setting, I likewise observe a discrete post-1870 increase in engagement with formal banking, but I can measure this response at a much finer level, I use a bank-year panel of savings banks to track changes in accounts opened and account usage, rather than state-year aggregates for national banks. In addition, the depositor records provide direct micro-evidence on *who* enters the banking system; the post-period is associated with a greater entry of women in the formal banking sector. Finally, my institutional environment helps separate mechanisms, as savings banks in this setting offered secure, interest-bearing saving and did not extend credit, so the effects in this section capture changes in financial inclusion through savings and greater security of funds rather than borrowing, and hence are able to exclude a credit supply channel.

4.2.2 Robustness

I perform a battery of robustness tests on the increase in women's financial inclusion following the passing of the Married Women's Property Act of 1870, including using different measures of ex-ante married female presence in a local district, examining changes in the outcome variables of interest (e.g. changes in the number of accounts opened or deposit receipts), using inverse probability weights to balance local districts, and other tests, which are described here.

Alternative definitions of variables and specifications. The main patterns documented in this section are not sensitive to functional form, outcome scaling, or the precise construction of treatment. First, I show my baseline difference-in-differences estimates hold using the share of married women in 1861 in a given local district. These results are presented in the Tables E.1 and E.2 in the Internet

entrants count more than months with only a handful, so the estimate reflects the change for the *average entrant* rather than the *average bank-month*. It is appropriate here because the female share is computed from counts and is much noisier when there are few entrants.

Appendix. Table E.1 indicates that a one percentage point increase in the share of married women in a local district is associated with an approximately 8% increase in the number of accounts opened, and a 9% increase in the number of deposits made in a given year.

I also consider alternate definitions of the outcome variables. In particular, I model the changes in total accounts, deposit receipts, deposits, and the average deposit size at a bank from one year to the next. Tables E.4 and E.5 of the Internet Appendix present the results.

In addition, while the Married Women's Property Act of 1870 had a direct effect on married women, it likely also affects the choices of single women, many of whom typically went on to marry. Hence, there should be an effect of the reform on the behavior of both married and single women. To this end, I estimate the effect of the Act using the ex-ante *total* female population, rather than just the married female population, and get similar results on the number of accounts opened and the deposit receipts in Figure E.3 of the Internet Appendix.

Another concern could be that married female presence proxies for total local district population. The main specification addresses this already by controlling for population, and the married female share specification further isolates the presence of married women as being the relevant driver of the post-1870 increase in financial inclusion. However, to give further support to this, I explicitly rule out male presence driving this by controlling for both $1861\text{MarriedWomenPopPct} \times \mathbb{1}_{\{\text{Post}\}}$ and $1861\text{MalePopPct} \times \mathbb{1}_{\{\text{Post}\}}$in the same regression, in Table E.7. The results in this table demonstrate that, conditional on parish and year fixed effects, only the married female share significantly predicts the post-1870 rise in accounts, deposit receipts, and deposits, while the male share is small and statistically insignificant, indicating that the effect is driven by the intensity of married women's presence rather than overall population or male composition.

I also re-estimate the event-study in a Poisson framework which yields nearly identical dynamics and magnitudes in Figure E.4 of the Internet Appendix.

Finally, I also compute generalized propensity scores to predict the treatment of the ex-ante 1861 married female population, matching local districts on population, agricultural worker population, employment rate, and population density. Table E.6 of the Internet Appendix presents the results of this weighted difference-in-differences specification, and indicates similar magnitudes of the effect of the Married Women's Property Act of 1870 on the bank outcomes of open accounts, account usage, total deposits, and the average deposit size.

Placebo. I also consider a placebo test where I restrict the sample to prior to the passing of the Married Women's Property Act of 1870, and take a placebo year of 1865 as the treatment year. Figure E.5 in the Internet Appendix presents the dynamic difference-in-differences coefficients for this test for both the account uptake and account usage outcomes, and indicates no treatment effect of the

placebo date. This supports the timing validity of the design as there is no detectable effect at the placebo cutoff and the pre-1870 coefficients hover around zero—reducing concerns about pre-trends or anticipatory behavior driving the main results.

Migration. A potential challenge to my analysis is the migration of married women across local districts over time such that the ex-ante 1861 local districts with a higher level of married women are not the same as those in 1870 after the reform, or beyond. Local districts originally classified as "high married female" areas may lose married women (e.g. for job opportunities or other reasons), while "low married female share" local districts could gain more married women. A shift in composition may undermine the parallel trends assumption if one set of local districts systematically gains or loses female residents (and hence experiences changes in bank account usage for reasons unrelated to the 1870 Act). I address this concern through several tests.

First, I plot the local district-level average share of married women over time using the decennial census data. Figure E.1 in the Internet Appendix plots the results, demonstrating stable average shares of married women over time. This is consistent with married women having low overall mobility, particularly if they have children and more commitments to the local area than single individuals. Most migration during this period was initiated by male and male-driven employment opportunities, and married women had markedly low migration rates. Most often, women moved in connection with marriage, typically to join a husband, and were otherwise unlikely to initiate independent moves, especially for employment (Pooley and Turnbull, 2005).

In addition, the results in Table E.3 in the Internet Appendix help to partially alleviate the migration concern. If migration were driving the observed effects, we might expect a more erratic or non-monotonic pattern of the treatment effect across quartiles of ex-ante married female shares, reflecting differential selection in migration. The finding of a monotonic relationship in Table E.3 helps alleviate concerns that migration is the primary driver, because selective migration may induce irregular patterns rather than the consistent trend observed.

Bank local district selection. Another challenge is if bank presence changes over time. Since I restrict the main analysis such that the sample only contains local districts which already have a bank by 1861, at the time the treatment is defined, this is not a major concern as bank access remains the same over time in these local districts, and none of the local districts included in the sample had banks which closed prior to 1891. Furthermore, I included several 1861 local district-level controls, including population levels, population density, the number of agricultural workers, and unemployment levels to capture differences in economic development and urbanization.

Anticipation effects. If people anticipated that women would soon gain property rights, they might have started behaving differently (e.g., opening accounts earlier, or shifting marital arrangements)

before 1870. Figure 2, which plots the year-by-year coefficients of being in the top quartile of ex-ante married female share local districts, indicates no pre-trends for account uptake in Panel (a). In addition, I plot in dashed lines both the year the Act passed, in 1870, as well as the year it was first proposed in parliament, in 1868. The rise in savings bank accounts does not start until after the passing of the Act in 1870. In addition, as detailed in Section 2.1, the passing of the Act was generally not considered certain, particularly due to a general election in 1868 that resulted in some of the key proponents of the bill losing their seats in parliament.

Together, the results presented in this section and the robustness described support the hypothesis that there was increased financial inclusion in formal savings banks by women following the Married Women's Property Act of 1870, which granted property rights over financial assets.

5 Real Effects of Property Rights and Access to Finance

In this section, I investigate the potential real effects of women's financial inclusion on subsequent human capital investment and employment over the longer run following the granting of property rights to married women in 1870.

To what extent might the expansion of property rights have real effects? The literature on property rights has highlighted how granting property rights at the individual level can affect labor decisions and mobility (e.g. Field (2007), Galiani and Schargrodsky (2010), Adamopoulos et al. (2024)). In addition, the intrahousehold bargaining literature highlights two distinct channels. First, reforms that increase marital insurance or non-labor resources for wives generate income effects in collective models that can lower women's market work (e.g., Voena (2015) and Chiappori et al. (2002)). However, reforms that raise a woman's control over her own earnings and assets increase the payoff to own effort by improving appropriability and strengthening outside options, mechanisms that *increase* labor supply. Consistent with this appropriability channel, stronger inheritance and property rights can raise female labor force participation (Gonzales et al., 2015; Heath and Tan, 2020; Field et al., 2021). Motivated by these findings, I investigate whether property rights had real effects on labor market outcomes for women.

In my setting—where rights are enforceable through savings technologies that support wealth accumulation—access to intermediation may amplify these real effects, suggesting a complementarity which I directly test in this section. Having established in Section 4 that women's financial participation rises differentially after 1870, I assess whether and how property rights interact with financial access to jointly affect labor market outcomes. Savings banks in this setting serve as a *secure*, interest-bearing technology for married women following the 1870 reform, facilitating enforcement of

the Married Women's Property Act of 1870 by providing safe storage of funds. Hence, financial access may amplify the labor-market effects of property rights. The empirical design isolates a savings channel whereby property rights make future returns privately appropriable, and bank access supplies a secure, remunerated vehicle to carry value intertemporally.

Finally, I examine occupational choice and education investment. If higher appropriability raises the private return to hours and to skill accumulation, labor market responses may occur along two margins. On the one hand, where home-production constraints and entry costs are dominant, participation may be driven by occupations with low barriers to entry or compatibility with domestic responsibilities (e.g., self-employment such as dressmaking from home, laundry, retail, or lower-skill agricultural tasks) (Adda et al., 2017; Kleven et al., 2019). On the other hand, higher appropriability can also increase the incentive to invest in schooling and to sort into higher-return occupations open to women (e.g., teaching, clerical work, or nursing) (Heath and Tan, 2020). To speak to these potential trade-offs, I investigate how labor market participation and occupational choices vary by marital status – that is, whether single women who are less likely to face child costs and are more likely to have fewer domestic responsibilities behave differently than married women.[24]

The analysis below tests these predictions by studying labor market participation, schooling, and occupational reallocation around the property rights reform in areas with and without bank access.

5.1 Labor Market Outcomes

In a first step, I investigate labor market participation of women around the reform.

In Figure D.2 I plot the average annual female employment rate across local districts in England. This figure illustrates muted differences in employment rates overall across England, with the average female employment rate (calculated as a percent of the total female population in a local district over the age of 15), remaining at around 35%, with a slight decrease in 1891. The trend is similar when examining married and single employment rates independently, in the green and orange lines in Figure D.2, respectively.

While overall there is limited change in the female employment trend over the latter half of the 19$^{\text{th}}$ century in England, including when I consider married and single women separately, I investigate whether *married* female employment responses change in areas where there was a greater treatment intensity of the Married Women's Property Act of 1870 – that is, areas with a greater ex-ante concentration of married women, as well as in areas with a bank.

[24]To motivate this further, note that while the Married Women's Property Act of 1870 applied to the financial assets of *married* women, it may have also affected the labor and education decisions of single women who would later go on to get married.

There are several reasons why access to financial infrastructure could affect real outcomes for women after being granted property rights. In collective household models, individual control over assets alters intrahousehold bargaining power, thereby influencing labor supply and human capital decisions (Lundberg and Pollak, 1993; Chiappori, 1988). In this context, formal savings accounts serve as a credible and legally enforceable mechanism for women to retain control over their resources, after being granted property rights through the 1870 Act. The presence of a local savings bank — even without the extension of credit — enhances the ability of women to allocate earnings toward forward-looking investments such as education, which require bargaining power to justify within the household utility frontier.

Moreover, access to pure savings instruments operates as a commitment technology, particularly valuable under time-inconsistent preferences. In settings with hyperbolic discounting, individuals tend to under-save in the absence of precommitment devices (Laibson, 1997; Ashraf et al., 2006). By enabling married women to maintain independent accounts protected by law, savings banks mitigated present-biased consumption behavior, facilitating durable labor force participation and intertemporal investment. Beyond commitment, the banks' role in offering secure and interest-accruing deposits also reduced the effective cost of precautionary savings, as predicted by buffer-stock models of consumption and labor supply (Deaton, 1991; Carroll, 1997). In this setting, married women with formal ownership rights and access to secure deposits are better equipped to absorb income shocks, supporting continued labor force engagement and longer-term educational investments.

Finally, while trustee savings banks did not extend credit, the capacity to accumulate funds in a formal institution may serve as a partial substitute for collateral-based borrowing, thereby influencing occupational choice. Theoretically, in the presence of borrowing constraints, wealth accumulation can relax entry barriers into higher-return activities or employment outside the home (Galor and Zeira, 1993; Banerjee and Newman, 1993). The empirical patterns from Section 4.2 where account uptake and usage increase following the property rights reform, demonstrate the importance of pairing legal reform with financial infrastructure. The effects of property rights alone may be more muted in the absence of institutional channels through which individuals can act on their new legal capacities, such as financial access.

To this end, in a local district × census-year panel, covering 1851, 1861, 1881, and 1891, I estimate

$$\begin{aligned}\text{MarriedFemaleEmploymentRate}_{dt} = \alpha &+ \beta_1(\text{Ln}(1861\text{MarriedWomen}) \times \mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}}) \\ &+ \beta_2\,(1861\text{MarriedWomen}_d \times \mathbb{1}_{\text{Post}}) \\ &+ \beta_3(\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}}) + \gamma' X_{dt} + \lambda_d + \tau_t + \epsilon_{dt},\end{aligned} \tag{5}$$

to examine the effect of greater exposure to the 1870 reform following the passing of the Act on married female employment rate, and whether and how this effect varies by bank access. Table

7 presents the results. I define bank access as a bank existing in a local district as of 1861, the census-year observation prior to the passing of the 1870 reform.[25]

[Insert Table 7 here]

In Column 1, I estimate just the interaction of ($1861\text{MarriedWomen}_d \times \mathbb{1}_{\text{Post}}$) in a difference-in-differences framework, which includes census-year local district controls of the local district population, the number of agricultural workers, and the population density of the local district. I also include local district and census-year fixed effects. This specification indicates that a 10% increase in the 1861 married female population increases the married female employment rate by 0.04 percentage points following the passing of the reform. However, if I consider an interaction with bank areas in a triple difference-in-differences framework in Column 2, a 10% increase in the married female population in bank areas after 1870 increases the married female employment rate by 0.19 percentage points, suggesting that bank access may indeed be an important driver of the real effects of property rights and be an important complementary institution. This result speaks directly to a potential complementarity between the legal reform and bank access – the 1870 property-rights reform yields larger employment gains precisely where two enabling conditions coincide—financial intermediation is present and the affected population (married women) is larger—consistent with legal capacity translating into labor-market entry through local financial access. Savings banks in this setting offer a return and a storage for the accumulation of savings, but importantly, during a time when property rights over financial assets for married women were just established, the *security* element of the savings banks is important to highlight.

Identification Approach - Financial Access and Property Rights. To further investigate this link between property rights and financial access, I now employ a difference-in-differences specification where I interact an indicator for bank presence from 1861 onward with an indicator for observations following the passing of the Married Women's Property Act of 1870 and estimate the real effects of the Act, jointly with bank access, on women. I estimate

$$\text{Outcome}_{dt} = \alpha + \beta_1(\mathbb{1}_{\text{Bank}} \times \mathbb{1}_{\text{Post}}) + \gamma X_{dt} + \lambda_d + \tau_t + \epsilon_{dt}, \tag{6}$$

where Outcome_{dt} refers to employment and human capital related outcomes. Specifically, the outcomes I test are the married female and single female employment rates. I control for local district

[25]Note that for this analysis on the real effects of the Married Women's Property Act of 1870, I also cluster standard errors at the local district level. This is again the unit at which treatment of bank access is assigned. In addition, as there are only four census year observations in this dataset for each local district, I do not report two-way clustering by both local district and census year, as there are very few clusters within the time dimension (Bertrand et al., 2004; Abadie et al., 2023).

level controls each year, indicated by X_{dt}, including the local district population, the number of agricultural workers, and the population density of the local district. Local district (λ_d) and year (τ_t) fixed effects are included, and standard errors are clustered at the local district level.

It is important to note that bank and non-bank areas may differ in ways that can matter for the effect identified by Equation 6. In particular, I compare local characteristics of bank and non-bank areas in Table D.2 of the Internet Appendix and indeed, bank local districts have greater population density and a smaller share of agricultural workers in the local population. Both areas however have similar total employment rates with no statistically significant difference, and very similar levels of female and married female shares of the total population. Both areas also have significant ex-ante levels of female employment rates. In order to address potential selection arising from the greater presence of banks in urban areas, I use a battery of controls and fixed effects, including directly controlling for population density. However, there may still be omitted variables correlated with these differences which could affect the changes in the outcomes I study. To address this, all specifications include local district fixed effects and census-year fixed effects: district fixed effects absorb any time-invariant differences between bank and non-bank districts (geography, long-run sectoral structure, baseline development), while census-year fixed effects net out common macro trends and nationwide shocks. With these controls—and an explicit control for population density—the identifying variation comes from within-district changes in exposure to banks relative to other districts in the same year. Consequently, any remaining omitted-variable bias would have to stem from district-specific shocks that (i) vary over time, (ii) are correlated with changes in bank presence, and (iii) directly affect the outcomes.[26] I discuss the robustness exercises I perform in detail in Section 5.1.4.

5.1.1 Female and Male Employment Rate Effects

I first report changes in the female and male employment rates using Equation 6 in Figure 3.

[Insert Figure 3 here]

Figure 3 demonstrates that across the two different specifications tested – including just local district and year fixed effects, and additionally including local district controls – there are two important takeaways. First, there is an increase in female employment in local districts with banks after the 1870 reform of between approximately 2-5 percentage points. Second, if this increase is indeed

[26] I further address this through two strategies detailed in the Internet Appendix: inverse-probability-of-treatment-weighted (IPW) results using characteristics of local districts, and an instrumental variable approach. See Section E.2 of the Internet Appendix for these robustness results, including Section E.2.1 for more details on the instrumental variable approach.

female-specific and about *women's* property rights, we should see no effect for men in the same area, or potentially a negative effect if women's entry into the workforce crowds out male employment. I find a small positive or nil effect on the male employment rate in bank areas following the reform. Together, these patterns indicate that female employment was more affected following the Married Women's Property Act of 1870, and that this effect was stronger in areas with a bank. In addition, this difference between the female and male employment rate is indeed statistically significant, as indicated in Table D.3.

The pattern of large female gains with negligible male responses is also consistent with a reduction in gender–specific wedges that improves the allocation of talent rather than crowding out men (Hsieh et al., 2019). In the context of this misallocation literature, the property rights reform of 1870, jointly with bank access, encourage the reallocation of talent of women, through increasing appropriability and encouraging private wealth accumulation, and the nil effect on male employment rates in bank areas after the reform suggests that this was done without displacing male labor. While I do not explore potential differences in total factor productivity, my results are consistent with the literature relating reduced misallocation to TFP improvements (Hsieh and Klenow, 2009; Dabla-Norris et al., 2021). In my setting, reducing the wedge caused by insecure property rights by increasing control over cash balances and returns, women's labor supply and skill investment move closer to first-best, while men's outcomes are largely unchanged.

5.1.2 Married vs. Single Employment Rate Effects

Next, I decompose the employment rate effect on women by marital status to shed light on what mechanisms might be driving changes in labor market participation following the reform. While the 1870 reform granted *married* women property rights, it may also have altered the labor market decisions of single women who might have gone on to get married. In particular, while married women can now appropriate their financial assets, the reform may also operate before marriage by altering expected control after marriage and the value of carrying premarital savings into marriage, so single women may adjust labor supply in anticipation of higher appropriable returns. In addition, the direction of the labor supply effect of the reform on married women is theoretically ambiguous; on one hand, married women now have more marital insurance and non-labor resources so their labor supply could fall, but on the other, they have increased appropriability of their labor income, which could encourage greater participation. Finally, married and single women may also face differences in household constraints which might alter the magnitude of any labor participation effect. Table 8 presents the results on the married and single female employment rates.

[Insert Table 8 here]

Table 8 indicates that married female employment increases by between 1-3 percentage points in areas with financial access following the passing of the 1870 Married Women's Property Act. The effect is stronger for single women, with single female employment rates rising between 2-6 percentage points in these areas following the reform.[27]

The increase in married female labor supply following the reform in bank areas is consistent with a channel where the appropriability of financial assets increases married women's autonomy within the household and raises her returns to work (Heath and Tan, 2020), rather than an income effect whereby married women, having more resources within marriage following the reform, may decrease their labor supply. If the reform had primarily increased marital insurance/non-labor resources, collective models predict muted or lower market work for wives. If instead the reform increased the appropriable return to women's own earnings and banks made enforcement practical, participation should rise for married women where banks are present, which is what I find in Table 8. The increase for single women likewise aligns with appropriable returns driving behavior, as greater expected control over post-marriage earnings—and the ability to carry premarital balances into marriage under separate ownership—raises the payoff to early labor market entry.

The larger response among single women is also consistent with a trade-off between higher returns to work and household constraints. Relative to single women, married women are more likely to face binding home-production and childcare responsibilities, which can dampen extensive-margin adjustments even when appropriability rises. In this sense, the reform shifts both groups toward market work, but with stronger participation among those facing fewer household constraints.

5.1.3 Urban vs. Rural Employment Rate Effects

Finally, I present additional results on the heterogeneity in the effects on the employment rate. In particular, I investigate how urban and rural status affect differences in the female and male employment rates.[28] Table D.5 presents the results. The estimates imply that, in rural districts with a savings bank, female employment rose by about 4 percentage points after 1870, while male employment did not change materially. As a result, the female-male employment gap widened by roughly 4 percentage points post-reform. The negative and significant triple interaction with urban status for the female employment rate outcome indicates that these gains are smaller in urban areas; the implied urban

[27] I also present these effects by age in Table D.4 in the Internet Appendix. By age, the post-1870 effect in banked districts is largest for *single* women at 16–20 (≈3.7 pp) and 21–25 (≈3.6 pp) and remains positive at 26–30 (≈2.2 pp); for *married* women, effects are muted at younger ages and become positive and significant only at 36+ (≈1.4 pp). The all-female pattern mirrors this, with significant gains at 25 and below, and above age 35.

[28] Urban status is defined as local districts with an 1861 population density that is greater or equal to the 75^{th} percentile population density, which corresponds to a value of 0.32 people per acre. Results are robust to different thresholds.

effect is still positive—about 2 percentage points for female employment and 1.8 percentage points for the female-male gap—but economically and statistically below the rural impact.

These results speak to both identification and mechanism. First, the main selection concern is that bank presence correlates with higher population density, so one might worry that *urban* demand growth after 1870 drives the female employment increase. Instead, the larger *rural* response points in the opposite direction, mitigating this concern. Second, the pattern further lends support to a property rights and finance complementarity; where alternative enforcement channels and legal infrastructure were sparser before 1870, the presence of a local savings bank made the Married Women's Property Act more *enforceable* in practice by providing secure, interest-bearing deposit accounts in a woman's name. In those settings, the reform produced a larger increase in the *privately appropriable* return to women's market work, yielding a stronger extensive-margin response.

5.1.4 Robustness

I perform several robustness tests on the effect of the property rights reform, jointly with bank access, on the female and male employment rate which I discuss below.

In particular, the primary identification concern is that bank and non-bank local districts differ in important characteristics which may have caused them to diverge around the Married Women's Property Act of 1870 for reasons unrelated to the increased appropriability of financial assets for married women. As described earlier, Table D.2 shows that bank areas had ex-ante (prior to the reform in 1870, using the 1861 local district characteristics) higher population density and a lower share of agricultural workers, but no differences in employment rates and very small differences in the female and married female share of the population.

While I include a variety of controls, including population density, and local district and year fixed effects to absorb time-invariant differences between bank and non-bank local districts as well as common macro trends and nationwide shocks, there may be concerns about district-specific shocks correlated with bank presence that vary over time and affect the labor market outcomes. In this section, I describe the series of additional tests I do to further lend support to the identification strategy I employ.

Alternate definitions of treatment and specifications. One concern is that bank and non-bank districts differed along pre-existing characteristics that could load onto post-1870 trends for reasons unrelated to the property rights reform. To absorb such differential trends explicitly, I re-estimate the female employment specifications including interactions of 1861 district covariates (population, agricultural workforce, and population density) with a post-1870 indicator, and then further add county times census-year fixed effects to net out county-level time-varying shocks and policies. The

difference-in-differences coefficient remains positive and statistically significant as shown in Table E.8; the effect on the female employment rate remains positive and around 1.5 percentage points higher in bank areas following the reform, and the female employment rate remains statistically significantly higher than the change in the male employment rate. These patterns indicate that the results are not artifacts of compositional differences or county-level shocks coinciding with the reform.

In Table E.9 of the Internet Appendix, I consider limiting my sample to only include the census years from 1851 to 1881, to investigate the short run employment effects of having access to a bank following the property rights reform in 1870. My result on female and male employment rates is the same - with female employment rates being statistically significantly positive, and higher than the male employment rate change, in bank areas following the reform. This indicates that even in the short run – about nine years following the reform – there were positive effects on the female employment rate. In addition, if there are concerns about other potential confounding reforms over the longer run, this test helps alleviate those concerns by demonstrating the results are not driven by the 1891 census.

I also replace the extensive-margin treatment of bank access with an intensity measure—banks per capita—to test for "dose-response" and reduce potential misclassification of marginal bank presence with the binary treatment in Table E.10. Using this continuous proxy, married female employment increases by 2.44 pp and single female employment by 5.61 pp in higher-banked districts after 1870, while male employment remains statistically unchanged. That the single-female response is again the largest is consistent with the baseline heterogeneity and supports an interpretation in which enforceable saving raises the appropriable return to own effort.

Finally, because London could simultaneously host both unusually deep financial intermediation and distinct labor-market dynamics, I exclude all London districts in Table E.11. Estimates remain similar, with married and single female employment rates rising. The persistence of the pattern outside the capital mitigates concerns that results are driven by London-specific shocks or measurement.

Inverse probability weighting. Second, to address selection on observables into bank presence, I apply inverse-probability weights based on a logit propensity score for having a bank in 1861 (using population, density, and agricultural employment) in Table E.12. The weighted DiD estimates again show married female employment rising by about 1.49 pp and a larger response for single women of 3.35 pp, with no detectable change for men; correspondingly, the female-male gap expands by 2.73 pp and the single-minus-married differential is 1.86 pp. The magnitudes are close to the baseline and reinforce that observable differences between banked and unbanked districts are not driving the findings.

Instrumental variable strategy. I also employ an alternate identification strategy which uses an instrumental variable approach to address selection on unobservables correlated with bank presence.

I instrument the post-1870 bank exposure with ex-ante local elite presence interacted with the post-period, $\mathbb{1}_{\{\text{Elite}\}} \times \mathbb{1}_{\{\text{Post}\}}$. Trustee savings banks were typically founded and governed by unpaid honorary trustees drawn from local elites (MPs/peers, senior officials/judges/top civil service, persons of independent means) and contemporary histories document that such elites were indeed pivotal for establishing a local bank (Horne, 1947). In the data, over three-quarters of districts have at least one elite—sufficient to support a bank—so I use the relative elite density across local districts as pre-determined variation that predicts post-1870 bank status. Elite presence is strongly predictive of bank treatment (Table E.14), and the IV second-stage yields effects comparable to or larger than OLS; approximately 4 pp for female employment and 3 pp for the female-male gap (Table E.15). I also employ a falsification test, restricting the sample to local districts without banks shows no reduced-form impact of $\mathbb{1}_{\{\text{Elite}\}} \times \mathbb{1}_{\{\text{Post}\}}$ on the labor market outcomes, reinforcing the exclusion restriction (Table E.16). This is discussed in more detail in Section E.2.1 of the Internet Appendix.

Local demand shocks. Finally, to probe whether generic local demand booms could explain the employment effects I observe, I exploit exposure to the 1869 Suez Canal opening as a plausibly gender-agnostic demand shock.

A key threat is differential local labor demand; banked districts are more urban and less agricultural, traits that may proxy for stronger or differently evolving demand around 1870. While the county times census-year fixed effects I include in Table E.8 absorb time-varying county-level shocks and policies (including demand booms common to all districts within a county), I directly test for this using the 1869 Suez Canal opening in a triple-difference design—banked vs. unbanked, pre- vs. post-1870, and Suez-exposed vs. other local districts. If generic demand were driving the results, banked and unbanked districts within Suez-exposed areas should move similarly post-1870, yielding a zero triple interaction. Instead, the triple term is positive and statistically significant, indicating that, conditional on an equivalent demand shock, districts with financial intermediation in place post-reform exhibit larger female employment responses—consistent with appropriability/enforcement rather than pure demand confounding. Table D.6 presents the results.

Other Victorian era reforms and identification concerns. There are several other Victorian era reforms and movements which could, in principle, confound the real effect results I document if they (i) coincided with 1870, the year of the Married Women's Property Act and (ii) differentially shifted labor market outcomes across local districts with and without bank access. Some other notable reforms around this time include the Divorce and Matrimonial Causes Act 1857, which modestly widened access to civil divorce without altering coverture over married women's earnings; the organization of women's rights campaigns in the 1860s (including the Langham Place circle and the repeal agitation against the Contagious Diseases Acts); the extension of the municipal franchise to unmarried female

ratepayers in 1869; the expansion of access to primary schooling under the Elementary Education Act 1870 across England; and the Post Office's growth in clerical and telegraph work—especially after telegraph nationalization in 1870—which opened some white-collar posts to women.[29] Importantly, these were *national* changes rather than locally piloted programs; they shifted the environment for all districts in England and Wales at the same time.

My empirical design for the change in female employment rates isolates within-district changes tied to the Married Women's Property Act of 1870 through access to banks, rather than these nationwide shifts. Year (census-year) fixed effects absorb the uniform impact of national reforms (e.g., Education Act 1870; Post Office professionalization), and district fixed effects absorb time-invariant differences. I further interact pre-1870 covariates with the post indicator and include county×year fixed effects in robustness, addressing time-varying shocks correlated with urbanization, sector mix, or baseline demographics. Placebo outcomes corroborate the design as male employment rates are flat, while female rates increase only where a bank is present; estimates also remain similar when excluding London and under IPW and IV specifications. Together, the empirical design and the robustness tests support the changes in real outcomes I observe are tied to property rights and bank access, rather than these other nationwide reforms.

Two targeted stress tests further rule out coincident demand expansions as the source of the *employment-rate* effect. First, if new public/clerical positions were the main driver, effects should be strongest in cities; instead, the Bank×Post effect is *larger in rural districts*, counter to an "urban clerical-boom" story. Second, a triple-difference that conditions on exposure to the 1869 Suez opening (a plausibly gender-agnostic local demand shock) shows the post-1870 *female employment rate* (and female–male gap) rises most in banked districts within Suez-exposed counties.

In sum, across the robustness tests I perform, the evidence consistently points to a property rights and finance complementarity that increases women's employment after 1870 without parallel changes for men. The pattern and magnitudes are stable across designs and align with the mechanism in which enforceable savings make returns privately appropriable and thereby raise the payoff to own effort for women.

5.2 Human Capital Investment and Occupational Choice

Beyond labor market participation, how might the combination of property rights and access to a formal savings technology have affected human capital investment and the nature of occupations women specialized in? In particular, how did the reform of 1870 affect the decision of girls to invest

[29] I will discuss the Elementary Education Act 1870 in more detail when I present results on girls' education in Section 5.2.

in education, and how did this affect subsequent occupational specialization?

In this section, I present results on how occupational choices and education investment changed in bank areas compared to non-bank areas following the 1870 reform.

Occupational choices. I first examine how occupational choices shift in bank areas following the reform across two dimensions. First, I classify jobs more likely to be conducted by women during this period (based on the census occupation data of individuals) into mutually exclusive categories of occupations that are likely to be self-employment based, low-skill, and high-skill, where skill is defined as requiring some investment in education or training.[30] Second, I classify all occupations in the census as belonging to primary, secondary, and tertiary sectors and sub-sectors of the economy.[31]

Next, I estimate Equation 6, using the log count of women working in self-employment, in low skill jobs, and in high skill jobs. Panel (a) of Figure 4 presents the results, and Panel (b) presents the decomposition of the changes in female employment in these categories by marital status.

[Insert Figure 4 here]

Figure 4 indicates that for married women, the increase in employment following the 1870 Act in bank areas is concentrated in more self employment and low skill jobs. These are also the occupations which require minimal start-up investment in skill and are likely to be more compatible when facing higher household constraints. For example, married women who could sew would have limited investment needed to start working from their homes as seamstresses. In addition, working as a domestic servant would also require limited investment in skill. In contrast, for single women, all employment types – self-employment, low skill, and high skill – see a rise following the reform in bank areas, with the greatest increase in self-employment and high skill jobs.[32] This is consistent with single women having more capacity to invest in education and develop skills to allow them to work in more skilled jobs such as being employed as a governess and teaching, or working as a nurse.[33]

[30] I include in the self-employment definition occupations such as dressmakers, seamstresses etc. that are likely to be self-employed female jobs. For low skill jobs, typical jobs include domestic service, while for high skill, I include working in the medical field, working as a teacher etc. See Section A.1 and Table B.1 in the Internet Appendix for more details on how this classification is constructed.

[31] See Section A.1 for more details on this classification.

[32] There may be potential concerns about the increase in clerical jobs available following the telegraph nationalization in 1870 driving the increase in high skill in single women's employment. However, I show that single women's employment increases broadly across employment type categories, and within the high skill category, I also observe increases in other high skill occupations like working in the medical field, and not just clerical fields.

[33] A natural question is whether single women choosing to invest more in education also delay marriage to a later age. While the age at marriage is not directly computable from the census, I estimate the same difference-in-differences

In Table D.7 of the Internet Appendix, I also estimate the same specification for married women engaged in unpaid labor. I use the count of married women indicated in the census as having an occupation of "wives and others engaged in (own) household duties" or "wives assisting generally in their husbands occupations (wife of ...)" as a proxy for married women engaged in unpaid labor. Following the reform, there is a notable decrease in married women engaged primarily in their own household duties, as well as supporting their husbands' employment in bank areas. This is further support of the appropriability channel of the property rights reform and bank access driving increased wage labor of married women.

The heterogeneity in occupational adjustment by marital status provides further insight into the mechanisms through which legal and financial reforms interact. For married women, who historically faced both legal subordination under coverture and greater household constraints on time and mobility, the availability of formal saving instruments facilitated entry into low-capital self-employment and low-skill occupations following the property rights reform. These occupations likely required limited upfront investment and could be pursued within or adjacent to the household sphere. By contrast, single women exhibit greater entry into skilled employment categories, and were able to invest more in their human capital to enter career trajectories requiring higher educational thresholds.

I also estimate Equation 6 using the log-odds ratio of female to male labor shares across different sub-sectors of the economy across the primary, secondary, and tertiary sectors in Figure 5.[34]

[Insert Figure 5 here]

The dependent variable is the log ratio of the female to the male employment *share* in sub-sector s of district d and year t. A positive coefficient on $\mathbf{1}\{\text{Bank}\} \times \mathbf{1}\{\text{Post}\}$ therefore means that, within sub-sector s and district d, women's employment share rose *relative to men's* after 1870 in banked areas, netting out local demand shocks that cause gender-neutral level changes.

Figure 5 shows positive and statistically significant relative shifts into agriculture, light manufacturing, and tertiary-market services, especially retail and professional services. By contrast, coefficients

specification as Equation 6 with the percent of women married across four different age groups at the local district level. Table D.8 presents the results. This table indicates there is no significant change in the average share of women married in bank areas following the reform among the 16-20 and 21-25 age group, and a 1.7 percentage point increase in the share of women married in the 26-30 age group. Hence, there is no significant change in the shares married among younger women, and a slight uptick among the 26-30 age group. In addition, if women invest more in human capital, they may reduce their number of children or delay the timing of children. While I cannot observe potential delays, for the former, I find no change in the average household size around the reform, as indicated in Table D.9.

[34] While female employment shares broadly were higher in tertiary sectors and lower in primary and secondary sectors of the economy in terms of levels, as demonstrated in Figure D.3, here I look at how the *relative* female vs. male shares in various sub-sectors changes following the 1870 reform, comparing bank and non-bank local districts.

are small or indistinguishable from zero in heavy industry, and within the tertiary sector there is a relative decline in food/hospitality and domestic service. Taken together, the evidence points to female participation expanding into lower-entry-cost, home-compatible activities (e.g. light manufacturing) and, within services, a reweighting toward retail and professional roles (e.g. clerical roles, teaching, medical positions); the latter is consistent with the skill-investment channel discussed earlier.

School Attendance. Finally, I investigate whether this shift towards higher-skill jobs by women is reflected in school attendance of younger children. Hence, I estimate Equation 6 using the log count of female and male students, under the age of 16, as the outcome of interest. Results are presented in Table 9.

[Insert Table 9 here]

Areas with a bank following the 1870 Act saw an increase in female education by 9-12%. While there were broad improvements in educational attainment in the late 19$^{\text{th}}$ century in England, for example as a result of the passing of the Elementary Education Act 1870 which mandated that schools be made available in all areas across England and Wales, the effect on increased participation in education by children and youths is concentrated in females, and also in areas with bank access. To address whether this increase in female employment is driven by potential outliers like London, I exclude local districts located in London in Table E.13 in the Internet Appendix, and results are robust to this. These results on increased human capital investment by female children are consistent with the increase in skilled labor participation by women above the age of 16 documented earlier.

A potential confounding reform for these schooling results could be the Education Act of 1870, which established elected school boards and expanded elementary provision *nationwide* for both sexes. Because the education reform was national and sex–neutral, year fixed effects absorb its average impact; the post-1870 *girls-only* increase concentrated in banked districts therefore points to the property rights and bank access channel rather than schooling supply alone. If the rise in Table 9 were solely an education mandate effect, it should appear uniformly across districts and similarly for boys and girls; instead, I find a 9–12% increase for *girls* specifically in banked districts, with little change for boys. This pattern is difficult to reconcile with contemporaneous national reforms or movements that do not vary with local bank access or by gender in the same way.

Taken together, the evidence in this section shows that the 1870 reform raised women's labor-market participation in places with a savings bank, with little movement for men, and that the gains are present for both married and single women and stronger in rural districts. On the skill margin, women shift toward higher-skill employment categories and girls' school attendance rises, as there are now higher appropriable returns to human capital investment following the reform. These patterns

lend support to a property rights and financial access complementarity; property rights increase the return married women can privately capture from work (and, for single women, anticipated post-marriage returns), and banks offer both security, further increasing the appropriability of assets, as well as an interest-bearing technology. Savings banks make the legal change operative by providing secure custody that supports appropriability of earnings and, via interest on deposits, a vehicle for wealth accumulation—even in the absence of credit. In addition, these results, by focusing on *savings* banks that did not extend credit, highlight the value of financial inclusion in savings banks, even in the absence of lending and formal access to credit, in facilitating real responses on the labor market. In contrast, Hazan et al. (2019) emphasize a macro-finance channel in which women's property rights increase the supply of loanable funds and study the resulting reallocation of male employment toward non-agriculture and capital-intensive industries. By focusing on the trustee savings banks of England, that did not extend credit, my results instead highlight a complementary mechanism where secure, interest-bearing savings makes the legal change operative by increasing women's appropriable returns, yielding direct effects on women's labor supply and girls' human-capital investment that are not driven by credit expansion.

My results also suggest increased appropriability, where each additional pound earned is more privately retained by married women, as an important driver of the labor market effects found, with bank accounts serving as an important vehicle to enforce the appropriability of financial assets. This higher appropriability increases the private return to married women's labor and to investing in daughters' education. Several alternative mechanisms are less consistent with my results. First, a pure wealth or marital insurance channel would predict lower female labor supply, whereas I find sizable increases among married women. Second, a credit or collateral mechanism is unlikely because these trustee savings banks did not lend, and the responses are driven by deposit-taking rather than loans.[35] Third, gender-neutral local demand or development would affect men and women similarly, but I find little change in male labor outcomes. Finally, a pure norms or ideology channel would imply similar impacts across banked and non-banked districts, yet the effects are much stronger where savings banks are present. These patterns collectively support an appropriability mechanism as the main driver of the labor market and schooling responses.

[35]Credit options were also limited for the working class population of Victorian England. See Section C.2 for more details.

6 Theoretical Framework

In this section, I present a theoretical framework which formalizes the mechanism suggested by the empirical results of Sections 4 and 5. I investigate how property rights affect labor market participation in a consumption-savings framework, and the role of bank access in mediating this response.

To this end, I represent the 1870 reform as a reduction in expropriation risk of women's assets, and the presence of a local savings bank as the availability of a secure, interest-bearing storage technology. Together, lower expropriation risk and secure saving raise the marginal value of carrying resources into the future and of earning in marriage, thereby increasing optimal savings and labor supply both when single and when married.[36]

6.1 Model Set-Up

I consider a setting where women are first single and make employment, consumption, savings, and schooling decisions, and in the second period are married and make an employment decision.

Environment. Time is discrete with two periods, $t = 1$ (single) and $t = 2$ (married). The woman chooses hours $h_1, h_2 \geq 0$ and saving $S \geq 0$. Wages are $(w_1, w_2) > 0$. There is also a disutility or opportunity cost of work governed by the parameters κ_1 and κ_2, which capture the social stigma of married women working, foregone home and child-rearing duties, or time costs.

Expropriation risk (marriage). I model married state property rights insecurity as an expropriation shock such that with probability $1 - p$ the woman retains both accumulated assets and married earnings; with probability p she consumes a subsistence level $\bar{c} > 0$. The good-state (no-expropriation) consumption is

$$c_2^G = w_2 h_2 + (1 + r)S.$$

Bank access. Access to intermediation is summarized by the gross return $1 + r$ with $r \geq 0$ available between periods. Setting $r = 0$ represents a "no bank," scenario, while $r > 0$ captures the payoff from secure deposits when bank access is present.[37]

[36] Because trustee savings banks did not lend, I abstract from credit and focus on savings and control of returns. I impose a non-negativity constraint on savings, $S \geq 0$.

[37] One important benefit of savings banks in the institutional setting of the empirical results of this paper is indeed the physical security of funds kept at the savings banks following the passing of the 1870 reform. Instead of modeling this explicitly, I consider the model's solutions under three regimes: a pre-reform case, a post-reform case without bank access with reduced expropriation risk, and a post-reform case with bank access which helps reduce expropriation risk even further.

Objective and constraints. Preferences are log over consumption with quadratic disutility of work, allowing different work costs when single and married, and are given by

$$U \;=\; \log c_1 \;-\; \frac{\kappa_1}{2}h_1^2 \;+\; \beta\Big[(1-p)\log c_2^G + p\log \bar{c} \;-\; \frac{\kappa_2}{2}h_2^2\Big], \qquad \beta \in (0,1],\ \kappa_1,\kappa_2 > 0. \tag{7}$$

The period 1 and period 2 budget constraints are given by

$$c_1 = w_1 h_1 - S, \qquad c_2^G = w_2 h_2 + (1+r)S.$$

6.2 Closed Form Optimal Solution

Below I present the closed form solutions of the model. I also present the condition for an interior solution with ($S > 0$).

Interior solution ($S > 0$). First, I define A and B to be

$$A \;\equiv\; 1+\beta(1-p), \qquad B \;\equiv\; \frac{w_1^2}{\kappa_1} \;+\; \frac{w_2^2}{\beta\,\kappa_2(1+r)^2}.$$[38]

The interior solution requires $S^* \geq 0$, which comes from the condition

$$\beta(1-p)\,\frac{w_1^2}{\kappa_1} \;\geq\; \frac{w_2^2}{\beta\,\kappa_2(1+r)^2}.$$

This inequality means the effective return to working and saving when single (left-hand side) must at least match the present-value effective return to earnings in marriage (right-hand side); otherwise the optimum is the no-saving corner $S = 0$.

Then, the equilibrium of the model is given by the following expressions for consumption and the

[38] Intuitively, $A = 1+\beta(1-p)$ is the total weight on how much "tomorrow" matters in the objective (higher patience β and better property rights, lower p, raise A). $B = \frac{w_1^2}{\kappa_1} + \frac{w_2^2}{\beta\,\kappa_2(1+r)^2}$ is an index of effective lifetime earning capacity, combining wages scaled by work costs and discounting the married-period opportunity by β and the return $1+r$. Since $c_1^* = \sqrt{B/A}$, larger A lowers c_1 (and raises saving/labor), while larger B raises c_1.

optimal choices of labor and savings,

$$
\begin{aligned}
c_1^* &= \sqrt{\frac{B}{A}}, \\
h_1^* &= \frac{w_1}{\kappa_1 c_1^*} = \frac{w_1\sqrt{A}}{\kappa_1\sqrt{B}}, \\
h_2^* &= \frac{w_2}{\beta\,\kappa_2(1+r)\,c_1^*} = \frac{w_2\sqrt{A}}{\beta\,\kappa_2(1+r)\sqrt{B}}, \\
S^* &= w_1 h_1^* - c_1^* = \frac{\beta(1-p)\,\dfrac{w_1^2}{\kappa_1} - \dfrac{w_2^2}{\beta\,\kappa_2(1+r)^2}}{\sqrt{A}\,\sqrt{B}}, \\
c_2^{G*} &= \beta(1-p)(1+r)\,c_1^*.
\end{aligned}
$$

Note that at the corner, when $S = 0$, the model generates

$$
h_1^{\text{corner}} = \frac{1}{\sqrt{\kappa_1}}, \qquad h_2^{\text{corner}} = \sqrt{\frac{1-p}{\kappa_2}}, \qquad S^{\text{corner}} = 0, \qquad c_1^{\text{corner}} = w_1 h_1^{\text{corner}}, \quad c_2^{G,\text{corner}} = w_2 h_2^{\text{corner}}.
$$

Comparative statics. In this two-period environment, stronger property rights - a lower chance that period 2 resources are seized - and better bank access - a higher payoff to carrying value across periods - both raise the consumption path.

Using the closed-form rules detailed earlier in this section, we see the following. A fall in the probability of expropriation raises the expected payoff to value carried into marriage. In equilibrium the agent shifts resources forward, choosing a lower level of period-1 consumption, which—through the intraperiod optimality condition that ties hours to planned consumption—induces higher labor supply. At the same time, the higher expected payoff to carried assets increases the incentive to save. Formally, under the interior allocation, period-1 hours, period-2 hours, and saving are all increasing in a reduction in expropriation risk (equivalently, they are decreasing in p).

Improved access to intermediation changes the composition of how tomorrow is financed. Because each unit saved grows more by the time marriage arrives, saving becomes a more efficient substitute for married labor. In equilibrium, the household again lowers period-1 consumption and increases period-1 labor to fund additional saving, while it plans to work less when married because a larger share of period-2 resources is optimally obtained through accumulated assets rather than contemporaneous labor. Formally, under the interior allocation, saving and period-1 hours are increasing in r, whereas married hours are decreasing in r.

These forces are complementary. Stronger property rights expand the region where saving is interior and raise the value of resources carried into the future, making bank returns more consequential.

Conversely, higher returns magnify the benefits of safer rights by increasing the payoff to each unit that successfully arrives in marriage. These statics are formalized in Figure 6.[39]

[Insert Figure 6 here]

Panel (a) of Figure 6 demonstrates that period 1 labor is increasing in the savings return r. Panel (b) indicates that both period 1 and period 2 labor are decreasing with expropriation risk. Panel (c) plots a heatmap of the optimal savings against both expropriation risk and savings return, indicating that savings is higher towards lower values of expropriation risk and higher values of the savings return. Finally, Panel (d) plots a heatmap of total utility, indicating further that this is maximized as both expropriation risk decreases and savings return increases, highlighting the complementary role of property rights and financial access.

6.3 Institutional Regimes

The model captures the effects of institutional change on women's behavior via the expropriation risk p. I consider three institutional regimes, under which p varies. First, a "pre-reform" regime under which married women have limited property rights over their financial assets. In this setting, I set p arbitrarily close to 1. Next, I consider a "post-reform, no bank" case. Here, $0 < p < 1$, as legally married women have property rights, but there may still be some risk of expropriation of funds kept outside a formal savings account. Finally, I consider a "post-reform, with bank" case where $p \approx 0$.

Pre-reform (high p). The expected marginal value of future expropriable resources collapses in a setting where women face an extremely high risk of expropriation, potentially pushing the solution to the $S = 0$ corner. Hours worked in both single and married period also fall in this case due to high expropriation risk.

Post-reform, without bank (lower p, $r = 0$). Lower p raises A, so period 1 consumption falls, as $c_1 = \sqrt{B/A}$, and both h_1^* and h_2^* increase. In addition, saving S^* rises in $(1 - p)$ and is more likely to be interior. Hence, relative to the pre-reform case, more secure property rights in the post-reform world shifts both savings and labor market participation higher.

Post-reform, with bank ($p \approx 0$, $r > 0$). In the view that bank access can also provide additional security and further reinforce property rights, one can view expropriation risk as being the lowest in this regime. In addition, a positive return r raises the payoff to carrying resources forward, so the agent shifts financing for period 2 from married labor toward saving. Under the interior allocation, saving and period 1 hours increase with r.

[39] The calibration of the numerical exercise is summarized in Table F.1 of the Internet Appendix.

Taken together, the model under these different institutional regimes suggests that the property rights and bank access forces in the model are complementary, as stronger rights make it optimal to push more value into the future, and better intermediation makes each pushed unit yield more in marriage.

7 Conclusion

This paper asks how expansions in women's property rights interact with access to formal finance to shape real economic choices. I leverage the Married Women's Property Act of 1870 in England—which granted married women ownership and control over financial assets—together with manually digitized savings bank records and the English census to measure financial participation and labor market outcomes. In a difference-in-differences design using local district pre-reform married-women exposure, I find sharp increases in financial inclusion, with the number of accounts opened and account usage rising, driven by many new, smaller depositors.

I then show that these financial responses translate into real effects only where a savings bank is present, which provides both an interest-bearing technology, and security and appropriability of financial assets following the reform. In banked local districts after 1870, female employment rises by 2-6 pp with little movement for men; gains are present for both married and single women and are stronger in rural areas. On the human capital margin, women shift into higher skill occupations and girls' school attendance increases by 9-12%. The pattern aligns with an appropriability mechanism of labor market participation; the reform raises the returns women can privately capture, and the savings bank makes those returns enforceable and remunerated—providing secure custody in addition to interest, to support wealth accumulation. Because these savings banks did not lend, the results isolate a pure savings channel, distinct from credit supply, and suggest secure deposits alone can produce labor market effects. I therefore document a complementarity between property rights and financial access in shaping labor market outcomes.

These findings speak to contemporary contexts where legal rights on paper coexist with weak enforcement; without a practicable way to safeguard financial assets and support wealth accumulation, property rights reforms may yield muted real effects. This paper demonstrates the importance of both legal and financial institutions in facilitating economic development, highlighting the complementary role of a well-developed financial sector and well-defined, enforced, property rights.

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I Figures

Figure 1: Trustee Savings Bank Locations

This figure plots trustee savings bank locations across England on 1851 local district boundaries.

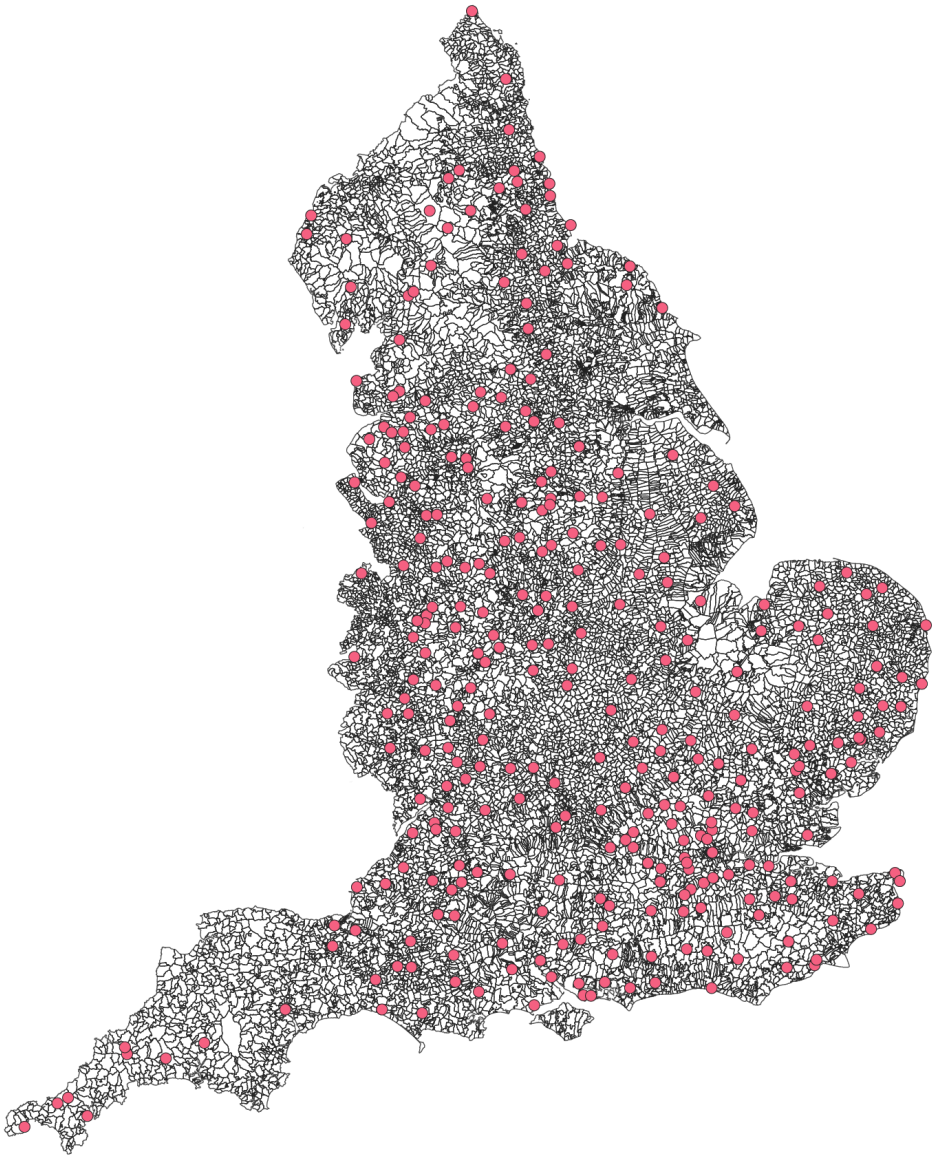
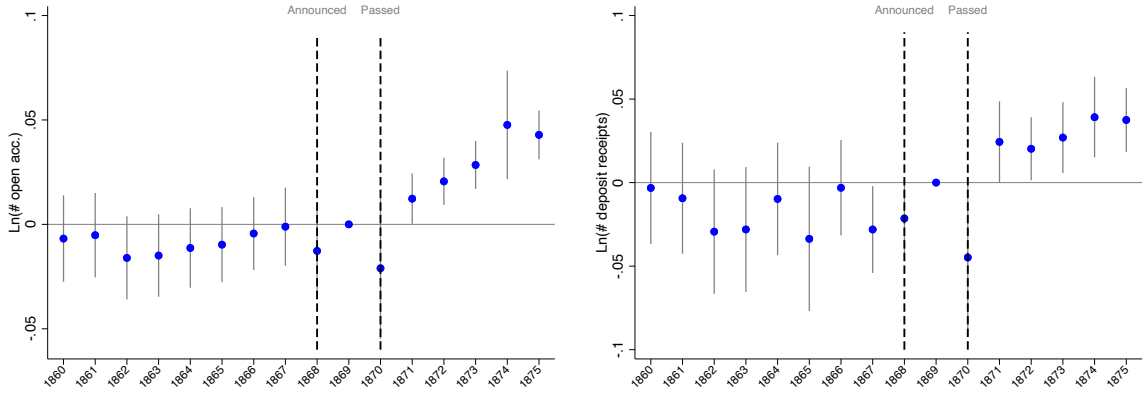


Figure 2: Effect of the 1870 Married Women's Property Act on Account Uptake and Usage

This figure plots annual coefficients of a difference-in-differences specification comparing new accounts and number of deposit receipts at banks located in local districts with higher or lower log count of 1861 married women population. Local district and year fixed effects are included. 90% confidence intervals are in gray and standard errors are clustered at the local district level. The first dashed line at 1868 indicates the year the Married Women's Property Act of 1870 was introduced in parliament, and the second dashed line at 1870 indicates the year the bill was passed.



(a) Ln(Number of open accounts)

(b) Ln(Number of deposit receipts)

Figure 3: Female vs. Male Employment by Bank Area

This figure presents difference-in-differences regression estimates of the female and male employment rates. The dots indicate the coefficients on the $\mathbb{1}_{\{\text{Bank1861}\}} \times \mathbb{1}_{\{\text{Post}\}}$ interaction. All regressions include local district and census year fixed effects. Controls, included as indicated, include population size, the size of the agricultural worker population, and the population density for each census year. 90% confidence intervals are indicated and standard errors are clustered at the local district level.

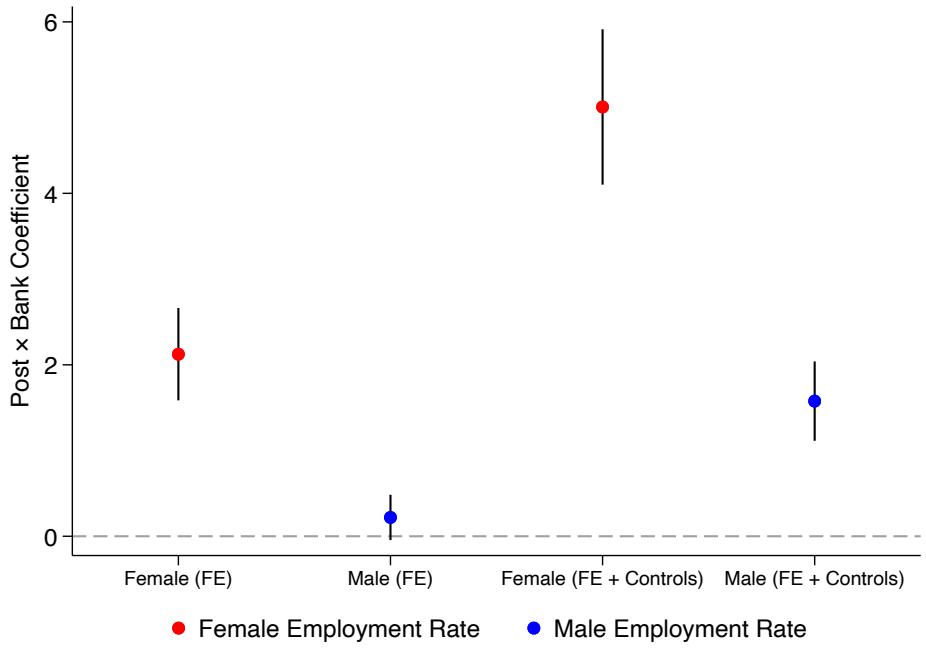
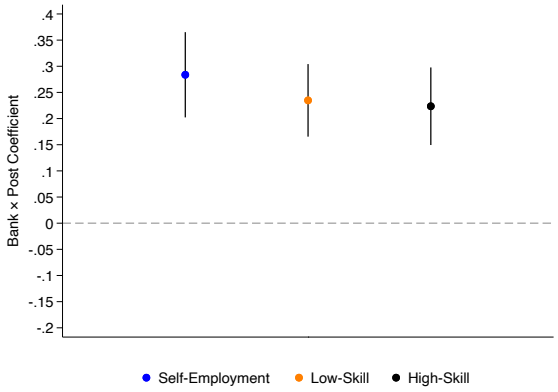
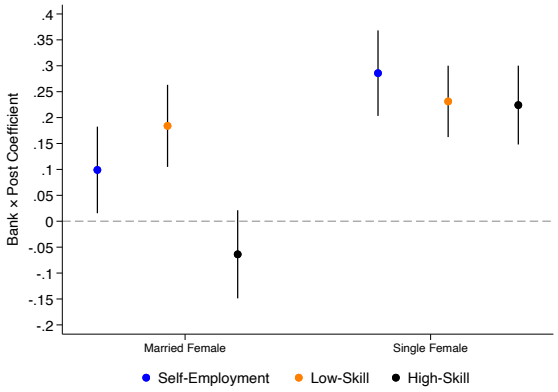


Figure 4: Female Occupational Choices by Bank Area - By Self-employment and Skill

This figure presents difference-in-differences regression estimates of the log count of women working in self-employment work, and low and high skilled work in Panel (a), and the decomposition of this by marital status in Panel (b). The dots indicate the coefficients on the $\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}}$ interaction. All regressions include local district and year fixed effects. 90% confidence intervals are indicated and standard errors are clustered at the local district level.



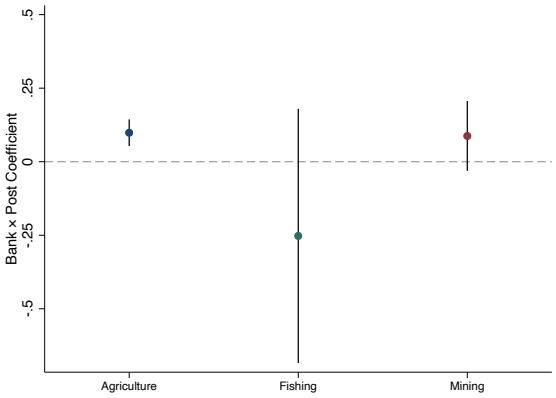
(a) Female employment by category



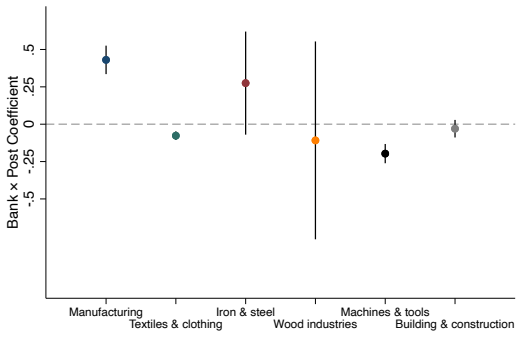
(b) Female employment by category and marital status

Figure 5: Ratio of Female to Male Employment Shares - By Sub-Sectors

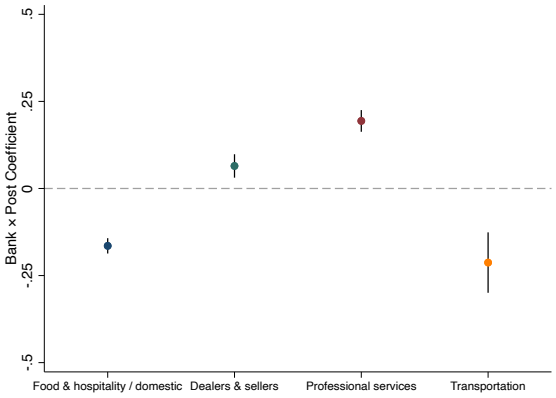
This figure presents difference-in-differences regression estimates of the log ratio of the female to male employment share for various sub-sectors across the primary, secondary, and tertiary sectors of the economy. The dots indicate the coefficients on the $\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}}$ interaction. All regressions include local district and year fixed effects. 90% confidence intervals are indicated and standard errors are clustered at the local district level.



(a) Primary Sub-sectors



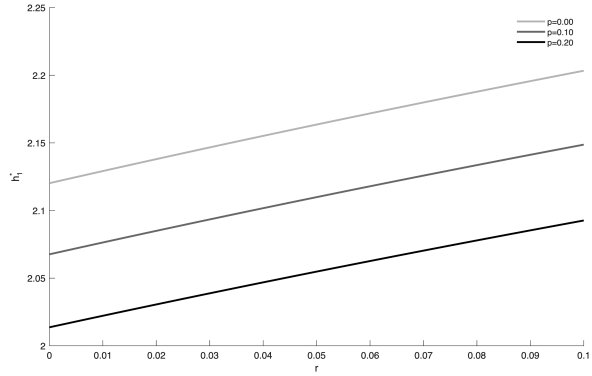
(b) Secondary Sub-sectors



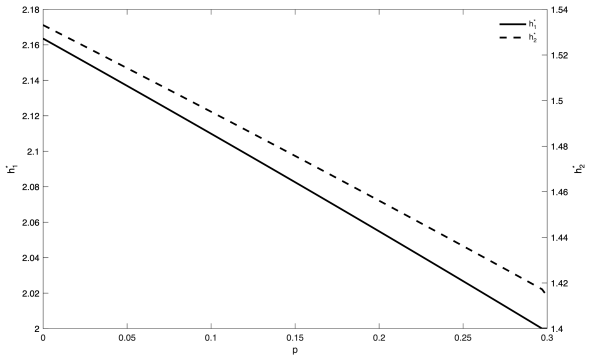
(c) Tertiary Sub-sectors

Figure 6: Theoretical Framework - Optimal Solutions

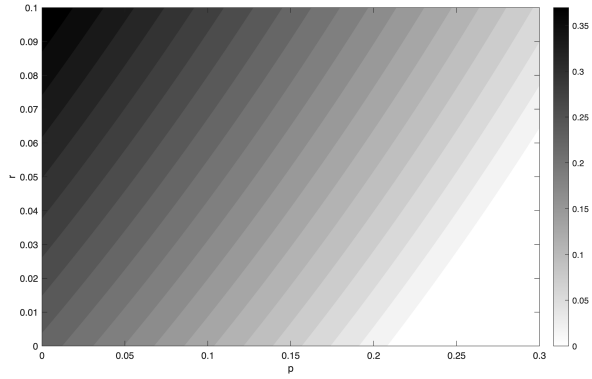
This figure plots the optimal solution of the model as a function of expropriation risk p and savings return r. Panel (a) plots the optimal period 1 labor hours, h_1^*, against different levels of savings return, r, for different values of expropriation risk, p. Panel (b) plots the optimal period 1 and period 2 labor hours, h_1^* and h_2^*, against expropriation risk, p. Panel (c) plots a heat map of the optimal savings choice S^* as a function of expropriation risk p and savings return r. Panel (d) plots a heat map of the total utility in equilibrium as a function of expropriation risk p and savings return r. The parameterization is described in Table F.1 of the Internet Appendix.



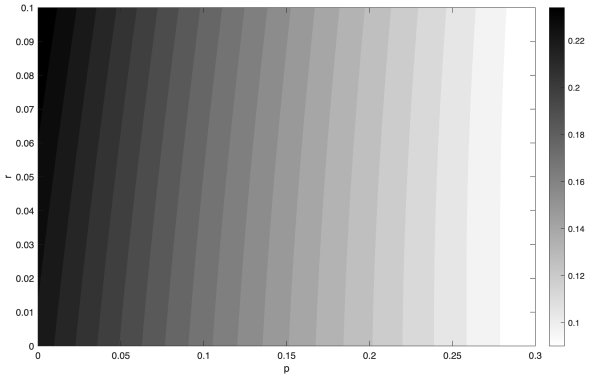
(a) h_1^* vs. r



(b) h_1^* and h_2^* vs. p



(c) S^*: p vs. r



(d) U^*: p vs. r

II Tables

Table 1: Census Dataset - Summary Statistics

This table presents summary statistics on the local district level census dataset. The data contains 42,286 local district level observations across the years 1851, 1861, 1881, and 1891.

	Mean	**Sd**	**p5**	**p25**	**p50**	**p75**	**p95**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
Population (#)	1,924.83	12,832.58	59.00	186.00	388.00	850.00	4,595.00
Agricultural workers, count (#)	110.59	165.30	12.00	36.00	69.00	127.00	329.00
Local district area (acres)	2,651.12	2,750.01	596.50	1,200.00	1,901.00	3,147.00	6,998.00
Pop. density (pop./acre)	1.80	30.62	0.05	0.12	0.20	0.33	1.72
Female, share of pop. (%)	49.61	3.83	43.86	47.70	49.73	51.66	55.10
Married female, share of pop. (%)	16.94	2.26	13.16	15.90	17.14	18.24	20.00
Married female employment rate (%)	12.26	13.77	0.00	4.08	8.16	15.02	41.20
Single female employment rate (%)	61.41	16.25	34.38	51.11	61.76	72.04	87.50
Male employment rate (%)	94.77	4.90	86.41	93.13	95.80	97.69	100.00
Female students under 16, count (#)	158.02	1,047.57	1.00	12.00	31.00	72.00	402.00
Male students under 16, count (#)	156.76	1,034.01	1.00	12.00	30.00	71.00	403.00

Table 2: Bank Annual Reports and New Depositors Datasets - Summary Statistics

This table presents summary statistics on the bank annual report dataset and the new depositors dataset. Panel A contains 7,867 bank-year observations covering 1850 to 1891 for 190 banks, and Panel B contains 2,522 depositor observations collapsed to the month-bank level for the years 1867 to 1873, covering 176 bank-month level observations.

	Mean	Sd	p5	p25	p50	p75	p95
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Panel A: Bank Annual Report Dataset						
Bank founded year	1,821.96	9.14	1,816.00	1,817.00	1,818.00	1,821.00	1,842.00
Report year	1,870.59	12.10	1,852.00	1,860.00	1,871.00	1,881.00	1,889.00
Open accounts (#)	4,189.13	8,420.97	345.00	923.00	1,752.00	3,167.00	18,240.00
Deposit receipts (#)	4,749.71	13,984.89	188.00	603.00	1,184.50	2,887.00	20,935.00
Deposits (£, nominal)	122,877.99	241,002.99	11,722.51	29,429.24	55,274.62	103,007.49	479,281.02
Avg. deposit size (£, nominal)	38.10	421.43	19.19	27.14	32.40	37.71	48.13
Interest rate (%)	2.91	1.11	2.50	2.75	2.94	3.00	3.10
	Panel B: New Depositors Dataset						
New depositors (#)	14.33	11.26	2.00	6.00	10.50	21.00	35.00
Female new depositors (#)	7.69	6.80	1.00	3.00	5.00	11.00	20.00
Female new depositor share (%)	51.33	18.82	23.08	40.00	50.00	63.48	78.95

Table 3: Effect of the 1870 Married Women's Property Act on Savings Account Uptake and Usage

This table reports difference-in-differences coefficients on the treatment of the ex-ante log count of married women in the total local district population in 1861 with post-1870, estimating Equation 1, with the log number of savings bank accounts as the outcome of interest in Panel A, and the annual log count of deposit receipts – the number of times depositors made deposits at a bank in a given year, as the outcome of interest in Panel B. Column 2 includes local district level controls measured in 1861 along with county fixed effects. Local district level controls include the logarithms of total population and agricultural workers, the employment rate, and population density, and the bank-year control refers to the interest rate at a given bank in a given year. Column 3 includes local district and year fixed effects, Column 4 includes local district and county×year fixed effects, and Column 5 includes baseline local district controls interacted with $\mathbb{1}_{\text{Post}}$, bank-year controls, as well as local district and year fixed effects. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	(1)	(2)	(3)	(4)	(5)
	Panel A. Ln(# Open acc.)				
Ln(1861MarriedWomen) × $\mathbb{1}_{\text{Post}}$	0.086***	0.100***	0.104***	0.102***	0.111***
	(0.022)	(0.020)	(0.019)	(0.021)	(0.026)
Observations	7,808	7,596	7,808	7,597	7,596
R^2	0.445	0.617	0.946	0.958	0.946
	Panel B. Ln(# Deposit receipts)				
Ln(1861MarriedWomen) × $\mathbb{1}_{\text{Post}}$	0.113***	0.130***	0.130***	0.127***	0.144***
	(0.030)	(0.029)	(0.028)	(0.027)	(0.038)
Observations	7,788	7,576	7,788	7,573	7,576
R^2	0.554	0.687	0.937	0.954	0.940
	Panel C. Controls				
Controls					
Ln(1861MarriedWomen)	Yes	Yes	No	No	No
$\mathbb{1}_{\text{Post}}$	Yes	Yes	No	No	No
Local district controls	No	Yes	No	No	No
Local district controls ×$\mathbb{1}_{\text{Post}}$	No	No	No	No	Yes
Bank-year controls	No	Yes	No	No	Yes
Fixed Effects					
County	No	Yes	No	No	No
Local district	No	No	Yes	Yes	Yes
Year	No	No	Yes	No	Yes
County×year	No	No	No	Yes	No

Table 4: Effect of the 1870 Married Women's Property Act on Total Deposits and Average Deposit Size

This table reports difference-in-differences coefficients on the treatment of the ex-ante log count of married women in the total local district population in 1861 with post-1870, estimating Equation 1, with the log deposits as the outcome of interest in Panel A, and the average deposit size of depositors as the outcome of interest in Panel B. Column 2 includes local district level controls measured in 1861 along with county fixed effects. Local district level controls include the total population and agricultural workers, the employment rate, and population density, and the bank-year control refers to the interest rate at a given bank in a given year. Column 3 includes local district and year fixed effects, Column 4 includes local district and county×year fixed effects, and Column 5 includes baseline local district controls interacted with $\mathbb{1}_{\text{Post}}$, bank-year controls, as well as local district and year fixed effects. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	(1)	(2)	(3)	(4)	(5)
	Panel A. Ln(Deposits)				
Ln(1861MarriedWomen) × $\mathbb{1}_{\text{Post}}$	0.065***	0.078***	0.083***	0.079***	0.090***
	(0.023)	(0.021)	(0.020)	(0.022)	(0.027)
Observations	7,800	7,589	7,800	7,588	7,589
R^2	0.337	0.497	0.892	0.913	0.892
	Panel B. Ln(Avg. dep. size)				
Ln(1861MarriedWomen) × $\mathbb{1}_{\text{Post}}$	-0.020**	-0.022**	-0.021**	-0.024**	-0.020
	(0.009)	(0.010)	(0.009)	(0.009)	(0.014)
Observations	7,800	7,589	7,800	7,588	7,589
R^2	0.091	0.249	0.450	0.543	0.448
	Panel C. Controls				
Controls					
Ln(1861MarriedWomen)	Yes	Yes	No	No	No
$\mathbb{1}_{\text{Post}}$	Yes	Yes	No	No	No
Local district controls	No	Yes	No	No	No
Local district controls × $\mathbb{1}_{\text{Post}}$	No	No	No	No	Yes
Bank-year controls	No	Yes	No	No	Yes
Fixed Effects					
County	No	Yes	No	No	No
Local district	No	No	Yes	Yes	Yes
Year	No	No	Yes	No	Yes
County×year	No	No	No	Yes	No

Table 5: Effect by Quartile of Ex-ante Married Female Population

This table reports difference-in-differences coefficients on the interaction of post-1870 with quartiles of the log ex-ante 1861 married female population, estimating Equation 2. All columns include local district and year fixed effects, while Columns 2 and 4 include local district and county×year fixed effects. Robust standard errors are clustered at the local district level. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively.

	Ln(# Open acc.)		Ln(# Deposit receipts)	
	(1)	**(2)**	**(3)**	**(4)**
$\mathbb{1}_{\{1861\text{MarriedWomenQuar4}\}} \times \mathbb{1}_{\{\text{Post}\}}$	0.335***	0.304***	0.405***	0.365***
	(0.073)	(0.079)	(0.106)	(0.105)
$\mathbb{1}_{\{1861\text{MarriedWomenQuar3}\}} \times \mathbb{1}_{\{\text{Post}\}}$	0.175***	0.195***	0.215***	0.273***
	(0.065)	(0.068)	(0.078)	(0.083)
$\mathbb{1}_{\{1861\text{MarriedWomenQuar2}\}} \times \mathbb{1}_{\{\text{Post}\}}$	0.065	0.036	0.045	0.012
	(0.054)	(0.064)	(0.066)	(0.080)
Fixed Effects				
Local district	Yes	Yes	Yes	Yes
Year	Yes	No	Yes	No
County×year	No	Yes	No	Yes
Observations	7,850	7,681	7,830	7,657
R^2	0.946	0.959	0.937	0.954

Table 6: Female Share of New Depositors Around 1870

This table estimates the effect of the post-1870 period on the female share of *new* depositors using a bank×month panel (1868m1–1872m12). Column (1) includes month-of-year fixed effects only; Column (2) adds bank fixed effects. Regressions are weighted by the number of new depositors in each bank×month, and robust standard errors are computed. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	Female share of new depositors (%)	
	(1)	**(2)**
$\mathbb{1}_{\{\text{Post}\}}$	3.464*	3.408*
	(2.021)	(1.955)
Fixed Effects		
Month-of-year	Yes	Yes
Bank	No	Yes
Observations	176	176
R^2	0.064	0.131

Table 7: Married Female Employment in Bank Areas - Triple Difference-in-Differences Specification

This table presents triple difference-in-differences regression estimates of the married female employment rate, around the 1870 passing of the Married Women's Property Act of 1870 comparing areas that had a bank in 1861 to those that did not, in areas with higher or lower married female population. Local district controls include population size, the size of the agricultural worker population, and the population density for each census year. Local district and census year fixed effects are included. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	Married fem. employment rate	
	(1)	**(2)**
Ln(1861MarriedWomen) $\times \mathbb{1}_{\text{Post}}$	0.421***	0.210
	(0.122)	(0.140)
Ln(1861MarriedWomen) $\times \mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}}$		1.678***
		(0.502)
Controls		
$\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}}$	No	Yes
Local district controls	Yes	Yes
Fixed Effects		
Local district	Yes	Yes
Census year	Yes	Yes
Observations	29,486	29,418
R^2	0.611	0.612

Table 8: Employment Rate by Bank Area

This table presents difference-in-differences regression estimates of married female and single employment rates, as a percent of the respective population size over 15, as well as their difference, around the 1870 passing of the Married Women's Property Act of 1870, comparing areas that had a bank in 1861 to those that did not. Local district controls include population size, the size of the agricultural worker population, and the population density for each census year. Local district and census year fixed effects are included in all specifications. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	Married fem. employment rate		Single fem. employment rate		Single minus married fem. employment rate	
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
$\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}}$	1.038***	3.187***	2.134***	6.153***	1.073***	2.974***
	(0.311)	(0.509)	(0.297)	(0.507)	(0.353)	(0.456)
Controls						
Local district controls	No	Yes	No	Yes	No	Yes
Fixed Effects						
Local district	Yes	Yes	Yes	Yes	Yes	Yes
Census year	Yes	Yes	Yes	Yes	Yes	Yes
Observations	41,880	29,492	41,843	29,461	41,813	29,438
R^2	0.554	0.611	0.508	0.566	0.462	0.511

Table 9: School Participation by Bank Area

This table presents difference-in-differences regression estimates of the log count of female and male students under 16, around the 1870 passing of the Married Women's Property Act of 1870, comparing areas that had a bank in 1861 to those that did not. Local district controls include population size, the size of the agricultural worker population, and the population density for each census year. Local district and census year fixed effects are included in all specifications. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	Ln(Female students)		Ln(Male students)	
	(1)	**(2)**	**(3)**	**(4)**
$\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}}$	0.096***	0.122***	0.052**	0.056
	(0.025)	(0.040)	(0.024)	(0.038)
Controls				
Local district controls	No	Yes	No	Yes
Fixed Effects				
Local district	Yes	Yes	Yes	Yes
Census year	Yes	Yes	Yes	Yes
Observations	40,417	28,035	40,558	28,197
R^2	0.901	0.903	0.909	0.912

Internet Appendix for

"Property Rights and Financial Access"

A Data

This appendix section provides additional details on data cleaning and variable and sample construction.

A.1 Census Data

I rely on the full-count historic census of England provided by the Integrated Census Microdata (I-CeM) project, which covers the years 1851, 1861, 1881, and 1891.[40] I-CeM is a harmonized dataset maintained by the UK Data Service that aggregates individual-level and area-level information from historical censuses into consistent, comparable units over time. The project standardizes variables such as individual demographic characteristics and occupational classifications, allowing the construction of measures at various geographic scales. The data contain information on each individual recorded in each census year, including the local district of enumeration, sex, age, and occupation.

I merge the individual census data with a manually compiled and geo-tagged dataset of trustee savings bank locations. The bank dataset is originally drawn from the appendix of Horne (1947), which is the most comprehensive source of data on the locations of trustee savings banks and indicates the dates each bank was founded and closed (*if* it was closed). I manually identify the 1851 local district of each of the banks listed in Horne (1947), and merge this list to the census to identify bank local districts. From this merged file, I derive bank indicators for each census year, defined as having at least one bank that was opened (i.e. founded before or in the census year and not closed prior to that year). Therefore, the analysis using the census data defines bank local districts as those areas which, at the time of the census, had a bank located in it.

Finally, I aggregate the I-CeM individual records to the local district level to derive key variables — including total population, population density, the share of agricultural workers, and variables related to the employment structure and sex/marital composition of local districts over time. In particular, I aggregate individual census records to the local district level using a common geographic identifier across census years (`conparid`).

In addition, I classify each of the approximately 800 different occupation labels in the census to the primary, secondary, and tertiary sectors of the economy. The primary sector comprises agriculture, fishing, and mining; the secondary sector comprises manufacturing, textiles and clothing, iron and steel, wood industries, machines and tools, and building and construction; and the tertiary sector comprises food and hospitality (including domestic service), dealers and sellers (retail/wholesale), professional services, and transportation. Some examples of more female-specific occupations in

[40] Note that the transcriptions for the English census for 1871 have not been made available.

the secondary sector include textiles & clothing—dressmakers, seamstresses, milliners/hat makers, shirt/bonnet/stay makers, hosiery/knitting, and lace work—and segments of light manufacturing such as pottery/earthenware finishing and packing, paper and bookbinding/printing finishing, confectionery and other food processing, smallwares (pins, buttons), and tobacco/cigar making. Within the tertiary sector, this includes work in domestic service (housemaids, cooks, laundresses), retail/shop assistants and hawkers, and professional care/education (teachers/governesses, nurses/midwives).

I also classify female-specific occupations into mutually exclusive categories based on requirement of investment in skill (low skill vs. high skill), and self-employment jobs, which are likely to be conducted from the home. These classifications are detailed in Table B.1.

A.2 Trustee Savings Bank Annual Reports

I obtain bank annual report data from archival sources by manually digitizing and transcribing standardized annual statistics for Trustee Savings Banks (TSBs) covering the period from 1850 to 1891. Figure B.1 provides an example of the reports.

I convert monetary values expressed in pounds, shillings, and pence into a single numeric value in pounds. I also clean the location variables by standardizing local district and county names to allow for a merge with the census dataset.

Next, I merge the cleaned TSB bank data with my English census local district-level data. I conduct the merge at the local district level using common geographic identifiers (`conparid`) to create a harmonized dataset that captures the bank-year annual report data, and the corresponding local district's characteristics from the census data.

For the financial inclusion results, I restrict the bank-year dataset to banks which were founded in 1860 or earlier, and survived until at least 1891, corresponding to the final year of the census dataset. This final dataset contains 7,867 bank-year observations for 190 banks, covering the period from 1850 to 1891. For the real effects, I define bank access as having a bank by 1861, the census year prior to the 1870 reform.

A.3 Trustee Savings Bank Depositor Declarations

For a select number of banks, there are surviving depositor records over the sample period of interest. In particular, I manually digitize and transcribe depositor declarations, records of new depositors, over the 1868 to 1872 period for three banks – Alston Savings Bank, Bury Savings Bank, and Ormskirk Savings Bank.

While the recording convention for new depositors differs across banks, unlike the standardized bank annual reports, all banks record at least the date of a new account opening and the name of the

new depositors. From these data, I manually classify each first name into belonging to either gender, and arrive at a dataset of all new depositors and their genders at these three banks from 1868 to 1872.

B Variable Construction

Table B.1 details the construction of the variables used in the main analysis and their sources.

Table B.1: Variable Description

This table describes the variables used in the main analysis.

Variable Name	Source	Description
Labor force	Full count England census	Computed as the full local district population aged over 15.
Employed	Full count England census	Computed for those over 15 only. Defined as those with an *occode* indicating any employment type.
Self-employment occupations	Full count England census	Female-specific. Includes the following occupations: *dressmakers*, *stay and corset makers*, *shirtmakers and seamstresses*, *milliners (retail)*, *artificial flower makers*, *hawkers, hucksters, costers*, *cowkeepers, milksellers*, *umbrella, parasol and stick makers*, *embroiderers*, *muslin embroiderer*, *general shopkeepers, dealers*, *multiple shop keepers*, *grocers, tea dealers*, *poulterers, game dealers.*
Low-skilled occupations	Full count England census	Female-specific. Includes the following occupations: *domestic servants – hotels/boarding houses (resident)*, *domestic servants – undefined (resident)*, *domestic gardeners*, *army servants*, *college, club service*, *park lodge and gatekeepers*, *church/chapel/cemetery caretakers*, *hospital servants' registry office keepers*, *office keepers, school cleaners, caretakers*, *cooks (not domestic)*, *cooks (boarding lodging house: non-resident)*, *cooks (domestic: non-resident)*, *day girls, day servants (other indoor)*, *day girls (hotels, lodging houses)*, *charwomen*, *laundry workers (not domestic)*, *bathing service*, *servants – undefined (non-resident)*, *others in service*, *window cleaners*, *chimney sweepers.*
Skilled employment	Full count England census	Defined as those working in medicine (*physicians surgeons practitioners (qualified) including poor law hospitals - doctors etc*, *dentists and dentists assistants*, *midwives*, *nurses (medical not domestic) including poor law nurses*), teaching (*schoolmasters and teachers (default)*, *university teachers*, *school service (inc attendants and pupil teachers)*, *school service general, clerks, etc*, and *governesses (domestic)(resident)*), or science and engineering (*engaged in scientific pursuits (inc inventors and scientific qualifiers)*, *others scientific*, *mining engineers*, *civil engineers*, *surveyors (land house ship)*, *mining engineers assistant*, *civil engineers assistants*, *surveyors assistant*, *architects*).
Marital status	Full count England census	Single is defined as those with a marital status of *single*, *widowed*, or *divorced*, and married is defined as those with a marital status of *married* or *married with spouse absent.* These variables are conditional on age being greater than 15.

Figure B.1: Example of Archival Annual Reports Data

This figure plots an example of the data on annual reports of the trustee savings banks that was digitized and transcribed over the latter half of the 19th century.

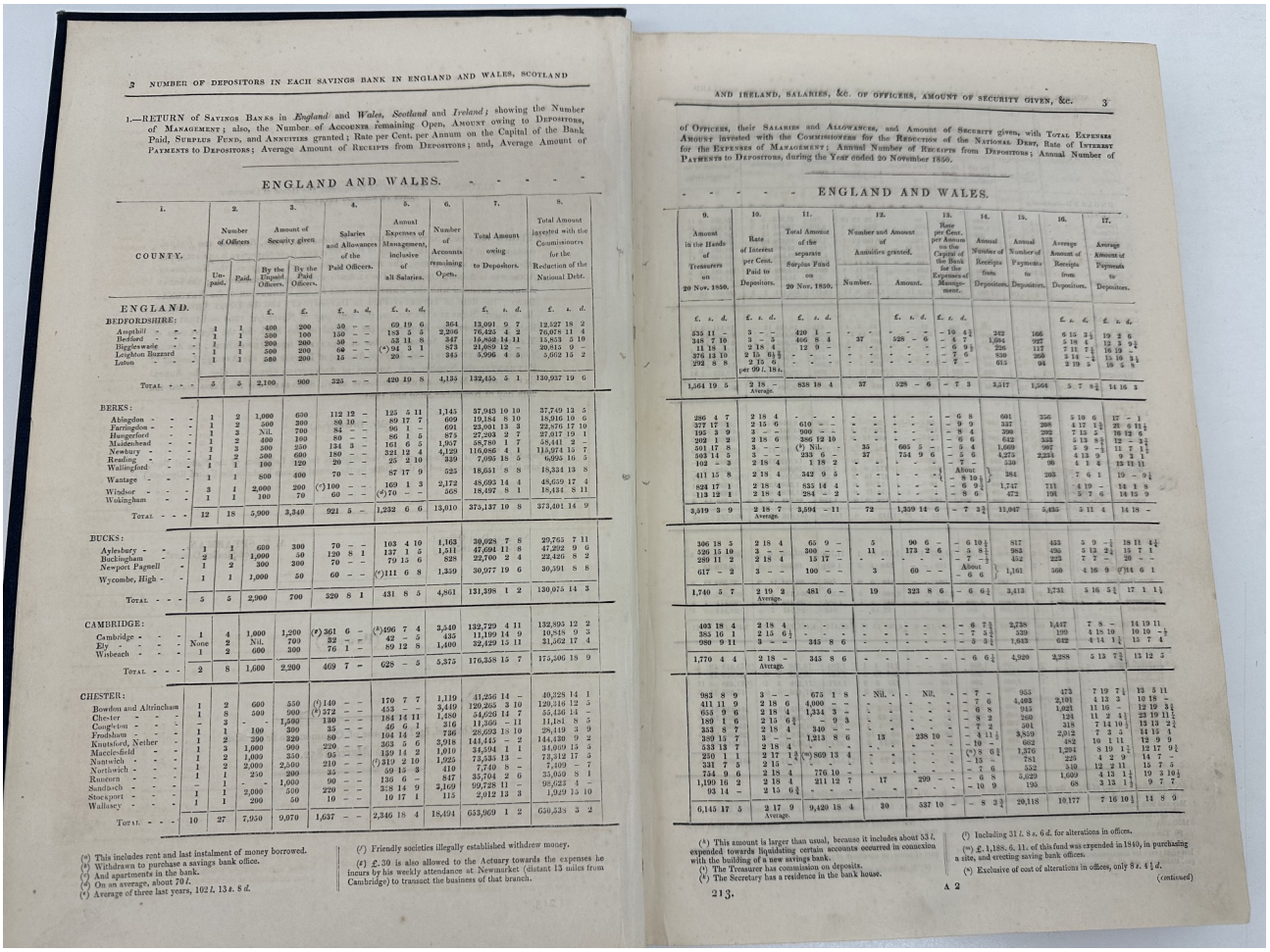
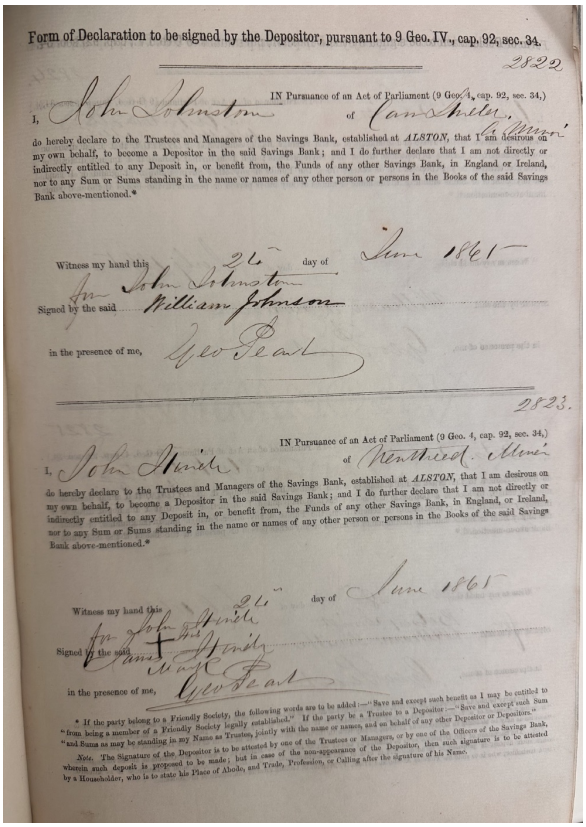
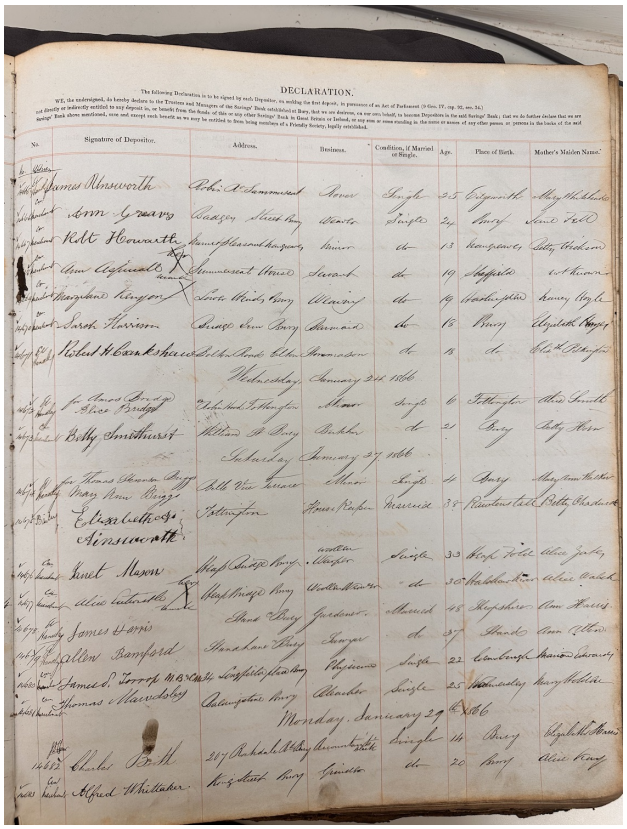


Figure B.2: Examples of Archival New Depositor Records Data

This figure plots examples of the new depositor accounts data recorded for Alston Savings Bank and Bury Savings Bank in Panels (a) and (b), respectively.



(a) Alston Savings Bank example



(b) Bury Savings Bank example

C Additional Institutional Details

C.1 Divorce

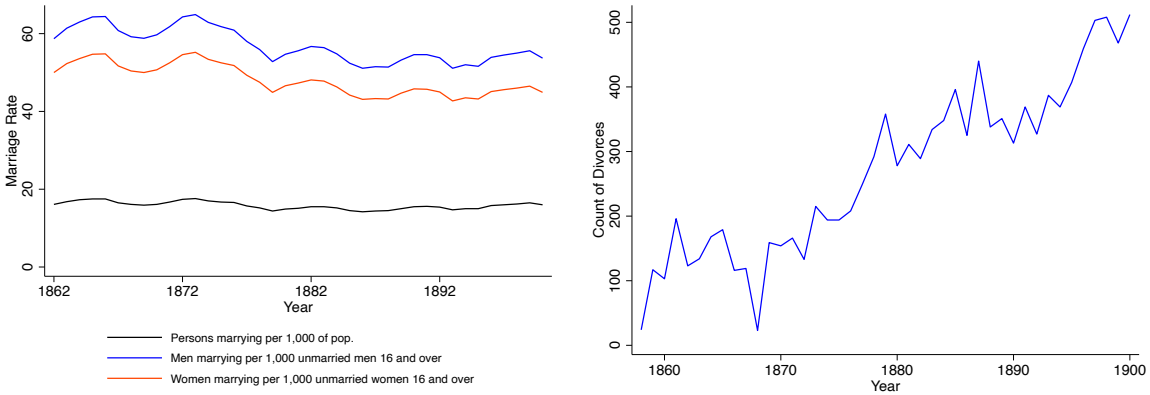
The Matrimonial Causes Act 1857, which took effect in 1858, was the first major legal reform to make civil divorce accessible in England, transferring jurisdiction from ecclesiastical courts to a new secular Court for Divorce and Matrimonial Causes. It allowed men to divorce on grounds of adultery alone, while women faced stricter requirements—adultery plus cruelty, desertion, or similar offenses (Shanley, 1982; Stone, 1990). The Act abolished the need for costly private Acts of Parliament, making divorce relatively affordable to the middle class, and introduced orders of protection and judicial separation that let deserted or judicially separated wives retain their own earnings and property acquired after desertion or separation.

More precisely, the 1857 Act's protection orders and judicial separation safeguarded earnings and acquisitions made after desertion or separation, and upon divorce or separation a woman resumed the status of a feme sole, however assets already absorbed under coverture were not automatically restored. Only women deserted by their husbands were able to go to a local magistrate and receive an order to control their own earnings as a feme sole, however, this did not apply to assets already absorbed during the marriage under coverture (Shanley, 1982). Hence, limited property rights for married women or previously married women prior to the Married Women's Property Act of 1870 remained the reality.

In addition, the use of civil divorce remained very low throughout the rest of the 19$^{\text{th}}$ century, and was still a costly process. Figure C.1 demonstrates that across both England and Wales, the total count of divorces in a given year remained below or around 500 divorces, even towards the very end of the 19$^{\text{th}}$ century.

Figure C.1: Marriage and Divorce Trends

This figure plots the annual marriage rates in Panel (a) and the count of divorces in Panel (b), across England and Wales. Marriage rates are calculated as the rate of marriages per 1,000 people, the rate of men married among 1,000 unmarried men 16 and over, and the rate of women married among 1,000 unmarried women 16 and over. Data are from the Office for National Statistics.



(a) Marriage rates

(b) Divorce count

C.2 Money Management and Credit in Victorian England

Working-class household finances in Victorian England generally ran on tight budgets and often irregular earnings, including in rural areas where household budgets were built around small weekly (or seasonal) wages, in-kind remuneration (board, lodging, fuel, garden allotments), and exposure to harvest and employment cycles. The classic social surveys by Rowntree (1901) and Booth (1902) detail how small interruptions to wages—illness, layoffs, seasonal slack—could push families towards at or below subsistence, and how careful budgeting and thrift were critical for insurance against shocks, particularly given limited borrowing options. In this setting, the institutions that mattered significantly for "money management" were those that helped people hold cash safely and smooth risk — friendly societies and, centrally for this paper, the trustee savings banks, which were organized around deposit-taking and security rather than lending.

When short-run liquidity was needed, options existed but sat outside the formal banking sector, particularly for the working class population of England. In particular, access to credit was both generally limited and informal, for example, relying on social connections (Finn, 2003). Households could (i) pledge belongings with pawnbrokers in their nearest market town; (ii) run credit ("on tick") with the village grocer, baker, or coal dealer; (iii) buy clothing and household textiles on installment from itinerant credit drapers (tallymen); and (iv) in some places, accept limited wage advances or deductions, later constrained by Truck Acts (Hilton, 1957; O'Connell, 2009).[41]

C.3 Contemporary Challenges to Women's Property Rights

While the primary regulatory change I use, the 1870 Married Women's Property Act, occurred many decades ago, and there have been many strides in securing women's property rights since, many countries still exhibit patterns reminiscent of historical coverture. High bureaucratic fees, gender bias in courts, and a lack of awareness about property entitlements continue to hinder the full realization of women's property rights in some parts of the world (Food and Agriculture Organization (FAO), 2018; Lastarria-Cornhiel, 1997).

In Sub-Saharan Africa, for example, statutory laws grant equal inheritance and land rights, yet customary practices often override these reforms, leaving women reliant on male relatives for property access (Benschop, 2002; Henrysson and Joireman, 2009). Similar contradictions between formal statutes and on-the-ground realities are found in the Middle East and North Africa, where women's entitlements are frequently constrained by both religious inheritance frameworks and local norms to

[41] The Truck Acts refer to the series of legislation over centuries in England intended to limit the extension of credit by employers to employees in the form of goods or tokens instead of money or wages, intending to limit risk of debt bondage.

relinquish inheritance claims (World Bank, 2023).

Across South Asia, progressive legal measures such as the Hindu Succession (Amendment) Act in India theoretically ensure daughters' rights to ancestral property. Nonetheless, practical enforcement is hampered by social norms and familial intimidation, making it difficult for women to assert property claims without enduring costly legal battles (Agarwal, 1994; Tripp, 2004). The Latin American experience similarly highlights the gap between joint titling legislation and actual practice, as women are routinely excluded from property registration or discover belatedly that they hold no formal title (Deere and León, 2003).

D Additional Results

In this section, I detail additional results on heterogeneity or different outcomes.

D.1 Additional Results to Supplement Section 4

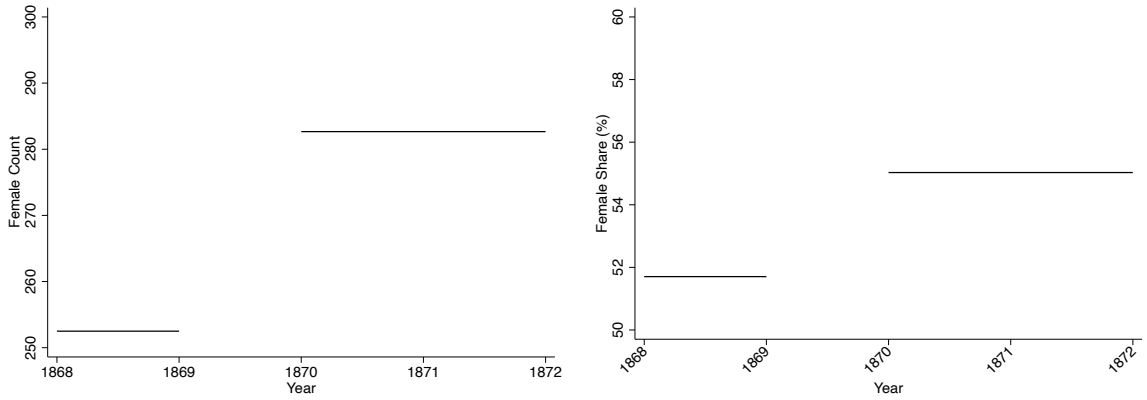
Table D.1: Effect of the 1870 Married Women's Property Act - Interaction with Urban Local District Status

This table reports difference-in-differences coefficients on the treatment of the ex-ante log count of married women in the total local district population in 1861 with post-1870, and an indicator for urban status. All columns include local district and year fixed effects. Robust standard errors are clustered at the local district level. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively.

	Ln(# Open acc.)	Ln(# Deposit receipts)	Ln(Deposits)	Ln(Avg. dep. size)
	(1)	**(2)**	**(3)**	**(4)**
1861MarriedWomen $\times$ $\mathbb{1}_{\text{Post}}$	0.130**	0.094*	0.127*	-0.003
	(0.052)	(0.056)	(0.070)	(0.033)
1861MarriedWomen $\times$ $\mathbb{1}_{\text{Post}}$ $\times$ $\mathbb{1}_{\text{Urban}}$	-0.043	0.021	-0.057	-0.014
	(0.056)	(0.065)	(0.074)	(0.035)
Fixed Effects				
Local district	Yes	Yes	Yes	Yes
Year	Yes	No	Yes	No
Observations	7,808	7,788	7,800	7,800
R^2	0.946	0.937	0.892	0.450

Figure D.1: Depositor-Level Data

This figure plots the annual new accounts opened from 1865 to 1875. Horizontal lines indicate the pre-period (1868-1869) and post-period (1870-1872) averages of the female count of depositors and the female share of depositors among all depositors, in Panels (a) and (b), respectively.



(a) Female Depositor Count

(b) Female Share among all Depositors

D.2 Additional Results to Supplement Section 5

Table D.2: Bank Local Districts vs. Other Local Districts - Summary Statistics

This table presents the mean and standard deviation of 1861 local district level variables for local districts with banks by 1861, compared to local districts without banks by 1861. The data covers 11,059 local districts. Column 5 presents a t-test of the difference, with the t-statistic in brackets. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively.

	Bank by 1861		**Other**		**Difference**
	Mean	**Sd**	**Mean**	**Sd**	
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
Pop. density (pop./acre)	23.31	143.34	0.80	13.68	22.51***
					[3.24]
Employment rate (%)	65.62	5.58	65.29	8.04	0.33
					[1.18]
Male employment rate (%)	92.83	3.94	93.81	5.56	-0.98***
					[-5.04]
Female employment rate (%)	41.60	10.34	36.29	14.43	5.31***
					[10.34]
Agricultural workers, share of pop. (%)	8.93	6.87	30.82	12.03	-21.89***
					[-62.92]
Female, share of pop. (%)	52.08	2.39	49.49	3.82	2.59***
					[21.65]
Married female, share of pop. (%)	17.21	1.09	17.08	2.37	0.14**
					[2.39]

Figure D.2: Trends in Female Employment

This figure presents the average female, married female, and single female employment rates for the years 1851, 1861, 1881, and 1891. 90% confidence intervals are plotted.

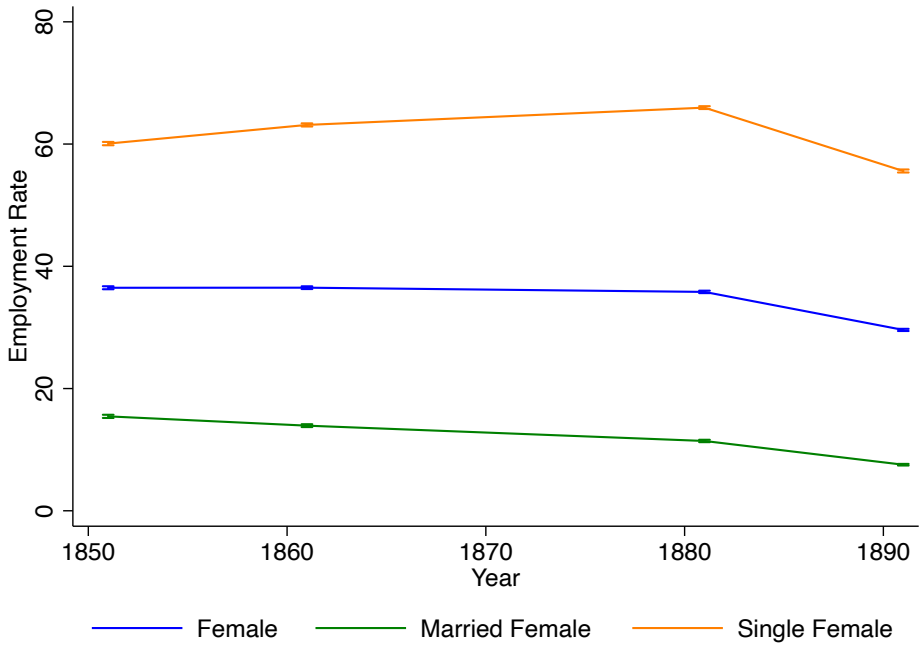


Table D.3: Changes in the Difference Between Female and Male Employment Rates

This table presents difference-in-differences regression estimates of the difference between the female and male employment rates in a particular local district, around the 1870 passing of the Married Women's Property Act of 1870 compares areas that had a bank in 1861 to those that did not. Local district controls include population size, the size of the agricultural worker population, and the population density for each census year. Local district and census year fixed effects are included. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	Female minus male employment rate	
	(1)	**(2)**
$\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}}$	1.901***	3.431***
	(0.300)	(0.417)
Controls		
Local district controls	Yes	Yes
Fixed Effects		
Local district	No	Yes
Census year	Yes	Yes
Observations	41,908	29,513
R^2	0.633	0.677

Figure D.3: Male vs. Female Sector Shares

This figure presents the average shares of total sector employment by gender, across local districts and the census years. 90% confidence intervals are plotted.

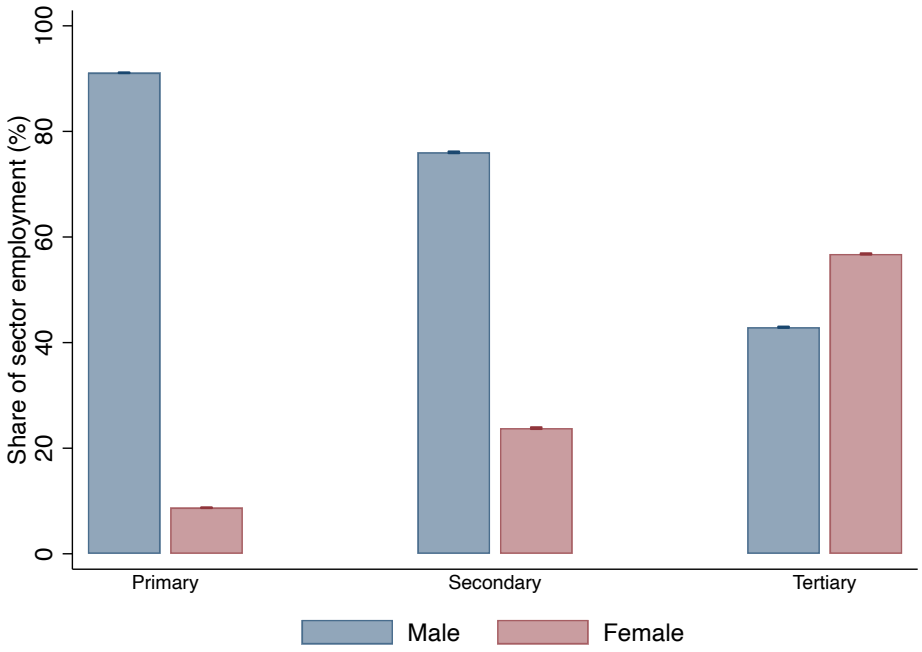


Table D.4: Share of Women Employed by Age Group

This table presents difference-in-differences regression estimates of the percent of the local district female population that is employed across different age groups, around the 1870 passing of the Married Women's Property Act of 1870 comparing areas that had a bank in 1861 to those that did not in Panel A, and the same outcome for married vs. single women in Panels B and C. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	Age $\leq$ 15	16 $\leq$ Age $\leq$ 20	21 $\leq$ Age $\leq$ 25	26 $\leq$ Age $\leq$ 30	31 $\leq$ Age $\leq$ 35	Age $\geq$ 36
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
			Panel A. Female Employment Rate			
$\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}}$	1.483***	3.535***	2.431**	0.733	0.614	1.149**
	(0.352)	(0.906)	(0.958)	(0.926)	(0.928)	(0.550)
Observations	41,797	41,523	41,261	41,029	40,630	41,868
R^2	0.493	0.449	0.471	0.471	0.435	0.536
			Panel B. Married Female Employment Rate			
$\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}}$	0.128	1.451	0.775	0.738	0.767	1.383**
	(6.378)	(1.261)	(0.870)	(0.780)	(0.778)	(0.566)
Observations	299	20,220	37,633	39,780	39,822	41,798
R^2	0.547	0.524	0.500	0.484	0.460	0.508
			Panel C. Single Female Employment Rate			
$\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}}$	1.484***	3.734***	3.560***	2.159*	1.504	-0.589
	(0.352)	(0.928)	(1.077)	(1.298)	(1.497)	(0.913)
Observations	41,797	41,487	40,566	38,119	33,647	41,084
R^2	0.493	0.435	0.391	0.370	0.365	0.424
			Panel D. Controls			
Fixed Effects						
Local district	Yes	Yes	Yes	Yes	Yes	Yes
Census year	Yes	Yes	Yes	Yes	Yes	Yes

Table D.5: Employment Rate by Bank Area – Interaction with Urban Local District Status

This table presents difference-in-differences regression estimates of female and male employment rates, as a percent of the respective population size over 15, as well as the difference in these rates, around the 1870 passing of the Married Women's Property Act of 1870 comparing areas with and without a bank, and with and without an urban status. Urban status is defined as local districts with an 1861 population density that is greater or equal to the 75$^{\text{th}}$ percentile population density. Local district controls include population size, the size of the agricultural worker population, and the population density for each census year. Local district and census year fixed effects are included. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	Female employment rate	Male employment rate	Female minus male employment rate
	(1)	**(2)**	**(3)**
$\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}}$	4.222***	-0.114	4.333***
	(0.866)	(0.691)	(1.161)
$\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}} \times \mathbb{1}_{\{\text{Urban}\}}$	-2.208**	0.351	-2.560**
	(0.897)	(0.701)	(1.191)
Controls			
Local district controls	Yes	Yes	Yes
Fixed Effects			
Local district	Yes	Yes	Yes
Census year	Yes	Yes	Yes
Observations	41,909	41,912	41,908
R^2	0.623	0.373	0.633

Suez Canal Areas. In a triple difference-in-differences framework, I consider how the counties in England most exposed to the Suez Canal opening in 1869 behaved differently in terms of the gender-specific employment responses, comparing bank areas before and after the passing of the 1870 Married Women's Property Act.[42] The opening of the Suez Canal allowed England to significantly decrease its shipping costs, particularly to important colonies such as India. I treat this Suez Canal shock, which coincided closely with the passing of the 1870 Married Women's Property Act, as a local labor demand shock that is plausibly agnostic towards whether more male or female friendly jobs would be created. In particular more warehousing and processing could have increased heavy dock labor, but also lighter, skill- or task-based work such as sorting and packing goods such as tea and spices at dockside warehouses, clerical and office-support jobs, as well as textile work related to shipping and warehousing. The coefficient on $\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}} \times \mathbb{1}_{\{\text{Suez}\}}$ therefore captures whether, *conditional on the same Suez-driven demand shock*, banked areas saw a larger post-1870 *female* employment response than comparable unbanked or non-Suez places, consistent with women's improved ability to contract, hold earnings, and obtain working capital once the 1870 reform removed marital coverture frictions. Indeed, as Table D.6 demonstrates, female employment (and the difference relative to male employment changes) increases most in bank areas following the 1870 reform in Suez areas.

Table D.6: Triple Difference-in-Differences - Suez Canal Areas

This table presents triple difference-in-differences regression estimates of female and male employment rates, as well as their difference, around the 1870 passing of the Married Women's Property Act of 1870 comparing areas that had a bank in 1861 to those that did not, and comparing counties that had the greatest exposure to the Suez Canal. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	Female employment rate	Male employment rate	Female minus male employment rate
	(1)	**(2)**	**(3)**
$\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}} \times \mathbb{1}_{\{\text{Suez}\}}$	4.303***	1.440**	2.860**
	(1.541)	(0.687)	(1.361)
$\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}}$	4.612***	1.353***	3.260***
	(0.455)	(0.238)	(0.423)
$\mathbb{1}_{\{\text{Post}\}} \times \mathbb{1}_{\{\text{Suez}\}}$	-2.700***	0.133	-2.831***
	(0.714)	(0.274)	(0.688)
Fixed Effects			
Local district	Yes	Yes	Yes
Census year	Yes	Yes	Yes
Observations	29,515	29,518	29,513
R^2	0.668	0.443	0.677

[42] I use London, Middlesex, and Lancashire as the areas most affected by Suez-related trade (Fletcher, 1958).

Unpaid Labor, Marital and Fertility Choices. Beyond employment and schooling, I examine margins that clarify mechanisms and further explore other potential responses of individuals to the Married Women's Property Act of 1870. Table D.7 studies married women's unpaid labor status to distinguish reclassification from entry into paid work. Table D.8 reports age-specific marriage shares to gauge marital responses, and Table D.9 documents average household size as a coarse proxy for fertility and co-residence. These patterns help interpret whether the reform primarily reorganized within-household allocation or expanded women's engagement in market work and human capital.

A natural question arising from the results in Section 5 on increased married female employment is whether or not unpaid labor among this group was affected as well. To this end, I use the occupation variable from the England census, which indicates two specific occupations related to this – "wives and others engaged in (own) household duties" and "wives assisting generally in their husband's occupations (wife of ...)" for women over 15 who are married. Table D.7 below presents the results, indicating that there is a substantial decrease in married women engaged in these forms of unpaid labor in bank areas following the reform, consistent with the notion that married women were entering the formal labor market and increasingly earning wages for their work.

Table D.7: Married Women in Unpaid Labor

This table presents difference-in-differences regression estimates of the log count of married women engaged in (i) own household duties, and (ii) assisting her husband in his occupation as indicated in the census, around the 1870 passing of the Married Women's Property Act of 1870 comparing areas that had a bank in 1861 to those that did not. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	Ln(Own HH duties)	Ln(Assisting husband)
	(1)	**(2)**
$\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}}$	-0.203***	-0.151***
	(0.050)	(0.053)
Fixed Effects		
Local district	Yes	Yes
Census year	Yes	Yes
Observations	25,439	17,535
R^2	0.653	0.679

Next, I consider whether there are differences in the share of women married within various age buckets, as well as the average household size, as proxies for changes in marital timing and fertility choices. While the census data allows limited granularity to address this, these tables, Tables D.8 and D.9, provide indirect evidence, suggesting limited changes overall to marriage and fertility patterns following the passing of the 1870 reform.

Table D.8: Share of Women Married by Age Group

This table presents difference-in-differences regression estimates of the percent of the local district female population that is married across four different age groups, around the 1870 passing of the Married Women's Property Act of 1870 comparing areas that had a bank in 1861 to those that did not. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	$16 \leq$ Age ≤ 20	$21 \leq$ Age ≤ 25	$26 \leq$ Age ≤ 30	$31 \leq$ Age ≤ 35
	(1)	**(2)**	**(3)**	**(4)**
$\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}}$	-0.302	0.272	1.705*	1.009
	(0.338)	(0.837)	(0.895)	(0.871)
Fixed Effects				
Local district	Yes	Yes	Yes	Yes
Census year	Yes	Yes	Yes	Yes
Observations	41,523	41,261	41,029	40,630
R^2	0.349	0.459	0.432	0.376

Table D.9: Average Household Size

This table presents difference-in-differences regression estimates of the average household size in a given local district, around the 1870 passing of the Married Women's Property Act of 1870 comparing areas that had a bank in 1861 to those that did not. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	Avg. HH size
	(1)
$\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}}$	0.999
	(0.729)
Fixed Effects	
Local district	Yes
Year	Yes
Observations	41,913
R^2	0.587

E Robustness Checks

This section provides robustness checks and alternate specifications for the main results presented in Sections 4 and 5 of the paper.

E.1 Robustness Checks for Section 4

Figure E.1: Distribution of the Share of Married Women Across Local Districts

This figure plots the distribution of the share of married women across local districts in England.

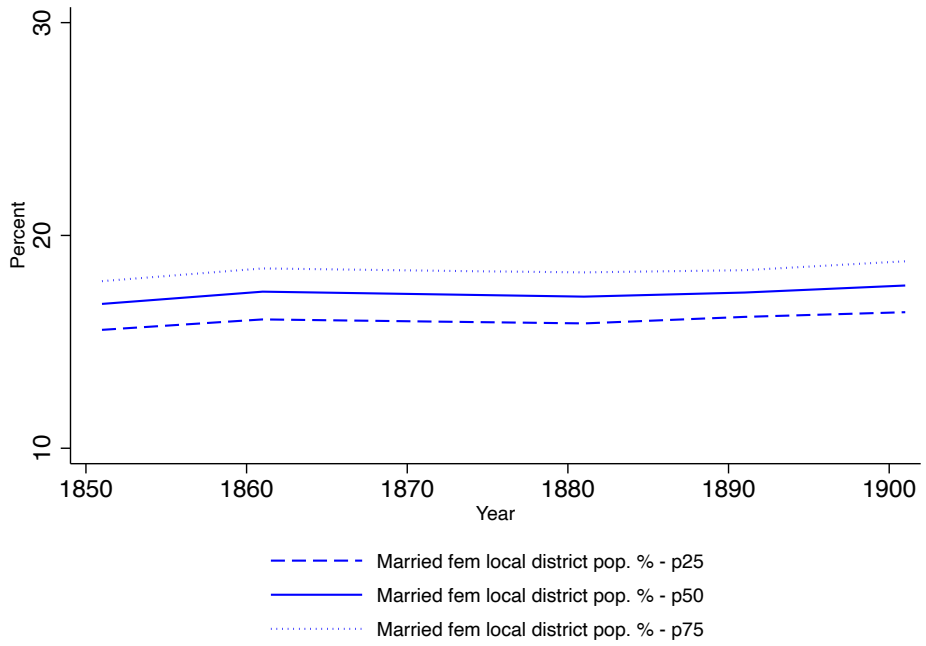


Figure E.2: Local District Characteristics by Low vs. High Married Female Share

This figure plots the average of local district characteristics in 1861 – the percent of agricultural workers in the population, the employment rate, and the population density per acre – by above or below median married female share. 90% confidence intervals are included.

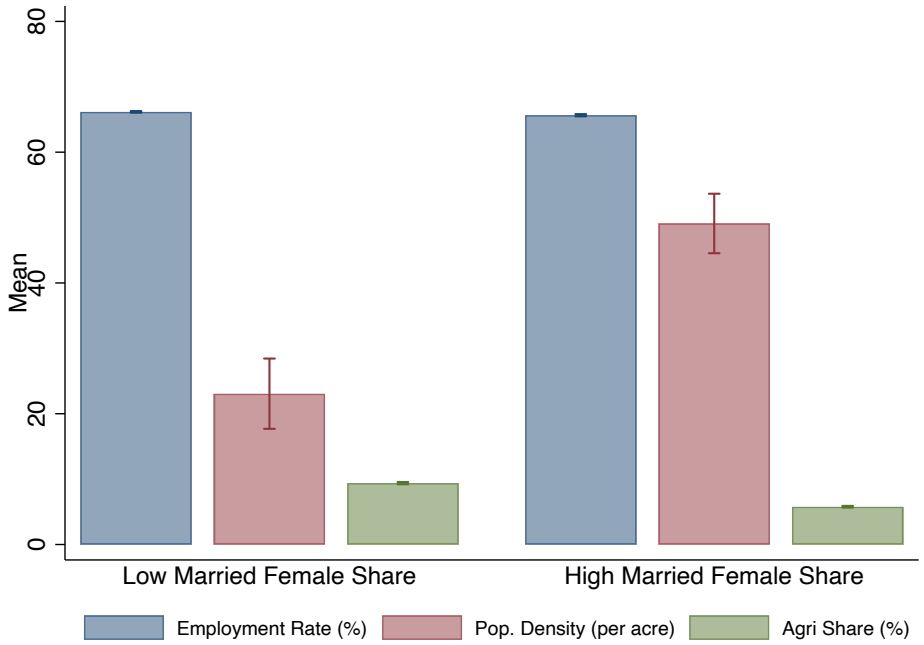
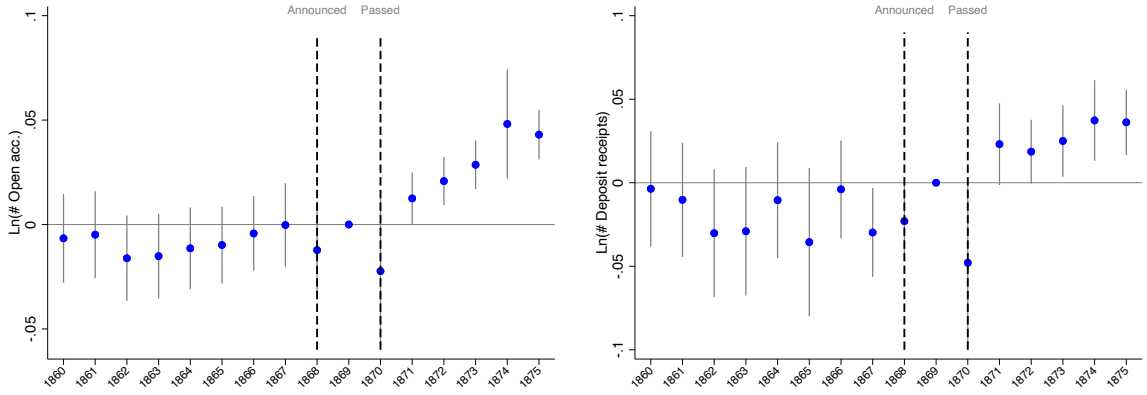


Figure E.3: Effect of the 1870 Married Women's Property Act on Account Uptake and Usage by Female Population

This figure plots annual coefficients of a difference-in-differences specification comparing new accounts and number of deposit receipts at banks located in local districts with a higher or lower log count of the 1861 female population. Local district and year fixed effects are included. 90% confidence intervals are in gray and standard errors are clustered at the local district level. The first dashed line at 1868 indicates the year the Married Women's Property Act of 1870 was introduced in parliament, and the second dashed line at 1870 indicates the year the bill was passed. This sample includes all banks opened prior to 1861, and surviving until at least 1891 or longer.

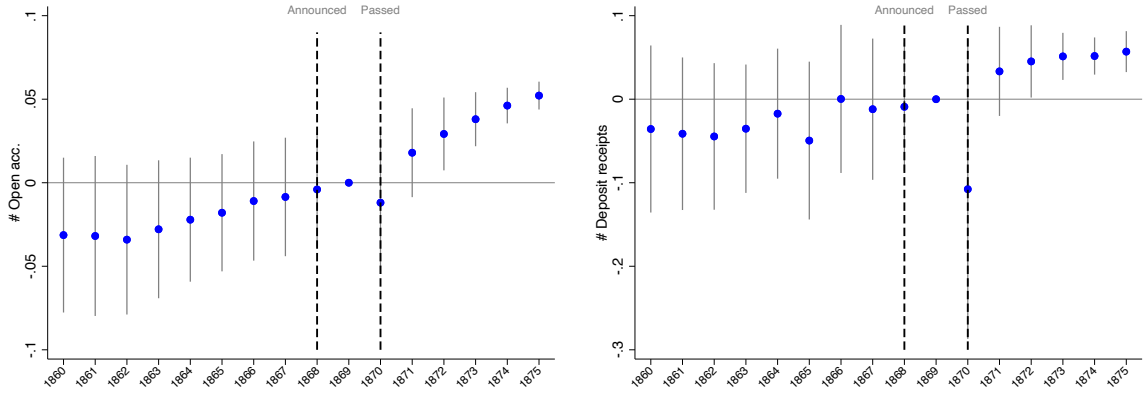


(a) Ln(Number of open accounts)

(b) Ln(Number of deposit receipts)

Figure E.4: Effect of the 1870 Married Women's Property Act on Account Uptake and Usage - Poisson Specification

This figure plots annual coefficients of a difference-in-differences specification comparing the count of new accounts and number of deposit receipts at banks located in local districts with higher or lower 1861 married women population percent, using a Poisson specification. Local district and year fixed effects are included. 90% confidence intervals are in gray and standard errors are clustered at the local district level. The first dashed line at 1868 indicates the year the Married Women's Property Act of 1870 was introduced in parliament, and the second dashed line at 1870 indicates the year the bill was passed. This sample includes all banks opened prior to 1861, and surviving until at least 1891 or longer.

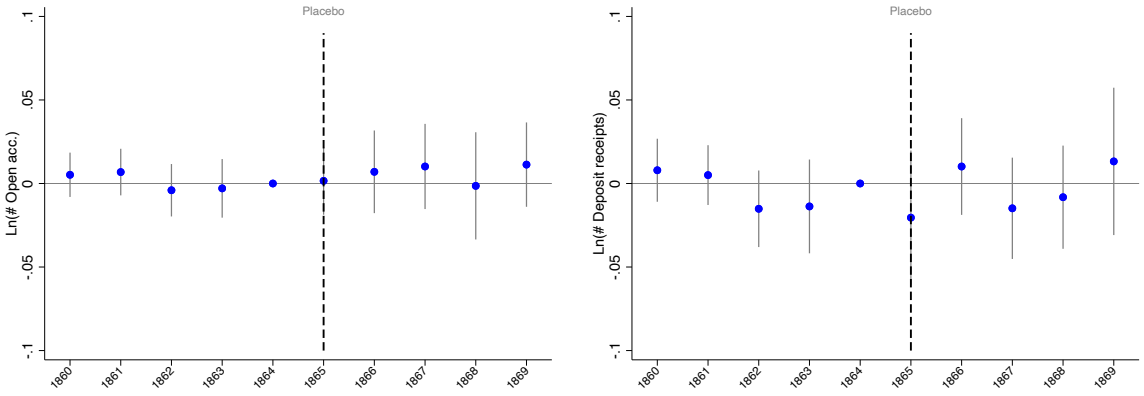


(a) Number of open accounts

(b) Number of deposit receipts

Figure E.5: Effect of the 1870 Married Women's Property Act on Account Uptake and Usage - Placebo Timing

This figure plots annual coefficients of a difference-in-differences specification comparing the count of new accounts and number of deposit receipts at banks located in local districts with higher or lower 1861 married women population percent, using a placebo date of 1865 for the passing of the Married Women's Property Act of 1870. Local district and year fixed effects are included. 90% confidence intervals are in gray and standard errors are clustered at the local district level. The dashed line at 1865 indicates the placebo date.



(a) Number of open accounts

(b) Number of deposit receipts

Table E.1: Effect of the 1870 Married Women's Property Act on Savings Account Uptake and Usage - Ex-ante *Share* of Married Women

This table reports difference-in-differences coefficients on the treatment of the ex-ante log count of married women in the total local district population in 1861 with post-1870, estimating Equation 1, with the log number of savings bank accounts as the outcome of interest in Panel A, and the annual log count of deposit receipts – the number of times depositors made deposits at a bank in a given year, as the outcome of interest in Panel B. Column 2 includes local district level controls measured in 1861 along with county fixed effects. Local district level controls include the logarithms of total population and agricultural workers, the employment rate, and population density, and the bank-year control refers to interest rate at a given bank in a given year. Column 3 includes local district and year fixed effects, Column 4 includes local district and county×year fixed effects, and Column 5 includes baseline local district controls interacted with $\mathbb{1}_{\text{Post}}$, bank-year controls, as well as local district and year fixed effects. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	(1)	(2)	(3)	(4)	(5)
	Panel A. Ln(# Open acc.)				
1861MarriedWomenPopPct × $\mathbb{1}_{\text{Post}}$	0.081***	0.083***	0.090***	0.097***	0.079***
	(0.021)	(0.021)	(0.021)	(0.025)	(0.022)
Observations	7,808	7,596	7,808	7,597	7,596
R^2	0.122	0.510	0.944	0.957	0.946
	Panel B. Ln(# Deposit receipts)				
1861MarriedWomenPopPct × $\mathbb{1}_{\text{Post}}$	0.111***	0.116***	0.126***	0.148***	0.114***
	(0.029)	(0.028)	(0.027)	(0.031)	(0.028)
Observations	7,788	7,576	7,788	7,573	7,576
R^2	0.188	0.563	0.936	0.954	0.939
	Panel C. Controls				
Controls					
Ln(1861MarriedWomen)	Yes	Yes	No	No	No
$\mathbb{1}_{\text{Post}}$	Yes	Yes	No	No	No
Local district controls	No	Yes	No	No	No
Local district controls ×$\mathbb{1}_{\text{Post}}$	No	No	No	No	Yes
Bank-year controls	No	Yes	No	No	Yes
Fixed Effects					
County	No	Yes	No	No	No
Local district	No	No	Yes	Yes	Yes
Year	No	No	Yes	No	Yes
County×year	No	No	No	Yes	No

Table E.2: Effect of the 1870 Married Women's Property Act on Total Deposits and Average Deposit Size - Ex-ante *Share* of Married Women

This table reports difference-in-differences coefficients on the treatment of the ex-ante log percentage share of married women in the total local district population in 1861 with post-1870, estimating Equation 1, with the log total deposits in Panel A, and the average deposit amount as the outcome of interest in Panel B. Column 2 includes local district level controls measured in 1861 along with county fixed effects. Local district level controls include the logarithms of total population and agricultural workers, the employment rate, and population density, and the bank-year control refers to the interest rate at a given bank in a given year. Column 3 includes local district and year fixed effects, Column 4 includes local district and county×year fixed effects, and Column 5 includes baseline local district controls interacted with $\mathbb{1}_{\text{Post}}$, bank-year controls, as well as local district and year fixed effects. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	(1)	(2)	(3)	(4)	(5)
			Panel A. Ln(Deposits)		
1861MarriedWomenPopPct × $\mathbb{1}_{\text{Post}}$	0.071***	0.076***	0.083***	0.090***	0.078***
	(0.021)	(0.020)	(0.021)	(0.024)	(0.022)
Observations	7,800	7,589	7,800	7,588	7,589
R^2	0.068	0.416	0.891	0.913	0.892
			Panel B. Ln(Avg. dep. size)		
1861MarriedWomenPopPct × $\mathbb{1}_{\text{Post}}$	-0.009	-0.007	-0.007	-0.006	-0.001
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
	7,800	7,589	7,800	7,588	7,589
R^2	0.090	0.243	0.449	0.542	0.448
			Panel C. Controls		
Controls					
Ln(1861MarriedWomen)	Yes	Yes	No	No	No
$\mathbb{1}_{\text{Post}}$	Yes	Yes	No	No	No
Local district controls	No	Yes	No	No	No
Local district controls × $\mathbb{1}_{\text{Post}}$	No	No	No	No	Yes
Bank-year controls	No	Yes	No	No	Yes
Fixed Effects					
County	No	Yes	No	No	No
Local district	No	No	Yes	Yes	Yes
Year	No	No	Yes	No	Yes
County×year	No	No	No	Yes	No

Table E.3: Effect by Quartile of Ex-ante Married Female Population Share

This table reports difference-in-differences coefficients on the interaction of post-1870 with quartiles of ex-ante 1861 married female population percent, estimating Equation 2. All columns include local district and year fixed effects, while Columns 2 and 4 additionally include County×Year fixed effects. Robust standard errors are clustered at the local district level. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively.

	Ln(# Open acc.)	Ln(# Open acc.)	Ln(# Deposit receipts)	Ln(# Deposit receipts)
	(1)	**(2)**	**(3)**	**(4)**
$\mathbb{1}_{\{1861\text{MarriedWomenPopPctQuar4}\}} \times \mathbb{1}_{\{\text{Post}\}}$	0.264***	0.265***	0.396***	0.422***
	(0.069)	(0.085)	(0.091)	(0.106)
$\mathbb{1}_{\{1861\text{MarriedWomenPopPctQuar3}\}} \times \mathbb{1}_{\{\text{Post}\}}$	0.119**	0.149**	0.201**	0.299***
	(0.059)	(0.063)	(0.079)	(0.079)
$\mathbb{1}_{\{1861\text{MarriedWomenPopPctQuar2}\}} \times \mathbb{1}_{\{\text{Post}\}}$	0.059	0.050	0.111	0.130
	(0.066)	(0.073)	(0.084)	(0.086)
Fixed Effects				
Local district	Yes	Yes	Yes	Yes
Year	Yes	No	Yes	No
County×year	No	Yes	No	Yes
Observations	7,850	7,681	7,830	7,657
R^2	0.945	0.958	0.937	0.954

Table E.4: Effect of the 1870 Married Women's Property Act on *Changes* in Savings Account Uptake and Usage

This table reports difference-in-differences coefficients on the treatment of the ex-ante log count of married women in the total local district population in 1861 with post-1870, estimating Equation 1, with the log change in savings bank accounts as the outcome of interest in Panel A, and the annual log change in deposit receipts – the number of times depositors made deposits at a bank in a given year, as the outcome of interest in Panel B. Column 2 includes local district level controls measured in 1861 along with county fixed effects. Local district level controls include the logarithms of total population and agricultural workers, the employment rate, and population density, and the bank-year control refers to the interest rate at a given bank in a given year. Column 3 includes local district and year fixed effects, and Column 4 includes local district and county×year fixed effects. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	(1)	(2)	(3)	(4)
	Panel A. Ln(Δ # Open acc.)			
Ln(1861MarriedWomen) × $\mathbb{1}_{\text{Post}}$	0.180***	0.171***	0.146***	0.133***
	(0.050)	(0.046)	(0.040)	(0.036)
Observations	4,053	3,950	4,053	3,671
R^2	0.363	0.453	0.639	0.752
	Panel B. Ln(Δ # Deposit Receipts)			
Ln(1861MarriedWomen) × $\mathbb{1}_{\text{Post}}$	0.117***	0.088**	0.109***	0.082*
	(0.042)	(0.040)	(0.037)	(0.045)
Observations	3,756	3,661	3,756	3,385
R^2	0.380	0.461	0.600	0.728
	Panel C. Controls			
Controls				
Ln(1861MarriedWomen)	Yes	Yes	No	No
$\mathbb{1}_{\text{Post}}$	Yes	Yes	No	No
Local district controls	No	Yes	No	No
Bank-year controls	No	Yes	No	No
Fixed Effects				
County	No	Yes	No	No
Local district	No	No	Yes	Yes
Year	No	No	Yes	No
County×year	No	No	No	Yes

Table E.5: Effect of the 1870 Married Women's Property Act on *Changes* in Total Deposits and Average Deposit Size

This table reports difference-in-differences coefficients on the treatment of the ex-ante log count of married women in the total local district population in 1861 with post-1870, estimating Equation 1, with the log change in deposits as the outcome of interest in Panel A, and the average change in deposit size of depositors as the outcome of interest in Panel B. Column 2 includes local district level controls measured in 1861 along with county fixed effects. Local district level controls include the total population and agricultural workers, the employment rate, and population density, and the bank-year control refers to interest rate at a given bank in a given year. Column 3 includes local district and year fixed effects, and Column 4 includes local district, year, and County×Year fixed effects. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	(1)	(2)	(3)	(4)
	Panel A. Ln(Δ Deposits)			
Ln(1861MarriedWomen) × $\mathbb{1}_{\text{Post}}$	0.194***	0.187***	0.175***	0.182***
	(0.035)	(0.035)	(0.030)	(0.034)
Observations	4,454	4,320	4,454	4,117
R^2	0.276	0.384	0.555	0.694
	Panel B. Ln(Δ Avg. dep. size)			
Ln(1861MarriedWomen) × $\mathbb{1}_{\text{Post}}$	-0.077**	-0.075**	-0.078**	-0.030
	(0.031)	(0.031)	(0.031)	(0.037)
Observations	4,383	4,260	4,383	4,013
R^2	0.002	0.024	0.123	0.372
	Panel C. Controls			
Controls				
Ln(1861MarriedWomen)	Yes	Yes	No	No
$\mathbb{1}_{\text{Post}}$	Yes	Yes	No	No
Local district controls	No	Yes	No	No
Bank-year controls	No	Yes	No	No
Fixed Effects				
County	No	Yes	No	No
Local district	No	No	Yes	Yes
Year	No	No	Yes	No
County×year	No	No	No	Yes

Table E.6: Effect of the 1870 Married Women's Property Act on Bank Outcomes - Inverse Probability Weighting

This table reports difference-in-differences coefficients on the treatment of the ex-ante log count of married women in the total local district population in 1861 with post-1870. I use stabilized generalized propensity score (GPS) matching on 1861 local district characteristics – population, agricultural workers, employment rate, and population density – for the treatment, and use the weights to run the difference-in-differences regression results presented here. All columns include local district and year fixed effects. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	Ln(# Open acc.) **(1)**	Ln(# Deposit receipts) **(2)**	Ln(# Deposits) **(3)**	Ln(Avg. Deposit Size) **(4)**
Ln(1861MarriedWomen) $\times \mathbb{1}_{\{\text{Post}\}}$	0.094***	0.121***	0.073***	-0.021**
	(0.017)	(0.025)	(0.016)	(0.010)
Fixed Effects				
Local district	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
Observations	7,599	7,579	7,592	7,592
R^2	0.951	0.943	0.893	0.401

Table E.7: Effect of the 1870 Married Women's Property Act on Bank Outcomes - Controlling for Male Presence

This table reports difference-in-differences coefficients on the treatment of the ex-ante share of married women in the local district in 1861 interacted with post-1870. I additionally include the interaction of the 1861 male population share interacted with post-1870. All columns include local district and year fixed effects. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	Ln(# Open acc.)	Ln(# Deposit receipts)	Ln(# Deposits)	Ln(Avg. Deposit Size)
	(1)	**(2)**	**(3)**	**(4)**
1861MarriedWomenPopPct $\times \mathbb{1}_{\{\text{Post}\}}$	0.090***	0.125***	0.084***	-0.006
	(0.022)	(0.027)	(0.021)	(0.011)
1861MalePopPct $\times \mathbb{1}_{\{\text{Post}\}}$	0.002	-0.006	0.007	0.005
	(0.011)	(0.013)	(0.012)	(0.005)
Fixed Effects				
Local district	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
Observations	7,808	7,788	7,800	7,800
R^2	0.944	0.936	0.891	0.449

E.2 Robustness Checks for Section 5

Table E.8: Employment Rate by Bank Area - Alternate Controls

This table presents difference-in-differences regression estimates of female employment rate, as a percent of the respective population size over 15, as well as their difference between the female and male employment rate, around the 1870 passing of the Married Women's Property Act of 1870, comparing areas that had a bank in 1861 to those that did not. 1861 local district controls of population, agricultural worker population, and population density interacted with $\mathbb{1}_{\{\text{Post}\}}$ are included in all specifications, as well as county × census year fixed effects in columns 2 and 4. Local district and census year fixed effects are included in all specifications. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	Female employment rate		Female minus male employment rate	
	(1)	**(2)**	**(3)**	**(4)**
$\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}}$	1.560***	1.232***	1.093***	0.909***
	(0.316)	(0.313)	(0.350)	(0.339)
Controls				
1861 Local district controls $\times \mathbb{1}_{\text{Post}}$	Yes	Yes	Yes	Yes
Fixed Effects				
Local district	Yes	Yes	Yes	Yes
Census year	Yes	Yes	Yes	Yes
County × census year	No	Yes	No	Yes
Observations	39,875	39,873	39,874	39,872
R^2	0.625	0.641	0.635	0.651

Table E.9: Employment Rate by Bank Area - Short Run Effects (1881)

This table presents difference-in-differences regression estimates of female employment rate, as a percent of the respective population size over 15, as well as their difference between the female and male employment rate, around the 1870 passing of the Married Women's Property Act of 1870, comparing areas that had a bank in 1861 to those that did not. I restrict the sample to 1851 - 1881, so that only the 1881 census year is represented in the post-period, to investigate the employment effects in the short run. Note that a specification with controls is not included as the 1881 census year does not contain information on population density. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	Female employment rate	Female minus male employment rate
	(1)	**(2)**
$\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}}$	1.275***	1.364***
	(0.266)	(0.297)
Fixed Effects		
Local district	Yes	Yes
Census year	Yes	Yes
Observations	32,720	32,720
R^2	0.661	0.669

Table E.10: Employment Rate by Bank Area – Bank per Capita Treatment

This table presents difference-in-differences regression estimates of married female, single female and male employment rates, as a percent of the respective population size over 15, around the 1870 passing of the Married Women's Property Act of 1870 comparing areas that had higher vs. lower banks per capita. Local district controls include population size, the size of the agricultural worker population, and the population density for each census year. Local district and census year fixed effects are included. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	Married fem. employment rate	Single fem. employment rate	Male employment rate
	(1)	**(2)**	**(3)**
BankPC $\times \mathbb{1}_{\{\text{Post}\}}$	2.441*	5.605**	0.799
	(1.275)	(2.457)	(0.957)
Controls			
Local district controls	Yes	Yes	Yes
Fixed Effects			
Local district	Yes	Yes	Yes
Census year	Yes	Yes	Yes
Observations	29,492	29,461	29,518
R^2	0.610	0.565	0.443

Table E.11: Employment Rate by Bank Area – Excluding London

This table presents difference-in-differences regression estimates of married female, single female and the female minus male employment rate gap, as a percent of the respective population size over 15, around the 1870 passing of the Married Women's Property Act of 1870 comparing areas with and without a bank, excluding local districts belonging to London. Local district controls include population size, the size of the agricultural worker population, and the population density for each census year. Local district and census year fixed effects are included. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	Married fem. employment rate	Single fem. employment rate	Female minus male employment rate
	(1)	**(2)**	**(3)**
$\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}}$	0.952***	1.707***	1.805***
	(0.324)	(0.297)	(0.305)
Fixed Effects			
Local district	Yes	Yes	Yes
Census year	Yes	Yes	Yes
Observations	41,664	41,627	41,692
R^2	0.553	0.508	0.631

Table E.12: Employment Rate by Bank Area – Inverse Probability Weighting

This table presents difference-in-differences regression estimates of married female, single female and male employment rates, as a percent of the respective population size over 15, and their difference, around the 1870 passing of the Married Women's Property Act of 1870 comparing areas with and without a bank. Estimates are weighted using inverse probability weights derived from a logit model predicting bank presence in 1861. The propensity score model includes pre-treatment 1861 covariates of population, population density, and the population of agricultural workers, from which stabilized weights are constructed. Local district controls include population size, the size of the agricultural worker population, and the population density for each census year. Local district and census year fixed effects are included. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	Married fem. employment rate	Single fem. employment rate	Male employment rate	Female minus male employment rate	Single minus married female employment rate
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
$\mathbb{1}_{\{Bank\}} \times \mathbb{1}_{\{Post\}}$	1.485*	3.347***	0.291	2.730***	1.863*
	(0.880)	(0.858)	(0.415)	(0.780)	(1.055)
Controls					
Local district controls	Yes	Yes	Yes	Yes	Yes
Fixed Effects					
Local district	Yes	Yes	Yes	Yes	Yes
Census year	Yes	Yes	Yes	Yes	Yes
Observations	29,492	29,461	29,518	29,513	29,438
R^2	0.615	0.564	0.439	0.680	0.513

Table E.13: School Participation by Bank Area - Excluding London

This table presents difference-in-differences regression estimates of the log count of female and male students under 16, around the 1870 passing of the Married Women's Property Act of 1870 comparing areas that had a bank in 1861 to those that did not, excluding local districts belonging to London. Local district controls include population size, the size of the agricultural worker population, and the population density for each census year. Local district and census year fixed effects are included. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	Ln(Female students)		Ln(Male students)	
	(1)	**(2)**	**(3)**	**(4)**
$\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}}$	0.086***	0.139***	0.043*	0.073**
	(0.025)	(0.038)	(0.024)	(0.036)
Controls				
Local district controls	No	Yes	No	Yes
Fixed Effects				
Local district	Yes	Yes	Yes	Yes
Census year	Yes	Yes	Yes	Yes
Observations	40,203	27,874	40,344	28,037
R^2	0.897	0.898	0.905	0.908

E.2.1 Instrumental Variable Approach — Elite Presence

I develop an instrumental variable approach to further address endogeneity in the real effects on employment identified in Section 5 relying on the institutional context of the savings banks and the broader trustee savings bank movement that took place in the 19$^{\text{th}}$ century.

19$^{\text{th}}$ century trustee savings banks were typically founded and governed by local notables—clergy, merchants, professionals, magistrates—serving as honorary trustees. The origins of the savings bank movement were explicitly philanthropic, with individuals organizing local institutions for small savers. Governance was based on unpaid trustees drawn from the upper/merchant classes, which is why they were called *trustee* savings banks. Contemporary histories and archival evidence document this role of local elites in founding and running these banks (Horne, 1947). Furthermore, in my sample, more than 75% of the local districts have at least *one* elite present, and one was all that was needed to potentially support the establishment of a trustee savings bank in the area. While areas that eventually had banks had elite presence in almost all local districts, even among areas that did not have a bank, there was elite presence in 75% of cases. Hence, the instrument uses relative variation in ex-ante elite presence as a predictor of bank establishment.

Hence, I use the presence of local elite to predict whether a district is *banked* in the post-1870 period. I define a *local elite* as an individual whose occupation falls into one of the following groups (i) Members of Parliament or peers; (ii) senior government officials, judges, or the top civil service; or (iii) persons living on independent means.[43] Let $\text{Elite}_{d,1851}$ denote the number of such elites recorded in local district d in 1851; for interpretability, I rescale this count by 10, so that one unit corresponds to ten elites.

Instrument and first stage. To address potential endogeneity in the real effects design, I instrument the post-reform treatment $\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}}$ with the interaction of elite presence and the post indicator:

$$Z_{dt} \;\equiv\; \text{Elite}_{d,1851} \times \mathbb{1}\{\text{Post}_t\}.$$

The first stage specification is:

$$\left(\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}}\right)_{dt} \;=\; \pi\, Z_{dt} \;+\; \gamma X_{dt} \;+\; \lambda_d \;+\; \tau_t \;+\; \epsilon_{dt}, \tag{8}$$

where I control for local district (λ_d) and census year (τ_t) fixed effects in the first specification, and additionally include X_{dt}, the interaction of baseline 1861 local district controls (population, agricultural worker population, and population density) with $\mathbb{1}_{\{\text{Post}\}}$ to adjust for differential trends post-1870

[43] I define the presence of local elites in a particular local district using the 1851 census values (the earliest census year in my data and closest to the average founding date of the banks), however, elite presence is very persistent over time and results are largely unchanged using an alternate census year's value.

based on 1861 local district characteristics, the census year observation prior to the 1870 property rights reform.

Empirically, the instrument is relevant. As reported in Table E.14, the first stage coefficient on Z_{dt} is positive and statistically significant. The cluster-robust partial F-statistic for the excluded instrument ranges from 22 to 57 across specifications. The Kleibergen-Paap rk Wald F-statistics range from 21.9 to 57.2—well above the Stock-Yogo 10% maximal IV size critical value of 16.38—so we comfortably reject weak-instrument concerns (Stock and Yogo, 2005).

Table E.14: First Stage – Predicting Treatment with $\mathbb{1}_{\{\text{Elite}\}} \times \mathbb{1}_{\{\text{Post}\}}$

This table reports the first-stage regression corresponding to the IV specifications. The dependent variable is the treatment indicator, bank in 1861 interacted with post, $\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}}$. The instrument is $\mathbb{1}_{\{\text{Elite}\}} \times \mathbb{1}_{\{\text{Post}\}}$. Local district controls include population size, the size of the agricultural worker population, and population density in 1861, all interacted with $\mathbb{1}_{\{\text{Post}\}}$. Local district and census year fixed effects are included. *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively. Robust standard errors are clustered at the local district level.

	$(\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}})$	
	(1)	**(2)**
$\mathbb{1}_{\{\text{Elite}\}} \times \mathbb{1}_{\{\text{Post}\}}$	0.007***	0.005***
	(0.001)	(0.001)
Controls		
Local district controls $\times \mathbb{1}_{\text{Post}}$	No	Yes
Fixed Effects		
Local district	Yes	Yes
Census year	Yes	Yes
First-stage F-statistic	57.234	22.321
Observations	41,353	39,357
R^2	0.578	0.626

Exclusion restriction.

The exclusion restriction in this setting is that, conditional on local district fixed effects, census-year fixed effects, and $\mathbb{1}\{\text{Post}_t$-interacted baseline covariates, pre-reform elite presence affects post-1870 outcomes only through its effect on post-period bank access. This is plausible for three reasons. First, elite presence is measured before the reform and is time-invariant, so local district fixed effects absorb any permanent differences across districts correlated with elite density (wealth, urbanity, civic capacity). Second, year fixed effects absorb nationwide shocks at 1870 (e.g., macro trends, national legislation), ensuring identification comes from cross-local district differential changes rather than country-wide breaks. In addition, to directly address channels most likely to correlate with elites, I show robustness to adding pre-reform sectoral and institutional proxies interacted with $\mathbb{1}\{\text{Post}_t$—e.g., baseline agricultural intensity and population density. These terms soak up post-1870 outcome movements that operate through pre-existing industry or local economic structure rather than through bank access. Finally, on the subsample of local districts that do not have a bank, the reduced form of Z_{dt} on outcomes is statistically flat (Table E.16). This falsification test supports the claim that elite presence matters through bank access rather than some independent post-1870 dimension.

Second stage and interpretation. The corresponding 2SLS replaces the endogenous regressor with its fitted value from (8),

$$Y_{dt} \;=\; \beta\left(\widehat{\mathbb{1}\{\text{Bank}\} \times \mathbb{1}\{\text{Post}\}}\right) \;+\; \gamma X_{dt} \;+\; \lambda_d \;+\; \tau_t \;+\; \eta_{dt}, \tag{9}$$

where Y_{dt} is the female employment rate and the difference between the female and male employment rates. The 2SLS coefficient β is the LATE for districts whose post-period bank access is shifted by pre-reform elite presence. Results are reported in Table E.15.

Table E.15: Employment Rate by Bank Area – Elite Presence Instrumental Variable Approach

This table presents difference-in-differences regression estimates of married female, single female and male employment rates, as a percent of the respective population size over 15, around the 1870 passing of the Married Women's Property Act of 1870 comparing areas with and without a bank. This is instrumented with the ex-ante elite presence interacted with post. Local district controls include population size, the size of the agricultural worker population, and the population density for each census year. Local district and census year fixed effects are included. *, **, and *** represent statistical significance at the 10%, 5%, and 1% confidence levels, respectively. Robust standard errors are clustered at the local district level.

	Female employment rate		Female minus male employment rate	
	(1)	**(2)**	**(3)**	**(4)**
$(\mathbb{1}_{\{\text{Bank}\}} \times \mathbb{1}_{\{\text{Post}\}})^{\text{IV}}$	4.139***	4.150***	2.995***	2.165**
	(0.504)	(0.933)	(0.514)	(1.057)
Controls				
Local district controls $\times \mathbb{1}_{\text{Post}}$	No	Yes	No	Yes
Fixed Effects				
Local district	Yes	Yes	Yes	Yes
Census year	Yes	Yes	Yes	Yes
Observations	41,350	39,354	41,349	39,353
R^2	0.000	0.000	0.000	0.001

Table E.15 indicates an increase in female employment of about 4 percentage points, and a gap between the female and male employment rate of about 2-3 percentage points in the instrumented results across the various specifications.

Finally, I present a falsification test where I use the instrument to predict the outcomes of interest in areas *without* a bank (Table E.16). This indicates that the instrument has no detectable reduced-form effect absent the banking channel; the coefficients on $\mathbb{1}_{\{\text{Elite}} \times \mathbb{1}_{\{\text{Post}\}}$ are small and statistically indistinguishable from zero for both female employment and the female-male gap. This is consistent with the exclusion restriction as, in places without a bank, pre-reform elite presence does not show a detectable post-1870 shift in the employment outcomes considered.

Table E.16: IV Falsification Test

This table reports regression results from a falsification test that uses the instrument, $\mathbb{1}_{\{\text{Elite}} \times \mathbb{1}_{\{\text{Post}\}}$, to predict post-1870 outcomes in non-bank areas. Local district controls include population size, the size of the agricultural worker population, and population density in 1861, all interacted with $\mathbb{1}_{\{\text{Post}\}}$. Local district and census year fixed effects are included. *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively. Robust standard errors are clustered at the local district level.

	Female employment rate	Female minus male employment rate
	(1)	**(2)**
$\mathbb{1}_{\{\text{Elite}\}} \times \mathbb{1}_{\{\text{Post}\}}$	0.057	-0.006
	(0.038)	(0.029)
Controls		
Local district controls $\times \mathbb{1}_{\text{Post}}$	No	Yes
Fixed Effects		
Local district	Yes	Yes
Census year	Yes	Yes
Observations	37,718	37,717
R^2	0.616	0.627

F Additional Tables and Figures

Table F.1: Numerical Illustration Parameters

This table summarizes the parameter values for the numerical illustration of the model in Section 6.

Parameter	Description	Value
β	Time discount factor	0.96
κ_1	Period 1 labor hours disutility	0.25
κ_2	Period 2 labor hours disutility	0.35
w_1	Wage rate, period 1	1.0
w_2	Wage rate, period 2	1.0
p	Expropriation risk	Grid $p \in [0, 0.30]$
r	Interest rate on savings	Grid $r \in [0, 0.10]$