Tensions of Structural Change: Evidence from Finland's Field Reservation Policy*

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Abstract

While structural transformation is vital for economic development, it often counters resistance. To shed light on the tension between the political and economic effects of structural change, I study a policy that paid farmers to stop farming in 1970s Finland. Using over 290,000 newly digitized Agricultural Census forms linked to rich register data, I find that this Field Reservation Policy led to farm closures but did not affect farmers' income or geographical mobility. However, it had an important intergenerational effect. Children of the most affected farmers had 2.7% higher earnings and were more likely to work in office and managerial positions. Surprisingly, the positive effects on income are predominantly driven by children with lower cognitive skills. Despite the economic benefits, the policy faced a political backlash contributing to the rise of a populist rural party. I provide evidence for two separate explanations for this political reaction: identity-based backlash by offended farmers and negative externalities arising from field reservation.

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1 Introduction

A fallow field — A gaily blooming
burial mound of the agrarian society

An unknown writer
In *A Fallow Field Blooms*, 1974

Structural transformation from agriculture to other, more productive, sectors is crucial for a country's economic growth (Lucas, 2004). This transformation requires both a demand for workers in these other sectors and a supply of workers willing to leave agriculture. There is, however, well-documented friction in the labor market that makes people stay where they are (in terms of location and occupation) even if they could be much more productive elsewhere.[1] This friction leads to misallocation in the labor market meaning that reallocating workers to different jobs would increase the overall productivity. Hence, the government may want to design structural transformation policies that incentivize people to switch occupations and therefore increase productivity and boost structural change (Hsieh et al., 2019).

Structural change is not, however, always beneficial for everyone. If people are unable or unwilling to manage the change it may also lead to political unrest. As Kuznets (1973) writes in his Nobel lecture: "Economic growth perforce brings about a decline in the relative position of one group after another—of farmers, of small scale producers, of landowners—a change not easily accepted, and, in fact, as history teaches us, often resisted".[2] Therefore when designing policies to boost structural change, the government needs to balance economic efficiency and political resistance.

This paper studies a large-scale agricultural policy called the Field Reservation Policy in 1970s Finland. The policy incentivized farmers to stop farming and leave the fields fallow to reduce the overproduction of agricultural products. At the same time, the reform was also designed to enhance productivity and allow people to reallocate between industries and local labor markets. My main findings are twofold. First, the policy accelerated structural change and the farmers' children ended up in better-paying occupations. Second, despite working as planned, the policy strikingly led to political backlash and a temporary rise of a rural populist party in the Finnish Parliament.

My analysis builds on two sources of plausibly exogenous variation in the intensity of the

[1] See, for example, Baseler (2023), Bryan and Chowdury (2014), Deryugina et al. (2018), Nakamura et al. (2022), and Sarvimäki et al. (2022).

[2] Perhaps the most notable example in the history are the Luddites during the Industrial Revolution (Mokyr, 1992). The Luddites and the interaction of political power and economic development are discussed in detail for example in Chapter 3 in Acemoglu and Robinson (2012). In more recent times, the decline in the U.S. manufacturing jobs after the increased foreign competition from China has contributed to heightened political polarization (Autor et al., 2020)

policy: an eligibility cutoff for the policy and geographical differences in land productivity. First, farms had to have at least two hectares of arable field in cultivation to be eligible for field reservation. Second, since the policy offered the same compensation per field hectare everywhere in the country, the contract was more attractive to farmers in low-productivity regions. I combine these two sources of variations in a difference-in-differences design by comparing the difference between eligible and non-eligible small-scale farms in both low- and high-productivity regions. The estimate gives the difference in the effect of the policy in different productivity regions. Since the policy also affected the high-productivity regions, although more moderately, the estimates can be interpreted as lower bounds of the true effect of the policy.

I draw data from multiple novel sources to facilitate the analysis. Most importantly, I use the Agricultural Census 1969, for which I scanned over 290,000 original documents from the National Archives. I employ a deep learning algorithm, that I developed specifically for hand-written text in standard forms, to digitize the scanned documents into data. These data are necessary for my analysis as they include details on farms—most importantly the field area that determines eligibility for field reservation. Additionally, I restored novel farm register data from Statistics Finland's archives which allows me to connect the farms from the Agricultural Census to farmer IDs and then to other data sources.

My findings indicate that after the policy's introduction, eligible small-scale (part-time) farmers in low-productivity regions were more likely to stop farming than their counterparts in high-productivity areas.[3] While the reform did not affect farmers' income or location choice, it had a substantial intergenerational effect. The children of the farmers end up earning about 700 euros more (in 2020 prices) corresponding to a 2.7% increase in their yearly income compared to the children in the high-productivity regions.

I then examine the mechanisms behind the effects on income. The effects are largely driven by occupational choice while location and education do not appear to play a role. For this analysis, I form a measure for each municipality, six-digit occupation, and education codes on average earned income. I find that the treated children end up in occupations that pay more on average while the impact on average earned income in municipalities or education degrees are statistically non-significant. I also study these mechanisms by adding outcome-based fixed effects of the municipality, education, and occupation categories on the main specification one at a time. This analysis suggests that occupations explain over 80 % of the earnings effect. These children are more likely to work in office and administration, like secretaries or tellers, and in managerial roles. They are less likely to be agricultural workers or in the armed forces. This concludes

[3] I do not directly observe contract take-up at an individual level. I do observe (imperfectly) the area used for cultivation, so I use it as a proxy for stopping farming.

the evidence that the field reservation policy did accelerate structural transformation by reallocating the children of the farmers into higher productivity occupations.

Who are the ones that benefit most from the push to reallocate in the labor market? If the returns to ability are higher in the high-productivity jobs, the policy would raise inequality by increasing sorting into different occupations by ability. Surprisingly, I find the opposite. By using the results of a visuospatial test for the conscripts of the Finnish Defence Forces, I divide my sample into low- and high-ability men based on their scores.[4] I find that the positive income effect seems to be driven by those who have lower cognitive abilities. This suggests that individuals of lower ability can benefit from structural transformation and transitions to more productive jobs.

To summarize, the policy accelerated structural change and pushed people to move from agriculture into other, more productive, sectors. Interestingly, however, despite its positive long-term economic effects and almost unanimous support at its introduction, it soon became "the most hated one in the wide arsenal of agricultural policies" (Vihinen, 1990) and was discontinued in 1974. Contemporary political commentators and historians argue that the reform was one main reason for the results in the 1970 parliamentary election also known as "the shock election" (Granberg, 2004, Silvasti, ed, 1970). The government coalition, particularly the Centre Party which was supported by the farmers, experienced large losses while an agrarian populist party, the Finnish Rural Party (FRP), got its first large victory and increased its representation from 1 to 18 members in the Parliament[5].

In the second part of the paper, I study the political backlash against the policy and the reasons behind it. I use the increased vote share of the FRP as a measure of resistance towards the policy. Using an instrumental variable design, I first show that a one percentage point increase in the share of reserved farms in the municipality in 1969 led to a 1.1 percentage point increase in the FRP vote share compared to the 1966 parliamentary election. My IV strategy exploits a conceivably exogenous mass of eligible farms just above the threshold of two hectares in a municipality as an instrument for the take-up of the contract.

To interpret these results, I draw from surveys and interviews conducted in the 1970s. Two main explanations arise for the protest. First, the policy hurt farmers' status which caused bitterness towards the government coalition. And second, negative externalities of the policy due to the sense of losing the community. I find evidence for both mechanisms. I find no relationship between the reservation share and the increase in the FRP vote

[4]The test for visuospatial reasoning is the closest measure to IQ or fluid intelligence in the tests and it is considered the most stable one over time and least affected by, for example, education. I have these data for 83 % of men born after 1962 in my data.

[5]Today's right-wing populist party in Finland, the Finns Party, was founded by members of the FRP after it filed for bankruptcy in 1995.

share at a municipal level. I conclude that this is because farmers who hate the policy are also most likely to vote for the populist party. However, an exogenous increase in the field reservation share does increase the FRP vote share, which I interpret is due to the negative externalities. Based on the interviews and surveys, farmers did not appreciate the policy even if they understood the reasons for individuals to reserve their fields.

The contribution of this paper is two-fold. First, it shows that the government can accelerate structural change by pushing people to reallocate in the labor market with agricultural policy. Second, it shows how such a policy can lead to strong political resistance. Conceptually, structural change happens through a reallocation of the labor market. The reallocation can be either individuals switching occupations or an intergenerational reallocation in which the entrants choose other occupations than the leavers have. If the government wants to accelerate this reallocation, it can design policies to "pull" or "push" workers depending on the needs of the economy. Policies to pull workers include industrial policies that create jobs in higher productivity sectors. Pushing workers is incentivizing them to leave lower productivity sectors like the field reservation policy did.[6]

Evidence on pushing workers to relocate has largely relied on exogenous shocks caused by natural disasters or armed conflicts. Nakamura et al. (2022) show how home destruction by a volcanic eruption (and compensation of the lost home) increased the probability of moving away from an island that had a strong tradition of fishing. Although fishing was a profitable business, younger people benefited substantially from moving away from the island and reallocating to new sectors. Similarly, Sarvimäki et al. (2022) study how being forced to leave home from areas Finland ceded to the Soviet Union after World War II made farmers more likely to leave their farms and earn more in the long run. Deryugina et al. (2018) show that people affected by Hurricane Katrina end up earning more and are more likely to move away from low-opportunity regions. Becker et al. (2020) also study forced migration and its effects on increased educational attainment. My paper is the first to show the effects of relocation induced by increased labor supply through (industrial) policy rather than extreme "natural" experiments.

My findings also contribute to the literature examining misallocation in the labor market. Almgren et al. (2023) study occupational choice and economic efficiency. They show how children are more likely to choose the occupation of their parents and this leads to misallocation of talent in the labor market.[7] My paper examines an exogenous shock

[6] The literature on the effects of industrial policies has focused on policies that create jobs to pull workers into high-productivity sectors (**?**). For example, Mitrunen (2020) shows how Finland's war reparations led to rapid industrialization and shifted workers from agriculture to manufacturing and, in the long run, increased intergenerational mobility. Similarly, Lane (2022) shows that industrial policies that affected specific industries had long-run effects on their comparative advantages.

[7] A specific example of inheritance of occupation is being a farmer and inheriting the farm. Fernando (2022) show that being a first-born son in India makes them more likely to stay at the farm and to work

for the children to not choose their parents' occupation and this seems to improve the allocation. Improved labor allocation can be a major driver in economic growth (Hsieh et al., 2019) and innovation (Bell et al., 2019).

Labor market misallocation is a particularly prevalent topic in the literature on agricultural productivity gaps (Kuznets, 1957, Gollin et al., 2002, Herrendorf and Schoellman, 2018, Hamory et al., 2021). A central question in this literature is whether the well-documented differences in productivity between agriculture and other sectors are due to selection or for other reasons like barriers to information.[8] Gollin et al. (2014) document significant differences in worker value added between agriculture and other sectors even after controlling for multiple potential explanations like working hours and human capital differences. Their conclusion is that there should be large gains from workers moving out of agriculture. This is what the results of Bryan and Chowdury (2014) also indicate. They show that sending a migrant to a city for seasonal work does increase consumption in Bangladesh. My paper shows that intergenerational effects can play a major role in the transition from agriculture to other sectors.

The final contribution of the paper is to the literature on the political effects of economic change and left-behind places. Autor et al. (2020) document how regions that experienced a large decline in manufacturing jobs because they were most exposed to increased trade competition from China, also saw increased political polarization. Other studies show economic distress results in political extremism, polarization and populism (Dal Bó et al., 2023, de Bromhead et al., 2013, Funke et al., 2016, Malgouyres, 2017). In these studies, political unrest arises from a mix of economic distress and an inability to cope in a changing economy.[9] Mutz (2018), however, finds that the threat of status loss explains the 2016 US presidential vote rather than economic distress. In my paper, the policy is based on an individual's own choice to take the contract and hence it does not directly hurt anyone. It can, however, affect farmers' status as they can feel their work is not appreciated anymore. Hence, the protest against the policy is less likely to come from economic distress but more from the status loss and inability or unwillingness to react to changes as described in Kuznets (1973).

The rest of the paper is organized as follows. Section 2 discusses the context of the policy and politics. Section 3 describes the data used and details the sources. Section 4, explains the empirical strategy for studying the individual effects of the policy and discusses the results and mechanisms of the results. Section 5 analyzes and interprets the political effects of the policy, and Section 6 concludes.

in agriculture.

[8]For example, Baseler (2023) shows with a randomized controlled trial that offering information about urban earnings increases rural-to-urban migration in Kenya.

[9]An example of a paper that shows political unrest with economic growth is Tabellini (2020) which shows how immigrants during the Age of Great Migration led to hostile political reactions in US cities despite improving natives' employment.

2 Context

In 1969, Finland was at the peak of transitioning from an agrarian society into a service and manufacturing economy. Twenty years earlier in 1950, 46 % of the working force made their living in agriculture and forestry (Statistics Finland, 1977) and 79 % of the farms had less than 10 ha (25 acres) of arable land (Statistics Finland, 1962). During the 1950s and 60s, farming became more capital-intensive and more productive. People also started to move into more productive industries, in the manufacturing and service sectors. By 1970, only 20 % of the economically active people were working in agriculture and forestry (Statistics Finland, 1979). The average manufacturing worker earned 50% more than in agriculture in 1970. Despite the decrease in the working force in agriculture, the number of farms kept increasing until 1965 due to active government policy that incentivized people to clear out new farms (Sauli, 1987).

As Finland had been primarily an agrarian country, most people also lived in a rural environment. In 1950, only 32 % of the Finnish residents lived in cities. As the structural change from agriculture to manufacturing and service sectors progressed, people also moved with half of the people living in cities by 1970 and 60 % by 1980 (Statistics Finland, 1983). The rural-to-urban migration was strong in the 1960s and intensified in 1969–70 with the baby boomers coming into adulthood and decreased labor demand in agriculture (Haapala, 2004).

The prices of agricultural products were determined by negotiations between the government and the Central Union of Agricultural Producers. Prices were negotiated above the market price as part of the policy was to keep the living standards of the farmers on the same trend as manufacturing workers (Sauli, 1987). With increasing productivity and artificially high prices, Finland had overproduction in agricultural products, particularly in dairy (Government Proposal, 1969). The excess supply was exported but it was costly for the government since it had to cover the difference between the export price and the guaranteed price for the producer. In the Government Proposal (1969), it was estimated that every hectare of farmed land increased government spending by EUR 690 (2020, 450 mk at the time) annually. It would be cheaper for the government to pay for farmers not to cultivate their fields.

2.1 Field Reservation Policy

To decrease agricultural production, the Finnish government introduced the Field Reservation Act (FRA) in April 1969. The government would offer field reservation contracts for farmers with at least two hectares of arable land. The farmer would be paid 380 euros (in 2020 prices) per hectare annually for stopping all commercial farming on their farms.

In the first year of the policy, the compensation was paid up to 14 hectares so that larger farms were paid a maximum of 5360 euros even if they had to reserve all their fields. The farmer was only allowed to grow garden products for domestic consumption and the contract required the sale of all cattle and pigs. Farms could not rent their land after taking the contract but they were eligible for some farming subsidies.

The preparation for the FRA started only in late 1968 as an emergency solution; hence, many farmers were not aware of the policy in the spring of 1969. According to Kähönen (1969), many farmers who would have liked to take the contract did not get it in 1969 since they had already made investments for farming that summer.

The contract was made for three years at a time and could be renewed for up to nine years. Another option was to make a reforestation contract that was made for 15 years. Officially, the contracts were prioritized for farmers over the age of 55, decreased ability to work, or "for whom the contract is especially justified for personal reasons". Also, farms that were less rationalizable for farming due to location or soil were prioritized. Most of the applications from active farmers were, however, approved.

The FRA was adjusted over time. In 1970, the upper limit of payment was removed, with fields from 14 to 21 hectares being paid 305 euros per ha and 230 euros per ha from above that (Kangas, 1972). Communities, such as municipalities and religious groups, were also made eligible for the contract but with lower compensation. At the same time, there were changes to the compensation for slaughtering the cattle and this compensation was given also to farms that did not reserve their fields. This "slaughter-subsidy act" was in place only in 1970. In 1971, there were also new restrictions on making the field reservation contract in Northern Finland. For those regions, the farmer or his wife had to be 55 years old or one of them had to have working capacity reduced by at least 40 %. The contract was also possible for owners under 18 years old or female widows (Jaatinen and Nygård, 1972). These restrictions were also put into effect in Eastern Finland in 1973 (Iisakkila, 1975).

The policy was unique in Europe but comparable to the soil bank system in the USA in 1956-65 (Jaatinen and Alalammi, 1978). The last new contracts were made in 1975 after which the program was gradually shut down. The last payments were made in 1989 (Kettunen, 1992).

The FRA affected regions disproportionately. Since the contract paid a flat rate, farmers with less productive land were more willing to take it. According to Jaatinen and Kärkkäinen (1970), in Northern Finland, over 10% of the eligible farmland was under contract in the first year whereas the shares were below 5% in many southern regions. In the less productive regions, the share of contracts for over 55-year-old farmers was also smaller until 1971[10] (Jaatinen and Nygård, 1972).

[10]After 1971, new restrictions lowered the share of farmers under 55 in the northern and eastern

A natural alternative to reserving the fields was to rent them out. This was a viable option in southern Finland in which the average rent for a hectare was around 380–430 euros per hectare being above what was paid by the government (Iisakkila, 1975). In Northern Finland, the average rents were barely above EUR 150 per hectare, meaning reserving the fields was more than twice more profitable.

How economically significant was the field reservation contract for farmers? In 1973, the average agricultural income in 2–5 ha farms was 3,130 euros in Finland (Statistics Finland, 1977). The annual compensation from field reservation was over 40% of this income[11]. The regional variation in agricultural income was however large. In Southern Finland, an average 2–5 ha farm would make almost 4,560 euros a year. In contrast, in the North, the average annual income from agriculture was around 2 340 euros a year. For farms with only 2–5 ha of arable land, agriculture was not the major source of income with forestry and work outside the farms playing a larger role. Income from agriculture was on average 29.2% of total income for the household with regional variation again being large[12]. To conclude, the economic significance of the contract varied a lot but it could compensate over 50% of the lost income from farming.

2.2 Political Context

In the second part of the paper, I study the political consequences of the policy. Despite strong political support at the introduction of the policy, it quickly turned into "the most hated agricultural policy" (Vihinen, 1990) and was abolished in 1974. The policy is considered one main reason for the parliamentary "shock" election in 1970 that resulted in a loss of the government coalition and gains for an opposition populist rural party.

In 1968, when the field reservation bill was introduced, Finland was led by a Popular Front[13] coalition government led by the Social Democratic Party and the Centre Party which represented farmers and rural communities. Other coalition parties were the Finnish People's Democratic League, positioned left of Social Democrats, the Swedish People's Party of Finland, and the Social Democratic Union of Workers and Smallholders. The opposition parties included the moderate conservative National Coalition Party and the agrarian populist Finnish Rural Party (FRP) with one member in the Parliament out of two hundred. The Parliament had its highest share of leftist members in its history with 103 representatives from the leftist parties. The government coalition had a large majority behind it with 164 of the members coming from government parties.

regions.

[11] 1,330 euros for a 3.5 ha field plus one-time payment for cattle slaughter.

[12] From 20% in the Vaasa region to 47% in the Mikkeli region.

[13] A general term used for a government coalition of working-class and middle-class parties.

The coalition government pushed for reforms including comprehensive school reform, and family and pension reforms including farmer pensions. The first national income policy agreements were negotiated under the instructions of the government.

The FRP was formed as the Small Peasants' Party of Finland in 1959 as its leader and founder Veikko Vennamo fell out with the Centre Party and left it. It remained a marginal party throughout the 1960s until the presidential election in 1968 in which Vennamo, one of three candidates, got 11.35 % of the votes. The party received its breakthrough two years later in the parliamentary election when it got 18 members to the Parliament and was the largest party in the Northern Karelia region. The rise of FRP happened at the expense of the parties in the government coalition, particularly the Centre Party which was the traditional rural party and had been designing the policies in the government.

The FRP presented itself as a defender of the "forgotten people of the rural". It portrayed the Centre Party favoring the owners of large farms while it would represent the small farm-holders. Although its successor, the Finns Party, is a right-wing populist party with a strong emphasis on anti-immigration, the FRP is considered a syncretic or centrist party with strong anti-establishment and anti-elite populist sentiment.

3 Data and Descriptive Statistics

I draw data from multiple novel sources to link individuals to their farms. The main new sources are the Agricultural Census in 1969 and the farm register in 1973. I digitize and link these data to other datasets at Statistics Finland. For detailed variable definitions and sources, see Table E.2.

Farm data. The 1969 Agricultural Census forms the basis of my estimation sample as it has data on the farm size and field area. I digitized the Census by scanning the forms from the National Archives in Finland and developing a two-layered deep learning model to digitize the scanned forms. Figure 1 illustrates the data digitization process and Appendix B details the technicalities of the process.

The Agricultural Census does not, however, have individual farmer IDs. To get the farmer IDs, I link the Census to another novel dataset, the 1973 Farm Register, which I recovered from the archives of Statistics Finland. Both these datasets have unique farm IDs that can be used to link these data. The Agricultural Census has 282,729 unique observations while the farm register has 223,637 farms with farm and farmer IDs. The difference in the number of observations arises from two main reasons. One, not all farms in the farm register have farm and farmer IDs: the farm register has 265,938 observations in total. And two, some farms ceased to exist between 1969 and 1973. The linked dataset with farm details from the Agricultural Census and farmer IDs from the farm register has 192,993 observations which is 86 % of farms in the farm register. Missing farms can be new (or merged) farms established between 1969 and 1973 or due to errors in data digitization of the Agricultural Census. The error rate in the digitization process was 0.6% in an out-of-sample human validation of 1,000 farms. Figure A.1 displays the distributions of all merged and non-merged farms with the top 1 % winsorized. It shows that the non-matched farms are large on average, particularly having a smaller share of really small farms of 2–5 hectares.

While I do not directly observe the contract take-up at an individual level, I can use a proxy by using the land cultivated in 1973 from the farm register. I define a farmer stopping (commercial) farming if the land in cultivation is less than 0.2 hectares. This measure includes farmers stopping both due to field reservation and other reasons without a contract. As shown in Table 1, 6% of the farmers in the estimation sample and 4.4% of all farms had stopped farming by 1973. This is a significantly smaller number than the 12% of all farms taking a field reservation contract in 1969–1974. The share of farms taking the contract in the main estimation sample is even higher. Based on Jaatinen and Nygård (1972), in 1969–1971 10 % of all farms and 14.4% of farms with less than 5 hectares of field area had taken the contract. In the final years of the policy, the relative shares of contract take-up remained the same, over 17% of farms with less than 5 hectares took the contract. The farm register was updated by surveying the farms, so if the farms did not respond, it was not always up to date. When estimating the effect of the policy on stopping farming, I do not interpret it as a first stage or treatment variable since it would be downward biased.

Individual data. The first observations from the individual data come from the Population Census 1970, which is supplemented with tax records from 1971 with details on earned income. These data also contain information on the individual's location, occupation, and education. The individuals can be followed in five-year intervals with Population Censuses of 1975–1985 and yearly in linked population and tax registries (the Statistics Finland FOLK modules) from 1987 onwards.

I use 6-digit level occupation and education codes to calculate the average earned income in a given occupation or with a given education for each year separately. I also calculate the average annual earned income in a given municipality.

I use farmer IDs from the farm register to link individuals to Population Censuses and other register data from Statistics Finland. The administrative data have also a link for the children and their parents which I use to study the effects on the farmers' children. My sample of children consists of individuals born between 1952 and 1969, and whose parent is in the farm register and Agricultural Census.[14] As Table 1 shows, The share that stops

[14] The link for the parents covers most of the children born since 1952.

farming is also smaller for the children. This reflects the fact that the field reservation was more popular among older farmers whose children are not in my estimation sample.

Military test data. I also have data on cognitive skills on a subsample of the farmers' male children. I draw the data from the Finnish Defence Forces, which tests all military conscripts. In my sample, I have data for 83 % of men born 1962–1969. I use visuospatial reasoning as my measure of cognitive skills as it is the closest measure to IQ or fluid intelligence. It is considered more innate than the other measured cognitive abilities, arithmetic or verbal reasoning.

Municipality-level variables. Even if I don't see take-up of the contract at an individual level, I have collected the number of farms taking up the field reservation contract between 1969–1971 at the municipality level from Jaatinen and Kärkkäinen (1970) and Jaatinen and Nygård (1972) at an accuracy of 5 farms. Over 80 % of the field reservation contracts were made in these first three years of the policy. These data are digitized from maps drawn on the articles since the original data was lost. Figure A.2 displays a map of reservation share. The reservation share was lowest in the south and highest in the central parts of the west coast (Oulu region) and in the northern parts.

For my study, I use two measures for regional land productivity. First, I estimate my main measure from a sample of tax records for 12,156 farms in 1973. The sample contains detailed records for all expenses and revenues of the farm. I use these to estimate a local common factor for the farm revenues, which is land productivity. It is measured as standard deviations from the mean. This productivity measure captures potential regional differences in farmer productivity, and differences in agricultural policy. For example, northern farms received higher prices for their products. More on how the measure is estimated and the main results with the measure are detailed in Appendix C. Figure C.1 plots the land productivity measure on a map.

As another source to estimate land productivity, I use FAO's Global Agro-Ecological Zones (Gaez v4) to determine the Agro-climatic Potential Yield for wheat in different regions in Finland (Fischer et al., 2021). The Gaez measure uses only the geographic potential for yield so it is independent of characteristics of the farmers or agricultural policy. See Nunn and Qian (2011) as an example of using these data and Giuliano and Matranga (2021) for a review.

The election outcomes come from the Official Statistics of Finland for Parliamentary Elections in 1966 and 1970 (XXIX A:29, A:31) and the Official Statistics of Finland for Local Elections (XXIX B:3). These data contain municipality-level vote shares of each party.

4 The Effect of Field Reservation Policy on Eligible Farmers and Children

Before moving to analyze the effects of the Field Reservation Policy, it is useful to discuss the hypotheses and potential mechanisms. What is the expected effect of the policy? In general, regardless of the policy, farmers have three options: continue working in agriculture, work in other sectors, or retire. As mentioned in Section 2, most (small-scale) farmers would combine work in agriculture and other sectors like forestry and construction. Farmers can also choose to either stay on their farms or move elsewhere to look for better opportunities. When the policy is implemented, the relative value of working in agriculture decreases, as the farmer can choose to stop farming and still get partial compensation from their land. Hence, there are three channels through which the policy can affect the eligible farmers who choose to reserve their farms: 1) Farmers moving to work in other sectors but staying in their location, 2) Farmers moving away from their farms to find better opportunities in other sectors, and 3) Farmers going into early retirement. In my analysis, I focus on the two first channels.

How should the policy affect the children of the farmers? First of all, it can have an effect through their parents: if the parents choose to relocate due to the field reservation contract, their children will likely relocate with them. The second possible mechanism is a signal of their parent's choice to reserve their fields. This can lead the child to choose to stay at school for longer or look for other opportunities in the labor market instead of working at the farm. For example, Tuhkuri (2023) finds that a manufacturing decline in the U.S. led to an increase in children's educational attainment.

The field reservation policy also has a resemblance to conditional cash transfer (CCT) programs. The CCTs, like Mexico's PROGRESA, were originally implemented with two objectives: to reduce short-term poverty by giving a cash transfer while improving long-term earnings by conditioning the transfers on investments in human capital like putting children to school or taking them to health checks (Parker and Todd, 2017). Even if not a motivation for the field reservation policy, its long-term effect would be to advance reallocation in the labor market for either the farmer or their children. In the short term, the policy functioned as a poverty-reducing measure for the least productive farmers.

4.1 Empirical Approach

In my empirical approach, I use two sources of variation. First, I use the field area of the farm, which determines the eligibility for the policy with a two-hectare cutoff. Second, I use local land productivity which determines the relative value of the contract for the farmer. Since the compensation had the same rate per hectare everywhere, it was more valuable in less productive regions.

Figure 2 displays the farm reservation share at the municipality level on land productivity. The farm reservation share is measured only in the first three years of the policy. The land productivity of the municipality is in standard deviations using the land productivity measure from the tax records sample.[15] The figure shows that the share of reserved farms in regions below the mean in land productivity is between 8–12 %. Above the mean, the share of farms reserved sharply drops to 3 %. This fact results from the design of the policy: it paid the same rate per hectare everywhere making it more attractive in regions where productivity was lower. These low- and high-productivity regions could be considered as treatment and control groups if they did not differ in other characteristics, such as location and average income. A similar phenomenon is shown with the alternative land productivity measure from Gaez in Figure A.3.

Next, I show at an individual level how the size of the farm is related to field reservation around the eligibility cutoff of at least two hectares of arable land. As mentioned in the Data section, I do not observe field reservation at an individual level, so I use a proxy measure of stopping farming instead. It is not, however, perfectly updated, showing only 6% of sample farms stopping farming while 12% of all farms took the contract and presumably even higher share in our estimation sample. Hence, when estimating the effect of the policy on stopping farming, it should be interpreted as proof of the first stage but not an accurate estimate of the first stage. Figure 3 shows, that the size of the farm is linked with the individual's likelihood of stopping farming around the two-hectare cutoff for the farms in low-productivity regions. Each point in the figure is the share of farms that stop farming between 1969 and 1973 for each half-a-hectare bin and for farms below and above mean productivity separately. It shows that while the stop rate remains around 5% for the high-productivity farms on both sides of the cutoff, it jumps in the low-productivity regions to 8–9% for the eligible farms. This difference in differences is due to the policy. Since my measure of stop farming captures only a share of field reservation, this is likely a lower bound for the real effect. In the background, the figure displays the share of farms in each bin as a fraction of farms with less than 5 hectares. The distribution of farms within the sample is quite even with 11-14% of farms in each bin.

For the design to be valid, the difference between non-eligible low- and high-productivity regions should be constant for all farms. To test this, I first run an event-study style estimation for each bin of a half hectare separately. This gives a statistical test for the differences in Figure 3 by estimating the difference of the below and above mean points

[15] The Tax Records sample that includes all inputs and outputs of over 12,000 farms is used to estimate a common local productivity term. More details in Section C.

compared to the difference for the non-eligible farms with 1.5–2 hectares of arable land. The estimation equation is:

$$Y_{im} = \alpha + \sum_{s=1,s\neq 2}^{8} \gamma_s \text{area}_{is} + \sum_{s=1,s\neq 2}^{8} \delta_s(\text{area}_{is} \times \text{prod}_m) + \kappa_m + \theta X_{im} + \varepsilon_{im} \tag{1}$$

Where area_{is} is an indicator for $1 + \frac{s}{2} \leq area_i < 1 + \frac{s+1}{2}$ for farmer i in municipality m. In other words, the indicators create eight half-hectare bins from 1 to 5 hectares and each farm is in one of these bins (1–1.5 ha, 1.5–2 ha, etc.). prod_m is an indicator if the municipality m of the farm is below-mean in land-productivity. The coefficients of interest are δ_s which identifies the difference of the effect of the eligibility for the policy for farms of size s for low- and high-productivity farms. I also include field area as a control variable and municipality and age fixed effects.

Figure 4 shows the estimation results of the estimation equation 1 with stopping farming as an outcome. It shows that the difference between eligible below and above mean farms in stopping is around 2 percent points higher than for the non-eligible farms of 1.5–2 hectares. The difference is zero for the non-eligible farms of 1–1.5 hectares which supports the proposition that the difference is due to the policy. Figure A.5 shows the same estimates with the alternative land productivity measure Gaez showing very similar results. Figure A.7 splits the bins into quarter-hectare bins. Although the confidence intervals grow, the point estimates are consistently zero for the non-eligible farmers and around 2 percentage points for the eligible farmers.

In my main analysis, I use a difference-in-differences design pooling observations below and above the cutoff to have just one point estimate for each outcome. Formally,

$$Y_{im} = \alpha + \beta_1 T_i + \delta(T_i \times \text{prod}_m) + \kappa_m + \theta X_{im} + \varepsilon_{im} \tag{2}$$

Where Y_{im} is an outcome for individual i with a farm in municipality m. T_i is an indicator for being eligible for the contract, meaning the field area is more than 2 hectares. prod_m is an indicator that the farm is in a below-mean municipality m in terms of land productivity. For robustness, I show the results using a continuous variable for land productivity. I include municipality fixed effects, κ_m, and field area as control variables X_{im} in the main specification.

The coefficient of interest is δ. It measures the difference in the eligibility for the policy for farms in low- and high-productivity regions [16]. Since the policy also affects the high-

[16] This is similar to Bleemer (2022) in which he studies the effect of affirmative action on underrepre-

productivity farms but the effect is smaller, the estimated parameter is a lower bound for the true effect of the policy. To have a causal interpretation for the estimates, the identifying assumption is that the difference between the eligible and non-eligible farms would be constant in different regions without the policy. The assumption is supported by the stable zeros in the "pre-trends" of the non-eligible farms in Figure 4.

Another way to use the field area is to use a regression discontinuity design around the eligibility cutoff of two hectares. However, I do not use this approach as my main empirical strategy as it only uses a very small sample of farms and hence lacks statistical power. I do present them as a robustness check for my main analysis and the empirical strategy and the results are presented in Appendix D.

In my main estimation sample, I focus on farms between 1 and 5 hectares as they still are comparable small-scale farms. Farmers on these farms are likely to also work outside their farms and do not employ workers on their farms. The consideration of the suitable bandwidth comes down to a trade-off between statistical power and the comparability of the treated and non-treated farmers. In my estimation strategy, the farmers do not have to be comparable but differences between the farmers should be similar in both low- and high-productivity regions. When moving further away from the two-hectare cutoff, these differences may however start to diverge. For example, the wealth difference between a 1-hectare farmer and a 4-hectare farmer in low- and high-productivity regions are not that large but the differences between a 1-hectare farmer and a 20-hectare farmer might be quite different depending on land productivity.

4.2 Effect of the Policy on Farmers

Table 2 shows the effect of the policy on stopping farming, which is a proxy for the contract take-up, and earned income for the farmers. The first column shows that the treated (eligible) farmers were 2.36 percentage points more likely to stop farming by 1973 compared to the non-treated (non-eligible) ones. This is a 35 % increase to the outcome mean of 6.7 percent. Panel B shows the same outcome with the Gaez measure for land productivity. The point estimate, 2.95 percentage points, is in a similar range as with the primary definition of land productivity. Column 2 shows the effect on earned income in 1980 for the farmers. It shows that the farmers in the treatment group do not have statistically significantly different earned income 10 years after the policy. There is also no effect on the probability of having any earned income as shown in column 3. Column 4 shows an effect on the probability of living in an urban municipality as defined by Statistics Finland classification of municipalities[17]. It shows that the treated farmers are

sented minorities (URM) relative to its effect on the non-URM outcomes.

[17]See Table E.2 for the exact definitions and data sources of the variables.

not more likely to move to urban municipalities.

Validity and Robustness. A potential concern in the research design is that the difference between the non-eligible and eligible farmers in low- and high-productivity regions is not necessarily constant in the absence of the policy. This concern is already alleviated with Figure 4. It shows how the point estimates for the non-eligible farms in different bins (1–1.5 and 1.5–2 ha) are very similar as illustrated by the point estimate close to zero for the first bin. The half-hectare bins can be further divided into smaller ones to see if there are some underlying trends. Figures A.6 and A.7 display exactly this first as mean graphs and then estimated with Equation 1 modified into quarter-hectare bins. The figures show that the point estimates for the non-eligible farms are very close to zero even if the confidence intervals are larger with smaller sample sizes.

Another test for the validity of the design is to estimate it on pre-period values. As my data on the farmers' characteristics starts from the 1970 census, I do not have data from the pre-periods. There are, however, measures from 1970 that are likely not affected by the introduction of the policy in 1969. In Table A.1, I estimate Equation 2 without the birth year fixed effects on farmer age, education, and number of children. The estimate for the age of the farmer is statistically significant for one of the specifications while others are not. To alleviate the concern about the age difference, I include birth year fixed effects in all my estimations.

I also estimate the main outcomes with standardized continuous land-productivity measures with mean zero and standard deviation of one. This gives an intensity of treatment interpretation to the coefficient estimate under the strong parallel trends assumption (Callaway et al., 2021). The two first columns of Table A.4 show the point estimates for the farmers on stopping farming and earned income with both measures of land productivity. The point estimates are of different sign than in the main tables as lower productivity regions have negative productivities and are hence more affected by the policy. The estimates are in line with the main specification although the Gaez land productivity does not show an increase in the probability of stopping farming.

One dimension of robustness is the upper limit of field area. As argued in Section 4.1, the choice of five hectares is justified since those farms are small-scale and all farmers are likely to work also outside their farms. In Figure A.10, I show the estimates also for other specifications ranging from 8 to 16 hectares. Panel (a) shows that the point estimates for stopping farming are consistent while panel (b) shows the effect on earned income, which is positive for some specifications. For the largest upper limit at 16 hectares, the income effect is again zero reflecting the fact that differences in land productivity matter more for larger farms. Table A.5 shows that the results are also robust to different cluster specifications.

I also use an alternative research design, a regression discontinuity design (RDD) around the eligibility cutoff, as a validity check. Although this design estimates a different underlying parameter as explained in Appendix D, the estimates should have the same direction. Figure D.1 shows the share of farmers stopping around the two-hectare cutoff in low-productivity regions and linear estimates on each side of the cutoff with a bandwidth of one hectare. The figure shows how the probability of stopping farming jumps from around 6 to 8 % at the cutoff. Panel A in Table D.1 shows the point estimates of the RDD for stopping farming and earned income with bandwidths of 0.5 and 1.0 hectares. The estimates for stopping farming are larger in the RDD than in the main specification. A larger point estimate is expected as it measures the effect of the policy for the eligible low-productivity farmers compared to non-eligible farmers. The estimate for the earned income is an imprecise zero.

Discussion. While we observe an effect on stopping farming which shows that the policy did indeed lead to reserving farms, there is no other observed effects for the farmers. As explained earlier in this section, we could expect multiple channels through which the policy affects farmers. The null effect on earned income could hide different channels of opposing signs, like retirement and increased labor supply in other sectors. This is not, however, likely as the effects on mobility and having positive earnings are also zero.

One potential reason for no effect on earned income could also arise from the public policy that was described in Section 2. Many governments implemented policies so that farmers and manufacturing workers would receive similar increases in living standards. This policy was implemented through price systems for agricultural products and centralized wage bargaining (Sauli, 1987). Farmers who took the contract are also relatively old, so that might hinder their potential to earn in other sectors and willingness to move away from their farms.

4.3 Effects of the Policy on Farmers' Children

Next, I move on to study the effects of the policy on children. Table 3 shows the estimates of stopping farming and prime age earned income for children. Stopping farming is a farm-level variable, indicating whether the farm of the children's father was in operation in 1973. As I have highlighted before, this is an imperfect measure that indicates the existence of the first stage but is downward biased. Columns 1 and 2 show that the point estimates for stopping farming are 1.23 and 1.86 percentage points depending on the land productivity definition. The point estimates are smaller than for the farmers. A smaller estimate compared to the farmers is expected because the policy was prevalent among more senior farmers who did not have young children at the farm anymore (Jaatinen and Nygård, 1972). The outcome in columns 3 and 4 is the prime age earned income, meaning the average aged 35–45. Treated children earn 627 euros annually more in adulthood than their counterparts. This is a 2.5 % increase.

Table 4 shows how the policy affected children's mobility and education choices. The effect on children's mobility is mixed with no effect with the Tax Records specification on land productivity and a 1.9 percentage point (7.6%) increase in the probability of living in an urban municipality in 1980 with the Gaez specification. The treated children move to urban municipalities 0.38–0.71 (1.4–2.7%) years younger, although the estimate is not statistically significant for the Tax Records specification. Those children also had 0.07–0.1 years more education than their non-treated counterparts depending on the specification.

Mechanism. What explains the increased earned income for the children? To study this I focus on three separate but interconnected channels: location, education, and occupation. I form an average income measure for each municipality, six-digit education code, and six-digit occupation code for each year separately. These averages are then estimated as an outcome in equation 2. The results are presented in table 5. The treated children end up in occupations in which people earn on average 314 euros more. The difference in municipality and education earning levels is small and statistically not significant. To conclude, the treated children end up in higher-paying occupations but the average earnings of their municipality or education is not higher.

Another way to explore the mechanisms is to add outcome-based fixed effects to the estimation one at a time. Table 6 shows these results and they also point to the large role that occupations have in explaining the earnings effect. After adding municipality and education fixed effects, the income effect remains large suggesting a small role of the two factors in explaining the effect. Occupation code fixed effects, however, decrease the income effect down from 627 euros to 118 euros. After that there is almost 20 % of the effect unexplained although this remaining effect is statistically insignificant. This leaves space for potential interactions and non-observed mechanisms. This is illustrated in column 5 which adds the occupation-municipality interactions as fixed effects. After controlling for this, the income effect turns negative and is close to zero.

What are the occupations that the children move to? Figure 5 shows the treatment effect for the ten main occupation categories based on the first digit of the occupation code measured in the year 2000. As the figure shows, the treated children are 1.7 percentage points or 23% less likely to be agricultural workers and 0.2 percentage points less likely to work in the Armed Forces. They are 0.9 percentage points or 12% more likely to work in office and administration and 0.5 percentage points or 22% more likely as managers. The results are consistent with both specifications of land productivity measures. The most common occupations in the office and administration category in the estimation sample are secretaries (28 %) other office clerks (18 %) tellers and other counter clerks (13 %). The most common managerial occupations are sales and marketing managers (15%) and finance and administration managers (12%).

Validity and Robustness. As discussed in the farmer's robustness section regarding the relationship between field area and stopping farming, the same question is raised for the earnings effect. Is there an underlying trend with children's earnings and field area that would explain the earnings effect? Figure A.9 displays these trends in the event-study style graphs. Although the individual point estimates are noisy and mostly statistically insignificant, there are no observable pre-trends nor particular trends on the right-hand side of the cutoff. For example, if there was a clearly increasing trend in the income effect with field area, that could raise concerns about the validity of the research design, but there no such trend in the figures. Similarly to the farmers, the effects are robust to using a continuous land productivity measure as shown in columns three and four of Table A.4. Negative point estimates show that the eligible children from lower productivity regions end up earning more as the treatment intensity is larger for them.

Figure A.10 shows the robustness of the upper limit of the farm area for stopping farming and earnings. Instead of the 5 hectares in the main design, the figure uses a variety of definitions from 8 to 16 hectares. The point estimates are robust to changing the upper limit of the sample.

As mentioned in the robustness section on the farmers, the treated farmers were slightly older compared to the control group. This is reflected in Table A.2 which shows that the parents of the treated children are also 0.39–0.61 years older. The children themselves are not, however, any older than in the control group. Table A.3 shows that the main results are robust to adding parents' birth year fixed effects to the estimation.

Are the results sensitive to the choice of the year 2000 for the mechanism outcomes? Table A.6 shows the results for the children when choosing age 40 instead of a specific year. The results are mostly robust to this specification except for the fact that the average earnings in the occupation are not statistically significant when using the Gaez land productivity. Figure A.12 shows the point estimates in the mechanism for different years ranging from 1993 to 2010. The point estimates are generally consistent over the years although the effect sizes increase for both earned income and average earnings in occupation over the years. Figure A.11 displays the dynamics of the earnings effect specifically. Panel (a) shows that there are no statistically significant differences in earnings before the age of 35 after which it further increases up to age 45. Panel (b) shows a similar trend showing the results over years instead of age.

The results with RDD shown in Table D.1 are qualitatively similar to these results although the effect on children's earnings is noisier to bandwidth specification. The RDD estimates also show a statistically significant effect on years of education and suggestive evidence that the treated children moved to urban municipalities at a younger age. There is no effect on the probability of moving to an urban municipality. Figure D.3 shows the RDD estimates for the occupations. It shows that the treated children are more likely to work as managers and it also shows a consistent but non-significant negative effect on the probability of working in agriculture.

Discussion. The results show that the children affected by the policy benefited from it economically in the long run. The children from eligible farms moved away from working in agriculture into office work as secretaries, clerks, and even managers. This suggests that the policy did indeed accelerate structural change in terms of people locating to higher productivity occupations away from agriculture. What is surprising is the smaller role of location and education in determining the income effect. Even if over 40% of the estimation sample end up living in urban municipalities by the year 2000, the treated children are not more likely to live in one.

What would the effect of field reservation be on the children? So far, we have only discussed the results in reduced form as we do not observe field reservations at the individual level. We have an imperfect proxy that captures some of the farms that stop farming as explained in Section 3. We observe a 1.23–1.86 percentage point or 24–36% increase in stopping farming for the children compared to the outcome mean. As discussed earlier in the Data section, the outcome mean for field reservation is around three times higher for the estimation sample than the stop farming variable meaning around 15% of farms stopping. If stopping farming consistently captures some of the field reservation, we could expect at least a 30% increase in the field reservation share which would result in a 5 percentage point first stage.

With a five percentage point first stage, we could scale the main income effect of 696.7 euros to have a $696.7/0.05 = 13934$ euros effect of field reservation on the children. This would correspond to a 55% increase in income compared to the outcome mean. In terms of magnitudes, even if very large, the estimates are similar to Nakamura et al. (2022) and Sarvimäki et al. (2022) who estimate 82% and 74% higher earnings for those who leave their homes. Of course, field reservation did not require leaving the farm but, as we have seen, it made children more likely to choose better-paying occupations. The effect would also include the income effect on the farmers since they were able to take the contract and get money from it.

4.4 The Treatment Effect by Cognitive Ability

One concern of policies like the field reservation policy is that it might increase inequality by allocating only higher-ability people away from low-productivity occupations while leaving others behind. To study this concern, I draw data from the Finnish Defence Forces, which tests all military conscripts on personality and cognitive skills. In my sample, I have data for 83 % of men born 1962–1969. The challenge for the analysis is that the individuals are tested only at the age of 18 or 19 which is after the policy has taken place and potentially affected their cognitive abilities. To overcome this challenge, I rank my sample separately for the treated and non-treated by their visuospatial reasoning which is a measure close to IQ or fluid intelligence. Then, I divide my sample, treated and non-treated separately, into below and above median groups based on their visuospatial reasoning. While the treatment may have affected the visuospatial reasoning, it is not a problem for the identification as long as it has kept the ranking within the treatment status the same.

Figure 6 shows the estimation results of equation 2 for the subsample separately on earned income and the average income of the location, education, and occupation that the treated had. As the figure shows, the positive effect on earnings is driven by the children below the median in visuospatial reasoning. Although the difference between the subsamples is not statistically significant, as shown in Figure 7, it gives evidence that the men with lower cognitive skills benefited at least as much as others from the policy.

One potential reason for the political backlash described in Section 2 could have been the increased inequality due to the policy based on the individual's skills. Based on this analysis, this does not seem very likely. If anything, it was the individuals with low cognitive skills who benefit from the policy. Hence, in the next section, I will move on to other explanations to understand the reasons for the political backlash.

5 Political Backlash of the Field Reservation Policy

> *Sometimes it feels like you are a criminal if you are a farmer.*
>
> Olavi M. 51
> Farmer from Orimattila

After detailing the individual-level effects of the policy, I move on to a broader view: If the policy was successful in terms of individual benefits, why was it discontinued so quickly? Why is the field reservation policy considered the most hated agricultural policy in Finland? These questions have broader implications on designing policies to promote structural transformation or help people in declining sectors.

To shed light on the political ramifications of the reform, I draw motivation from contemporary interviews of the farmers conducted by Paajanen and Kekkonen (1972) and surveys done by Juntunen (1978). I form two types of critiques that make different empirical predictions. In the first type of critique, which I call identity-based, the farmers will not reserve under any circumstances. These farmers say they will not reserve their fields under any circumstances or "as long as their fists swing". They are also the ones who oppose the policy the most. The higher the prevalence of this identity-based critique, the lower the correlation between policy opposition and field reservation is. The second type of critique focuses on the negative externalities of the policy on the local community. If more farmers the reserve their fields, the economic activity might decline in the community affecting also other people. These externalities include depopulation of the rural and the spread of weeds from the fallow fields to neighbors. This type of critique predicts that an exogenous increase in field reservation rate should also increase the opposition against the policy. Long excerpts of the interviews are in Appendix F.

To understand the farmers' views better, I draw from interviews in Paajanen and Kekkonen (1972) that show almost unanimous discontent towards the policy. The main concerns regarding the policy, are two-fold. The first critique is a personal one in which the policy is viewed as an attack against agriculture and farming as a profession. . The other critique is more nuanced with concerns over the spillover effects of the policy.

At a national level, discussion on the field reservations before elections was modest. The Finnish Rural Party demanded in its party manifesto that "it is irresponsible to have cultivable in non-productive state" but it mostly focused on promising agricultural subsidies for more rural regions and smaller farms. Three months prior to the election, president Kekkonen (1970) described how the structural change hit hardest on farmers and the rural areas. He insisted that overproduction "does not give a reason to punish individual farmers" and that the farmers "have to get to enjoy higher living standard provided by economic growth" (Kekkonen, 1970). At a general public debate, there was, however, very little direct opposition to the policy.

After the election, the role of field reservations became clear. Kalevi Sorsa, a party secretary of the Social Democratic Party (who also became a 4-term prime minister in the 1970s and 80s) described the elections:

> *We did not fully understand how the image of the government and the party had been damaged in the election debates ... Migration emptied villages and left an atmosphere of despair. The final nails in the coffin were field reservations, forestation, and other measures to decrease production. The rural generation that was still active had sacrificed their best strength on clearing fields, which had until this day been glorified in Finland. ... Now, the value of this work has been concretely mitigated.* From Granberg (2004).

Only a month after the election, in April 1970, the Central Union of Agricultural Producers that had previously supported the policy set "very strict conditions on continuing of the policy" (Maaseudun Tulevaisuus, 1970). The delegation pushed for increasing consumption of domestic production and criticized the field reservation policy for hindering the expansion of farms. They supported a farm closure compensation system instead of field reservation. Five years later, in 1975, the outgoing chair of the producer union, Veikko Ihamuotila, already claimed that the field reservation policy was a mistake and that the union only supported the policy with reserververvations (Maaseudun Tulevaisuus, 1975). The change of heart was rapid and it was a bottom-up process stemming from the discontent of individual farmers rather than an instigation of a populist leader.

5.1 Empirical Approach

For the political outcomes, all variables are at the municipality level, so I adjust my empirical approach accordingly. As a measure of opposition towards the policy, I use the change in the share of votes for the Finnish Rural Party (FRP) between the 1966 and 1970 parliamentary elections. As discussed in Subsection 2.2, the party was in opposition while the other rural party, the Centre Party, was in a government coalition designing the policy. Hence, voting for the FRP was a natural way to protest against the policy. The estimation regression is:

$$\Delta S_m = \alpha + \beta R_m + \varepsilon_m \tag{3}$$

ΔS_m is the change in the share of FRP votes between the parliamentary elections in municipality m, and R_m is the share of farms taking the field reservation contract in municipality m. As the election occurred in 1970, a year after the introduction of the policy, I only use the first year of field reservation shares in my measure. Since the likelihood of taking the contract and the popularity of the FRP are likely negatively correlated, I use an instrumental variable design to estimate the effect. It also solves an issue with measurement error of field reservation levels at the municipality level explained in section 3.

The main instrument I use is the share of eligible farms around the eligibility cutoff in a municipality. I define the instrument formally as:

$$Z_{share,m} = \frac{\sum_{j=1}^{N_m} \mathbb{1}(2 \leq A_j < 3)}{\sum_{j=1}^{N_m} \mathbb{1}(1 \leq A_j < 2)} \tag{4}$$

where N_m is the number of farms in municipality m. The instrument is the number of 2–3 hectares (eligible) farms divided by the number of 1–2 hectares (non-eligible) farms in a municipality. While the distribution of field area of the farms within a municipality is not random, excess mass on either side of a specific cutoff point can be interpreted as an exogenous precondition for a municipality. I control for the average field area in the municipality, to capture the effect of the share of eligible farms and not only the distribution of field area within the municipality. For robustness, I test for different specifications of the instrument. This is similar to Fujiwara (2015) and Card (1992) both of which use a share of treated people in a state as an instrument. For robustness, I also show placebo cutoffs by defining the farm share as 3–5 hectares over 2–3 hectares and 5–10 over 3–5. For the instrument to be valid, it must satisfy the exclusion restriction. The restriction states that the share of eligible farms above the cutoff can only affect the electoral outcome through the increase in take-up of the contract.

Since my measure of field reservation is at the increments of five farms, I restrict the estimation sample to municipalities with at least 200 farms in 1970 to have more precision. I drop municipalities for which I do not have all the required variables. The excluded municipalities are presented in Figure 8 with gray color. Table 7 presents the descriptive statistics for the 404 municipalities in the sample. On average, the vote share for the Finnish Rural Part increased by 13.3 percentage points in the sample while the average reservation share in the first year was 4.1%.

5.2 Results

Figure 8 depicts the regional variation in three main variables of the setting. Panel (a) shows the instrument Z_{share} while Panel (b) shows the farm reservation share in 1969 at the municipality level. It can be seen that the farm reservation share was particularly high in Central Finland, Oulu Region, and Lapland in the first year. These regions also had a relatively high share of small but eligible farms. Panel (c) Shows the change in the vote share of the Finnish Rural Party between the 1966 and 1970 parliamentary elections in percentage point changes. The increase in the vote share was high in Northern Finland but also in Eastern Finland.

Table 8 presents the main results for the political outcomes. In Column 1, I present the non-controlled OLS regression of the estimation equation 3. The coefficient is small and statistically non-significant, so the relationship between the reservation share and the change in vote share is weak. This is despite the fact that many historians consider the field reservation policy as one of the root causes for the success of the FRP (Granberg, 2004, Sauli, 1987). A potential reason for this is that in municipalities where people hated the policy most did not want to reserve their fields while still opposing the policy by voting for the FRP as expected with the identity-based critique. The second column shows the IV estimate for the effect of the field reservation. It shows that a 1 percentage point increase in field reservation share increased the FRP vote share by 1.1 percentage points. This is supportive evidence for the second mechanism, in which an exogenous increase in the field reservation rate would still increase opposition due to its negative spillover effects in the community. Finally, I study the effect of field reservation take up on the taxable revenue in the municipality. I estimate the effect on both the per capita taxable revenue and the total taxable revenue. The effects are measured both in very short-term changes 1966–70 and 1966–72 as a percentage change from the baseline of 1966 before the policy. I include the baseline model with controlling only the average farm size but also controlling for the employment rate and population change 1961–70 separately. Figure 9 presents these results. It shows that while revenue per capita does not seem to decrease, the total taxable revenue slightly decreases with increasing reservation share. The point estimates are between 0.12 and 0.17 percentage points. This means that a one percentage point increase in reservation share leads to a 0.12–0.17 percentage point decrease in total taxable revenue at the municipality. This negative effect is likely driven by a decline in population rather than income.

Validity and Robustness. To demonstrate the validity of my research design, I use other instruments with placebo cutoffs at 3 and 5 hectares. The placebos are presented in Table 8 in columns 3 and 4. The results show small and statistically insignificant estimates with smaller F-stat values of 5.7 and 11.5. This supports that the increased take-up of the contract and increased support of the Finnish Rural Party was really due to the mass of farms just above the real cutoff rather than some underlying mechanisms that would have increased them regardless.

I also test the robustness of the setting with a variety of controls in Table A.7. In general, the results are robust to different control variables. I test specifically for controlling on municipality's distance to Helsinki, employment rate, and population change in 1961–70. Only after controlling for all these variables at the same time, the result becomes statistically insignificant but the point estimate remains consistent at 0.96. I also control for the local election results of 1968 for the Finnish Rural Party and the Centre Party separately and in the final specification in column 7, I include parliamentary election results from 1966 as control variables. The point estimates range from 0.75 to 1.29 between the specification and are statistically significant.

Discussion. The estimates support the story of two types of resistance to the field reservation policy. In a standard OLS regression, there is no relationship between field reservation and the FRP vote share. This stems from the fact that people who opposed field reservations the most were also likely to vote for the FRP. These people felt that their identities as farmers were offended by the government policy and they refused to take contracts. Another group that opposed the policy was the ones who observed negative externalities of the policy. Municipalities with higher shares of field reservation due to exogenous reasons also voted more for the FRP. This supports the second type of critique focusing on the externalities of the policy.

The surveys done by Juntunen (1978) also point to the explanation of negative externalities. He asks farmers who have taken the contract whether they are happy with their choice and how they view the policy as a whole. While only 9 % of the respondents thought the policy was bad for themselves, a third of them thought the policy was bad in general and another 37 % were uncertain. This highlights the general opposition towards the policy even among those who had taken the contract for themselves.

6 Conclusion

In this paper, I examine the impact of Finland's field reservation policy designed to accelerate structural transformation while fighting overproduction. I show that individuals who were more exposed to the policy were more likely to stop farming after its introduction. Although the most exposed farmers did not benefit economically from ceasing to farm, their children did. These children of the most affected farmers were more likely to switch from working in agriculture to office and managerial jobs. As a consequence, they had higher earnings in their prime age compared to the less exposed children. Despite the positive economic effects of the policy, it faced considerable public backlash.

The results provide broader lessons to other contexts such as regions lefti behind due to globalization (Autor et al., 2013) or transition to a non-fossil economy (Scheiber, 2021). It is common among economists to suggest aiding people in the losing regions by enabling individuals to relocate and retrain rather than helping the places (Glaeser, 2011, Banerjee and Duflo, 2019). This paper shows that individual-based policies, like the field reservation policy, can help the targeted population in the long run. However, these policies can also amplify the bitterness of the people in the regions in decline. While the potential political ramifications are presented in the media (e.g. The Economist, 2017), academic research on place-based policies has mostly focused on the inefficiencies they create (Kline and Moretti, 2013, 2014). More recently, studies have also documented people's preferences for place-based redistribution (Gaubert et al., 2020). One reason for the popularity of place-based policies might be that they are politically more feasible compared to policies in which money follows the individual. This seems to be the case in Finland too. After the shock election in 1970, the Field Reservation Policy was discontinued and the "golden era" of place-based policies began in Finland which lasted until the late 1980s (Katajamäki, 2022).

For a policy-maker, the results of this paper create a dilemma. They provide evidence for a feasible policy option to accelerate structural change that did what it was designed to do. However, while accelerating structural change might benefit their constituencies in the long term, implementing these policies may come with a political cost. Finland's field reservation policy is a case in point: it took three decades for the positive economic effects to appear, but only a year for a fringe part to benefit from the political backlash at the ballot box. A possible remedy for such political backlashes could be better communication and framing of such policies.

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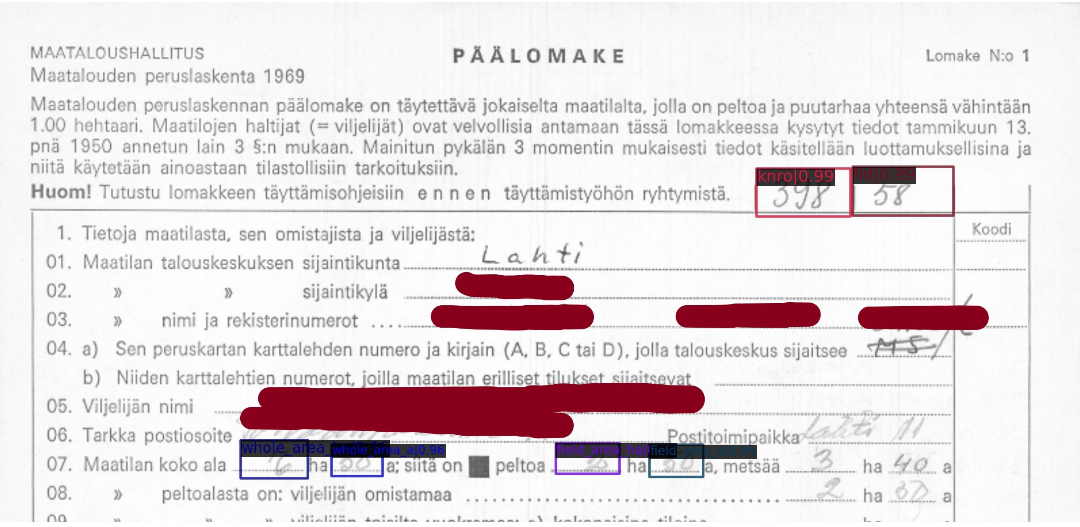
7 Figures and Tables: Individual Effects

Figure 1: Data digitization

(a) Excerpt of an Agricultural Census form


MAATALOUSHALLITUS

Maatalouden peruslaskenta 1969

PÄÄLOMAKE

Lomake N:o 1

Maatalouden peruslaskennan päälomake on täytettävä jokaiselta maatilalta, jolla on peltoa ja puutarhaa yhteensä vähintään 1.00 hehtaari. Maatilojen haltijat (= viljelijät) ovat velvollisia antamaan tässä lomakkeessa kysytyt tiedot tammikuun 13. pnä 1950 annetun lain 3 §:n mukaan. Mainitun pykälän 3 momentin mukaisesti tiedot käsitellään luottamuksellisina ja niitä käytetään ainoastaan tilastollisiin tarkoituksiin.

Huom! Tutustu lomakkeen täyttämisohjeisiin e n n e n täyttämistyöhön ryhtymistä. 398 58

Koodi

1. Tietoja maatilasta, sen omistajista ja viljelijästä:

01. Maatilan talouskeskuksen sijaintikunta Lahti

02. » » sijaintikylä [redacted]

03. » nimi ja rekisterinumerot [redacted]

04. a) Sen peruskartan karttalehden numero ja kirjain (A, B, C tai D), jolla talouskeskus sijaitsee

b) Niiden karttalehtien numerot, joilla maatilan erilliset tilukset sijaitsevat

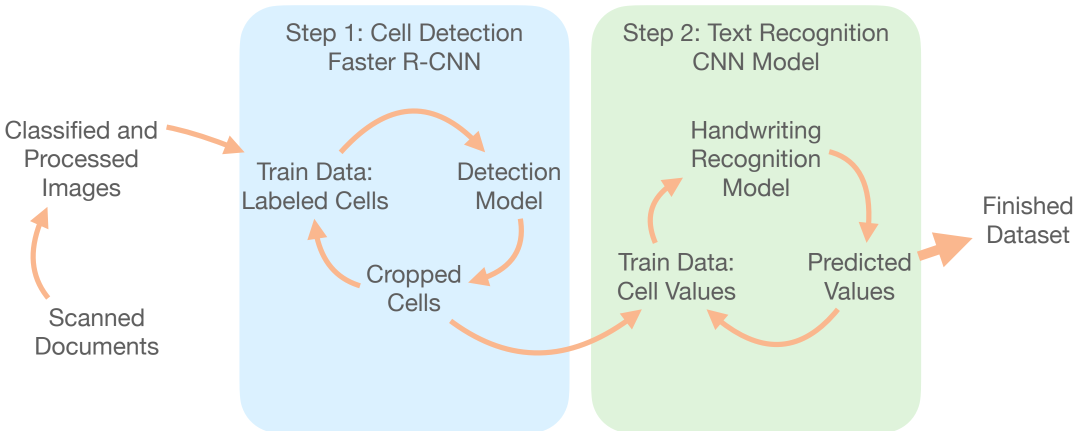
05. Viljelijän nimi [redacted]

06. Tarkka postiosoite [redacted] Postitoimipaikka

07. Maatilan koko ala ha a; siitä on peltoa ha a, metsää 3 ha 40 a

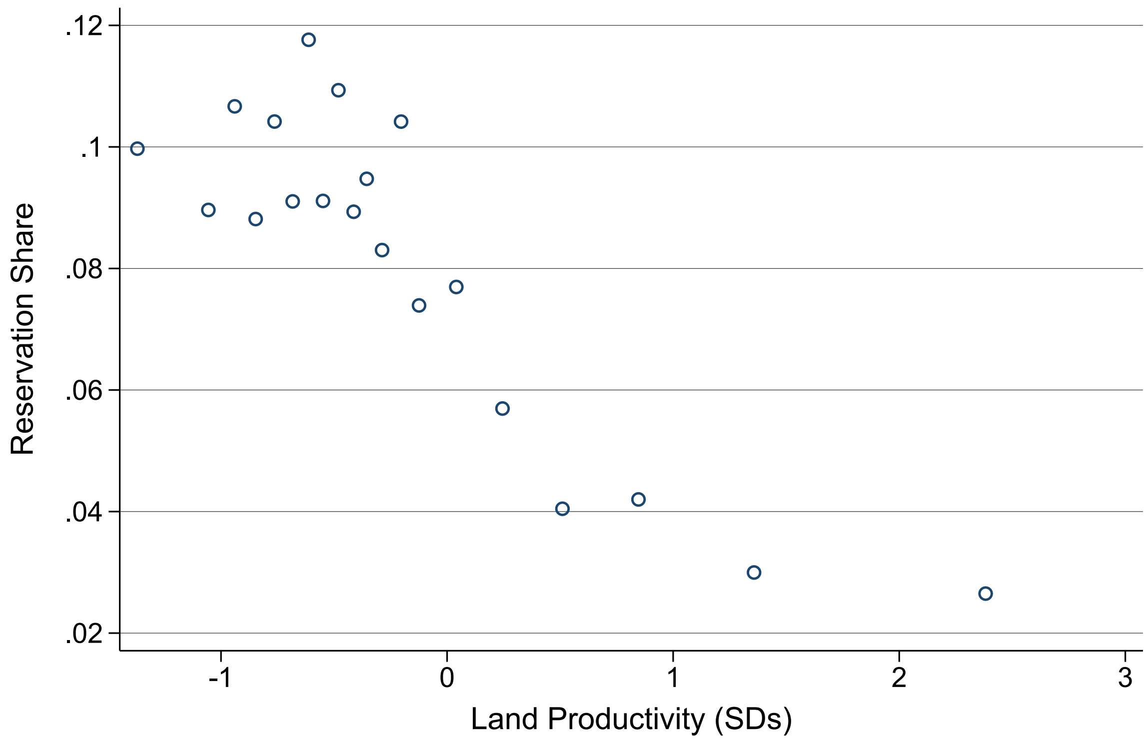
08. » peltoalasta on: viljelijän omistamaa ha a

(b) Digitization process



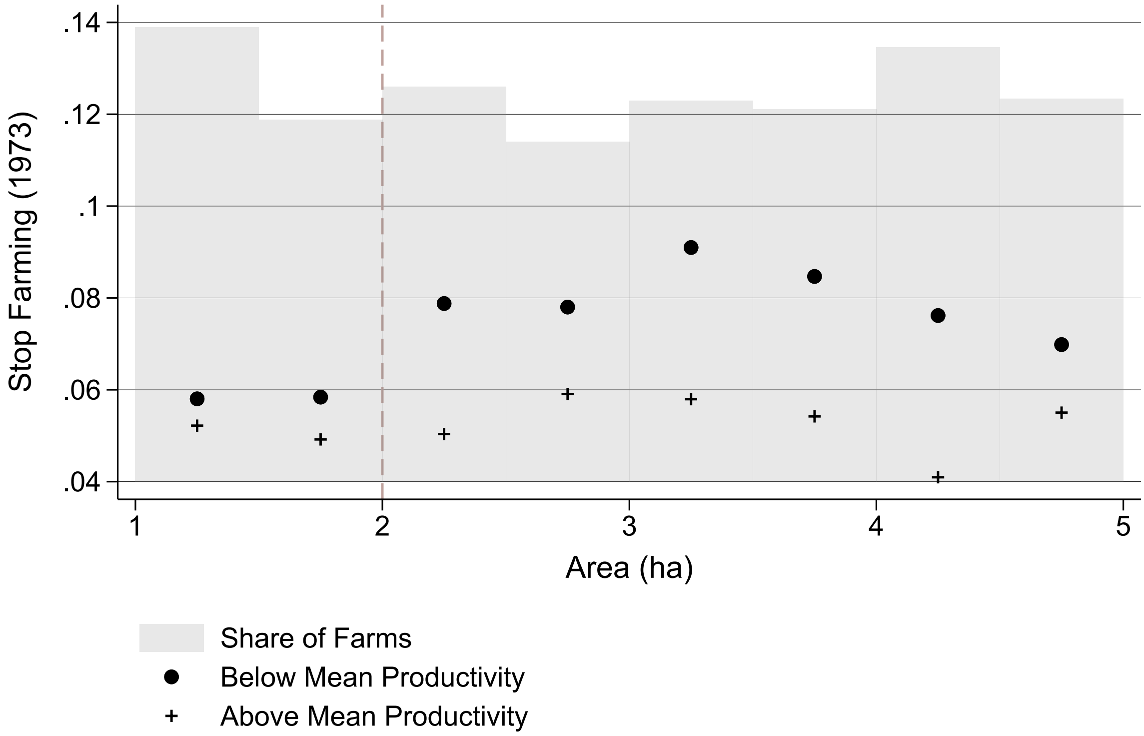
Notes: The 1969 Agricultural Census forms (example in Panel a. The form is censored by the author.) were scanned at the premises of the National Archives. Each form consists of four pages and there are forms in both Finnish and Swedish. Hence, there were eight categories that were classified with a simple image classification model. Classified images are then uploaded to a data labeling program which is used to create cell detection training data. The labeled train data is used to train the detection model that learns to detect each cell separately. The training for cell detection is achieved by continuous learning in which the human annotator sees the predictions of the model and corrects them as necessary. Once the accuracy rate is sufficient, the model is used to crop cells from all forms. The boxes in a sample form in Panel (a) are predictions made by the model. A sample of the cropped cells is then used to create train data for the second model which is a convolutional neural network for transcribing text. The model is trained and then used to predict values in each cell. The model also gives a confidence value for each prediction which can be used to target new train data on the cells that the model finds most difficult. Once the handwriting recognition model achieves high enough accuracy, it is used to predict all cells. These predictions create the final dataset of 291,701 observations.

Figure 2: Share of the farms reserved by 1971 on land productivity.



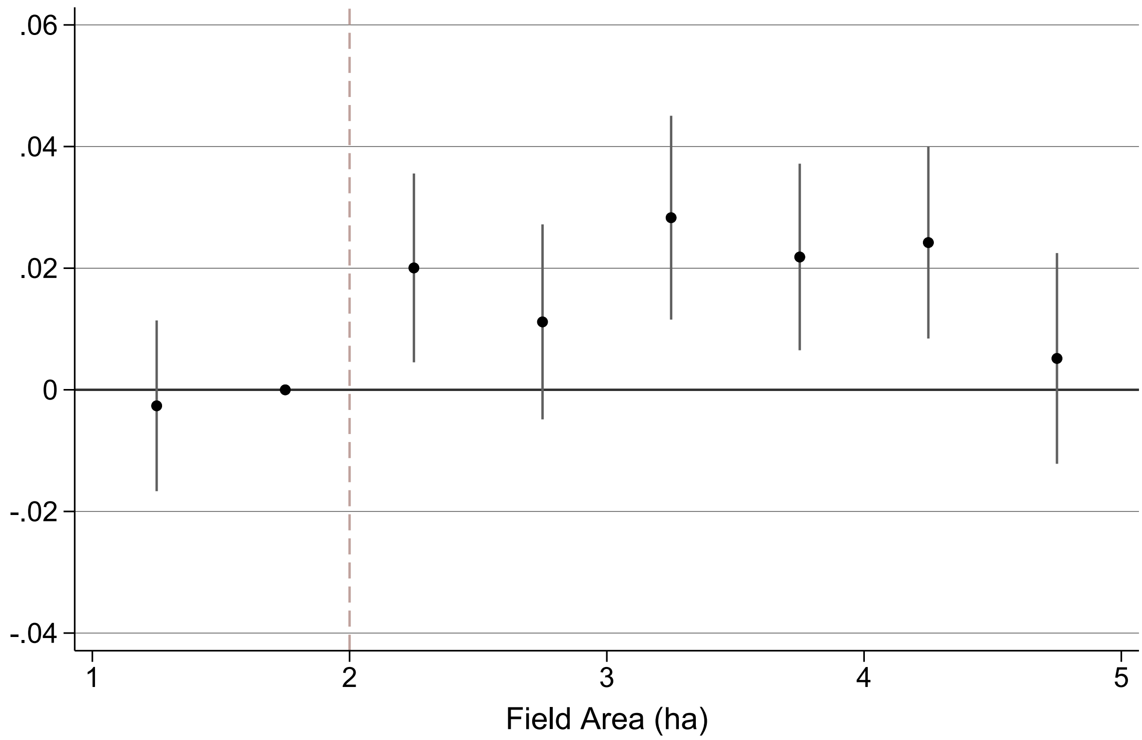
Notes: Dots are equal-sized means of municipalities weighted by the number of farms in the municipality. Land productivity is a local measure estimated from the tax records sample as explained in Section 3 and Appendix C. The measure is standardized for a mean zero and a standard deviation of one. Reservation share data is from Jaatinen and Nygård (1972)

Figure 3: Share of the farmers stopping farming by 1973 on field area.



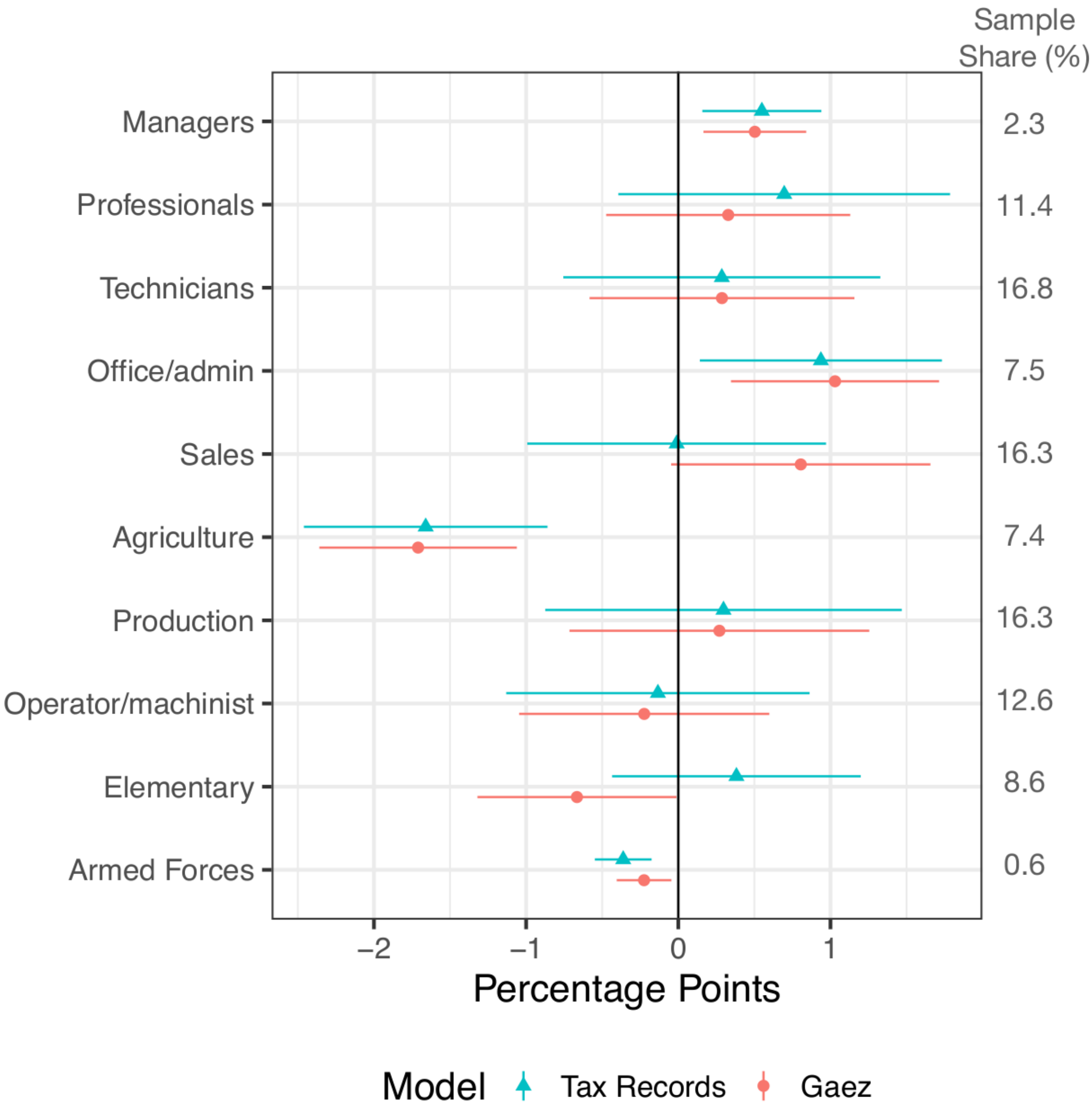
Notes: The points are separated for above and below mean in terms of land productivity. The points are divided into 0.5 hectare-wide bins. The gray bars are the shares within the sample displayed in the figure. The vertical line is at the eligibility cutoff of two 2 hectares.

Figure 4: The difference of the effect of eligibility on Stop Farming for low and high productivity regions.



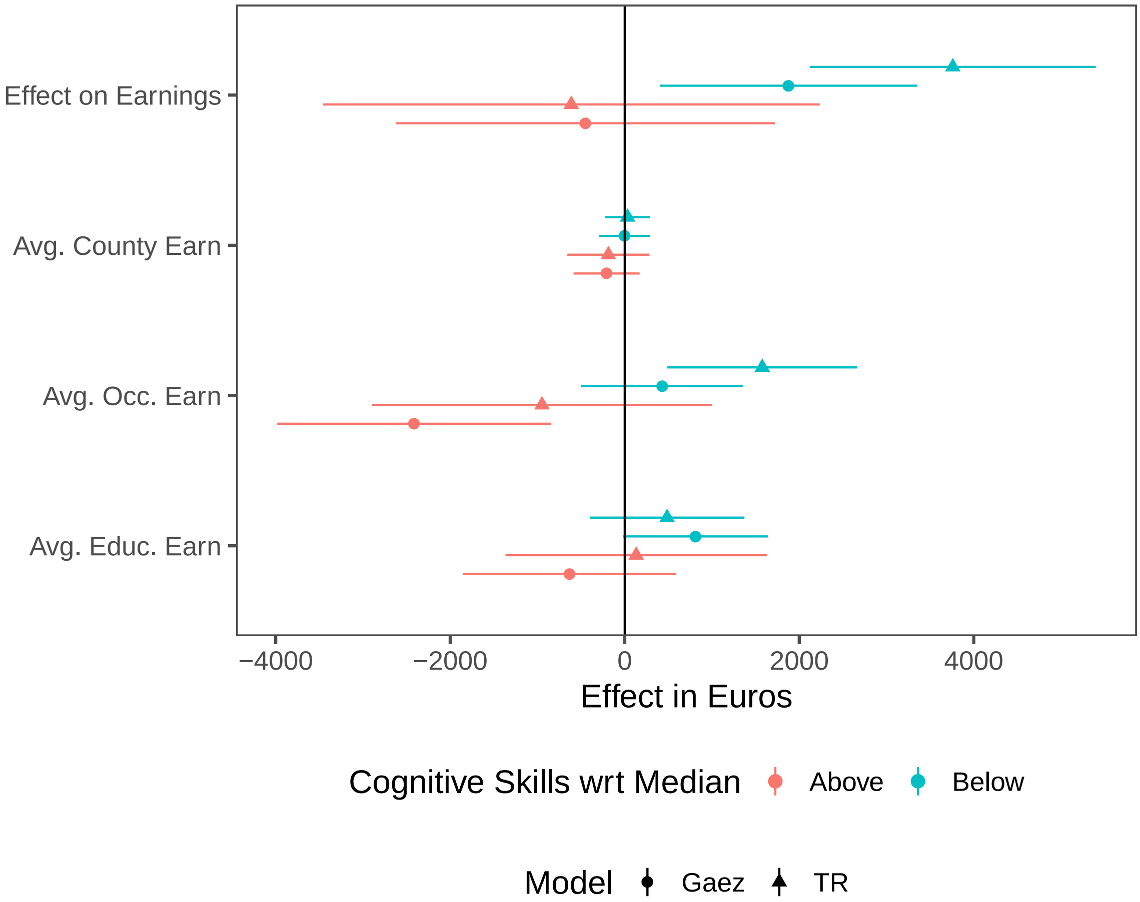
Notes: The point estimates come from the estimation equation (1). The outcome is the probability of stopping farming in percentage points. The estimate is for each half-hectare bin separately, comparing farms below and above mean land-productivity regions compared to the difference of the reference point, 1.5–2 ha. The difference is around two percentage points and statistically significant for most points after the 2-hectare cutoff. The standard errors are clustered at municipality-farm size level.

Figure 5: The effect of field reservation on occupational choice.



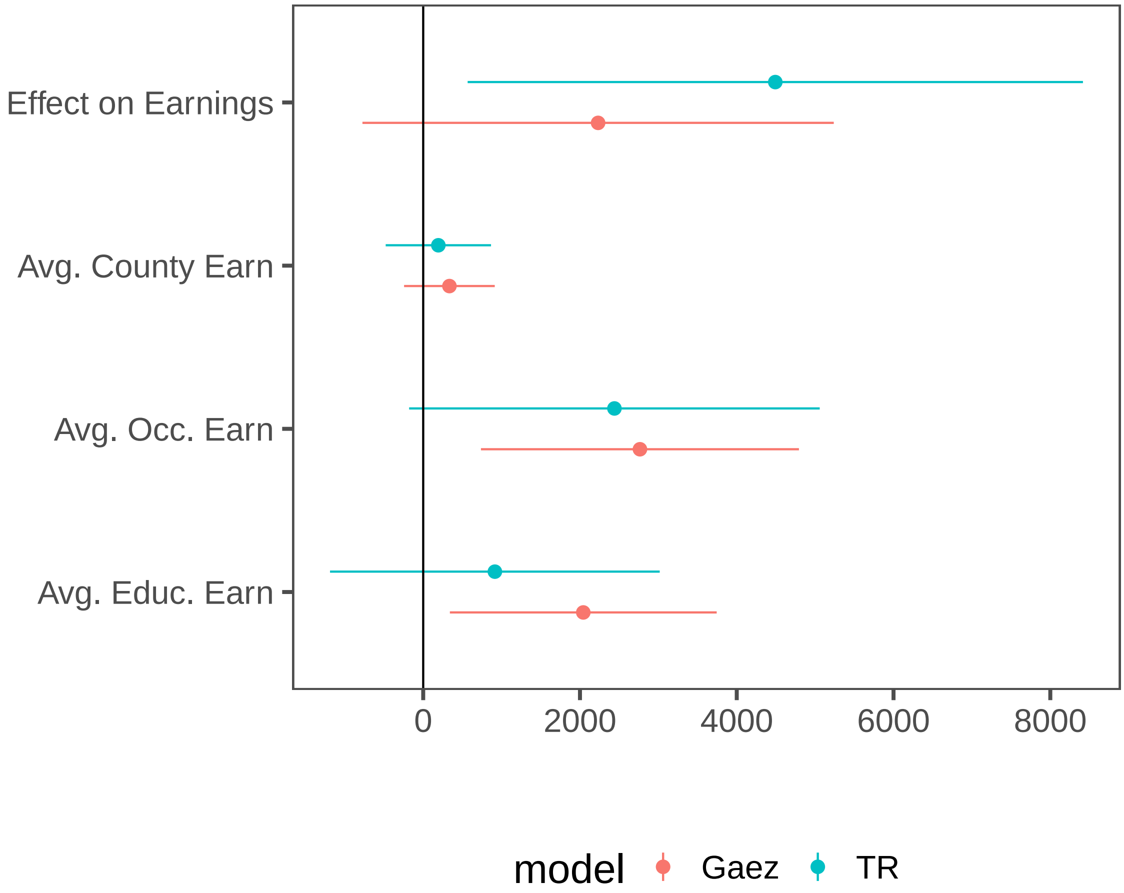
Notes: The point estimates are separately estimated with estimation equation 2 as a probability to belong to a given occupation group in the year 2000 when the children are of age 30–48. The estimates are with different definitions of land productivity as explained in Section 3. The confidence intervals are at 90 % level. The standard errors are clustered at municipality-farm size level.

Figure 6: The treatment effects by cognitive skills.



Notes: The point estimates are separately estimated with estimation equation 2 for below and above median rank in a visuospatial (IQ) test from Finnish Defence Forces. The test scores are for 83 % of men born in 1962–1969 in the estimation sample. The outcomes are earned annual average income aged 35–45, average earned income in the municipality, occupation, and education in the year 2000. The confidence intervals are at 90 % level. The standard errors are clustered at municipality-farm size level.

Figure 7: The difference in treatment effects by cognitive skills.



Notes: The point estimates compare the treatment effect of the individuals who score below the median in a visuospatial (IQ) test to those who are above the median. The test scores are for 83 % of men born in 1962–1969 in the estimation sample. The outcomes are earned annual average income aged 35–45, average earned income in the municipality, occupation, and education in the year 2000. The confidence intervals are at 90 % level. The standard errors are clustered at municipality-farm size level.

Table 1: Descriptive Statistics of the main estimation sample and all farms.

Variable	Sample				All			
	Mean	S.D.	p10	p90	Mean	S.D.	p10	p90
				Farmers				
Land. Prod. (Gaez)	-0.11	1.0	-1.44	1.30	0.03	1.0	-0.97	1.36
Land. Prod. (Tax)	-0.24	0.76	-0.94	0.76	-0.18	0.83	-0.98	0.93
Field Area (ha)	2.96	1.18	1.32	4.56	10.47	20.03	2.31	19.8
Forest Area (ha)	18.14	32.24	0	47.30	31.80	42.06	2.00	73.25
Dist. Helsinki (km)	310.3	167.5	122.2	549.1	283.8	152.5	103.3	482.7
Age in 1970	52	12.18	36	68	49.72	11.95	34	65
Educ. Years (1970)	9.26	1.03	9	9	9.39	1.16	9	12
Stop Farming (1973)	0.06	-	-	-	0.04	-	-	-
Earned Income (1970)	11150	11640	1230	23070	13690	12370	2195	26190
Earned Income (1980)	11040	12240	1052	25090	12330	11950	1838	25580
Lives in Urban (1970)	0.04	-	-	-	0.04	-	-	-
Lives in Urban (1980)	0.09	-	-	-	0.08	-	-	-
N	42284				147577			
				Children				
Age in 1970	11.18	4.98	4	17	10.77	5.06	3	17
Stop Farming (1973)	0.03	-	-	-	0.03	-	-	-
Lives in Urban (1970)	0.03	-	-	-	0.01	-	-	-
Lives in Urban (1980)	0.25	-	-	-	0.20	-	-	-
Age in City	26.63	10.63	17	44	27.52	10.80	18	45
Educ. Years	11.90	2.07	9	14	12.13	2.12	9	14
Earned Income (age 35–45)	25630	14270	8200	43100	26350	14990	8230	44720
Lives in Urban (2000)	0.42	-	-	-	0.38	-	-	-
Avg. Mun. Earn (EUR K)	20.39	29.95	16.46	24.37	20.22	2.997	16.34	24.37
Avg. Educ. Earn (EUR K)	22.30	8.80	14.88	30.27	22.52	9.31	15.05	30.58
Avg. Occ. Earn (EUR K)	23.88	9.48	15.64	33.08	23.68	10.24	13.79	34.74
Earned Income (EUR K, 2000)	29.75	14.63	12.40	47.51	29.72	15.29	11.40	48.64
N	69899				253102			

Notes: The monetary values are deflated to 2020 euros according to the Statistics Finland consumer price index. More detailed variable sources and descriptions are in Appendix E.

Table 2: The main outcomes on the effects of field reservation.

	A. Productivity Measure: Tax Records			
	Stop Farming	Earned Income 1980	Pos. Earn. 1980	Urban Mun. 1980
$(T_i \times \text{prod}_m)$	2.36***	-48.1	-0.99	0.15
	(0.53)	(198.7)	(0.78)	(0.53)
N	36726	36726	36726	36726
	B. Productivity Measure: Gaez			
$(T_i \times \text{prod}_m)$	2.95***	63.8	0.09	-0.39
	(0.49)	(184.9)	(0.77)	(0.41)
Outcome Mean	6.00 (%)	11030	88 (%)	9.41 (%)
N	36183	36183	36160	36183

Notes: Stop farming is defined as less than 0.2 hectares of field area being farmed in 1973. prod_m is one for below mean land productivity municipalities. TR uses the main specification for land productivity estimated from tax records, while Gaez uses the agro-climatic potential yield. All regressions include a continuous field area control, a dummy variable for eligibility status, and municipality and birth year fixed effects. The estimation equation is Equation 2. Standard errors clustered at municipality-farm size level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 3: The main outcomes on the effects of field reservation.

	Children, 0–18 years old			
	Stop Farming		Prime Age Earnings	
$(T_i \times \text{prod}_m)$	1.23***	1.86***	696.7**	631.6***
	(0.41)	(0.44)	(284.2)	(241.6)
Outcome Mean	5.11 (%)		25405	
Land Prod.	TR	Gaez	TR	Gaez
N	68658	67846	68641	67829

Notes: Stop farming is defined as less than 20 ares of field area farmed in 1973. Prime age earnings for the children are average yearly earnings between ages 35–45 in 2020 euros winsorized at 99 %. prod_m is one for below mean land productivity municipalities. TR uses the main specification for land productivity estimated from tax records, while Gaez uses the agro-climatic potential yield. All regressions include a continuous field area control, a dummy variable for eligibility status, and municipality and birth year fixed effects. The estimation equation is Equation 2. Standard errors clustered at municipality-farm size level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 4: The effects on location and education.

	Children, 0–18 years old					
	Urban 1980		Age in Urban		Educ. Years	
$(T_i \times prod_m)$	0.20	1.87**	-0.381	-0.711***	0.105*	0.070*
	(0.844)	(0.74)	(0.243)	(0.235)	(0.0540)	(0.042)
Outcome Mean	24.9 (%)		26.6		11.9	
Land Prod.	TR	Gaez	TR	Gaez	TR	Gaez
N	68658	67846	43431	33207	68784	67974

Notes: Urban means living in an urban municipality as defined in Statistics Finland categories. Age in Urban is measured only for the children who eventually move to an urban municipality. prod_m is one for below mean land productivity municipalities. TR uses the main specification for land productivity estimated from tax records, while Gaez uses the agro-climatic potential yield. All regressions include a continuous field area control, a dummy variable for eligibility status, and municipality and birth year fixed effects. The estimation equation is Equation 2. Standard errors clustered at municipality-farm size level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 5: The effects on the average earnings of location, occupation, and education.

	Earned Income			
	Prime Age	Avg. Mun.	Avg. Occ.	Avg. Educ.
$(T_i \times prod_m)$	627.3**	-51.76	313.6*	75.18
	(286.4)	(49.64)	(186.5)	(207.2)
Land Prod.	TR	TR	TR	TR
N	67131	67146	56147	54083
$(T_i \times prod_m)$	631.9***	56.34	273.3*	35.48
	(243.9)	(50.72)	(161.6)	(169.6)
Land Prod.	Gaez	Gaez	Gaez	Gaez
N	66339	66354	55469	53433

Notes: The table shows the main income effect and the effect on the average income in the municipality, occupation, and education separately. prod_m is one for below mean land productivity municipalities. TR uses the main specification for land productivity estimated from tax records, while Gaez uses the agro-climatic potential yield. All regressions include a continuous field area control, a dummy variable for eligibility status, and municipality and birth year fixed effects. The estimation equation is Equation 2. Standard errors clustered at municipality-farm size level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 6: Explaining the income effect.

	Prime Age Earned Income				
$(T_i \times prod_m)$	627.3**	524.6**	582.5**	117.8	-46.65
	(286.4)	(234.8)	(237.3)	(194.0)	(329.6)
Land Prod.	TR	TR	TR	TR	TR
N	67131	66933	66931	66853	50587
$(T_i \times prod_m)$	631.9***	606.3***	599.7***	263.2*	181.1
	(243.9)	(189.2)	(190.6)	(149.8)	(241.8)
Land Prod.	Gaez	Gaez	Gaez	Gaez	Gaez
N	66339	66143	66142	66069	49872
Municipality FE	No	Yes	Yes	Yes	Yes
Education FE	No	No	Yes	Yes	Yes
Occupation FE	No	No	No	Yes	Yes
Occ-Mun FE	No	No	No	No	Yes

Notes: The table describes the role of different mechanisms by controlling for one channel at a time on the income effect. In the last column, occupation-municipality interactions are also included. prod_m is one for below mean land productivity municipalities. TR uses the main specification for land productivity estimated from tax records, while Gaez uses the agro-climatic potential yield. All regressions include a continuous field area control, a dummy variable for eligibility status, and municipality and birth year fixed effects. The estimation equation is Equation 2. Standard errors clustered at municipality-farm size level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

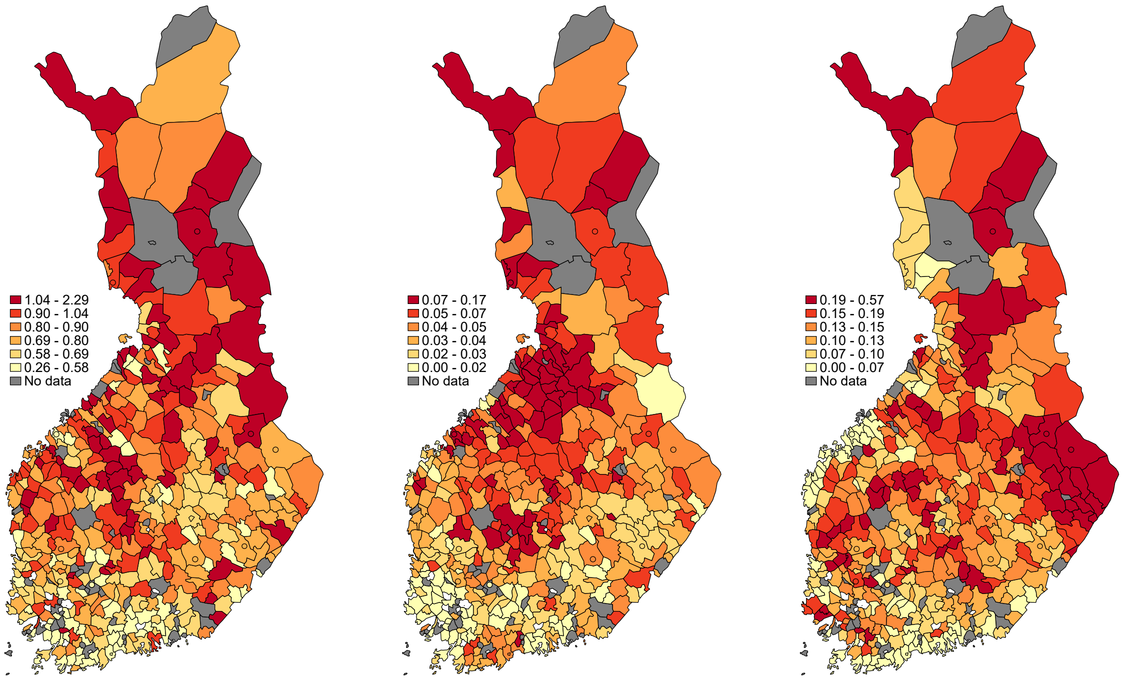
8 Figures and Tables: Political Effects

Figure 8: Regional Variation in the instrument, farm reservation share and FRP vote share change.

(a) Instrument: Farm Share above Cutoff

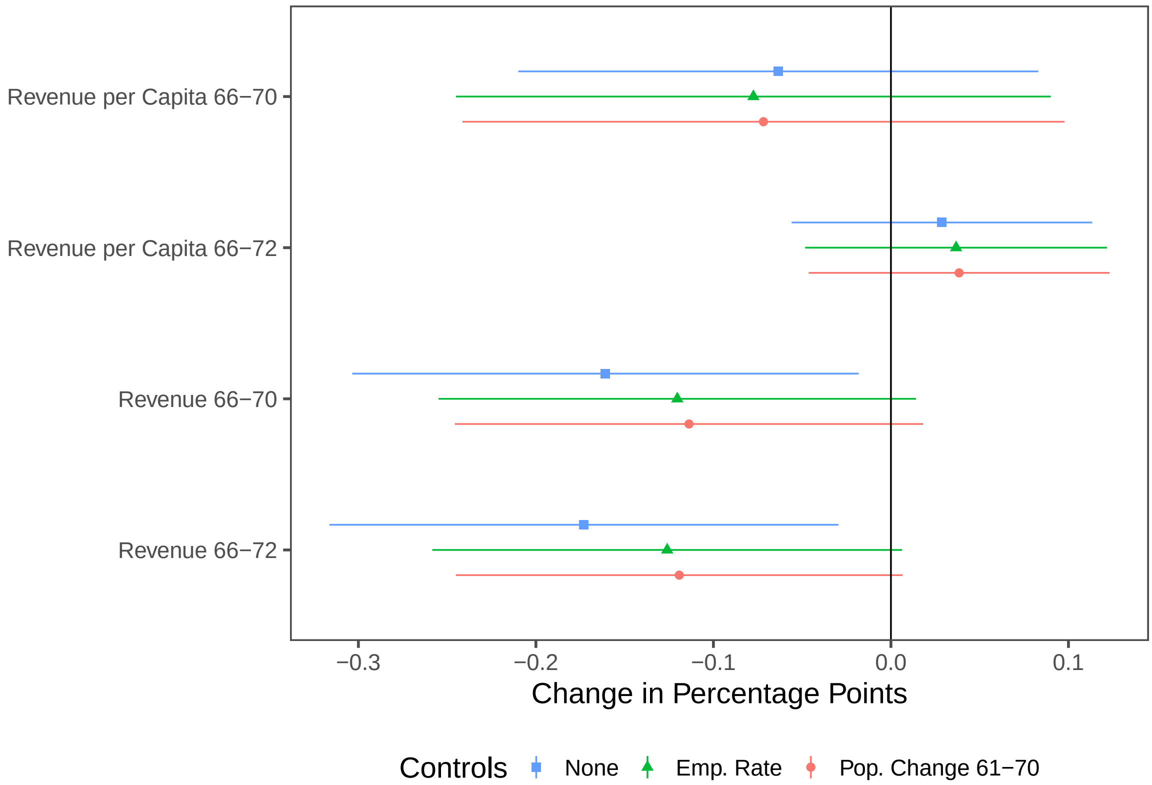
(b) Farm Reservation Share 1969

(c) FRP Vote Share Change



Notes: Panel (a) is the number of farms with 2–3 hectares of field divided by the number of farms with 1–2 hectares in the municipality. This share is the instrument for the take-up of the field reservation contract which is depicted in Panel (b). The number of reserved farms in each municipality is digitized from Jaatinen and Kärkkäinen (1970) at an accuracy of 5 farms. Panel (c) depicts the regional variation in the outcome variable, the change in Finnish Rural Party's vote share. The gray municipalities are excluded from the estimation sample due to missing data.

Figure 9: The effect of field reservation on municipal taxable revenue.



Notes: The regression estimates are from the instrumental variables specification of Equation 3 where the reservation share is instrumented by the eligible farm share around the cutoff detailed in Equation 4. All estimation equations include the average farm size as a control variable. The outcomes are in a percent-to-percent change in the share of farms reserved. The confidence intervals are at a 90% level.

Table 7: Summary statistics for the estimation sample on political effects.

	Mean	p10	Median	p90
Δ FRP 1966–70	0.133	0.055	0.131	0.213
Reservation Share 1969	0.041	0.010	0.038	0.077
No. of Farms	676	270	556	1188
Avg. Farm Size	9.345	5.900	8.769	14.204
Distance to Helsinki	3.239	1.265	3.247	5.153
$Z_{share,3}$	0.810	0.500	0.787	1.162
Land Prod. Gaez	0.122	-0.812	-0.181	1.413
Population Change 1961–70	-14.8	-32.7	-16.8	5.4
Employment Rate (1970)	48.85	41.6	48.9	56
Centre Party Share 1966	0.371	0.053	0.398	0.584
FRP Share 1966	0.018	0.000	0.005	0.051
Centre Party Share 1968 (Local)	0.342	0.017	0.368	0.547
FRP Share 1968 (Local)	0.095	0.000	0.082	0.204
Δ Rev per Cap. 66–70	1.418	0.907	1.295	1.870
Δ Rev per Cap. 66–72	2.688	1.958	2.548	3.622
Δ Rev 66–70	11.714	10.537	11.653	12.820
Δ Rev 66–72	12.370	11.280	12.290	13.495
N	404			

Notes: Municipalities in the estimation sample have at least 200 farms and no missing data on key variables. Revenue changes are in percentage points. Variable descriptions are detailed in Appedix E.

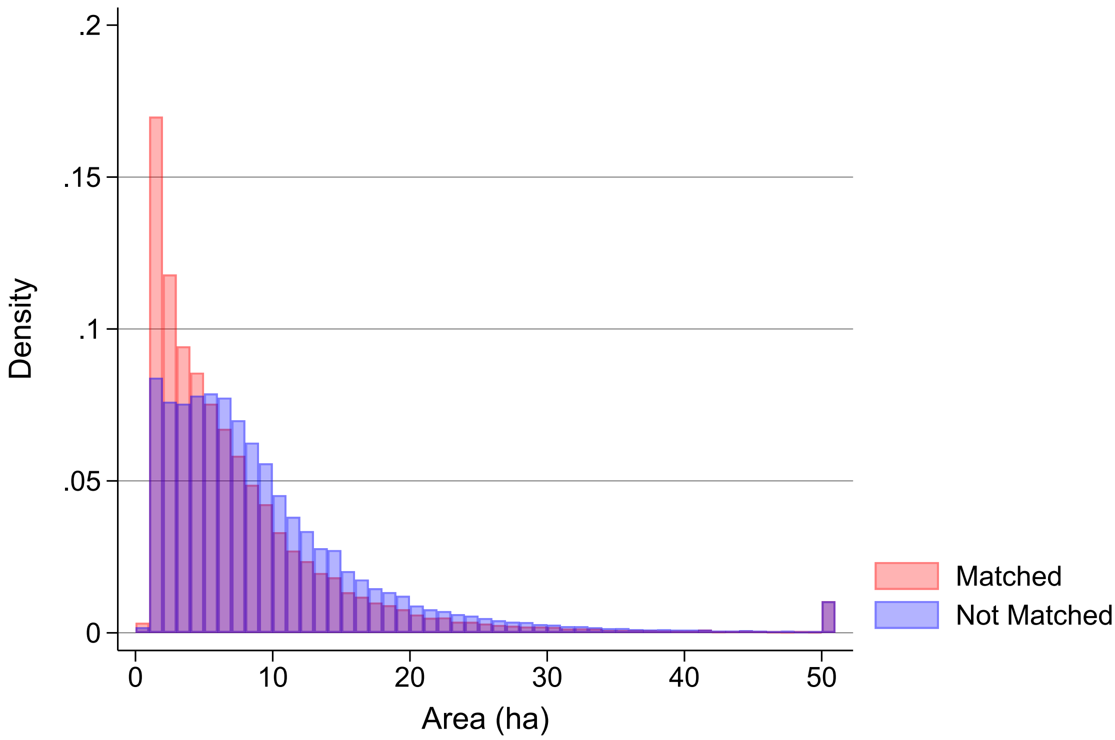
Table 8: The effect of reservation share on the support of the Finnish Rural Party.

	(1)	(2)	(3)	(4)
	OLS	IV	Placebo IV	
Res. Share	0.189	1.113**	0.018	0.498
	(0.117)	(0.534)	(0.355)	(0.860)
Avg. Farm Size		-0.006***	-0.008***	-0.007***
		(0.001)	(0.001)	(0.002)
N	404	404	404	404
F-stat	-	22.1	5.7	11.5
Res. Share (Mean / SD)	0.041	0.027		
Δ FRP (Mean / SD)	0.133	0.068		

Notes: Estimates come from equation 3. The first column shows the regular OLS estimate and the second column has the share of farms reserved instrumented with the share measure from equation 4. Columns 3 and 4 use placebo instruments at cutoffs of 3 and 5 hectares. Standard errors are heteroskedasticity robust. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

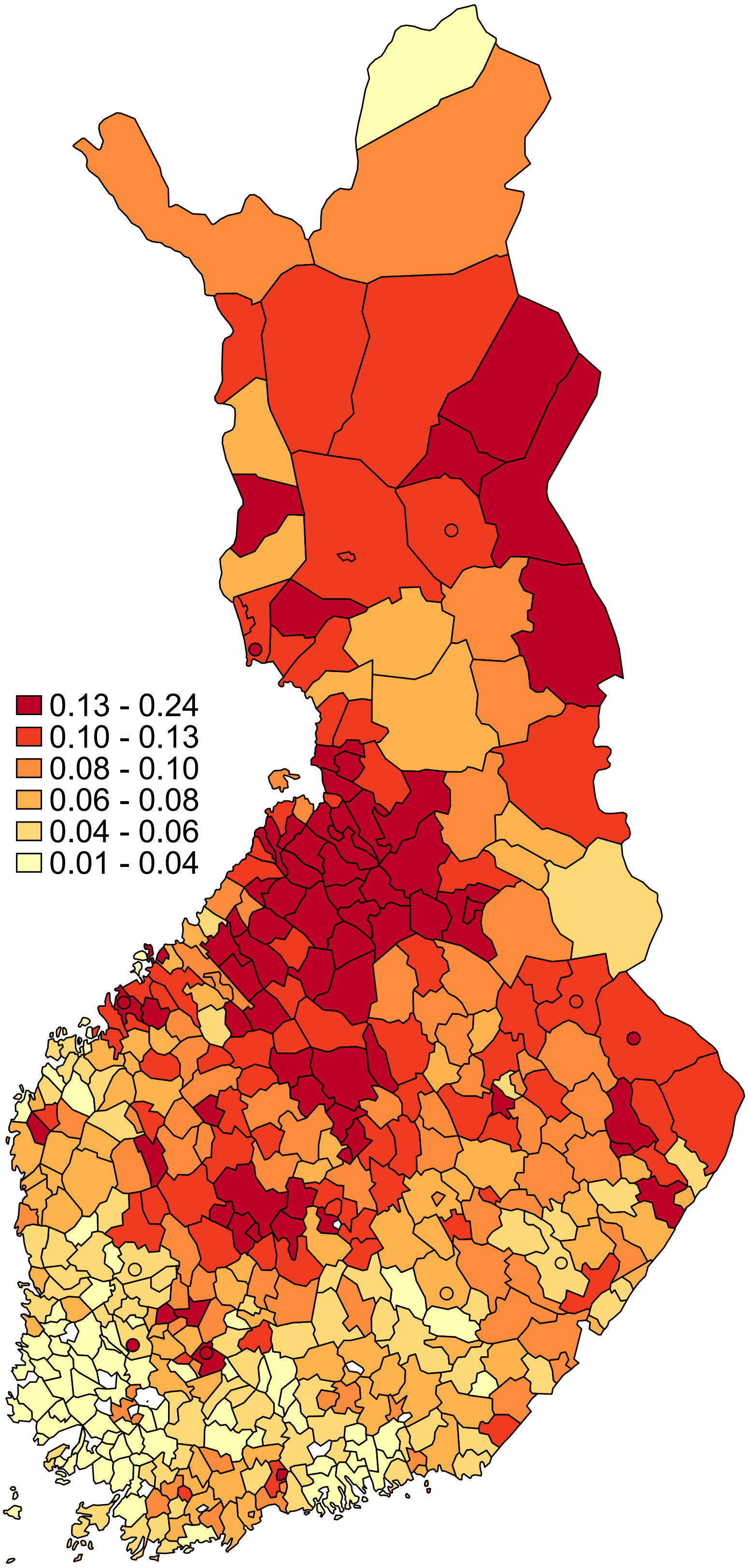
A Supplementary Figures and Tables

Figure A.1: Distribution of linked and non-linked farms.



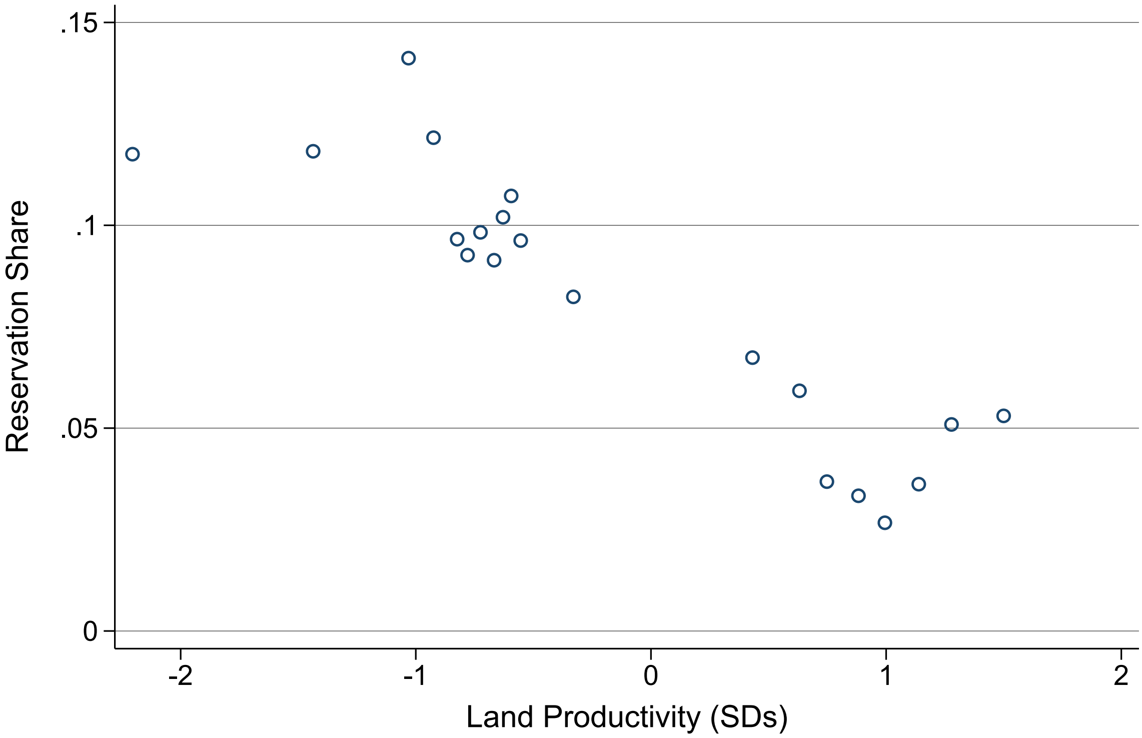
Notes: Distribution of farms by field area as digitized from the Agricultural Census 1969. The red color corresponds to farms that are matched with the farm register in 1973 (N=192,993). Blue color is for farms that are not matched (N=89,736). There is a fairly low match rate for a few reasons. The main reason is that not all farms in the farm register have farm or farmer IDs. While the farm register contains 265,938 farms in 1973, only 220,966 have both farm and farmer IDs. Some farms from the 1969 Agricultural Census no longer exist in 1973 and are therefore missing from the farm register. There are also some mistakes in the digitization of the census. An out-of-sample human validation of 1,000 observations had an error rate of 0.6 %.

Figure A.2: Map of reserved farm share by 1971.



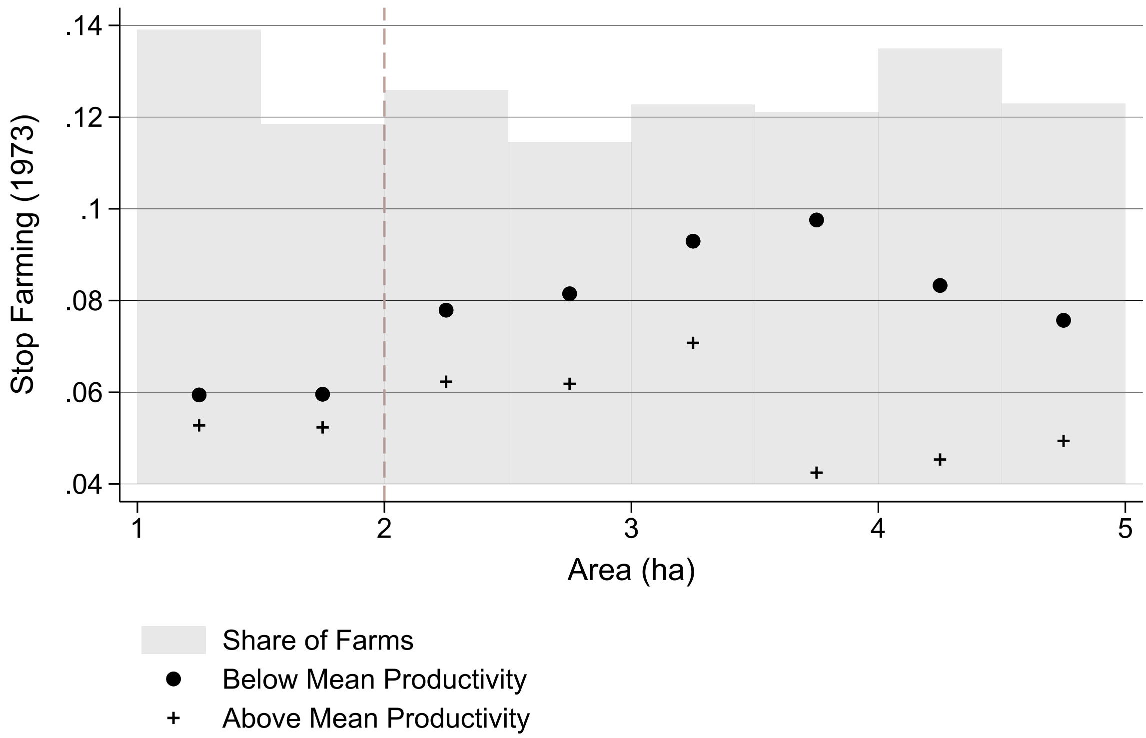
Notes: Municipality-level reservation share data is from Jaatinen and Nygård (1972)

Figure A.3: Share of the farms reserved by 1971 on land productivity measured with Gaez.



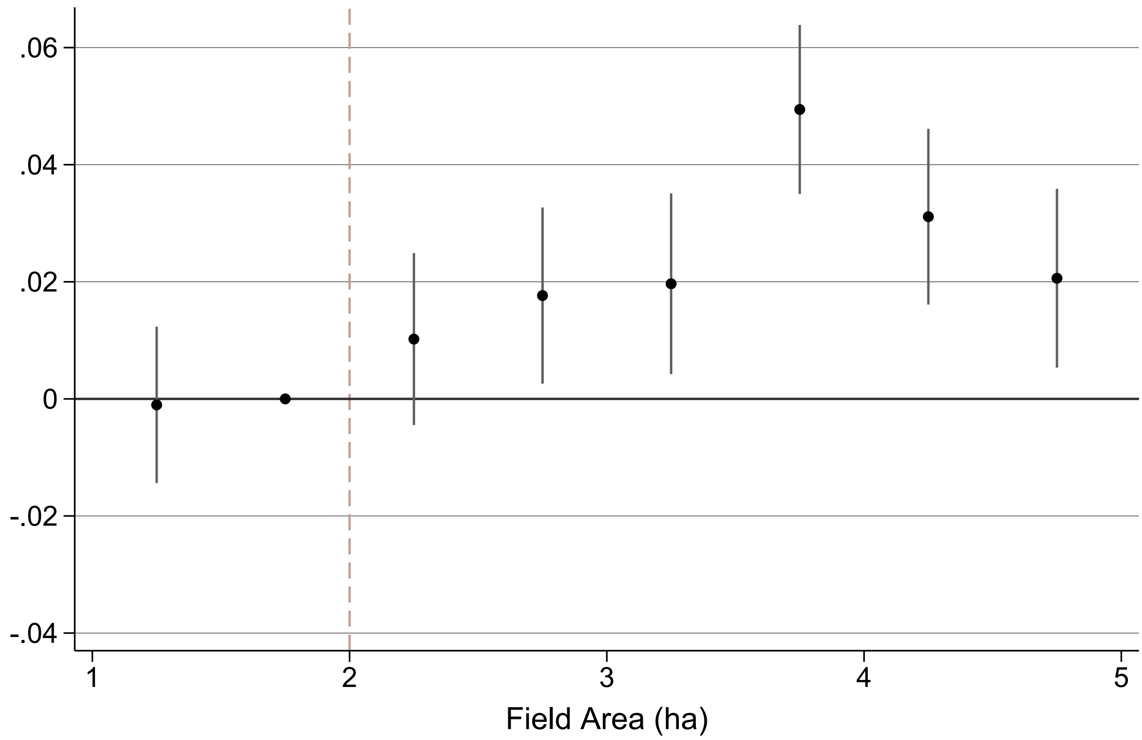
Notes: Dots are equal-sized means of municipalities weighted by the number of farms in the municipality. Land productivity is the regional agro-climatic potential yield for wheat for each municipality. The measure is standardized for a mean zero and a standard deviation of one. Reservation share data is from Jaatinen and Nygård (1972)

Figure A.4: Share of the farmers stopping farming by 1973 on field area (Gaez).



Notes: The points are separately for above and below mean in terms of land productivity measured with Gaez. Each point is of half-hectare distance from another. The share of farms of the sample is in gray bars. The vertical line is at the eligibility cutoff at two 2 hectares.

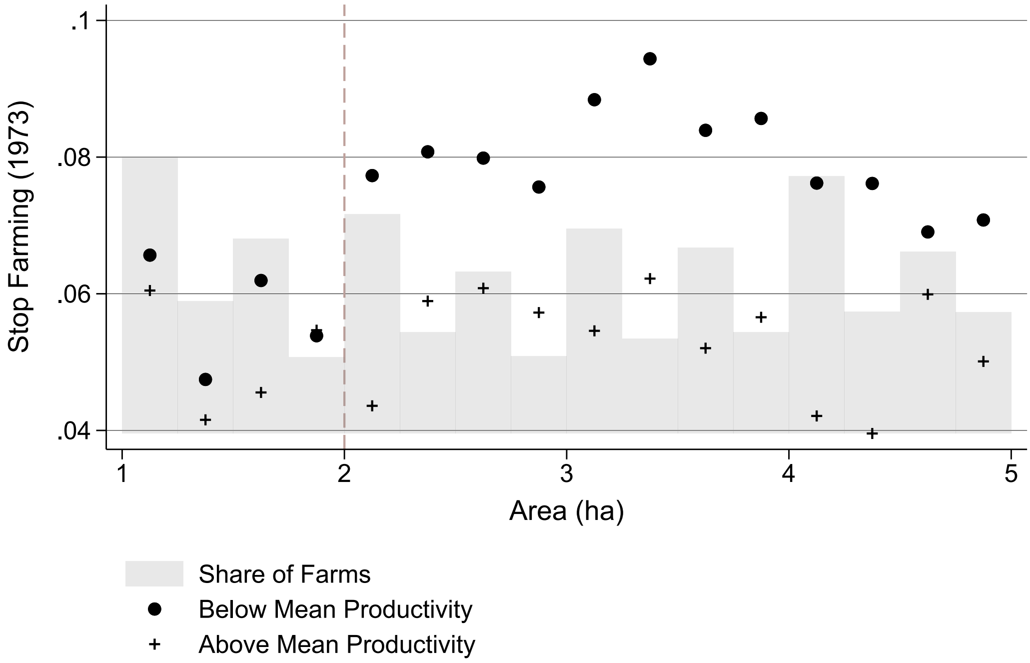
Figure A.5: The difference of the effect on Stop Farming for low and high productivity measured with Gaez.



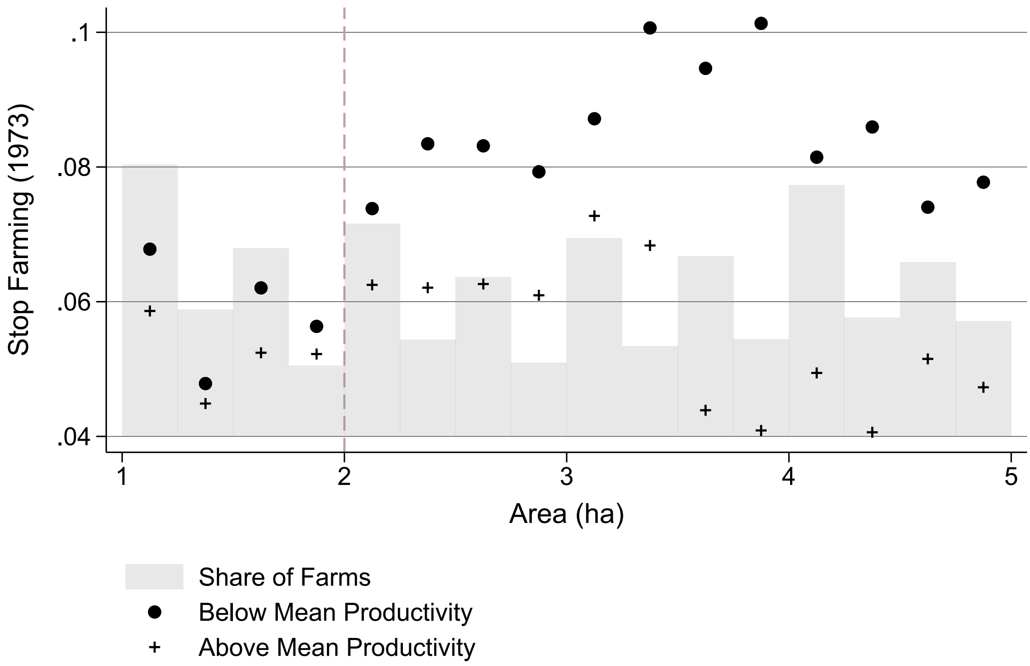
Notes: The outcome is the probability to stop farming by 1973. The point estimates come from the estimation equation (1). The estimate is for each half-hectare bin separately, comparing farms below and above mean land-productivity regions compared to the difference of the reference point, 1.5–2 ha. Tha land productivity is measured from Gaez. The difference is around two percentage points and statistically significant for most points after the 2-hectare cutoff. The standard errors are clustered at municipality-farm size level.

Figure A.6: The share of farms stopping farming in below and above mean productivity municipalities in quarter-hectare bins.

(a) Land. Prod: Tax Records



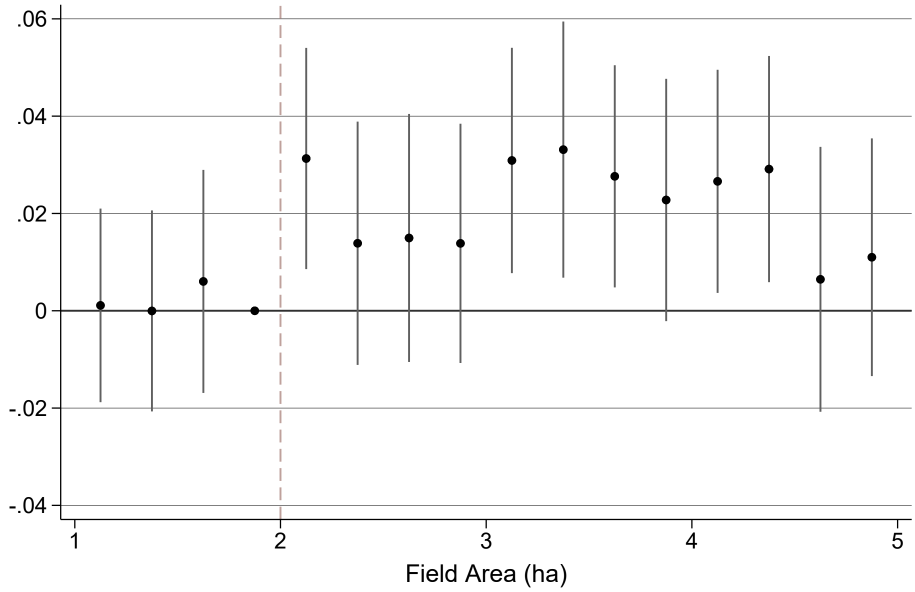
(b) Land. Prod: Gaez



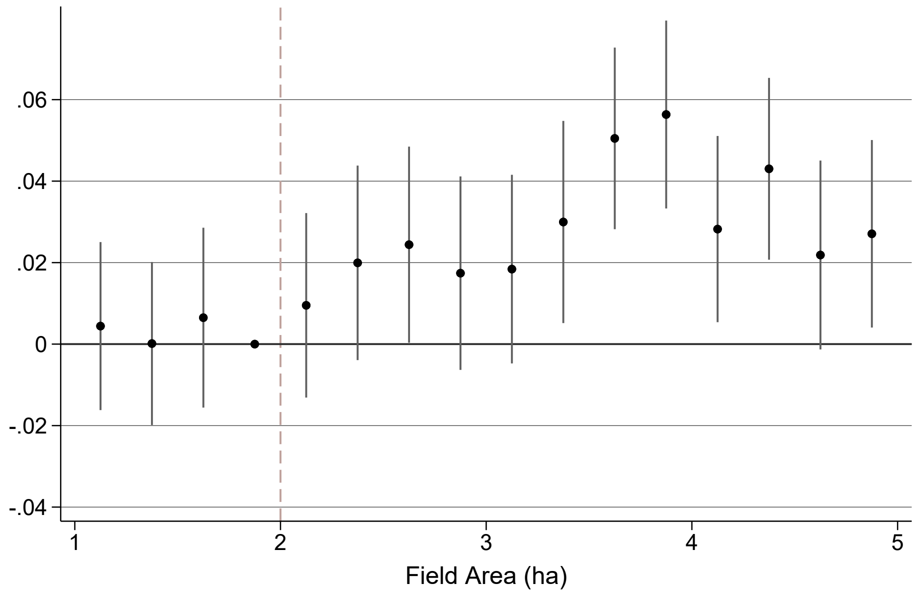
Notes: Share of the farmers stopping farming by 1973 on field area for above and below mean land productivity measured from the tax records sample. Each point is of quarter-hectare distance from another. The gray bars show the share of farms within the sample. The vertical line is at the eligibility cutoff of two hectares.

Figure A.7: The difference of the effect of eligibility for low and high productivity in quarter-hectare bins.

(a) Land. Prod: Tax Records



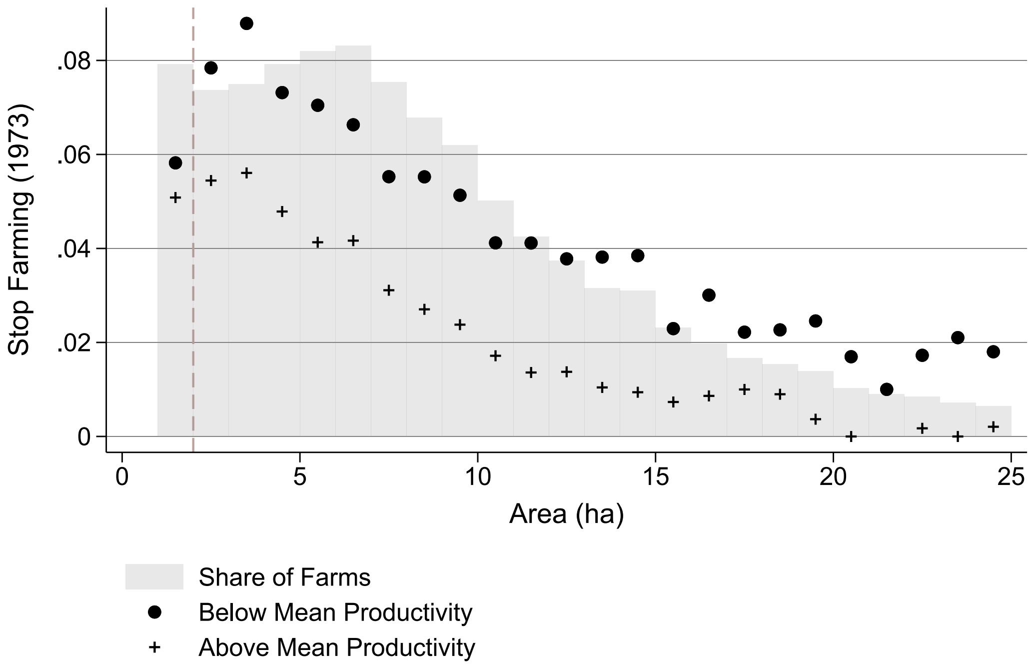
(b) Land. Prod: Gaez



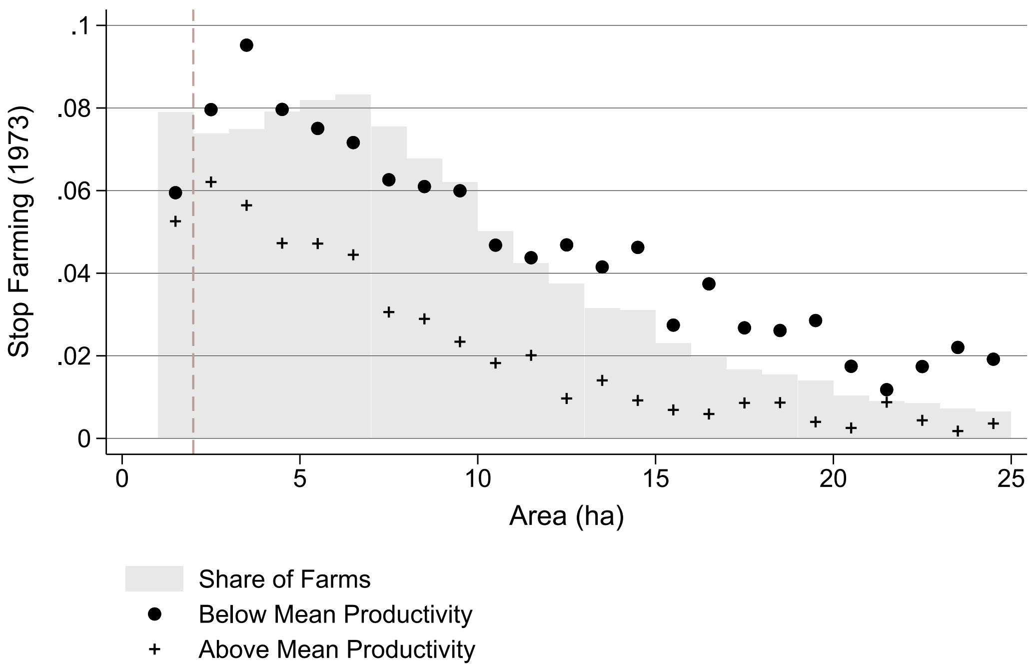
Notes: The point estimates come from the estimation equation (1). The estimate is for each quarter-hectare bin, comparing farms below and above mean land-productivity regions compared to the difference of the reference point, 1.75–2 ha. The difference is around 2–3 percentage points. The confidence intervals are at a 90 % level and standard errors are clustered at municipality farm size cells.

Figure A.8: The share of farms stopping farming in below and above mean productivity municipalities (Gaez).

(a) Land. Prod: Tax Records

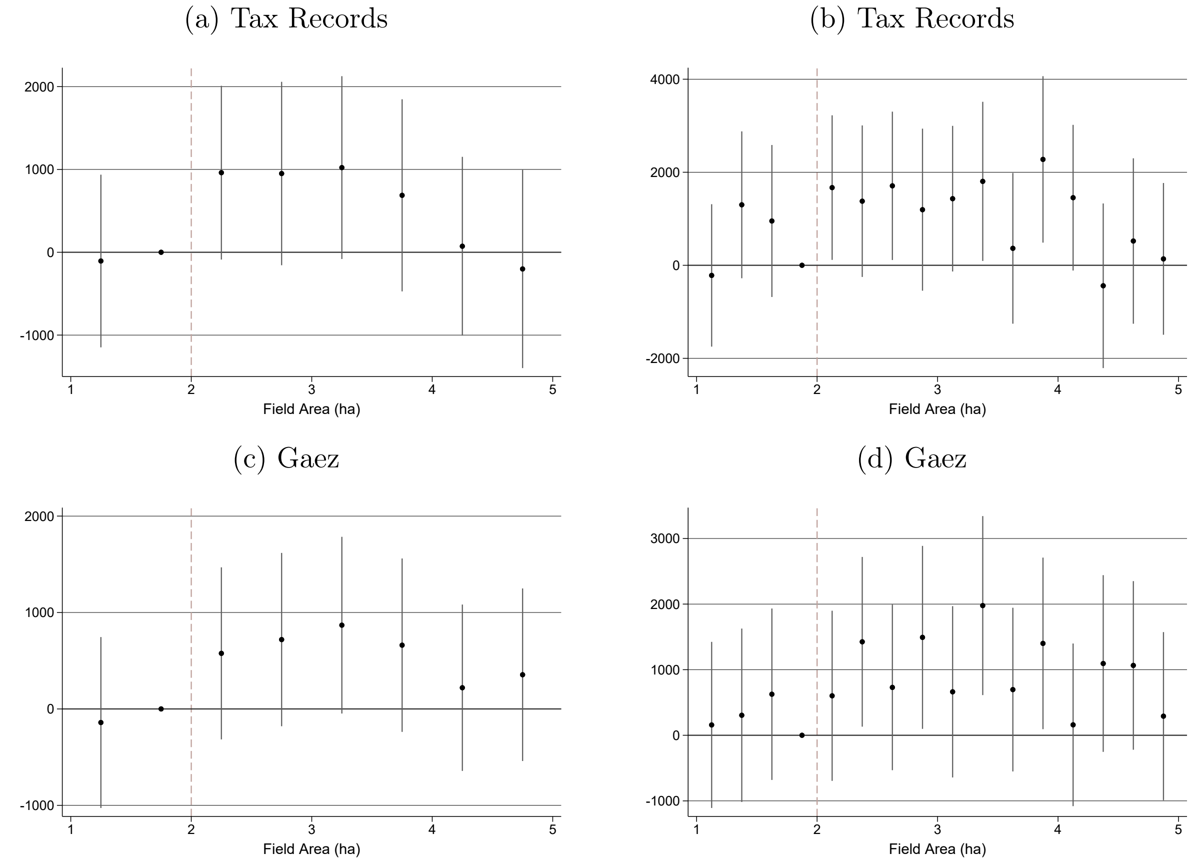


(b) Land. Prod: Gaez



Notes: Share of the farmers stopping farming by 1973 on field area for above and below mean land productivity measured with Gaez. The distance between each point is one hectare. The gray bars show the share of farms within the sample. The vertical line is at the eligibility cutoff of two hectares.

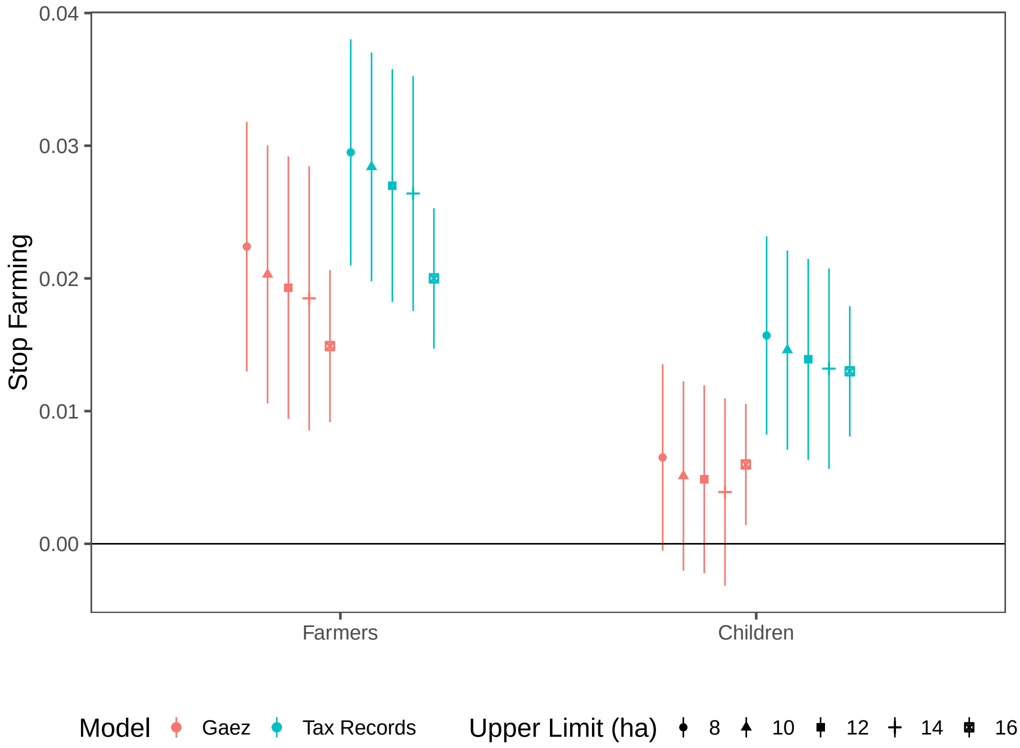
Figure A.9: The difference in the effect of the policy on children's earned income in bins.



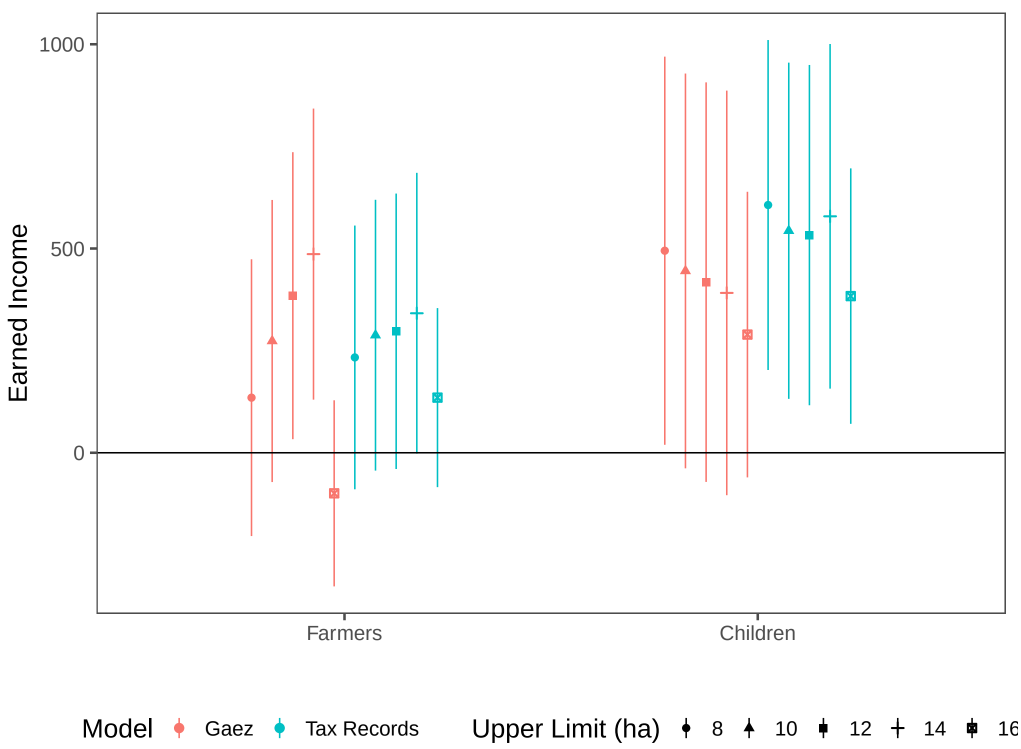
Notes: The point estimates come from the estimation equation (1) varying bins with half-hectares in panels (a) and (c) to quarter-hectares for panels (b) and (d). The outcome is the average annual earned income at age 35–45 for the children. Panels (a) and (b) use the main measure estimated from tax records for land productivity while panels (c) and (d) use the Gaez measure. The confidence intervals are at a 90 % level and standard errors are clustered at municipality farm size cells.

Figure A.10: Robustness to farm size restrictions.

(a) Stop Farming



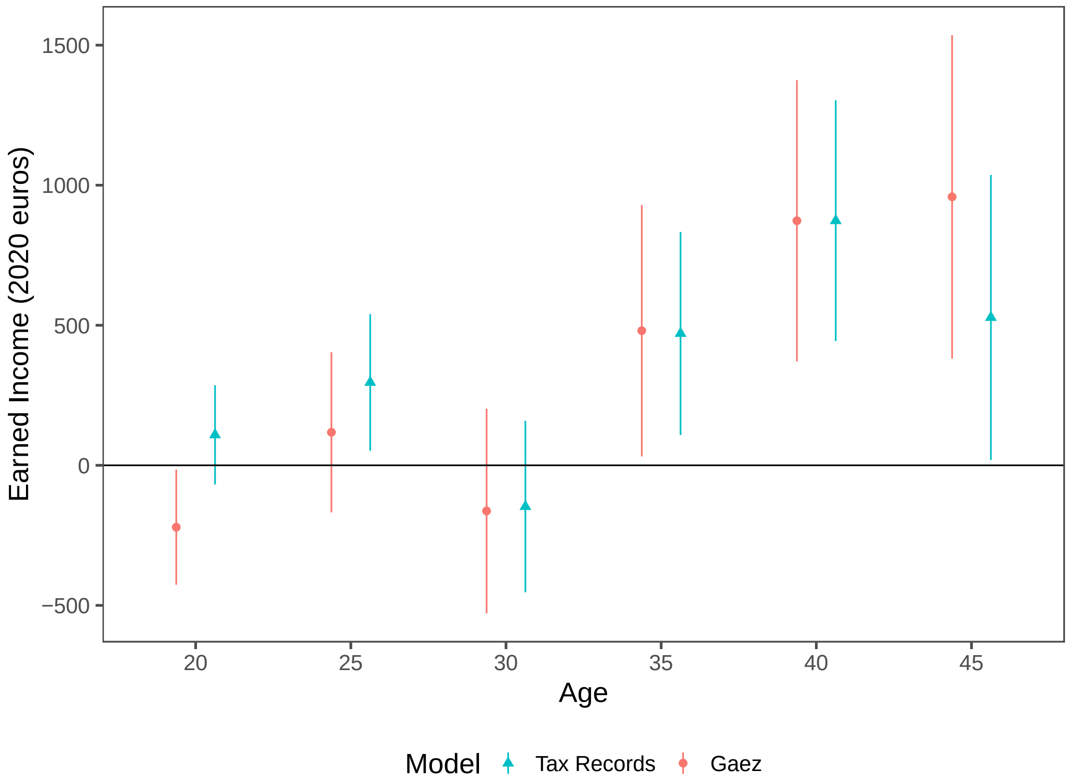
(b) Earned Income



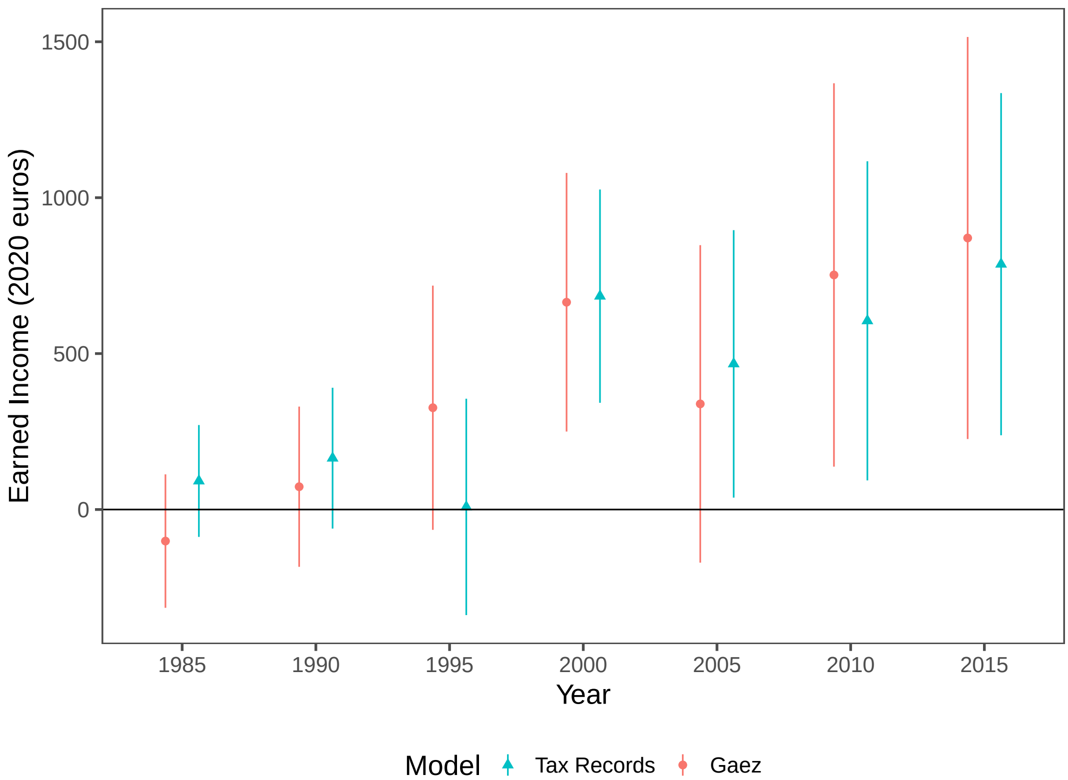
Notes: The main estimation outcomes for the farmers and children by varying the upper limit of farm size included in the estimation sample. Tax Records use the main specification for land productivity estimated from tax records, while Gaez uses the agro-climatic potential yield. All regressions include a continuous field area control, a dummy variable for eligibility status, and municipality and birth year fixed effects. The estimation equation is Equation 2. Standard errors clustered at municipality-farm size level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Figure A.11: Dynamics of the earnings effect.

(a) By Age

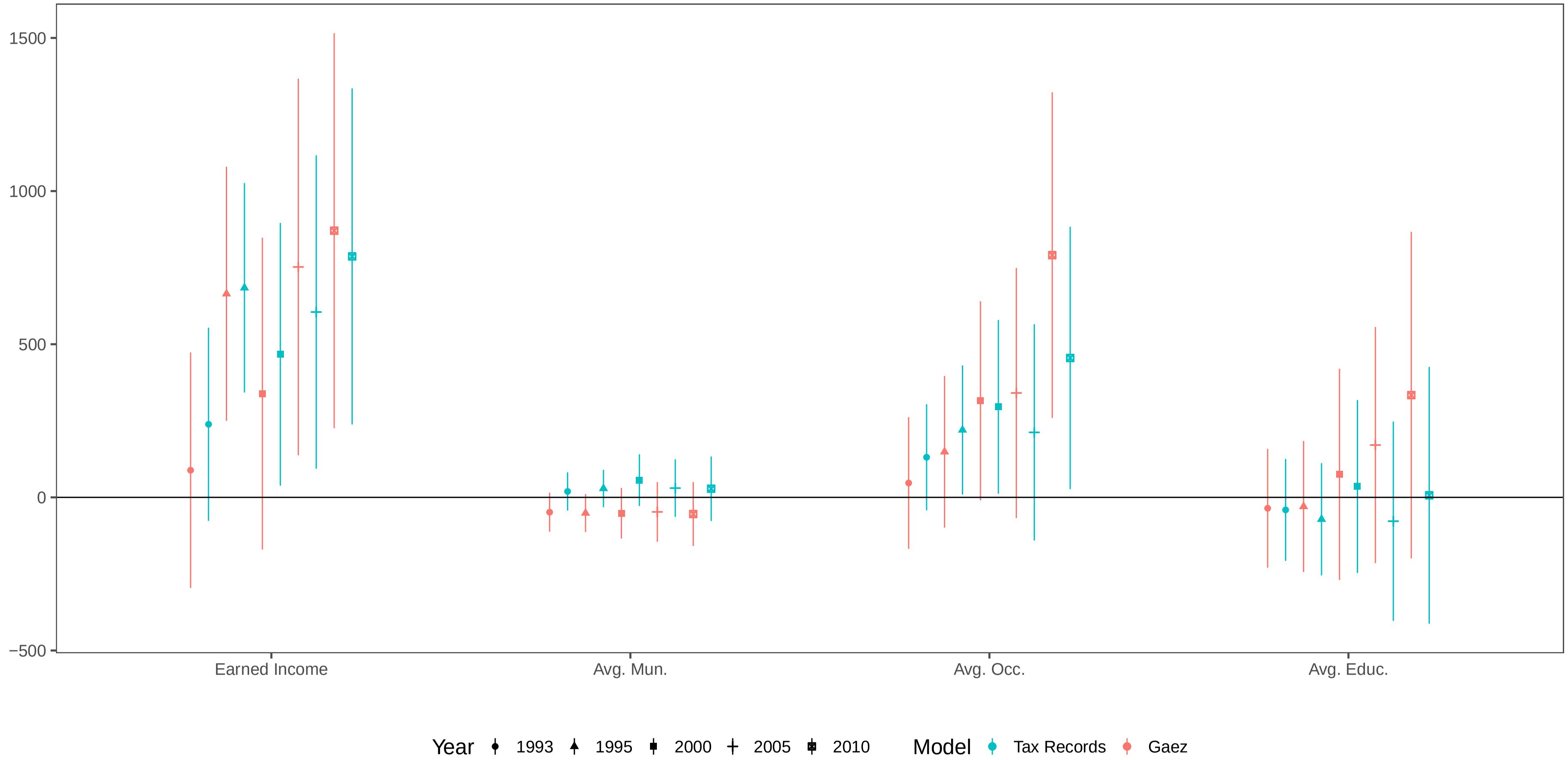


(b) By Year



Notes: Estimates for earned income for different years and age separately from Equation 2. Confidence intervals are at 90% level. The standard errors are clustered at municipality-farm size level.

Figure A.12: Mechanism estimates by year.



Notes: Estimates from Table 5 for different years separately. Confidence intervals are at 90% level. The standard errors are clustered at municipality-farm size level.

Table A.1: Balance tests for the farmer sample.

	Age 1970		No. of Children		Educ. Years 1970	
$(T_i \times prod_m)$	0.482**	0.793***	0.0302	0.00211	0.0172	-0.00938
	(0.242)	(0.230)	(0.0319)	(0.0304)	(0.0237)	(0.0199)
Outcome Mean	51.95		1.76		9.26	
Land Prod.	TR	Gaez	TR	Gaez	TR	Gaez
N	44881	44233	44881	44233	44881	44233

Notes: Estimates are from regression equation 2. prod_m is one for below mean land productivity municipalities. Negative coefficients mean higher earnings for the eligible farmers in low-productivity regions due to higher intensity of treatment. Stop Farming is a farm-level outcome that is the same for farmers and their children. The difference in coefficients for farmers and children is explained by the composition of farmers who have children. TR uses the main specification for land productivity estimated from tax records, while Gaez uses the agro-climatic potential yield. All regressions include field area control and municipality fixed effects. The estimation equation is Equation 2. Standard errors clustered at municipality-farm size level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.2: Balance tests for the children sample.

	Parent Age		Parent's No. of Children		Parent Education		Child Age	
$(T_i \times prod_m)$	0.614***	0.389***	0.038	0.004	-0.000	0.022	-0.135	0.076
	(0.210)	(0.166)	(0.065)	(0.056)	(0.035)	(0.027)	(0.106)	(0.098)
Outcome Mean	45.3		3.79		9.25		11.1	
Land Prod.	TR	Gaez	TR	Gaez	TR	Gaez	TR	Gaez
N	70257	69434	70257	69434	71621	70785	71621	70785

Notes: Estimates are from regression equation 2. prod_m is one for below mean land productivity municipalities. Negative coefficients mean higher earnings for the eligible farmers in low-productivity regions due to higher intensity of treatment. Stop Farming is a farm-level outcome that is the same for farmers and their children. The difference in coefficients for farmers and children is explained by the composition of farmers who have children. TR uses the main specification for land productivity estimated from tax records, while Gaez uses the agro-climatic potential yield. All regressions include field area control and municipality fixed effects. Three first outcomes also include children's birth year fixed effects. The estimation equation is Equation 2. Standard errors clustered at municipality-farm size level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.3: Main children outcomes controlling for the parents' age.

	Stop Farming	Earned Prime Age Income	Avg. Mun.	Avg. Occ.	Avg. Educ.
	A. (TR)				
$(T_i \times prod_m)$	0.0188***	721.5**	-65.6	371.4*	139.4
	(0.0043)	(289.4)	(51.9)	(199.0)	(215.2)
N	67354	67337	65892	50364	53080
	B. Gaez				
$(T_i \times prod_m)$	0.0191***	657.8***	56.5	357.9**	97.1
	(0.0046)	(244.4)	(52.4)	(176.7)	(176.2)
Outcome Mean	0.043	25410	19880	23360	21790
N	66555	66538	65113	49737	52442

Notes: Estimates are from regression equation 2. prod_m is one for below mean land productivity municipalities. Negative coefficients mean higher earnings for the eligible farmers in low-productivity regions due to higher intensity of treatment. Stop Farming is a farm-level outcome that is the same for farmers and their children. The difference in coefficients for farmers and children is explained by the composition of farmers who have children. TR uses the main specification for land productivity estimated from tax records, while Gaez uses the agro-climatic potential yield. All regressions include field area control and municipality, birth year and parent's birth year fixed effects. Three first outcomes also include children's birth year fixed effects. The estimation equation is Equation 2. Standard errors clustered at municipality-farm size level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.4: Estimates with continuous land productivity.

	A. Tax Records			
	Farmers		*Children*	
	Stop Farming	Earned Income 1980	Stop Farming	Prime Age Earnings
$(T_i \times prodc_m)$	-0.0144***	-124.9	-0.0094***	-325.8*
	(0.0031)	(137.3)	(0.0030)	(192.1)
N	36726	36726	68658	68641
	B. Gaez			
	Farmers		*Children*	
$(T_i \times prodc_m)$	-0.00938***	-124.8	-0.0040	-294.2**
	(0.00352)	(118.0)	(0.0029)	(148.8)
Outcome Mean	0.067	11030	0.88	0.094
N	36160	36160	67846	67829

Notes: Estimates are from regression equation 2 with a continuous productivity measure $prodc_m$ in standard deviations. TR uses the main specification for land productivity estimated from tax records, while Gaez uses the agro-climatic potential yield. All regressions include field area control and municipality fixed effects. The estimation equation is Equation 2. Standard errors clustered at municipality-farm size level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.5: Robustness to different levels of clustering.

	A. Tax Records			
	Farmers		*Children*	
	Stop Farming	Earned Income 1980	Stop Farming	Prime Age Earnings
$(T_i \times prod_m)$	0.0236	-48.07	0.0123	696.7
Main	(0.0053)	(198.7)	(0.0041)	(284.2)
Municip.	(0.0069)	(257.3)	(0.0053)	(370.3)
Area Bin	(0.0029)	(97.0)	(0.0021)	(325.9)
N	36726	36726	68658	68641
	B. Gaez			
	Farmers		*Children*	
$(T_i \times prod_m)$	0.0295	63.75	0.0186	631.6
Main	(0.0049)	(184.9)	(0.0044)	(241.6)
Municip.	(0.0062)	(234.6)	(0.0056)	(310.4)
Area Bin	(0.0056)	(161.0)	(0.0041)	(148.2)
Outcome Mean	0.067	11030	0.88	0.094
N	36160	36160	67846	67829

Notes: In the main specification, standard errors clustered at municipality-farm size level. The alternative specifications are municipalities and farm-size bins of one hectare. Estimates are from regression equation 2. TR uses the main specification for land productivity estimated from tax records, while Gaez uses the agro-climatic potential yield. All regressions include field area control and municipality fixed effects.

Table A.6: Mechanism estimates at the age of 40.

	Earned Income			
	Prime Age	Avg. Mun.	Avg. Occ.	Avg. Educ.
$(T_i \times prod_m)$	569.9*	-39.64	384.0**	54.66
	(301.0)	(51.63)	(194.1)	(184.6)
Land Prod.	TR	TR	TR	TR
N	68683	68784	54029	54909
$(T_i \times prod_m)$	677.6***	59.70	101.5	47.45
	(253.2)	(49.91)	(174.0)	(153.9)
Land Prod.	Gaez	Gaez	Gaez	Gaez
N	67875	67974	53388	54250

Notes: Estimates are from regression equation 2. prod_m is one for below mean land productivity municipalities. TR uses the main specification for land productivity estimated from tax records, while Gaez uses the agro-climatic potential yield. All regressions include field area control and municipality fixed effects. The estimation equation is Equation 2. Standard errors clustered at municipality-farm size level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.7: Robustness for the political effects.

Res. Share	1.198*	0.932*	0.905*	0.960	0.750*	0.979**	1.291*
	(0.697)	(0.503)	(0.540)	(0.686)	(0.409)	(0.487)	(0.712)
Avg. Farm Size	-0.006***	-0.004***	-0.005***	-0.004***	-	-	-
	(0.001)	(0.001)	(0.001)	(0.001)	-	-	-
Distance to Helsinki	-0.002	-	-	-0.003	-	-	-
	(0.005)	-	-	(0.005)	-	-	-
Employment Rate	-	-0.003***	-	-0.002***	-	-	-
	-	(0.001)	-	(0.001)	-	-	-
Population Change 61–70	-	-	-0.001***	-0.001***	-	-	-
	-	-	(0.000)	(0.000)	-	-	-
FRP 1968 (Local)	-	-	-	-	0.533***	-	-
	-	-	-	-	(0.078)	-	-
Centre 1968 (Local)	-	-	-	-	-	0.155***	-
	-	-	-	-	-	(0.022)	-
1966 Vote Share Controls	-	-	-	-	-	-	Yes
	-	-	-	-	-	-	-
N	404	403	404	403	404	404	404
F-Stat	16.026	21.072	22.085	15.725	25.310	27.409	13.008

Notes: Estimates come from equation 3 with the share of farms reserved instrumented with the share measure from equation 4. Standard errors are heteroskedasticity robust. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

B Digitization of the Agricultural Census 1969

Over 290,000 forms of the Agricultural Census were scanned and digitized from the National Archives in Finland. For the digitization process, I develop a computer vision neural network that reads each document and transforms it into an observation in data. Figure 1 visualizes the digitization process from scanning, through two separate deep learning models into a finished dataset.

The forms are in Finnish or Swedish and they consist of four separate pages. These make eight exclusive categories that one image file can belong to. The first step in the digitization process is to classify each image into one of these eight categories. This is done by creating a training dataset first and training a simple image classification model to do the categorization. With clear categories to detect, the success rate is close to 100%.

Once the images are classified into categories, the next step is to extract individual cells from the page. Each cell consists of one piece of information that makes one variable in the final dataset. Examples of cells are the municipality the farm is located in, the farm id, and the field area. The train data for the cell recognition model is created by human annotators using Label Studio[18] which is an open source data labeling tool. The human annotator creates a box around each cell that contains the information of the variable. The train data is then used to train a Faster R-CNN image detection model (Ren et al., 2015) that is run through MMDetection, an open source object detection toolbox based on PyTorch.[19]

Label Studio provides a full machine learning integration which allows for continuous learning. After a few examples made by the human annotator, the model makes the prediction for the new image and the annotator makes necessary corrections. After the corrections, the model is updated and it is used to make predictions for a new image. This allows also the human annotator to analyze the accuracy of the model. Once the accuracy is satisfactory, the model is used to crop cells from all forms.

The second model after cell detection is the handwriting recognition model.[20] The model takes in the individual cells, standardizes the image, makes a prediction on the values in the cell, and gives a certainty measure of the prediction. The model is built by Keras and it is a convolutional neural network with eight convolutional layers and 18,740,945 trainable parameters.

[18]See `https://labelstud.io/` and `https://github.com/HumanSignal/label-studio/` for more information on Label Studio.

[19]More on MMDetection: `https://mmdetection.readthedocs.io/en/latest/` and `https://github.com/open-mmlab/mmdetection`. PyTorch is a Python package that is commonly used for machine learning applications.

[20]For the development of the handwriting recognition model, I should acknowledge Jonas Mueller-Gastell from whom I learned a lot when starting the project.

Another option would have been to use a ready-made handwriting recognition tool, like the ones offered by Transkribus. However, those models are developed to transcribe longer multiline texts rather than small cells of few digits. Many cells have also traces from other cells around them that the model should ignore. Hence, it was more efficient to develop a tailored model for the digitization.

There has been a recent development of digitization methods, most notably Layout Parser by Shen et al. (2021). While Layout Parser is very flexible in analyzing document layouts, it is not very capable of recognizing similar patterns across documents which is a requirement when creating datasets from hundreds of thousands of regular documents. The closest application is Dahl et al. (2023) whose main objective is to transcribe data from tabular documents.[21] The main difference in their proposed method is that in table segmentation or cell detection. Their method is based on a reference document and key points in the corners of the table that can be identified in all documents by using standard computer vision techniques. Based on these key points, Dahl et al. (2023) use a Coherent Point Drift algorithm to align the point sets and use this alignment for the whole document. The main advantage of this method is that it requires very little manual work with one document of reference points being enough for each form type. It is, however, fairly inflexible, requiring the document to have identifiable corner points and not being able to adjust for irregularities like the information residing slightly off the original cell.

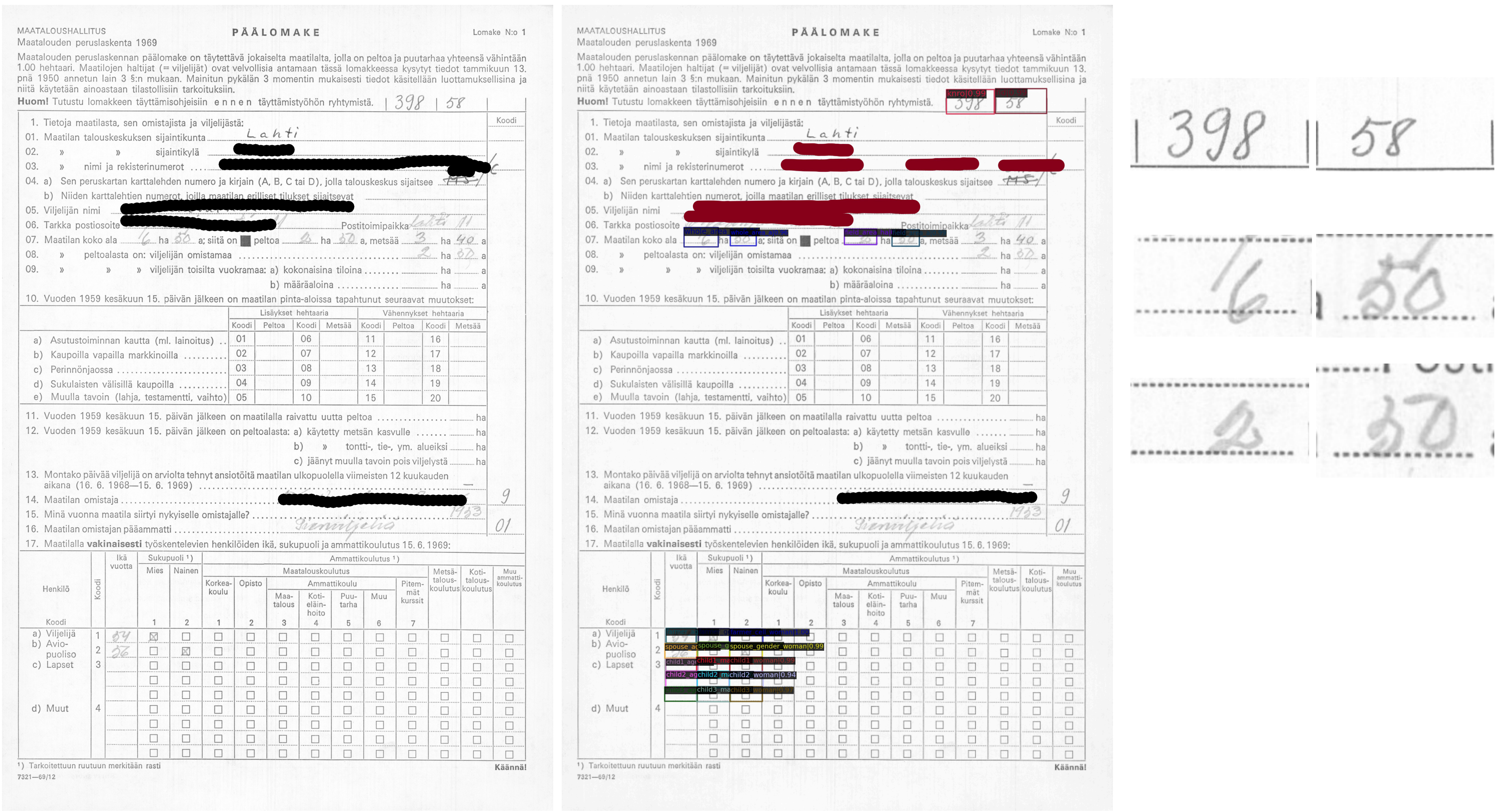
For this paper, the variables I have from the Agricultural Census are the size of the farm, field area, municipality of the farm, age of the farmer, and other people working on the farm. Importantly, it also contains a farm ID number that can link it to my second novel data source, the farm register. The farm register was built in 1972 based on the Agricultural Census 1969. It contains information on the land cultivated in 1973 and the farmer's name, birth date, and ID number which can be used to further link the farmer to the Population Census and other register data. I retrieved the Farm Register from the archives of Statistics Finland.

To improve the precision of the final predictions, a few rules are established for some of the variables. First of all, the measures can only have a value between 0 and 99 (as 100 ares = 1 hectare). The farm ID also has two properties. The first part of the ID is the municipality code that the farm is in and as the documents were scanned municipality by municipality, they are in order. Hence the first parts remain constant for farms one after another and then switch to another municipality. The second part of the farm ID is a running variable starting from one. Farms were (mostly) in this order as well, so it can

[21] Other notable data transcribing methods include Transkribus (`https://readcoop.eu/transkribus/`) which is a platform for text recognition and transcription developed by a European Cooperative Society, and Microsoft Azure's Document Intelligence `https://learn.microsoft.com/en-us/azure/ai-services/document-intelligence/overview?view=doc-intel-3.1.0` which allows the user to train their own model to extract information from structured documents like survey forms.

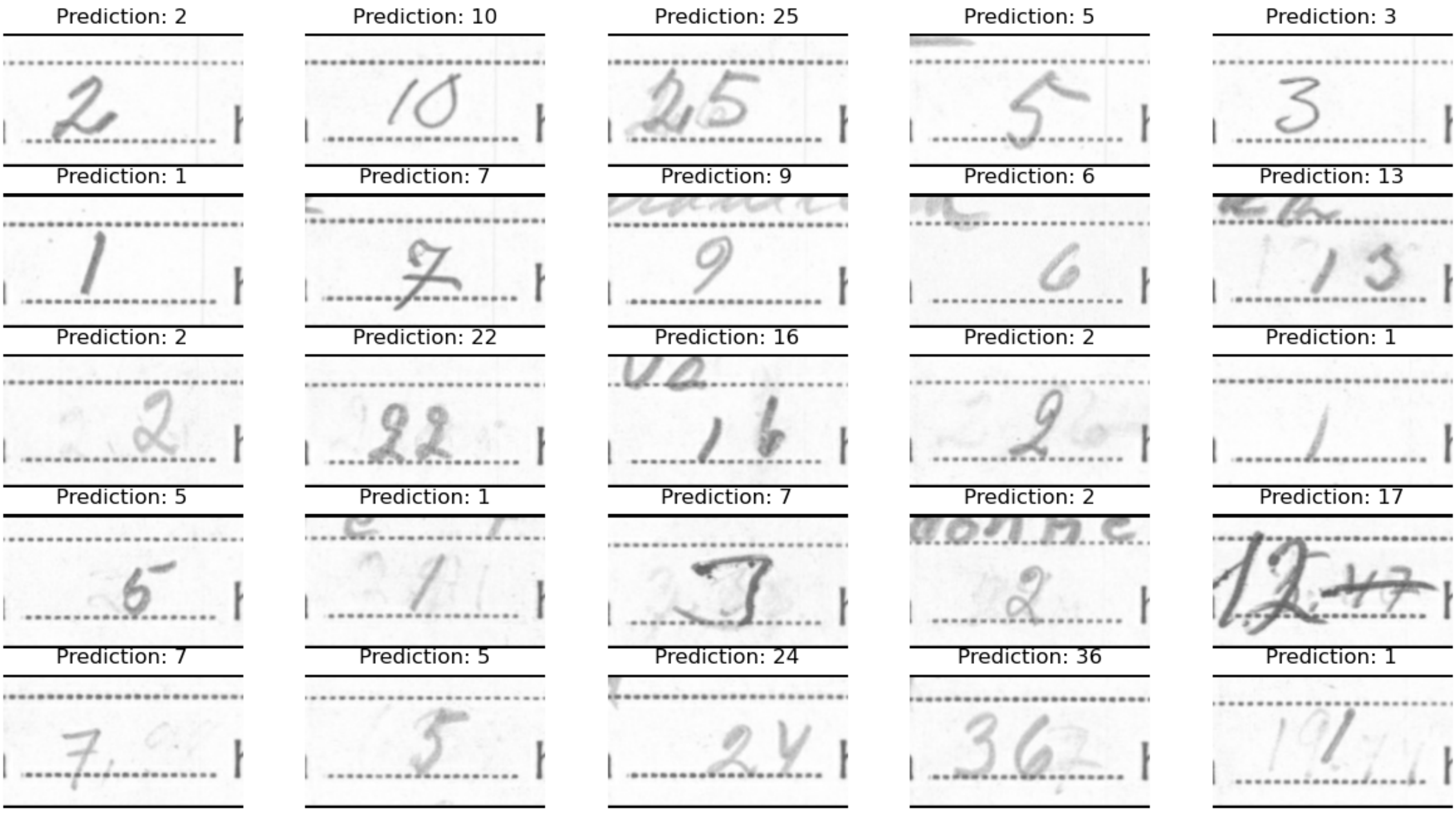
be easily used to check whether the farm IDs are always one larger than the previous one. After using these checks, I drew a random sample of 1000 forms from the final dataset. With six main variables, farm ID (two parts), field area, and whole area (hectares and ares in separate fields for each), a human assessor compared estimates to the original forms. There were mistakes in six forms meaning a mistake rate of 0.6 %.

Figure B.1: Illustration of cell detection



Notes: Illustration of the cell recognition process. The forms are censored for privacy reasons by the researcher. The left-most form is an original form, the middle one has the predictions of cell locations from the computer vision model. The right panel shows examples of extracted cells.

Figure B.2: Examples of transcription predictions



Notes: An example of text recognition predictions from a random sample of cells.

C Estimating Land Productivity from Tax Record Sample

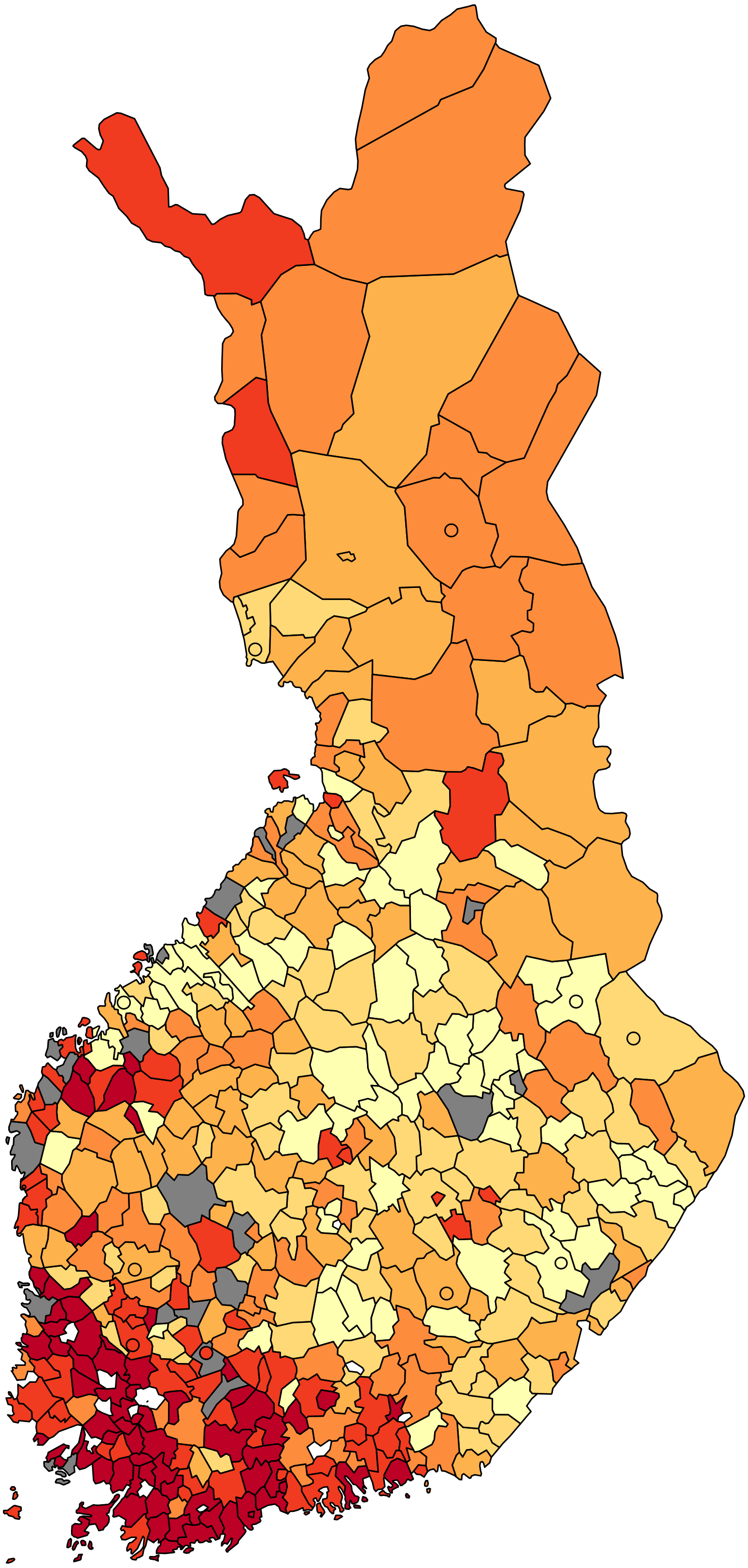
To estimate a measure of local land productivity, I use a sample of 12,156 farm tax records that detail income from sales and costs of inputs for farms, including wages, fertilizers, electricity, machine investments, and deductions. I use a Cobb-Douglas production function with a common local productivity factor:

$$\log Y_{im} = \alpha \log X_{im} + (1-\alpha) \log A_{im} + \omega_m + \varepsilon_{im} \tag{5}$$

where Y_{im} is the sales of the farm i in municipality m, X_{im} are the inputs for the farm, A_{im} is the area of the arable land, ω_m is a local common productivity term in municipality m, and ε_{im} is the farm's unique productivity term. After the estimation, I standardize the productivity measure to have a mean zero and a standard error of one.

Figure C.1 presents the productivity measures on a heat map. The highest productivity regions are on the South-West coast while the less productive regions are in Central and Eastern Finland. The relatively high productivity of Northern Finland corresponds to the subsidy policies that are included in the tax records.

Figure C.1: Land Productivity from Tax Records Sample



Notes: Gray municipalities are missing due to too few observations in the Tax Records sample.

D Alternative Empirical Approach: Regression Discontinuity

The design of the field reservation policy allows for an alternative empirical approach: regression discontinuity. By using the eligibility cutoff of two hectares, we can compare the eligible farms just above the cutoff to those below it. Even if the farm size is not random, the cutoff itself is exogenous for the farmers, and farms below and above the cutoff should be comparable enough. There is a tradeoff between statistical power in terms of the number of observations and the comparability of farms below and above the cutoff.

The estimation equation is

$$Y_{im} = \alpha + \beta_1|2 - A_i| + \beta_2(T_i \times |2 - A_i|) + \beta_3 T_i + \kappa_m + \theta X_{im} + \varepsilon_{im} \tag{6}$$

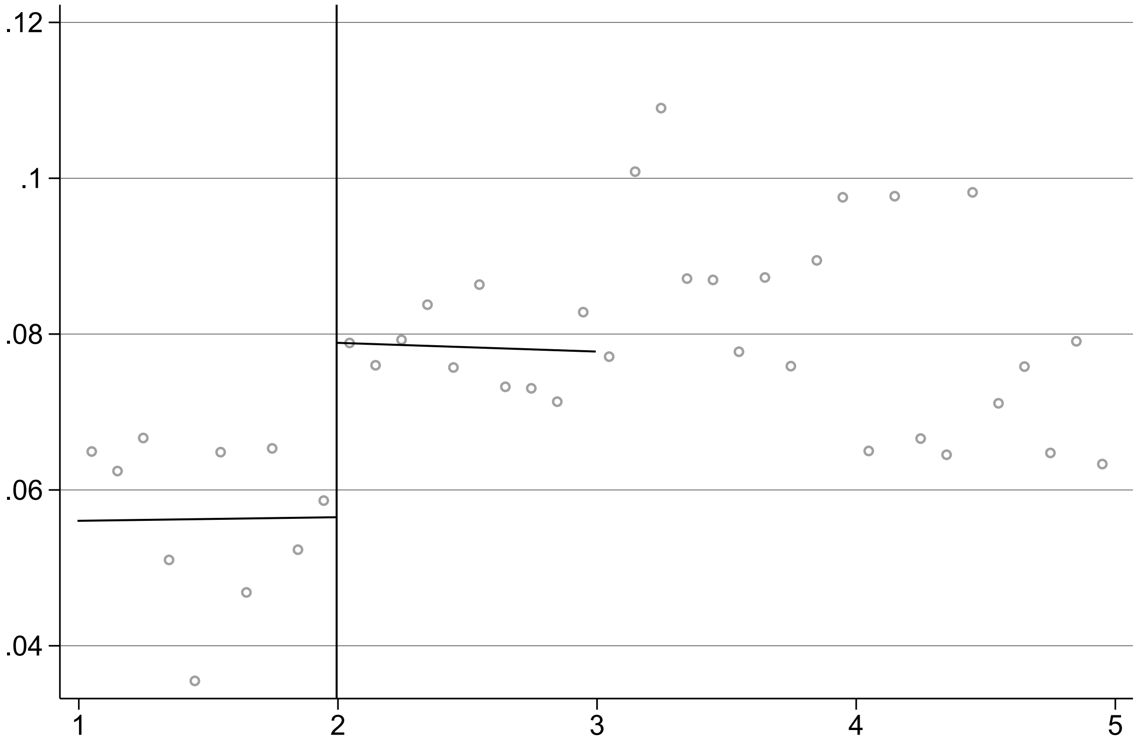
where I include the municipality and controls for the farm size. I also include birth year fixed effects for the children. Since the policy mostly affected the lower productivity regions, I focus on the farms that were in the below mean municipalities in land productivity.

The RDD measures a different underlying parameter than the main approach. While the main approach compares the effect of the policy on the farms in the low-productivity municipalities to those in high-productivity municipalities, the RDD compares the effect of the eligible on the non-eligible which is the effect of the policy. Hence, we should expect higher point estimates for the RDD, as the policy also affected the control group of the main design but more modestly.

Figure D.1 shows the raw data on the share of farmers stopping farming below and above the 2-hectare cutoff. As we can see, there is a jump of 2 percentage points at the cutoff. The lines are linear non-weighted regressions with a bandwidth of 1 hectare.

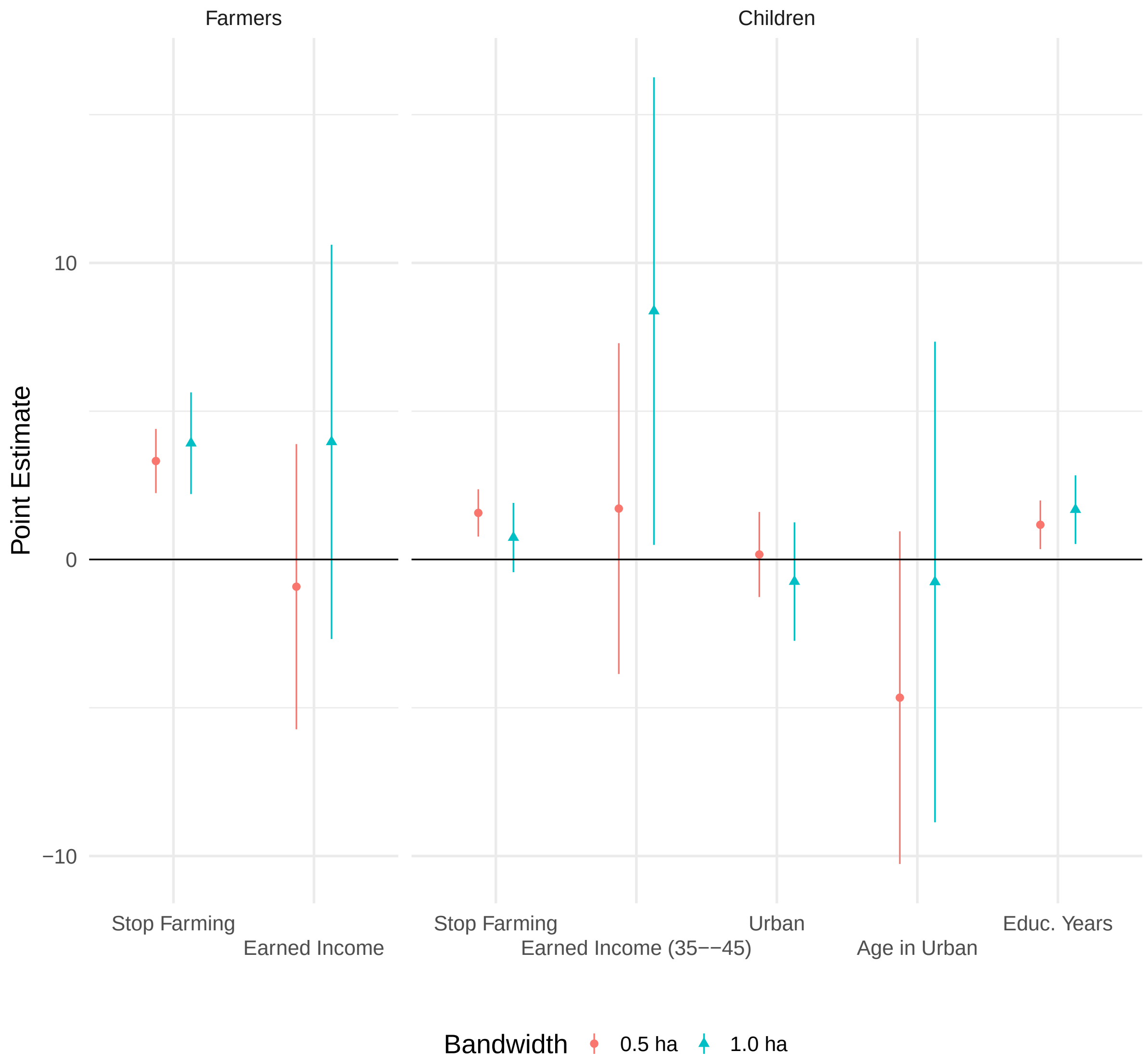
Figure D.2 shows the point estimates of the local linear RDD with two bandwidths of 0.5 ha and 1.0 ha. These results are also presented in Table D.1. It shows that the treated farmers are more likely to stop farming. The point estimate is also positive for the children, although smaller. While suffering from statistical precision, the treated children seem to earn more, possibly move to urban municipalities younger and get more education.

Figure D.1: The share of farmers stopping farming around the two-hectare cutoff.



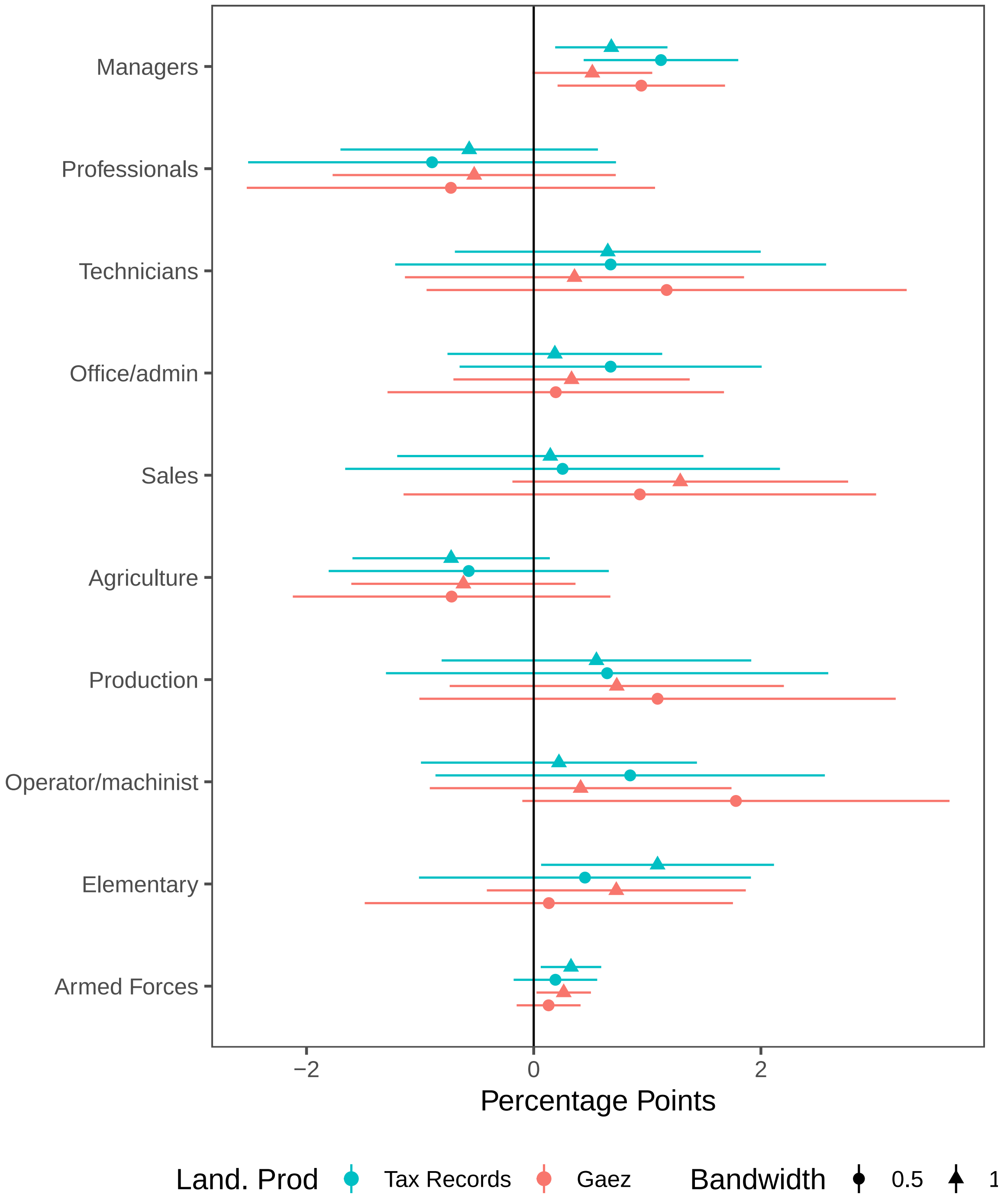
Notes: The share of farmers stopping farming around the two-hectare cutoff in below mean land-productivity municipalities. The lines are linear estimations of regression discontinuity with triangular kernel and no controls.

Figure D.2: Regression Discontinuity Results



Notes: Regressions have polynomials of first degree. Earned income units are in hundreds of euros of 2020 prices. Stop Farming and Urban are in percentage points. Age in Urban and Educ. Years are in years divided by ten. Confidence Intervals are at 90 % level.

Figure D.3: Regression Discontinuity Occupation Results



Notes: Regressions have polynomials of first degree. Estimates are for children from low-productivity regions, defined either from the Tax Records Estimates or Gaez. Confidence Intervals are at 90 % level.

Table D.1: Regression Discontinuity Results

A. Farmers

	Stop Farming		Earned Income	
T_i	0.0392***	0.0332***	396.5	-91.76
	(0.0103)	(0.00650)	(399.5)	(289.0)
Bandwidth	0.5 ha	1.0 ha	0.5 ha	1.0 ha
N	9547	22741	9547	22741

B. Children

	Stop Farming		Earned Income (35–45)	
T_i	0.00739	0.0157***	837.6*	171.6
	(0.00702)	(0.00479)	(473.8)	(335.2)
Bandwidth	0.5 ha	1.0 ha	0.5 ha	1.0 ha
N	14374	27820	14370	27814

C. Children

	Urban		Age in Urban		Educ. Years	
T_i	-0.00745	0.00168	-0.0759	-0.466	0.168**	0.117**
	(0.0120)	(0.00862)	(0.487)	(0.337)	(0.0696)	(0.0493)
Bandwidth	0.5 ha	1.0 ha	0.5 ha	1.0 ha	0.5 ha	1.0 ha
N	14374	27820	7210	13986	14212	27496

Notes: Regressions have polynomials of first degree. Earned income units are in hundreds of euros of 2020 prices.

E Variable Descriptions

The tables below describe all variables.

Table E.1: Individual-level Variables

Variable	Source	Description
Earned Income	Census 70-85, FOLK Income 1987-	Earned income subject to state taxation.
Urban / Home Municipality	Census 70-85, FOLK Basic	Urban municipalities are defined based on the threeway classification of Statistics Finland: https://www2.tilastokeskus.fi/en/luokitukset/corrmaps/kunta_1_20220101%23kuntaryhmitys_1_20220101/.
Educ. Years	Census 70-85	9 years: Primary, Lower secondary (undefined in data) 12 years: Upper secondary 13 years: Post-secondary, non-tertiary 14 years: Short-cycle tertiary 15 years: Bachelor's degree 18 years: Master's degree 21 years: Doctorate
Age / Year of Birth	Census 70-85, FOLK Basic	
Field Area	Agricultural Census 1969	At the precision on one are.
Forest Area	Agricultural Census 1969	At the precision on one are.
Stop Farming	Farm Register 1973	Less than 0.2 hectares of field cultivated in year 1973. The field reservation policy allowed for home production which this aims to take into account.
Occupation	FOLK Employment	Occupations are defined with the first digit of the 6-digit occupation code. Full definitions can be found here: https://www2.tilastokeskus.fi/en/luokitukset/ammatti/ammatti_1_20010101/
Average Earned Income in Municipality	FOLK Income, FOLK Basic	Average earned income for a given year in a given municipality.
Average Earned Income with Education	FOLK Income, FOLK Education	Average earned income for a given year for a given 6-digit education code.
Average Earned Income within Occupation	FOLK Income, FOLK Employment	Average earned income for a given year for a given 6-digit occupation code.

Table E.2: Municipality-level Variables

Variable	Source	Description
Field Reservation	Jaatinen and Nygård (1972)	Number of farms reserved each year in 1969–71.
Land Productivity (Tax)	Statistics Finland Archives	More details in Appendix C.
Land Productivity (Gaez)	Global Agro-Ecological Zones (Gaez v4), FAO	Potential yield of wheat in different municipalities
Election Outcomes	Official Statistics of Finland for Parliamentary Elections in 1966 and 1970 (XXIX A:29, A:31) and the Official Statistics of Finland for Local Elections (XXIX B:3)	
Population Change 1961–70, Employment Rate 1970	Census 1970	
Municipality Tax Revenue	Statistics Finland Communal Finances 1966, 1970, 1972	
Municipality Population	Statistics Finland Vital Statistics 1966, 1970, 1972	

F Full quotes from farmer interviews

The following quotes are parts from Paajanen and Kekkonen (1972) that mention field reservation, rural-to-urban migration, or politics. The translations are made by the author.

"Everybody would do as they see best for themselves, even if it would feel [weird], that some get paid for not farming while others for farming. - The field reservation act is peculiar. A normal person does not understand it" Viljo M. 51, Parikkala

"This field reservation is a crazy business, the government loses its money. First, they pay to clear fields and for reservation." Helge M. 36, Kempele

"Field reservation business does not make sense by any means and in Eastern Finland, it is a downright crime since there are no other jobs for people. People are torn away from their familiar birthplaces and often well-built homes. - Actual field reservation is a societal catastrophe." Veikko K. 55, Polvijärvi

"Sometimes it feels like you are a criminal if you are a farmer." Olavi M. 51, Orimattila

"Is it the government's fault or what that farmers are discriminated against as if they were some predators? You can harass and discriminate against them as you like. Agriculture is not valued as it was during wartime. The field reservation feels very nasty. Particularly, when you see wildflower fields by the roads. It was hard work to clear these fields in the first place." Kauko K. 63, Saloinen

"I won't reserve my fields as long as my fists swing. I have seen enough of reserved fields on my travels and they are a miserable sight. They have become a problem in Sweden too. They start spreading weeds if they are not taken care of as the law requires. But who is enforcing it? A civil servant reserving their fields? Of course, they can do it in a free society. It is not, however, as simple since they have all types of income. If a boss or some bigger farmer reserves their fields, they should give their land to smaller farmers." Veikko H. 40, Polvijärvi

"It's bad if the countryside becomes deserted. " Toivo V. 57, Heinävesi

"Most of the fields in our village have been reserved, which is one big humbug. [And since most farmers here are so old] it is necessary for many, but the burden of cost goes to those who try to do something. Me and my missus have decided that as long as our thumbs swing we won't reserve our fields. [Reserved fields] are so ugly and weed nest that pollutes the neighbor's fields. – This is all so short-sighted. These political parties are behind this. If this vision remains, it will lead to a total disorder. Nobody wants to work or make an effort. All the old proper values are gone. The young get a conception of the society and life that nobody bears any responsibility." Olavi M. 65, Ylivieska

"It's a bad thing if the countryside is deserted. If another era of austerity becomes like during these two previous wars. If food runs out who will help us if nobody starts to cultivate the fields and they've been made into forests? Then the government has to pay again to clear the forests back into fields. It would be good to keep the fields under operation for a rainy day. If everyone from the countryside moves to cities how will these people manage as there is not enough factory work there anyways? According to my reasoning, there are so many people moving to Helsinki that there is not enough housing, and here millions of houses are left to rot. With these wood supplies that rebuilding requires, we could export our food. With that money, we could support the rural so that people could stay in the countryside and the buildings here would not rot. To my knowledge, this is something that the parliament gentlemen should consider. Only to ensure that people can make their living here and not move to too urban conditions.

If I had guessed this thing [field reservation], I would have left my fields to reforest and left as my brothers did. Mother wanted to stay here and I did not want to leave where the business is. Now there would be more forest and wood to sell. I would have long summer holidays if I had a good government post. I would have had enough brain also to look for some occupation.

I won't go for this field reservation, the income is so low that it doesn't get you far. 250 marks for a hectare and you still have to keep your fields in shape in summer, mow and plow. In that sense, it's against the porridge this money. Neighbor's fields are near so you have to plow and harrow. What is left when you pay 15 marks an hour for a tractor man?

One does not live with the field reservation and you need other income if there is no basic pension or else. –

The original mistake was made after the war when people were scattered everywhere to live on small farms. I think that the minimum should have been 70 hectares of forests. One would not have to be a constant slave of the [forestry] companies. Now you just dry up your bag at home and tomorrow leave again to find another logging site. The firms get cheap labor from these small farms. The firms order where they want you and how much they want to pay you. If you had 70–75 hectares of forest, then 7–10 hectares of fields would be enough for me. – One wouldn't have to go begging work from the [forestry] firms." Toivo V. 57, Heinävesi

"I think this reservation issue is a miserable one. In our village, it creates a lot of unemployment. A lot of ex-farmers and their children end up in an unemployment fund as their fields are reserved. I think that as we have quite high unemployment numbers here in Lapland, it is because the fields are reserved and there is nothing to do at home farm." Reino M. 52, Vuotso