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**LAND REFORM IN MEXICO'S EJIDOS
UNSUNG HERO OR DEVELOPMENT DEAD END?**

by

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September 2019

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**LAND REFORM IN MEXICO'S EJIDOS:
UNSUNG HERO OR DEVELOPMENT DEAD END?**

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ABSTRACT

In 1992, Mexico's government embarked on an ambitious set of land reforms targeting the *ejido* system, a semi-communal land administration system applicable to approximately 50% of the country's surface area. The *ejido*, a largely rural institution stemming from the 1917 constitution structured to alleviate grievances about unequal land distribution that had helped trigger the Mexican Revolution, had by 1992 become a byword for poverty and underdevelopment. The neoliberal-oriented reforms sought to reorient *ejido* lands toward individual control and ownership in order to spur modernization of the agricultural sector, akin to the East Asian model of development. But, to what degree did the reforms succeed in their aims, and what additional consequences have resulted? This metastudy of literature on the reforms finds that Mexico's efforts had a more limited effect than intended, neither as beneficial as hoped nor as damaging as feared. While tenure security and conflict management in the *ejido* improved due to the reforms, credit access did not. And, rather than spark agricultural development, the changes wrought by the reforms instead contributed to rural out-migration and off-farm activities. Finally, this research concludes that first, land reform can yield significant unexpected consequences, second, that rural Mexicans have stronger ties to their land than can be explained by economics alone, and last, that market-led land reform is not a panacea for rural development.

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TABLE OF CONTENTS

I.	INTRODUCTION.....	1
A.	RESEARCH QUESTION	1
B.	SIGNIFICANCE OF THE RESEARCH QUESTION.....	2
C.	LITERATURE REVIEW	3
1.	Definition	3
2.	Types of Land Reform.....	4
3.	Evolution of the Land Reform Agenda.....	6
4.	Reform Success and Failure.....	7
5.	Research Implications	12
D.	POTENTIAL EXPLANATIONS AND HYPOTHESIS.....	12
E.	RESEARCH DESIGN	15
F.	OVERVIEW AND CHAPTER OUTLINE	16
 II.	 REFORM OUTPUTS.....	 17
A.	INTRODUCTION.....	17
B.	TENURE SECURITY	19
1.	Migration	19
2.	Tenure Security Perceptions.....	21
3.	Incomplete Privatization	22
4.	Explanations	23
5.	Conclusion	26
C.	CREDIT ACCESS	27
1.	Expectations.....	27
2.	Reality	28
3.	Explanation.....	29
4.	Conclusion	30
D.	CONFLICT	31
1.	Overview	31
2.	Context	32
3.	Decreasing Conflict.....	35
4.	Increasing Conflict.....	36
5.	Conclusion	38
E.	SUMMARY	39
 III.	 RURAL WELFARE.....	 41
A.	INTRODUCTION.....	41
B.	LIVELIHOODS APPROACH	41

C.	FARM INCOME.....	43
1.	Investment and Income	44
2.	Land Access	45
3.	Summary.....	46
D.	MIGRATION	46
1.	Migration and Agricultural Productivity	48
2.	Migration and Off-Farm Activities	49
3.	Summary.....	50
E.	OFF-FARM ACTIVITIES.....	50
F.	CONCLUSION	52
IV.	CONCLUSION	55
A.	PRIMARY FINDINGS.....	55
B.	FUTURE RESEARCH.....	57
C.	IMPLICATIONS	58
	LIST OF REFERENCES.....	61
	INITIAL DISTRIBUTION LIST	73

LIST OF FIGURES

Figure 1.	Schematic of <i>ejido</i> Land Regimes over Time.....	18
Figure 2.	Mexico’s Urban Population (Percentage of Total Population, 1988– 2018).	54

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LIST OF TABLES

Table 1.	De Jure Land Rights before and after Reforms.	21
Table 2.	Perception of PROCEDE Effects.....	25

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I. INTRODUCTION

A. RESEARCH QUESTION

Land reform is commonly considered a powerful policy tool to alleviate poverty. By altering existing patterns of land use or ownership, land reform offers a potential solution to the problems of income inequality and low productivity associated with inefficient land distribution.¹ Additionally, as rapidly developing East Asian countries embarked on substantive land reform prior to successful agricultural modernization and industrialization, land reform is posited as a precondition for sustained and equitable economic growth.² And, inequalities aside, land reform can contribute to the development of secure property rights which have been proposed as an essential part of the incentive structure underpinning successful market institutions.³ By adopting and implementing land reform, the hope is that clear ownership and secure usufruct of land will improve the livelihood of the poor through reduced economic uncertainty and higher capture of return on capital.

It is not clear, however, that land reform programs have led to improved outcomes for the poor. Numerous political and social barriers to implementation and significant administrative challenges in their execution have increased the difficulty of implementing major redistributive land reform programs. Instead, reformers have moved towards formalizing existing property arrangements via land titling, registration and tenure reform, all of which have become increasingly prominent on the land reform agenda. For more than a century, land reform efforts of every type have proliferated in Latin America making it an ideal testbed for examining the effectiveness of these more recent genres of reform. In particular, Mexico's market-oriented reform of its semi-communal land tenure system

¹ Michael Lipton, *Land Reform in Developing Countries: Property Rights and Property Wrongs* (Routledge, 2009), 1.

² Cristóbal Kay, "Why East Asia Overtook Latin America: Agrarian Reform, Industrialisation and Development," *Third World Quarterly* 23, no. 6 (December 2002): 1073–1102, <https://doi.org/10.1080/0143659022000036649>.

³ Daron Acemoglu and Simon Johnson, "Unbundling Institutions," *Journal of Political Economy* 113, no. 5 (October 1, 2005): 949–95, <https://doi.org/10.1086/432166>.

known as the *ejido*, started in the early 1990s, were a sharp break with its redistributive path. As a fully implemented and wide-reaching reform (applicable to 50% of the country's land area), Mexico's efforts serve as a true test of the potential of a second generation of land reform policies. This thesis will address the question: was Mexico's reform of its land tenure system associated with improved rural livelihood? If so, via what mechanisms did the reforms improve livelihood?

B. SIGNIFICANCE OF THE RESEARCH QUESTION

Grievances over land use and ownership continue to spark conflict around the globe in both rural and urban contexts.⁴ From squatter camps and slums to land invasions and armed rebellion, lack of secure property rights serves as a source of instability in many developing countries. Insurgencies in El Salvador, Nepal, Peru, the Philippines, Vietnam, Zimbabwe and South Africa have been directly tied to disputes over land with land reform policies enacted in response.⁵

While distributive land reform fell out of favor as a development tool with the end of the Cold War, "pro-poor land policies" constitute a new and continuing wave of reforms with a higher degree of sophistication and context-sensitivity.⁶ However, the link between land reform and poverty reduction has been more theoretical than empirical, and assessment of recent reforms remains challenging.⁷ As with distributive land reform policies, measurement and evaluation of more recent reforms is often based not on the stated aims of the policy, but "what the evaluator thinks the objectives *should* be."⁸ If

⁴ Innovations for Successful Societies Program, "Innovations in Land Tenure Systems and Land Titling (Cross-Cutting)," *Innovations for Successful Societies: Building Institutions, Escaping Development Traps*, February 2018, <https://successfulsocieties.princeton.edu/publications/innovations-land-tenure-systems-and-land-titling-cross-cutting>.

⁵ Michael Albertus and Oliver Kaplan, "Land Reform as a Counterinsurgency Policy: Evidence from Colombia," *Journal of Conflict Resolution* 57, no. 2 (April 2013): 200, <https://doi.org/10.1177/0022002712446130>.

⁶ Saturnino M Borras, Cristóbal Kay, and A Haroon Akram Lodhi, "ISS/UNDP Land, Poverty and Public Action Policy Paper No. 1," Land Policies, Poverty Reduction and Public Action Research Project (The Hague, The Netherlands: ISS/UNDP, 2005), http://hubrural.org/IMG/pdf/iss_pnud_overview.pdf.

⁷ Borras, Kay, and Lodhi.

⁸ M. Riad El-Ghonemy, *The Political Economy of Rural Poverty: The Case for Land Reform* (Routledge, 2006), 238, <https://doi.org/10.4324/9780203013304>.

poverty reduction is indeed the ultimate postulated outcome of land reform, as Lipton and Borras et al. indicate, then land titling as a less politically, socially and administratively challenging form of land reform should be clearly associated with improved poverty outcomes. If not, then land titling and by extension land reform may be neither necessary nor sufficient conditions for rural development.

Though land reform research is certainly not novel, land titling is a more recent effort whose long-term effects should now be evident. Yet, data remains sparse and many land reform relationships remain controversial, including basic questions such as whether farm size and productivity are directly or inversely related in developing countries. Land titling efforts are ongoing in Latin America, and though compelling research exists examining narrow outcomes such as the effect of titling on conflict or credit access in specific cases, a broader look at those effects in aggregate with respect to rural livelihood outcomes will provide policy implementation insights and better overall understanding of the potential benefits of land titling.

C. LITERATURE REVIEW

1. Definition

Land reform is a set of policies that modify the institutional framework of land tenure systems in order to alter their existing patterns of use and ownership, particularly in an agricultural context.⁹ Land reform potentially affects one or more of the “bundle of rights” associated with land tenure status, specifically: “(a) who controls the land, (b) who may use the land, (c) who reaps the benefits of land use, and (d) who bears the costs of land use.”¹⁰ Throughout much of the 20th century, land reform efforts were often undertaken in developing countries after recognition that formal and effective rights to control of and benefit (profit) from land were typically held by a small number of hacienda/plantation owners or absentee landlords while rural peasants often held formal or

⁹ Doreen Warriner, *Land Reform in Principle and Practice* (London, UK: Oxford University Press, 1969), xvi; Ethan B. Kapstein, *Seeds of Stability: Land Reform and US Foreign Policy* (Cambridge University Press, 2017), 78.

¹⁰ W. C. Thiesenhusen, “Broken Promises: Agrarian Reform and the Latin American Campesino,” *Broken Promises: Agrarian Reform and the Latin American Campesino.*, 1995, 7, <https://www.cabdirect.org/cabdirect/abstract/19986771573>.

customary rights to use of land.¹¹ This mismatch holds back productivity as workers of the land could not be sure of their right to make and benefit from fixed investments, while landowners could not necessarily ensure highest and best use of their assets. The hope of land reform is that realigning these rights will increase economic efficiency, reduce poverty, improve sustainability, and increase political stability.¹²

2. Types of Land Reform

While a myriad of specific policy measures are available under the umbrella of land reform, they can be grouped into four general categories: collectivization, redistribution, colonization, and tenure reform. Land reform based on collectivization sees rights to both ownership and surplus held by the state or community while use may be characterized as “induced joint farming.”¹³ The Soviet Union under Stalin and Mao’s Great Leap Forward are infamous examples. Land reforms of this type, often associated with transition to or away from Communism (de-collectivization), are divergent from others in terms of impetus, administrative mechanisms and effects, and will thus be disregarded in this research.¹⁴

Redistributive reform is typically state-led and often implemented with strong backing of coercive force. It represents the “classic” case where the state expropriates land held by one group (relatively unproductive large holders) in order to give to another (the landless or smallholders).¹⁵ Redistribution puts more land under control of those that would both derive the most benefit from ownership and would use the land most productively, thus redressing social and political grievances while increasing overall

¹¹ Hans Binswanger, Klaus Deininger, and Feder Gershon, “Power, Distortions, Revolt, and Reform in Agricultural Land Relations,” in *Handbook of Development Economics*, ed. Jere Behrman and T.N. Srinivasan, vol. IIIB, Handbooks in Economics 9 (Amsterdam, Netherlands: Elsevier, 1995).

¹² Alain De Janvry and Elisabeth Sadoulet, *Access to Land and Land Policy Reforms* (UNU World Institute for Development Economics Research, 2001), 1.

¹³ Lipton, *Land Reform in Developing Countries*, 190–91.

¹⁴ Scott Rozelle and Johan F. M Swinnen, “Success and Failure of Reform: Insights from the Transition of Agriculture,” *Journal of Economic Literature* 42, no. 2 (May 2004): 404–56, <https://doi.org/10.1257/0022051041409048>; Peter Ho and Max Spoor, “Whose Land? The Political Economy of Land Titling in Transitional Economies,” *Land Use Policy* 23, no. 4 (October 2006): 580–87, <https://doi.org/10.1016/j.landusepol.2005.05.007>.

¹⁵ Thiesenhusen, “Broken Promises.”

agricultural output.¹⁶ Similar to redistribution, land colonization refers to the state granting vacant public or unclaimed land to politically targeted beneficiaries, typically the rural poor. Similar effects are expected as redistributive reforms: the reduction of inequality in land holding by increasing the amount held by the poor.¹⁷ Venezuela and the Philippines in the 1950s and 1960s utilized both redistribution and colonization, the former to reduce the rural pressures contributing to rapid urbanization,¹⁸ while the latter aimed to stem the root grievances of a rural rebellion. In both cases, colonization became the dominant mode of reform over redistribution as it entailed less state coercion and produced fewer grievances.

Tenure reform consists of measures to improve the security of tenurial rights, from the registering and titling of small holders,¹⁹ to the formalization in statute of customarily held property rights, and to greater legal protection and certainty in tenant-landlord relations. For example, land titling in Honduras initiated in 1982 was intended to incentivize investment (through borrowing) in agriculture to spur modernization and raise productivity, allow market-led redistribution of land towards more efficient producers, and peacefully settle boundary conflicts.²⁰ To those ends, major components of tenure reform can include changes to land administration, formalization of tenure, and legal mechanisms to resolve land conflicts. Improvements to land administration involve technical efforts to better demarcate and track parcels. Formalization of tenure entails the recognition of de facto land rights, incorporating customary or formerly illicit land practices or transactions into formal institutions. And in order to mitigate against the risk and impact of land conflicts, the refinement or creation of legal processes is enacted.

¹⁶ Nancy Lapp, “Land Reform in Latin America” (Oxford University Press, August 31, 2015), <https://doi.org/10.1093/obo/9780199756223-0132>.

¹⁷ Doreen Warriner, *Land Reform in Principle and Practice* (London, UK: Oxford University Press, 1969).

¹⁸ John Kirby, “Venezuela’s Land Reform: Progress and Change,” *Journal of Interamerican Studies and World Affairs* 15, no. 2 (May 1973): 207, <https://doi.org/10.2307/174697>.

¹⁹ Lipton, *Land Reform in Developing Countries*, 169.

²⁰ Kees Jansen and Esther Roquas, “Modernizing Insecurity: The Land Titling Project in Honduras,” *Development and Change* 29, no. 1 (January 1998): 81–106, <https://doi.org/10.1111/1467-7660.00071>.

3. Evolution of the Land Reform Agenda

The appeal of one type of land reform over another is largely predicated on the economic ideology of the beholder and relatedly, the problem to be solved. On one side, those prioritizing equality outcomes favored redistributive while those focusing on efficiency gains preferred market-oriented tenure reforms. For much of the 20th century, agrarian reform writ large was studied with respect to industrialization and the debate on whether market or command economies were more successful. Whether as a precursor or complement to industrialization, redistributive land reform has long been hypothesized as a tool to jumpstart rapid economic development.²¹ In addition to economic theories of development, scholars as early as 1943 posited that redistributive land reform could contribute to political and social development with respect to a liberal democratic ideal.²² In practice, the Cold War provided an impetus for Western and Western-aligned governments to seek out measures that might reduce the appeal of Communism to rural populations. Given the perceived success of Philippine land reform efforts quelling Communist-aligned rural unrest in the early 1950s,²³ the Kennedy administration notably made land reform a component of the 1960s Alliance for Progress in Latin America.²⁴ Meanwhile, Communist ideals and influence spurred collectivization actions around the globe from the Bolshevik Revolution to China, Cuba and Vietnam. However, by the 1980s, political will faltered and state-led redistributive land reform efforts had fallen by the wayside in market economy countries.²⁵ With the fall of the Soviet Union, the primary impetus (diminishing popular support for Communism) for large-scale land redistribution was removed.

²¹ Alexander Gerschenkron, *Bread and Democracy in Germany* (Ithaca, NY: Cornell University Press, 1989); Kay, “Why East Asia Overtook Latin America.”

²² Gerschenkron, *Bread and Democracy in Germany*.

²³ Lawrence Greenberg, “The Hukbalahap Insurrection: A Case Study of a Successful Anti-Insurgency Operation in the Philippines, 1946-1955” (U.S. Army Center of Military History, 1986), https://history.army.mil/html/books/093/93-8/CMH_Pub_93-8-1.pdf.

²⁴ Ethan B. Kapstein, *Seeds of Stability: Land Reform and US Foreign Policy* (Cambridge University Press, 2017).

²⁵ Borras, Kay, and Lodhi, “ISS/UNDP Land, Poverty and Public Action Policy Paper No. 1,” 9–10.

The rise of neoliberal and New Institutional Economics in the 1980s meant an increased focus on property rights, rather than redistribution, as a means to improve equality of opportunity. North examined secure property rights as one of many basic market institutions that jointly establish “economic rules of the game” that can serve to inhibit or encourage sustained growth.²⁶ Rather than treat property rights as exogenous to economic models, authors have identified them as a key driver of variation in development outcomes.²⁷ Specifically, De Soto identifies the lack of formal property rights in the developing world as not only a cause of undercapitalization, but as the missing foundation for economic development.²⁸ Reforms during the 1980s and ‘90s throughout the developing world aimed to improve tenure security via land registration and titling.²⁹ Though “pro-market” land reforms are ongoing, basic theoretical issues such as whether these reforms improve economic outcomes such as farm size and productivity remain contentious, if not “notoriously difficult” to study.³⁰

4. Reform Success and Failure

Economic, political and social outcomes have been mixed following land reform, though I focus especially on economic outcomes in this thesis. In terms of successes, improved tenure security has been associated with better credit access, higher land values and higher agricultural investment and productivity.³¹ Consistent with Kay’s framing,³² land reform in Korea after World War II has been credited with significantly improving

²⁶ Douglass C North, “Institutions,” *Journal of Economic Perspectives* 5, no. 1 (February 1991): 98, <https://doi.org/10.1257/jep.5.1.97>.

²⁷ Daron Acemoglu, Simon Johnson, and James A Robinson, “The Colonial Origins of Comparative Development: An Empirical Investigation,” *American Economic Review* 91, no. 5 (December 2001): 1369–1401, <https://doi.org/10.1257/aer.91.5.1369>.

²⁸ Hernando de Soto, “The Mystery of Capital,” in *The Political Economy Reader: Markets as Institutions*, ed. Naazneen H. Barma and Steven K. Vogel, 1 edition (New York: Routledge, 2007).

²⁹ Gershon Feder and Akihiko Nishio, “The Benefits of Land Registration and Titling: Economic and Social Perspectives,” *Land Use Policy* 15, no. 1 (1998): 25–43, https://entwicklungspolitik.uni-hohenheim.de/uploads/media/The_benefits_of_land_registration_and_titling_04.pdf.

³⁰ Lipton, *Land Reform in Developing Countries*, 65–69; Cristóbal Kay, “Latin America’s Agrarian Reform: Lights and Shadows,” *Land Reform: Land Settlements and Cooperatives*, 1998, 19.

³¹ Feder and Nishio, “The Benefits of Land Registration and Titling: Economic and Social Perspectives.”

³² Kay, “Why East Asia Overtook Latin America.”

rural income distribution and raising agricultural output.³³ In Peru's titling program, increased title density was associated with improved investment opportunities.³⁴

But despite the potential benefits of land reform, its effects have often been less dramatic than hoped for, or even counterproductive. In Latin America, reforms have not only had mixed success in improving agricultural output or reducing income inequality but have instead sometimes served to intensify social conflicts.³⁵ Indeed, the mere prospect of land reform may induce landowners to initiate evictions of tenant farmers or more generally accelerate transition towards less labor-intensive activities, either in the form of mechanization or output substitution towards livestock.³⁶ Once implemented in Guatemala, land reforms did not improve the health of credit markets or unlock frozen capital and instead served to create untenable debt burdens even for the most successful beneficiaries.³⁷ In Honduras, land titling failed to improve tenure security, credit access or productivity and instead simply created a new mechanism for contesting property rights.³⁸

a. Reform Conditions

Once enacted, conditions impeding effective implementation of land reform can be grouped into two general categories, political and administrative. Political factors have been repeatedly highlighted as the primary barrier to effective implementation, particularly

³³ Yoong-Deok Jeon and Young-Yong Kim, "Land Reform, Income Redistribution, and Agricultural Production in Korea," *Economic Development and Cultural Change* 48, no. 2 (January 2000): 253–68, <https://doi.org/10.1086/452457>.

³⁴ Ricardo Fort, "Assessing the Impact of Rural Land Titling in Peru: The Case of the PETT Program" (Conference on New Challenges for Land Policy and Administration, Washington, DC: World Bank, 2008), 21.

³⁵ Kay, "Latin America's Agrarian Reform: Lights and Shadows."

³⁶ Klaus Deininger, "Making Negotiated Land Reform Work: Initial Experience from Colombia, Brazil and South Africa," *World Development* 27, no. 4 (April 1999): 653, [https://doi.org/10.1016/S0305-750X\(99\)00023-6](https://doi.org/10.1016/S0305-750X(99)00023-6).

³⁷ Susana Gauster and Ryan S Isakson, "Eliminating Market Distortions, Perpetuating Rural Inequality: An Evaluation of Market-Assisted Land Reform in Guatemala," *Third World Quarterly* 28, no. 8 (December 2007): 1519–36, <https://doi.org/10.1080/01436590701637375>.

³⁸ Jansen and Roquas, "Modernizing Insecurity."

in Latin America.³⁹ Addressing a collective action problem, land reform generally promises benefit to the numerous but politically weak rural workers and small holders to the detriment of powerful landowning interests.⁴⁰ Because the powerful face potentially large declines in their political, social, and economic standing from many land reform programs, however, they are likely to take actions to block the reform. Early in their post-colonial history, Latin American governments had tailored land tenure institutions to favor landed elites to which they were beholden.⁴¹ Accordingly, redistributive land reform would upset not only the economic status of the elite through expropriation or increased competition, but also the land-dependent social hierarchy and pro-elite political structures they had created. Even in the case of titling, reform processes are prone to elite capture by favoring existing holders, or elite avoidance by exercising informal processes prior to establish ownership claims prior to reform enactment thereby “[legalizing] theft of poor people’s land.”⁴²

Political support for land reform is hindered by two competing dynamics. On one hand, rural groups must organize sufficiently for their dispersed concerns to be taken seriously by politicians.⁴³ On the other hand, an overly aggressive movement may be viewed as an existential threat to landed interests or legitimacy of the state, thus triggering

³⁹ Alain de Janvry and Elisabeth Sadoulet, “A Study in Resistance to Institutional Change: The Lost Game of Latin American Land Reform,” *World Development* 17, no. 9 (September 1989): 1397–1407, [https://doi.org/10.1016/0305-750X\(89\)90081-8](https://doi.org/10.1016/0305-750X(89)90081-8).

⁴⁰ From a New Institutional Economics perspective, highly inequal or insecure tenure imposes high social opportunity costs by inhibiting more productive use of land that would occur if tenure were more universally distributed. Yet, opposition by large holders or inability of rural peasants to mobilize inhibits efficient land market outcomes. Land reform thus seeks to address the institutional market imperfections that structurally perpetuate socially inefficient tenure patterns. Pranab Bardhan, “Distributive Conflicts, Collective Action, and Institutional Economics,” in *Frontiers of Development Economics: The Future in Perspective*, ed. Gerald Meier and Joseph Stiglitz, vol. 39 (New York, NY: Oxford University Press, 2001), 278–79, <http://choicereviews.org/review/10.5860/CHOICE.39-0424>.

⁴¹ “Frontiers of Development Economics: The Future in Perspective,” *Choice Reviews Online* 39, no. 01 (September 1, 2001): 124, <https://doi.org/10.5860/CHOICE.39-0424>.

⁴² Ruth Hall et al., “Resistance, Acquiescence or Incorporation? An Introduction to Land Grabbing and Political Reactions ‘from Below,’” *The Journal of Peasant Studies* 42, no. 3–4 (July 4, 2015): 478, <https://doi.org/10.1080/03066150.2015.1036746>.

⁴³ Bardhan, “Frontiers of Development Economics.”

a repressive response without change.⁴⁴ Limited tradespace for compromise may further hinder passage and enactment, as calls for land reform are often inextricable from revolutionary overthrow of existing hierarchical social structures.⁴⁵ By considering regime type, Albertus finds that by circumventing democratic veto points, autocracies are more likely to overcome these challenges and enact more reform.⁴⁶ More generally, so long as opponents can be bullied, bought off, or convinced to allow reform to move forward, some degree of implementation is possible.

b. Determinants of Effectiveness

If political barriers to enactment of reform can be suppressed, then policy design is likely to act as the determinant of reform effectiveness. Regardless of the type of reform implemented, there are two key variables shaping execution: complementary policies enacted in conjunction with or in support of land reform, and administrative capacity and capability. Though some scholars have pointed to both theoretical and historical examples that suggest that land reform alone can be sufficient in kickstarting development,⁴⁷ some degree of complementarity has long been recognized as important in achieving successful land reform with respect to improved rural livelihood.⁴⁸ Depending on the intent of reform, complementary measures may include removal of general market distorting policies or changes to market incentives (e.g., tax structures, input subsidies), support for credit markets, construction of rural infrastructure, and farmer education or technical assistance. These measures vary depending on the intent of the reforms and ideological orientation of policymakers. In Honduras, land titling was framed from a solidly neo-liberal perspective

⁴⁴ Michael Albertus, Thomas Brambor, and Ricardo Ceneviva, “Land Inequality and Rural Unrest: Theory and Evidence from Brazil,” *Journal of Conflict Resolution* 62, no. 3 (March 2018): 557–96, <https://doi.org/10.1177/0022002716654970>.

⁴⁵ Elias H. Tuma, *Twenty-Six Centuries of Agrarian Reform: A Comparative Analysis* (University of California Press, 1965).

⁴⁶ Michael Albertus, *Autocracy and Redistribution: The Politics of Land Reform* (Cambridge: Cambridge University Press, 2015), <https://doi.org/10.1017/CBO9781316227107>.

⁴⁷ Binswanger, Deininger, and Gershon, “Power, Distortions, Revolt, and Reform in Agricultural Land Relations”; Kay, “Why East Asia Overtook Latin America”; Hernando de Soto, *The Other Path: The Economic Answer to Terrorism* (Basic Books, 2002).

⁴⁸ Robert J. Alexander, “Agrarian Reform in Latin America,” *Foreign Affairs* 41, no. 1 (1962), <https://doi.org/10.2307/20029609>.

as a way for the state to reduce market interventions.⁴⁹ Accordingly, insufficient attention was paid to “complementary factor markets,” notably credit and insurance as well as land itself, despite a goal of market activation.⁵⁰

Another determinant of effectiveness is the ability of state institutions to effectively implement the reform. Given the hurdles to enactment and execution that follow, a state lacking capacity to design a palatable reform for its constituents would seem unlikely to be capable of instituting a reform yielding its intended effects. Administratively, land reform most immediately requires the establishment of high-quality land registers (cadasters) and sophisticated, respected conflict resolution mechanisms to support the apportionment or titling of properties.⁵¹ Cadaster creation is a non-trivial proposition with respect to the resources and technical capabilities available to the state.⁵² Moreover, fair and respected conflict resolution for property disputes may raise thorny issues of corruption, legal rights and social privileges under the broad umbrella of good governance.⁵³ Additionally, depending on the degree to which complementary policies are necessary for land reform to positively affect rural livelihood, the state may be unable to concurrently shepherd an abundance of initiatives.⁵⁴ Notably, insufficient administrative capacity has been noted as hindering land reform progress and effectiveness in Colombia, Brazil, and South Africa.⁵⁵

⁴⁹ Jansen and Roquas, “Modernizing Insecurity,” 83.

⁵⁰ Stephen R. Boucher, Bradford L. Barham, and Michael R. Carter, “The Impact of ‘Market-Friendly’ Reforms on Credit and Land Markets in Honduras and Nicaragua,” *World Development* 33, no. 1 (January 1, 2005): 107–28, <https://doi.org/10.1016/j.worlddev.2004.09.004>.

⁵¹ Frank Byamugisha, “Securing Africa’s Land for Shared Prosperity: A Program to Scale Up Reforms and Investments,” African Development Forum (Washington, DC: World Bank, 2013), <https://openknowledge.worldbank.org/bitstream/handle/10986/13837/780850PUB0EPI00LIC00pubdate05024013.pdf?sequence>.

⁵² Byamugisha.

⁵³ Merilee S. Grindle, “Good Enough Governance: Poverty Reduction and Reform in Developing Countries,” *Governance* 17, no. 4 (October 1, 2004): 525–48, <https://doi.org/10.1111/j.0952-1895.2004.00256.x>.

⁵⁴ John D. Montgomery, “Allocation of Authority in Land Reform Programs: A Comparative Study of Administrative Processes and Outputs,” *Administrative Science Quarterly* 17, no. 1 (March 1972): 62, <https://doi.org/10.2307/2392094>.

⁵⁵ Deininger, “Making Negotiated Land Reform Work.”

5. Research Implications

This literature review reflects the breadth of existing work on land reform, but it also illustrates that existing narrow studies do not answer broader questions of interest to policymakers such as “will land reform work?” or “what are its broader effects on the economy?” Despite decades of disappointing land reform efforts, consensus has yet to be reached as to whether land reform fails because its theoretical underpinnings are wrong, or because of shortfalls in implementation. In Binswanger and Deininger’s 1999 retrospective on decades of World Bank land policies, they outline two findings: first, that despite growing literature of the potential of land reform to generate positive outcomes, “[m]ost of the land reforms undertaken during the last 20 to 30 years, however, were politically motivated and have not lived up to expectations;” and second, “a lack of consensus on the broader subject of land policy has often compromised the effect on development of specific interventions, such as land tiding.”⁵⁶ By examining the links between land reform and theorized mechanisms for its effectiveness in improving rural livelihoods in a case where implementation proceeded relatively smoothly, this thesis addresses the gap between expected positive outcomes and negative empirical results. It also contributes to the ongoing argument in the theoretical literature. As outlined in the following sections, the thesis investigates the effects of land reform on potential drivers of improved rural livelihood, and assesses the overall economic benefits of land reform.

D. POTENTIAL EXPLANATIONS AND HYPOTHESIS

The literature broadly indicates three main mechanisms for the effectiveness of land titling in improving rural livelihoods: reduction of conflict (violent or legal), improving tenure security, and increasing access to credit. This thesis will first investigate the effects of land reform on these three variables. It is assumed that by directly affecting these first-order aspects of rural livelihood, second-order economic benefits such as higher agricultural productivity, rural income and lower poverty rates will be achieved. However, if improvements in these three hypothesized mechanisms are not accompanied individually

⁵⁶ Klaus Deininger and Hans Binswanger, “The Evolution of the World Bank’s Land Policy: Principles, Experience, and Future Challenges,” *The World Bank Research Observer* 14, no. 2 (1999): 249.

or in aggregate by better rural livelihood outcomes, it would suggest that intervening factors may be blunting the effect of land titling.

In the first hypothesis, conflict reduction should improve rural livelihood not only through reducing the incidence of violent conflict, but also through the benefit of reduced transaction costs via fewer resources being diverted to competition for land. In areas of overlapping or uncertain property rights, tenure reforms may reduce conflict as land pressures (scarcity, rising land values) “give those in a position to exclude, enclose, or encroach on the rights of others heightened incentive to do so” and thus “heighten the possibility of zero-sum conflict over land.”⁵⁷ Conflict resolution mechanisms tailored to support titling efforts may be traditional (indigenous customs), local (existing legal system or new agency) or alternative (e.g., semi-legislative assembly of *ejido* members in Mexico) in nature and may operate either as a singular systematic adjustment or ongoing effort.⁵⁸ For example, Peru’s *Programa Especial de Titulación de Tierras* (PETT) created a legalistic process to handle a wave of formalization with the expectation that, once titled, land conflicts would be resolved via regular legal means.⁵⁹ However, in Mexico, *ejido* reforms addressed a unique form of communal ownership and involve durable institutions specific to that tenure regime.

The second hypothesis is about the effects of land reform on productive investment. Increased tenure security should incentivize new landholders to increase fixed investment into their land or use it more extensively. For example, Brazilian law explicitly supports the right of squatters to claim land not under “beneficial use.”⁶⁰ Higher tenure security could also benefit rural communities more broadly by increasing the use of hired labor on hitherto family farms, or by increasing the amount of land available for rent. Binswanger et al. succinctly summarize that “In Latin America, ever since the Mexican Revolution in

⁵⁷ Catherine Boone, *Property and Political Order in Africa: Land Rights and the Structure of Politics* (Cambridge University Press, 2014), 71.

⁵⁸ Jaap Zevenbergen et al., “Pro-Poor Land Administration: Principles for Recording the Land Rights of the Underrepresented,” *Land Use Policy* 31 (March 2013): 595–604, <https://doi.org/10.1016/j.landusepol.2012.09.005>.

⁵⁹ Fort, “Assessing the Impact of Rural Land Titling in Peru: The Case of the PETT Program.”

⁶⁰ Gary D Libecap, “Contracting for Property Rights,” in *Property Rights: Cooperation, Conflict, and Law*, ed. Terry Anderson and Fred McChesney (Princeton University Press, 2003), 156.

1910, land reform movements have legally enshrined the principle that land belongs to the tiller and that indirect exploitation of the land through tenants constitutes a cause for expropriation.”⁶¹ Not only does this incentivize landholders to avoid leasing out land or hiring labor outside the family,⁶² it forces them to constantly work the land themselves to reduce risk of squatter invasion or expropriation whether that work is productive or not.

The third hypothesis focuses on access to credit. With titled land as collateral, beneficiaries should gain access to credit to increase their input utilization or make productive investments. Especially if coupled with credit market reforms targeting rural beneficiaries, titling should allow recipients to access previously “frozen” capital. De Soto points out that, despite substantial assets held by poor populations around the world, “these assets cannot readily be turned into capital, cannot be traded outside of narrow local circles where people know and trust each other, cannot be used as collateral for a loan, and cannot be used as a share against an investment” due to a lack of formal property rights.⁶³ More credit access might also be associated with greater access to formal banking systems and more efficient deployment of capital in the agricultural sector.

If land titling reforms reduce conflict, improve productivity or increase access to credit, a corresponding positive effect should be observed in broader economic outcomes of rural income, poverty or associated rural development indicators. If reforms do not produce these outcomes, however, such findings may provide clues as to the underlying issues with reform. For example, if tenure reform fails to reduce conflict, the underlying issues may be related to deep social divides and/or the state’s low capacity to maintain order. If land tenure reform is not improving access to credit, it could signal underlying issues related to financial institutions or contract enforcement. Thus, the results of investigating the three hypotheses will facilitate further theorizing about the factors contributing to the success or failure of reforms.

⁶¹ Binswanger, Deininger, and Gershon, “Power, Distortions, Revolt, and Reform in Agricultural Land Relations,” 27.

⁶² Binswanger, Deininger, and Gershon, 27.

⁶³ Hernando De Soto, *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else* (Basic Books, 2000), 5-6.

E. RESEARCH DESIGN

The research design for this thesis consists of a single-country case study of Mexico, drawing on existing quantitative and qualitative studies to examine a two-part causal chain from land titling to economic rural livelihood outcomes. First, I evaluate the link between incidence of land titling and three intermediate mechanisms: tenure security, credit access and conflict resolution. Then, I investigate how subsequent effects of these mechanisms on rural livelihood are examined.

To examine conflict reduction, intensity of land titling measured by number of recipients or titles granted will be compared with number of legal disputes or incidence of violent conflict. More land titling should lead to less conflict. Then, changes in level of conflict associated with titling will be analyzed with respect to measures such as rural income, income inequality and poverty rates. Less conflict should induce an effect on a relatively broad population, as the benefits of lower levels of conflict would extend beyond immediate beneficiaries of titling.

Changes in tenure security after titling may appear in either the perception of beneficiaries, or in their productive actions with decisions to increase input utilization or increase fixed investments reflecting better tenure security. Improved tenure security should thus be directly reflected in better welfare outcomes for title recipients or inferred from changes in their economic behavior.

Credit access should also increase following titling. This should be evident in rural loan volumes, lower interest rates, and higher levels of credit utilization by beneficiaries. Credit market improvements should improve the ability of reform beneficiaries to make investments. An increase in utilization of credit for consumption could potentially be a boon for rural welfare (e.g., if used to reduce food insecurity). However, in the context of attempting to foster additional development, the causal chain of interest is that tenure reform should increase the availability of land rights for use as collateral, which could then be leveraged for productive investment.

In all hypotheses presented above, a positive causal link from land titling to improved economic rural outcomes is assumed. If the hypotheses are rejected at multiple links, then investigation will follow to determine if a common confounding variable exists,

halting the intermediate mechanisms of conflict reduction, tenure security and credit access from operating after titling, or muting the effect of those mechanisms on livelihood outcomes.

Mexico presents an ideal case for study as its constitutional changes and “PROCEDE” reforms date to 1992 with a variety of data available from official and academic sources. Mexico’s land administration reforms undid aspects of an existing semi-communal, redistributive land regime known as the *ejido* system. The reforms relied on both market forces and technically minded administrative processes rather than politicized executive decision-making and local administration prone to corruption characteristic of the system prior to 1992. The reforms could thus avoid many of the previously described political and administrative impediments to implementation that are associated with more radical redistributive reforms. Additionally, the unique nature of the country’s *ejido* system lends itself to novel datasets, and the highly institutionalized nature of the reform has led to better and more sophisticated record-keeping than other titling efforts. Though a UN report on the reforms was completed in 2001, its results were mixed and contained numerous policy recommendations to improve implementation. Accordingly, Mexico should provide compelling evidence as to what titling outcomes are practically possible, not merely theoretically so.

F. OVERVIEW AND CHAPTER OUTLINE

The thesis consists of four chapters. This introductory chapter provides the theoretical framing for land titling and effects on rural livelihood, as well as providing historical background for the selected case. The second chapter examines the three primary mechanisms with respect to the case, seeking to validate or reject the null hypotheses that land tenure reform does not reduce conflict, increase productivity or expand access to credit. The third chapter then investigates, given the context of tenure reform, how if at all each of the mechanisms affects economic rural livelihood outcomes. The final chapter concludes, synthesizing the findings, discussing generalizability and presenting factors that promote or inhibit effective translation of titling programs into observed outcomes.

II. REFORM OUTPUTS

A. INTRODUCTION

This chapter examines three of the major outputs that land tenure reform is theoretically expected to influence: tenure security, credit access and conflict. These outputs are themselves intermediate mechanisms by which land tenure reform is expected to generate tangible changes in rural livelihood. Tenure security, defined as “the certainty that a person’s right to land will be recognized by others and protected in cases of specific challenges” is fundamental to the rationale for land tenure reform.⁶⁴ Yet, African cases have demonstrated that land titling can potentially *decrease* tenure security due to the potential for those with greater resource endowments or institutional expertise deriving outsized advantage of formalization processes.⁶⁵ Assuming that tenure security does increase, credit access is expected to rise as well due to improvement in the ability of those with land use rights to collateralize that access. Finally, the reduction in ambiguity related to holding and transfer of tenure resulting from formalization should not only reduce causes of conflict related to land tenure but also facilitate peaceful resolution of such conflicts. This chapter will assess each of these hypotheses in order to trace the first link of the causal chain from the implementation of land tenure reform to its downstream outcomes on rural livelihood.

It is necessary to define certain terms and processes that can overlap in discussing the 1992 reforms. Reform participants refers broadly either to reform-eligible communities as a unit, the *ejido* or indigenous *comunidad agraria*, or the individual members of a community, the *ejidatarios* or *comuneros*. At one extreme, communities could choose to dissolve by certifying (boundary surveying and registering) both privately and communally-worked land, granting certificates for parcels to individual members of the community (*parcelarios*), and then electing to convert those certificates to fully-privatized

⁶⁴ Food and Agriculture Organization of the United Nations. Land Tenure and Rural Development. Rome, Italy: FAO, 2002.

⁶⁵ Smith, Robert E. "Land Tenure Reform in Africa: A Shift to the Defensive." Progress in Development Studies 3, no. 3 (2003): 213. doi:10.1191/1464993403ps062oa

dominio pleno titles. At the other extreme, communities could choose to remain outside PROCEDE and its formalization processes thus precluding access to fungible titles. A range of land administration options is possible between these extremes. A community could choose to certify some individual parcels allowing the sale of usufruct rights within the ejido while retaining large tracts of uncertified and unparcelled communal land. However, as long as land is certified, it can be granted *dominio pleno* title and alienated (sold) from the *ejido* with agreement of the *ejido* assembly. See Figure 1 for an illustration of this range of options. The Figure shows the various categories of *ejido* land and how formalization increases the certainty of boundaries and, when full-privatization is allowed, the manner in which individual land plots can become alienated from the *ejido*.

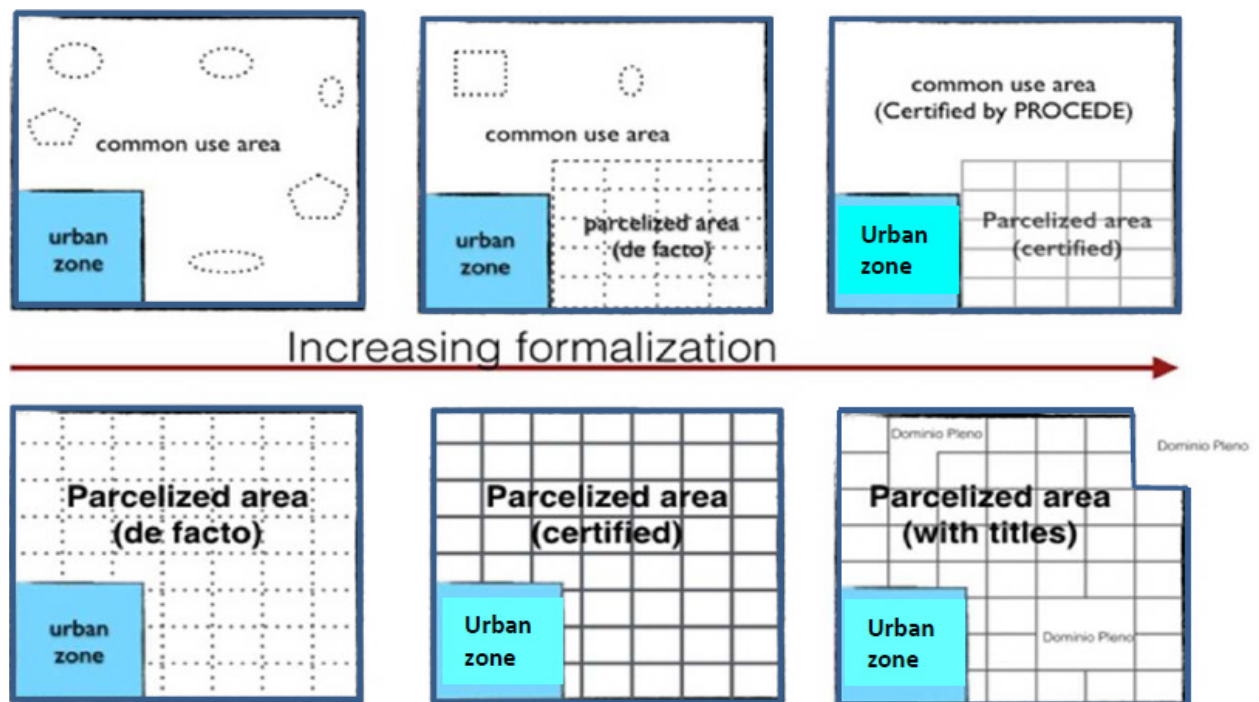


Figure 1. Schematic of *ejido* Land Regimes over Time.⁶⁶

⁶⁶ Source: Grenville Barnes and Maria DiGiano, "Land Administration of Communal Land: Lessons from the Ejidos in Mexico," 2014, 8.

B. TENURE SECURITY

This section evaluates the degree to which Mexico's reforms as implemented had intended effects on tenure security. I will examine migration resulting from the reforms, as well as its perceptions, as well as differing degrees of participation reached as proxy variables indicating changes in tenure security. Considering these variables, it appears that while the 1992 reforms did increase tenure security in *ejidos*, that increase was smaller than many predicted and some feared. The strongest indicator of improved tenure security can be inferred from the increased migration out of *ejidos* enabled by the diversification of legitimate land use options. And, as another measure of change following the reforms, heightened perceptions of tenure security are evident. However, low take-up rates for fully privatized titles and minimal changes in land markets suggest tenure security did not increase as much as reformers had hoped. Together, these findings suggest either that *ejidatario* behaviors did not change despite increased tenure security, or that PROCEDE did not significantly alter the expression of property rights in the country.

1. Migration

A dramatic increase in rural emigration from *ejidos* is the most prominent indicator of higher tenure security as a result of the reform. While welfare effects of tenure security will be discussed in the following chapter, PROCEDE's expansion of land use options and subsequent rise in tenure security can be inferred from increased migration as a proxy variable. An assumption behind the reforms was that agricultural labor productivity was very low, as *ejidataros* could not seek out higher paying non-farm work without potentially forfeiting their right to return to their land. An increase in migration directly tied to the reforms would indicate an improvement tenure security (whether this was a positive outcome with respect to rural welfare will be addressed in Chapter 3). Accordingly, De Janvry et al. specifically linked migration with reform, finding that certified households were 28% more likely to have a migrant member, while the locality population declined by 5% for PROCEDE-linked outmigration of 100,000 within the 2 million population

dataset.⁶⁷ The scale of migration was dramatic, with 41% of young people leaving their PROCEDE-eligible communities mostly destined for the United States.⁶⁸ These findings demonstrate labor sorting—the entry or exit of workers in an industry based on their productivity—in practice, indicating higher tenure security and confirming classical expectations that the limited security of pre-reform *ejido* system locked individuals into farming who might otherwise obtain more productive outside employment.⁶⁹ Thanks to PROCEDE, members of labor-abundant households in the *ejido* could migrate to take advantage of off-farm employment opportunities without fear of losing their ancestral homes or farming rights, while land-poor households gained legal means to access more land than previously available to them.⁷⁰

The emigration phenomenon directly stems from higher tenure security driven by the reforms, which allowed landholders more land use options than they had prior to PROCEDE. While rental contracts and land sales were not uncommon prior to PROCEDE, many transactions were not technically legal and the reform formally allowed for and enabled more of those arrangements (see Table 1). Specifically, note that individual plot holders gained the unconditional right to rent out their lands, as well as a right to sell their land. Additionally, the reforms allowed *ejidatarios* with certificates or titles to fallow or even abandon their lands without fear of losing their usufruct rights, which previously were predicated on the principal of “use or lose” inherent in Article 27. Though not directly intended by the reforms, increases in migration behavior coupled with decreasing land use intensity would support the conclusion that tenure security did rise as a result of the

⁶⁷ Alain de Janvry et al., “Certified to Migrate: Property Rights and Migration in Rural Mexico,” Working Paper (Center for Effective Global Action, University of California, September 25, 2012), 10, <https://cloudfront.escholarship.org/dist/prd/content/qt1jk3m3c1/qt1jk3m3c1.pdf?t=maxeoo>.

⁶⁸ J. Carlos Morett-Sánchez and Celsa Cosío-Ruiz, “Panorama de los ejidos y comunidades agrarias en México [Outlook on the ejidos and agrarian communities of Mexico],” *Agricultura Sociedad y Desarrollo* 14, no. 1 (March 31, 2017): 145–46, <https://doi.org/10.22231/asyd.v14i1.526>.

⁶⁹ Jeremie Gignoux, Karen Macours, and Liam Wren-Lewis, “Impact of Land Administration Programs on Agricultural Productivity and Rural Development: Existing Evidence, Challenges and New Approaches,” *Review of Agricultural and Environmental Studies - Revue d’Etudes En Agriculture et Environnement (RAEStud)* 96, no. 3 (21122015): 477.

⁷⁰ World Bank, “Mexico - Land Policy : A Decade after the Ejido Reform” (The World Bank, June 15, 2001), 48, <http://documents.worldbank.org/curated/en/522781468776992268/Mexico-land-policy-a-decade-after-the-Ejido-Reform>.

reforms. In line with this expectation, modeling showing an increase in following of “1.3 percentage points in response to a one standard deviation increase in time under certification,” a large and statistically significant increase considering an average following rate of 4% in 2007.⁷¹ The very fact that *ejidatarios* chose to *not* use their land indicates greater tenure security.

Table 1. De Jure Land Rights before and after Reforms.⁷²

Table 1

Post-Salinas change in de jure control.

	Individual plots	Common lands
Pre-reform	TSC, RC	TSC
Post-reform	TS, R, SC	TSC
Certification	TS, R, SC	TS, R, SC
Privatization	TS, R, S	TS, R, S

TS: secure tenure; TSC: conditional tenure security; R: unconditional right to rent; RC: conditional right to rent; S: unconditional right to sell; SC: conditional right to sell.

TSC indicates tenure conditional on use, while RC and SC indicate that rental or sale would only be permissible between *ejido* members

2. Tenure Security Perceptions

Throughout the country, *ejidatarios* have indicated perceptions of increased tenure security due to the reforms. In interviews in Tlaxcala over 1994–1999, Bouquet found not only that *ejidatarios* felt that formal parcelization provided more certainty and security to their plots, but also that *ejido* landholders without clear legal claim to their plots felt more secure as well.⁷³ A case study of an *ejido* in Michoacán found supporters of PROCEDE who believed that the reforms would increase their protection from corrupt state/*ejido* officials or predation by *ejidal* elites.⁷⁴ In an examination of Guanajuato and Sonora, Perramond offers a more nuanced view, identifying variation in tenure security perceptions

⁷¹ Paul Castañeda Dower and Tobias Pfutze, “Specificity of Control: The Case of Mexico’s Ejido Reform,” *Journal of Economic Behavior & Organization* 91 (July 2013): 26, <https://doi.org/10.1016/j.jebo.2013.03.039>.

⁷² Source: Castañeda Dower and Pfutze, 16.

⁷³ Emmanuelle Bouquet, “State-Led Land Reform and Local Institutional Change: Land Titles, Land Markets and Tenure Security in Mexican Communities,” *World Development* 37, no. 8 (August 2009): 1395, <https://doi.org/10.1016/j.worlddev.2008.08.015>.

⁷⁴ Luin Goldring, “The Changing Configuration of Property Rights under Ejido Reform,” in *Reforming Mexico’s Agrarian Reform* (Armonk, N.Y: M.E. Sharpe, 1996), 281.

based on geographic characteristics of *ejidos*.⁷⁵ Unsurprisingly, he finds that while *ejidos* with productive, irrigated agricultural lands “thought that the reforms provided more secure ownership and more flexibility for their households,” those in arid and semiarid areas more dependent on communal grazing found little benefit to the reforms: “what the hell would I title out here, dry grass?” said one respondent.⁷⁶ While migration and fallowing are behaviors consistent with rising tenure security, perceptions among *ejidatarios* support the link that those behaviors are indeed being driven by better tenure security.

3. Incomplete Privatization

Puzzlingly, only a small proportion of reform participants elected to pursue fully privatized individual *dominio pleno* titles, instead choosing to formalize communal arrangements via certification leading to less tenure security than theoretically expected. De Soto holds that that individual, fungible property rights would allow for the highest level of tenure security over communal ones even given equal levels of formalization.⁷⁷ But, while 95% of eligible communities and 93% of social land area have undergone certification,⁷⁸ only 5% of parcels have been fully privatized.⁷⁹ With the expansion of land use options provided by the reforms, some feared that widespread adoption of full privatization would lead to the end of *ejidos* or reconcentration of power by rural elites by

⁷⁵ Eric P. Perramond, “The Rise, Fall, and Reconfiguration of the Mexican ‘Ejido,’” *Geographical Review* 98, no. 3 (2008): 356–71, <https://www.jstor.org/stable/40377336>.

⁷⁶ Perramond, 363.

⁷⁷ de Soto, “The Mystery of Capital,” 2007, 479–80.

⁷⁸ Registro Agrario Nacional, “Información Estadística de La Estructura de La Propiedad Social En México [Statistical Information on the Structure of Social Property in Mexico],” December 31, 2018, <http://www.ran.gob.mx/ran/index.php/sistemas-de-consulta/estadistica-agraria/informacion-de-interes-nacional>.

⁷⁹ Registro Agrario Nacional, “Información Sobre Dominio Pleno [Information on Dominio Pleno],” August 2, 2017, <http://www.ran.gob.mx/ran/index.php/sistemas-de-consulta/estadistica-agraria/informacion-sobre-dominio-pleno>.

allowing *ejidatarios* to sell land en masse.⁸⁰ Instead, *ejidos* have overwhelmingly embraced formalization without full privatization raising the question of why have so few *ejidatarios* opted for the most complete set of property rights available to them? Even though perceptions and proxy indicators of tenure security rose following the reform, that rise was circumscribed by the incomplete adoption of benefits by participants despite theoretically better options.

4. Explanations

The foregoing analysis suggests that improvements in tenure security were lower than anticipated by the design of the reform. There are three primary explanations for the less-than-expected rise in tenure security indicated by the low take-up rate of full privatization. First, despite the formal implementation/adoption of PROCEDE, many land transactions continue to occur outside legally defined processes and without *dominio pleno* title. Second, the existence of irregular transactions prior to reform and persistence after the reform indicates that many informal processes already existed to protect tenure claims, processes over which *dominio pleno* title offered few additional benefits. Lastly, a sociocultural perspective indicates that while the semi-privatization associated with PROCEDE certification provided a variety of benefits over the previous communal tenure regime, non-economic relationships between individuals, families, communities and their land outweigh the pressure of market efficiency to privatize in the new hybrid regime. In sum, prior to the reforms, certain aspects of land tenure were already sufficiently secure for *ejidatarios* resulting in low adoption of the most secure form of tenure created by

⁸⁰ Sergio Zendejas, "U.S.-Bound Migration and the Future of the Ejido: Changing Pragmatic Commitments to the Ejido Among Different Cohorts of Villagers in a Hamlet in Michoacán," in *Reforming Mexico's Agrarian Reform*, ed. Laura Randall (Armonk, N.Y.: M.E. Sharpe, 1996), 318; Eric Léonard, "Políticas y Regulaciones Agrarias : Dinámicas de Poder y Juegos de Actores En Torno a La Tenencia de La Tierra [Agricultural Regulations and Policies: Power Dynamics and Games of Actors in Land Tenancy]," in *Titularización Agraria y Apropiación de Nuevos Espacios Económicos Por Los Actores Rurales : El Procede En Los Tuxtlas, Estado de Veracruz [Agrarian Titling and the Appropriation of New Economic Spaces by Rural Actors: PROCEDE in Los Tuxtlas, Veracruz]* (Mexico: Centro de Investigaciones y Estudios Superiores en Antropología Social, 2003), <http://www.documentation.ird.fr/hor/fdi:010033888>; E Bouquet and Jean-Philippe Colin, "From Legal Norms to Local Land Regulation : A Case Study from Mexico," in *The Role of Law in Natural Resource Management*, ed. Joep Spiertz and Melanie Wiber (La Hague: Vuga, 1996), 101–19, <http://www.documentation.ird.fr/hor/fdi:010023172>; Perramond, "The Rise, Fall, and Reconfiguration of the Mexican 'Ejido.'"

reforms and less scope for post-reform improvement than might have otherwise occurred had the starting levels of tenure security been lower.⁸¹

Both land sales and rentals in *ejidos* were highly circumscribed in law prior to 1992, but in practice were common throughout Mexico thus suggesting that *ejidatarios* did not necessarily view legal processes as a precondition for secure land transactions. Not only were rental contracts used, but “legal regulation of tenancy contracts was rarely if ever known.”⁸² On the other hand, outright purchase and sale of *ejidal* land was much riskier and its legal prohibitions were known.⁸³ In both cases, security for any less than legal transaction was tied to good relations with *ejido* officials. While the 1992 reforms provided an immediate legal path for rental, cooperation of an *ejido*’s officials and institutions was necessary for privatization as a precursor to sale, not unlike pre-reform transactions.

The demand for improved tenure security prior to the reform was not universal. *Ejidatarios* have historically been ambivalent on de jure oversight of communally managed lands, while usufruct-based rights have conflicted with customary claims of indigenous groups.⁸⁴ Specific to land markets, an implicit assumption of reform has been that activation of a formal market is contingent on clear, individual title. Yet, contrary to expectations of the reform, land sale market participation actually fell in a period after 1992 indicating a relatively weak influence of reform on aspects of land markets tied to tenure security (see Table 2).⁸⁵ Even in areas where economic pressures have increased the value of title, “most *ejidatarios* who have pursued the *dominio pleno* option for their land have been reluctant to sell outright.”⁸⁶ The rapid adoption of certification and parcelization but low rate of privatization suggests a satisficing rather than maximizing attitude of

⁸¹ Adrian Sinkler, “Land without Opportunity: Public Goods Investment and Land Markets in Rural Mexico,” *Comparative Political Studies* 47, no. 11 (September 2014): 1630, <https://doi.org/10.1177/0010414013512608>.

⁸² Bouquet and Colin, “From Legal Norms to Local Land Regulation : A Case Study from Mexico,” 109.

⁸³ Bouquet, “State-Led Land Reform and Local Institutional Change,” 1394.

⁸⁴ Perramond, “The Rise, Fall, and Reconfiguration of the Mexican ‘Ejido,’” 365.

⁸⁵ Klaus Deininger and Fabrizio Bresciani, “Mexico’s Ejido Reforms: Their Impact on the Functioning of Factor Markets and Land Access,” 2001, 16.

⁸⁶ Perramond, “The Rise, Fall, and Reconfiguration of the Mexican ‘Ejido,’” 367.

ejidatarios towards property rights. While a certified parcel allows a holder more options to extract value from the land than available prior to the reforms, only a privatized parcel's fully marketable title would allow the maximum realization of land value.

Table 2. Perception of PROCEDE Effects.⁸⁷

Table 2: Subjective perceptions regarding the impact of Procede

	Change due to Procede	
	.. More	.. Less
Tenure security and factor market participation		
Problems with land tenure security	5.0%	28.0%
Rental of lands	19.0%	12.0%
Land Sales	23.0%	11.0%
Migration	15.0%	8.0%
Access to credit	12.0%	8.0%
Productive investments	5.0%	4.0%
Ejido characteristics		
Social unity in the ejido	21.0%	12.0%
Participation in associations	5.0%	4.0%
Land consolidation	3.0%	2.0%
Land subdivisions	4.0%	2.0%

Source: 1997 Ejido survey (based on 1291 ejidatarios)

What social or cultural aspects of the *ejido* system contribute to its persistent appeal over the economic gains expected from a fully privatized and ostensibly more secure land tenure system? First, land relationships within the *ejido* are predicated on more than economics or legal structures: “*ejido* structural change is mediated by internal factors, including governance, ethnicity, livelihood strategies, migration, concepts about poverty, and the existing resource base.”⁸⁸ For example, even if individual farmers felt they might be economically better off dissolving their *ejido* in favor of full privatization, they may have felt socially pressured to minimize change. Or, as an one author regarding a different region simply states: “In land titling programs, market logic never simply shuts out political

⁸⁷ Source: Deininger and Bresciani, “Mexico’s Ejido Reforms: Their Impact on the Functioning of Factor Markets and Land Access,” 25.

⁸⁸ James Barsimantov et al., “Tenure, Tourism and Timber in Quintana Roo, Mexico: Land Tenure Changes in Forest Ejidos after Agrarian Reforms,” *International Journal of the Commons* 4, no. 1 (2010): 313, <http://www.jstor.org/stable/26523024>.

or cultural reason.”⁸⁹ Additionally, the threat of a return to pre-Revolution latifundia land concentration remains salient.⁹⁰ Prior to the reforms, land sales in the *ejido*, in addition to being illegal, went against moral norms for both buyers and sellers, as the prohibition was believed to be appropriate protection from predatory actions by non-*ejidatarios*.⁹¹

Second, the strength of the *ejido* system suggests that a neoliberal focus on individual rights and prosperity may not be universal. For the *ejido*, household and community matter more than the individual. At the household level, Bouquet recounts being told “*ejido* land should not be sold because our fathers fought for it; land should not be sold because we must pass it on to our children.”⁹² At the community level, a significant distinction between *parcelarios* and *dominio pleno* is that the rights of the former are inseparable from membership in the *ejido*. Even for migrants, the community pull of the *ejido* remains strong. In one case study, “almost 90 percent of *ejidatarios* had migrated at least once to the United States” but “most of them maintained their commitment to continue to be personally in charge of cultivating their *ejido* plots and to participate in the political life of the *ejido*.”⁹³

5. Conclusion

Overall, while the 1992 reforms enabled *ejidos* and *ejidatarios* to take steps up to and including fully privatized individual titling, they have overwhelmingly sought certification without privatization indicating a preference for sociocultural continuity of the *ejido* system over maximizing individual property rights. Though evidence suggests that tenure security has increased as a result of reforms thanks to formalization, that increase is much less than was hoped or feared. Instead of a binary shift from less secure

⁸⁹ Parker Shipton, “Land and Culture in Tropical Africa: Soils, Symbols, and the Metaphysics of the Mundane,” *Annual Review of Anthropology* 23 (1994): 365.

⁹⁰ Juan Carlos Cruz Vargas, “En 10 Años, 4.8% de La Propiedad Ejidal y Agraria Del País Pasó a Manos Privadas: Inegi [INEGI: In 10 Years, 4.8% of Ejidal and Agrarian Property of the Country Has Passed into Private Hands],” *Proceso*, July 5, 2017, <https://www.proceso.com.mx/493792/en-10-anos-4-8-la-propiedad-ejidal-agraria-del-pais-paso-a-manos-privadas-inegi>.

⁹¹ Bouquet, “State-Led Land Reform and Local Institutional Change,” 1394.

⁹² Bouquet, 1394.

⁹³ Zendejas, “U.S.-Bound Migration and the Future of the Ejido: Changing Pragmatic Commitments to the Ejido Among Different Cohorts of Villagers in a Hamlet in Michoacán,” 317.

communal property rights and land ownership to a more secure system for private individuals, the result has been a hybrid.⁹⁴

C. CREDIT ACCESS

This section explores whether credit access to *ejidatarios* increased as a result of the reform as expected by searching for changes in credit availability before and after the reforms. On one hand, it examines the aspects of Mexico's credit markets to identify possible inflection points attributable to the reforms. On the other hand, it examines the implementation and adoption of reform itself to see whether conditions conducive to the development of credit markets were established by the reforms. The analyses described in this section reveal that Mexico's 1992 reforms to the *ejido* system had little to no effect on rural credit access. The hope of reformers was that by formalizing property arrangements for *ejidatarios*, they would be able to use more of their assets as collateral for loans. Identifying the direct effects of the reform on credit access is confounded by several variables for much of the 1990s, especially given an overall decline in rural credit for *ejidatarios* and private farmers alike. However, more recent evidence makes clear that there has been no link between land titling and rural credit. Since most reform beneficiaries opted for certification of their land use rights without fully marketable title, their ability to post land as collateral was limited and banks could not treat PROCEDE certificates as they would titles to private land.

1. Expectations

In theory, a major benefit of transitioning away from communal land ownership towards individual property rights is an increase in access to credit and was “a driving force behind the 1992 reforms.”⁹⁵ For poor farmers with low levels of investible capital, having sufficient collateral to secure a loan is potentially a high barrier to surmount. But, as Deininger and Feder plainly state, “Because of its immobility and virtual indestructibility, land with secure, clearly defined, and easily transferable ownership rights is an ideal

⁹⁴ Perramond, “The Rise, Fall, and Reconfiguration of the Mexican ‘Ejido.’”

⁹⁵ World Bank, “Mexico - Land Policy,” 44.

collateral.”⁹⁶ Thus, land titling would appear to be an easy policy solution to allow farmers more access to commercial credit markets. It was hoped that financial sector liberalization and neoliberal reform of public development banks would complement the new private titles. Private financial institutions would be provided a larger consumer market (via increasing demand for credit services arising from new bankable assets to use as collateral) while consumers would gain access to more efficient private lenders as an alternative to inefficient, politicized development banks. However, these outcomes never materialized.⁹⁷

2. Reality

Initial indications following PROCEDE did not show a positive link between tenure reform and credit access. However, for much of the period that PROCEDE was actively implemented, wide-scale restructuring of the banking sector and economic crises confound the ability to draw out the connection between reform and credit access. Beginning in 1988, the government embarked on a series of structural reforms to the banking sector, reorienting it away from a state-led model of development towards a more neoliberal one. Rather than treating access to credit as a social good, the financial sector reforms instead pushed public rural financial institutions to favor profitable commercial farmers over riskier small holders.⁹⁸ For example, BANRURAL, a public lender that supported smallholders in 1970s and ‘80s, was restructured to favor farms with commercial potential allowing smaller farms to fall into default and thus losing access to input and technical assistance tied to public credit.⁹⁹ While some new programs were established that aimed to expand access to credit markets, the total value of the *ejido* credit sector fell by 19% from 1990–1994.¹⁰⁰ Indeed, additionally considering the economic crises of 1995 and

⁹⁶ Gershon Feder and Klaus Deininger, *Land Institutions and Land Markets*, Policy Research Working Papers (The World Bank, 1999), 11, <https://doi.org/10.1596/1813-9450-2014>.

⁹⁷ Osvaldo Santín Quiroz, *The Political Economy of Mexico’s Financial Reform*, 1st ed. (Routledge, 2017), 266–67, <https://doi.org/10.4324/9781315203010>.

⁹⁸ David Myhre, “Appropriate Agricultural Credit: A Missing Piece of Agrarian Reform in Mexico,” in *Reforming Mexico’s Agrarian Reform*, ed. Laura Randall (Armonk, N.Y: M.E. Sharpe, 1996).

⁹⁹ Hallie Eakin et al., “Selling Maize in Mexico: The Persistence of Peasant Farming in an Era of Global Markets: Selling Maize in Mexico,” *Development and Change* 45, no. 1 (January 2014): 137, <https://doi.org/10.1111/dech.12074>.

¹⁰⁰ Alain de Janvry et al., “Ejido Sector Reforms: From Land Reform to Rural Development,” in *Reforming Mexico’s Agrarian Reform*, ed. Laura Randall (Armonk, N.Y: M.E. Sharpe, 1996), 81–82.

1998 on both *ejido* and private farmers, “it was not the lack of individual title, but the combination of a financial crisis with insufficient asset endowments which seems to have prevented increased credit access.”¹⁰¹

Following the crises of the 1990s, the continued absence of private lending to compensate for the withdrawal of credit by public institutions suggests that little to no relationship exists between tenure and titling reforms and credit access. A study of rural financial markets has found that though non-public lenders had proliferated in number, overall credit market participation by borrowers nonetheless declined in step with the withdrawal of credit by the state thereby demonstrating the enduring shallowness of private alternatives.¹⁰² Though an in-depth examination of the interaction of the state with rural credit markets is out of the scope of this research, those interventions appear to have a much stronger effect on credit access relative to the land reforms in the *ejido*.¹⁰³ While movement toward stronger individual property rights via certification and titling may indeed be a prerequisite for the development of a robust private credit market, they are insufficient in catalyzing maturation of that market.

3. Explanation

Economic analysis has consistently failed to identify a link between the reforms and improved credit access in Mexico.¹⁰⁴ Indeed, even at the end of the reform’s active period, lack of access to credit remained the most commonly reported problem for *ejidos*.¹⁰⁵ Interestingly, about halfway through the reform period, *ejidos* who had elected

¹⁰¹ World Bank, “Mexico - Land Policy,” 46.

¹⁰² Susan M Richter, Stephen Boucher, and Chris Woodruff, “The Structure of Rural Financial Markets in Mexico” (American Agricultural Economics Association Annual Meeting, Long Beach, California, 2006), 43.

¹⁰³ Rodrigo A. Chaves and Susana M. Sánchez, “Poverty, Entrepreneurs and Financial Markets in the Rural Areas of Mexico,” in *Rural Poverty in Latin America*, ed. Ramón López and Alberto Valdés (London: Palgrave Macmillan UK, 2000), 120–51, https://doi.org/10.1057/9780333977798_7.

¹⁰⁴ World Bank, “Mexico - Land Policy”; Nancy L. Johnson, “Tierra y Libertad: Will Tenure Reform Improve Productivity in Mexico’s Ejido Agriculture?,” *Economic Development and Cultural Change* 49, no. 2 (January 2001): 291–309, <https://doi.org/10.1086/452503>; Castañeda Dower and Pfitze, “Specificity of Control”; Sinkler, “Land Without Opportunity.”

¹⁰⁵ Instituto Nacional de Estadística y Geografía (INEGI), “Censo Ejidal 2007 [Ejidal census 2007],” Censo Ejidal 2007, 2007, <https://www.inegi.org.mx/programas/cae/2007/>.

to certify started the period with higher credit access compared to their counterparts slow or resistant to certification.¹⁰⁶ Based on the expected link between reform and credit access, the opposite outcome would be expected. *Ejidors* beginning with high credit access would be expected to receive less marginal benefit from certification than *ejidos* starting with less access and certification take-up should have been higher in the latter accordingly.

A major impediment to improved credit access is the predominance of certification without conversion to *dominio pleno* titles. It is important to recall that while 95% of *ejidos* entered PROCEDE and certified their land (granting certificates formalizing the right to use demarcated parcels), only 5% of *ejido* parcels received fully private, marketable titles to their land. In contrast with the “ideal collateral” of fully private land title, usufruct certificates are less appealing to formal lenders.¹⁰⁷ Two case studies corroborate this conclusion, finding that PROCEDE certificates alone appear to be insufficient collateral to receive credit.¹⁰⁸ Though *dominio pleno* title would lead to more marketable collateral, they tend to be acquired only to support the sale of land with little regard for credit access.¹⁰⁹

4. Conclusion

The continued lack of credit affecting Mexico’s *ejidos* thus arises from neoliberal banking sector reforms that withdrew public sector credit for rural areas and the absence of private sector credit to compensate, in part due to the inability to collateralize PROCEDE certificates. The failure of private rural credit markets to thrive in the decades following multi-pronged neoliberal reforms indicates that, contrary to reformer expectations, improving individual property rights and reducing the role of the state is not sufficient to achieve the goal of more credit access. Nonetheless, the apparent reluctance of *ejidatarios*

¹⁰⁶ World Bank, “Mexico - Land Policy,” 44.

¹⁰⁷ World Bank, 44.

¹⁰⁸ Jessa Lewis, “Agrarian Change and Privatization of Ejido Land in Northern Mexico,” *Journal of Agrarian Change* 2, no. 3 (July 2002): 401–19, <https://doi.org/10.1111/1471-0366.00040>; Amy L. Luers, Rosamond L. Naylor, and Pamela A. Matson, “A Case Study of Land Reform and Coastal Land Transformation in Southern Sonora, Mexico,” *Land Use Policy* 23, no. 4 (October 2006): 436–47, <https://doi.org/10.1016/j.landusepol.2005.04.002>.

¹⁰⁹ Fernando Galeana, “Explaining the Demand for Land Titling in Mexico: Credit and Urbanization in the Ejido Sector” (Stanford University, 2004).

to seek *dominio pleno* title which would allow the greatest financialization of their assets remains perplexing. Were fully privatized *dominio pleno* titles further adopted, a positive relationship with credit access cannot be ruled out. However, Mexico's experience demonstrates that, on their own, reforms that move in the direction of formal, complete and individual property rights, but do not fully embrace such rights (whether due to reformer implementation or participant volition) have little effect on credit access. Instead, either more complete reform towards privatization or stronger government support for credit markets may have been necessary.

D. CONFLICT

1. Overview

Land titling is posited to have effects on social conflict, though it is most immediately linked to economic concerns. The Mexican government itself justifies ongoing investment in land institutions taking as a given that “uncertainty in land tenancy generates ungovernability and social instability.”¹¹⁰ Though the links between tenure regime and land-based conflict have been most closely studied in Africa,¹¹¹ Latin American experiences are not as well documented.¹¹² Additionally, Mexico provides a unique context given the *ejido* system itself and the extent of redistributive land reform conducted in the 20th century, which resulted in approximately half of Mexican land being subject to tenure reform.

¹¹⁰ Registro Agrario Nacional, “Diagnóstico Del Programa Presupuestario U-001 Regularización y Registro de Actos Jurídicos Agrarios [Budgetary Program Analysis U-001 Regularization and Recording of Agrarian Legal Acts],” 2018, 35, http://www.ran.gob.mx/ran/pdf/Fanar/Diagnostico_Programa_Presupuestario-U-001_RRAJA.pdf.

¹¹¹ Boone, *Property and Political Order in Africa*; Takashi Yamano and Klaus Deininger, “Land Conflicts in Kenya: Causes, Impacts, and Resolutions,” Discussion Paper (Tokyo, Japan: Foundation for Advanced Studies on International Development, December 2005).

¹¹² Lee J. Alston, Gary D. Libecap, and Bernardo Mueller, *Titles, Conflict, and Land Use: The Development of Property Rights and Land Reform on the Brazilian Amazon Frontier* (Ann Arbor: University of Michigan Press, 1999), <https://ebookcentral.proquest.com/lib/ebook-nps/detail.action?docID=3414802>; Karen Macours, “Land Titles and Conflicts in Guatemala,” Working Paper (Inter-American Development Bank, March 2009); Victoria Reyes-García et al., “Does Participatory Mapping Increase Conflicts? A Randomized Evaluation in the Bolivian Amazon,” *Applied Geography* 34 (May 2012): 650–58, <https://doi.org/10.1016/j.apgeog.2012.04.007>.

In this context, “dispute” refers to disagreement on who controls which pieces of land while conflict refers collectively to actions undertaken by actors to win a land-based dispute. Such actions could be legal, such as initiating a court action, illegal, such as carrying out land invasion, or violent, such as killing those with competing land use claims. An additional distinction is between latent conflict and a dormant dispute: the former are instances where disputes are known and conflict is ongoing but unresolved (e.g., recurring inter-*ejido* violence over boundaries, long-standing legal action with open appeals) while the latter represents the possibility of conflict (e.g., unvoiced opinions on rightful succession of *ejidal* rights).

The overall effect of the titling reform on conflict is expected to be beneficial through the institutionalization of conflict that would have previously been addressed illegally and/or violently. Thus, a large increase in volume of legal or administrative conflict linked to land disputes should be viewed positively if accompanied by a fall in measures of illegal or violent conflict. This relationship is expected due to technical improvements in land certification and titling reducing ambiguity over boundaries and land use rights (mitigating active conflicts and dormant disputes), and new institutions creating clearer and more legitimate mechanisms to enforce property rights (helping resolve existing conflicts and institutionalizing new ones).

2. Context

a. Pre-reform Context

Prior to the reforms, imprecise measurements of boundaries both between and within *ejidos* served to generate conflict. With few legal mechanisms to address these conflicts, “historic ambiguity in determining exact boundaries [were] the source of most conflicts between communities.”¹¹³ Between *ejidos*, not only could boundary disputes generate instances of legal conflict, they were also long-term sources of intergenerational violence with the initiation in Oaxaca of blood feuds between neighboring *ejidos* over

¹¹³ Billie R De Walt and Martha W Rees, *The End of Agrarian Reform in Mexico: Past Lessons, Future Prospects* (San Diego, CA: University of California, 1994), 23.

control of productive land for coffee cultivation.¹¹⁴ Within the *ejido*, prior to the reforms local officials (*comisariado ejidal*) were essentially fully in control of land distribution and use and *ejido* members effectively had no recourse in contesting judgements reached at the local level. Local *ejido* authorities had broad power in allocating plots to individuals and granting access to communal land.¹¹⁵ This power could be used coercively to secure votes for the PRI¹¹⁶ or corruptly to reward friends and family members. Yet, it could also encourage peaceful dispute resolution between parties given the threat of expropriation. Villarreal accordingly points to the internal political process behind apportionment as a cause of disputes.¹¹⁷ Systemic inability to resolve those disputes via legal means would likely spur *ejidatarios* to take matters into their own hands via illegal/violent action.

In terms of the judicial framework underlying pre-1992 land institutions, established structures were poorly implemented and faced competing priorities. Individuals unsatisfied with decisions made at the *ejido*-level had to petition state-level bodies generally located in state capitals far from rural hinterlands. Officials adjudicating disputes rarely conducted their own fact-finding and were not trained as judges.¹¹⁸ Helga Baitenmann summarizes that “what was especially significant in this matter, however, was that an agency pertaining to the executive branch had previously held the power to act as a judicial institution. In other words, the agrarian justice system responsible for deciding the fate of collective and individual agrarian rights in large parts of rural Mexico from 1915 to 1992 had occupied the wrong institutional space.”¹¹⁹ Recalling not only that the executive held both the power and constitutional responsibility to redistribute land but also that the

¹¹⁴ Andrés Villarreal, “The Social Ecology of Rural Violence: Land Scarcity, the Organization of Agricultural Production, and the Presence of the State,” *American Journal of Sociology* 110, no. 2 (September 2004): 318, <https://doi.org/10.1086/421724>.

¹¹⁵ Paul Castaneda Dower and Tobias Pfutze, “Land Titles and Violent Conflict in Rural Mexico,” 2014, 8.

¹¹⁶ Michael Albertus et al., “Authoritarian Survival and Poverty Traps: Land Reform in Mexico,” *World Development* 77 (January 2016): 154–70, <https://doi.org/10.1016/j.worlddev.2015.08.013>.

¹¹⁷ Villarreal, “The Social Ecology of Rural Violence,” 318.

¹¹⁸ Helga Baitenmann, “Everyday Trials: Legality, Illegality, and Extralegality in Mexico’s Agrarian Reform” (University of London: Institute for the Study of the Americas, n.d.), 15, <http://jg.socialsciences.manchester.ac.uk/docs/Everyday%20trials%20Baitenmann.pdf>.

¹¹⁹ Baitenmann, 12–13.

PRI over this period readily exercised that power to secure votes,¹²⁰ it is unsurprising that attempts at legal conflict resolution tended to languish and that judgements, if ever delivered, lacked legitimacy.

b. Effecting Reform

The most tangible aspects of the reforms aimed at addressing conflict, other than the introduction of titles themselves, were a series of institutional innovations that shifted the enforcement of property rights upwards away from the local level, diminishing the power of corrupt *ejido* officials and providing *ejidatarios* with new legal means to resolve land disputes and assert their rights. The reforms altered the power dynamics within the *ejido* (towards participatory vice elite decision-making) and created a new agrarian legal framework in addition to the previously discussed land administration improvements aimed at ensuring that *ejidal* rights are clearly specified. This new framework included the creation of formal institutions charged with assisting in conflict resolution or administering justice, namely the *Procuraduría Agraria* which serves as an agricultural ombudsman providing mediation/arbitration as well as legal services to *ejidatarios*, and establishment of Agrarian Tribunals dedicated to legally resolving land conflicts.

Though my primary concern is not with the character but with the levels of non-institutionalized conflict, critics of the reform have argued that the sources of conflict shifted due to the reforms asserting or concluding that levels of conflict remained constant or rose as a result. Serving to increase conflict, the 1992 reforms increased flexibility in the exercise and assignment of *ejido* rights, not only creating new points of contention among existing *ejidatarios* but also allowing large influxes of new *ejidatarios*, disrupting existing communal relationships and introducing new members to the *ejido* unfamiliar with local informal conflict resolution methods. Notably, the reforms altered inheritance rights. Previously, *ejidal* rights were familial and could not be inherited by anyone other than the spouse or children of the holder. By allowing *ejidatarios* to assign anyone as an heir, the potential for family members to feel unjustly disenfranchised and thus turn to conflict increased.

¹²⁰ Albertus et al., “Authoritarian Survival and Poverty Traps.”

3. Decreasing Conflict

Following the reforms, Mexico entered into a period of a decline in rural violent deaths and was able to clear a backlog of land grievances. Statistical studies have demonstrated that in aggregate, conflict did decline as a result of the reforms though numerous explanations exist for why they would have that effect. As a proxy for direct conflict measurement, as discussed below, surveys indicate that PROCEDE participants perceived it as contributing to better conflict resolution.

A clear indicator of conflict reduction is a fall in violent deaths that occurred in association with the reforms. PROCEDE's implementation from 1992–2006 coincided with a fall in violence nationwide (see Table 1). Two studies examine this relationship through statistical analysis: one by Castañeda Dower and Pfutze and another by Murphy and Rossi.¹²¹ Castañeda Dower and Pfutze examined homicides in *ejidos* following their certification, finding that “a one-standard deviation increase in PROCEDE results in between 1.6 and 2.6 lower violent deaths per capita.”¹²² Murphy and Rossi similarly find a decrease of 2.3 murders per 100,000 with an increase of one standard deviation in the percentage of land exposed to the reforms.¹²³ The spike in violence beginning in 2007 due to the rise of powerful drug cartels obscures the strength and duration of the reform on conflict reduction. However, a comparative study by state of reform intensity and rates of conflict over time could sharpen the precise relationship between land titling in conflict. Lack of available of granular data on reform intensity precluded such an analysis in this research.

Opinion polling indicates that PROCEDE participants perceived that it was beneficial in reducing conflict. A 2006 study of *ejidos* in Zacatecas found that 55.8% of respondents agreed that PROCEDE helped to resolve conflicts, specifically those relating

¹²¹ Dower and Pfutze, “Land Titles and Violent Conflict in Rural Mexico”; Tommy E. Murphy and Martín A. Rossi, “Land Reform and Violence: Evidence from Mexico,” *Journal of Economic Behavior & Organization* 131 (November 2016): 106–13, <https://doi.org/10.1016/j.jebo.2016.08.013>.

¹²² Dower and Pfutze, “Land Titles and Violent Conflict in Rural Mexico,” 24.

¹²³ Murphy and Rossi, “Land Reform and Violence,” 111–12.

to land boundaries, invasion of land, and deprivation of agrarian rights.¹²⁴ Coupled with the observed fall in violence, these perceptions of improved conflict resolution support the conclusion that some of the reduction in violent conflict were due to the reforms.

4. Increasing Conflict

Some authors point to the large volume of cases received by agrarian tribunals as indicative of high levels of conflict generated by the reforms. Appendini and de Ita reference the aggregate case load in excess of 100,000 of agrarian tribunals from 1992 to 1998 and 2002 respectively, stating that high proportion of those cases were filed under the new system rather than passing to the courts under the old one.¹²⁵ Given the lack of appeal mechanisms for conflict management within the *ejido* prior to the reforms, it seems more likely that the large volume of cases received by the new agrarian tribunals reflected a backlog of disputes that had not been addressed satisfactorily at the local level. Indeed, Jones and Nuijten instead point to the number of petitions for redress registered by institutions created by PROCEDE as reflecting the pre-existing demand for new conflict resolution mechanisms, rather than reflecting demand induced by the reform's changes.¹²⁶

Though some authors have posited that the reforms created new sources of conflict and thus more conflict overall, I argue that the reform's improvements in conflict resolution have minimized the impact of new conflicts. Several case studies of areas affected by the reforms point to instances where new causes of conflict arose or where perceptions of

¹²⁴ Maria I. Hernández Santos, et al., "El Programa de Certificación de Derechos Ejidales y Titulación de Solares Urbanos (PROCEDE): Su Impacto En Fresnillo, Zacatecas, México [The Certification of Ejidal Rights and Titling of Urban Plots Program (PROCEDE): Its Impacts in Fresnillo, Zacatecas, Mexico]," *Agrociencia* 40, no. 2 (2006): 254.

¹²⁵ Kirsten Appendini, "Land Regularization and Conflict Resolution: The Case of Mexico" (Food and Agriculture Organization of the United Nations, December 2001), 32, http://www.fao.org/tempref/GI/Reserved/FTP_FaoRlc/old/prior/desrural/tenencia/pdf/mexico.pdf; Ana de Ita, "Land Concentration in Mexico after PROCEDE," in *Promised Land: Competing Visions of Agrarian Reform*, ed. Peter Rosset, Raj Patel, and Michael Courville, 2nd ed., rev.expanded (Berkeley, Calif: Bay Tree Pub, 2006), 159.

¹²⁶ Gareth A. Jones, "Between a Rock and a Hard Place: Institutional Reform and the Performance of Land Privatization in Peri-Urban Mexico.," in *Current Land Policy in Latin America: Regulating Land Tenure under Neo-Liberalism*, ed. Gemma Van der Haar and Annelies Zoomers (Amsterdam, Netherlands: Royal Tropical Institute, 2000), 209, <https://www.cabdirect.org/cabdirect/abstract/20013095865>; Monique Nuijten, "Family Property and the Limits of Intervention: The Article 27 Reforms and the PROCEDE Programme in Mexico," *Development and Change* 34, no. 3 (June 2003): 489, <https://doi.org/10.1111/1467-7660.00315>.

higher conflict following the reforms existed.¹²⁷ Lynn Stephen identifies accelerating conflict post-reform driven by gender relations.¹²⁸ A 1971 reform improved access to *ejidal* inheritance rights for women as well as creating a structure¹²⁹ for women to organize and collectively hold use rights to parcels within the *ejido*. The 1992 reforms allowed *ejidatarios* to name successors outside the family, permitting them to skip over female relations that would previously have been natural heirs, though also creating new legal avenues for *ejidatarias* to contest rights. While Stephen provides examples of a new mode of conflict relating to inheritance rights, her other examples of gender-based conflict following the reforms (i.e., male relatives of women who held *ejido* rights claiming title if they were the ones working the land) are instances of the reform stirring up latent conflicts simply by providing new means to resolve them. Were it not for the reforms, these conflicts would have continued to simmer at the local level. Following the reforms, PROCEDER required existing disputes to be resolved prior to completion of certification and issuance of titles. Resolved disputes, clear title, and an accepted legal process for contestation would thus seem likely to diminish such conflicts over time.

There are two other possible sources for conflict created by the reforms, though these links lack empirical support. First, tenure reform diminished the ability of local leaders to disincentivize illegal or violent conflict via the threat of expropriation. Castañeda-Dower and Pfutze point out that “land titles make it more difficult to punish conflictive behavior through land expropriation.”¹³⁰ This power not only allowed local authorities to intervene in and resolve land disputes by fiat, it potentially served as a disincentive against poor social behaviors. For example, a family initiating conflict, land-based or otherwise, could find their rights to work *ejido* land curtailed or reassigned by the authorities. Second, the shift in government focus towards land titling and away from redistribution is sometimes highlighted as “a symbolic break with the past [historical

¹²⁷ Gareth A. Jones and Peter M. Ward, “Privatizing the Commons: Reforming the Ejido and Urban Development in Mexico,” *International Journal of Urban and Regional Research* 22, no. 1 (March 1998): 91, <https://doi.org/10.1111/1468-2427.00124>.

¹²⁸ Lynn Stephen, “Accommodation [sic] And Resistance: Ejidatario, Ejidataria, And Official Views Of Ejido Reform,” *Urban Anthropology* 23, no. 2/3 (1994): 34.

¹²⁹ Unidades Agroindustrias de la Mujer (Agro-industrial Units for Women — UAIMs)

¹³⁰ Dower and Pfutze, “Land Titles and Violent Conflict in Rural Mexico,” 29.

support for the peasantry]” feeding rural discontent.¹³¹ However, in addition to identifying state abandonment of “the peasant aspirations of the Mexican Revolution” through the embrace of land titling as a source of conflict, Judith Teichman places the land reforms as just one albeit salient grievance in the broader context of De la Madrid and Salinas neoliberal reforms dating back to 1985.¹³² In both cases, it is unclear whether and to what degree these proposed links can be directly tied to observed post-1992 conflict.

5. Conclusion

The 1992 reforms have reduced violent conflict in *ejidos* by channeling disputes into new judicial and administrative institutions, though new sources of dispute were introduced by the changes in the land regime. This finding is not inconsistent with other land titling studies which have found a neutral to positive (conflict-reducing) effect from reforms.¹³³ While de Soto expects a strong link between the quality of land institutions and illegal or violent conflict,¹³⁴ overall levels of rural conflict are contingent on a variety of grievances. Tenure insecurity is rarely the main driver of conflict, as illustrated by the Chiapas Rebellion and resistance to building a new airport for Mexico City on *ejido* lands. In both cases, though lack of clear titles is a plausible contributing factor, conflict was predicated on a much wider array of social, political and economic factors. This conclusion is echoed in the link between land titling and urban violence in Mexico, as Melanie Lombard finds that “insecure tenure in itself is not a cause of land conflict and violence; but combined with other factors... it may lead to or exacerbate conflict and ultimately violence.”¹³⁵ Nonetheless, even if declining violent conflict has been accompanied by an

¹³¹ Neil Harvey, *The Chiapas Rebellion: The Struggle for Land and Democracy* (Duke University Press, 1998), 188.

¹³² Judith Teichman, “Violent Conflict and Unequal Development: The Case of Mexico,” in *Economic Development Strategies and the Evolution of Violence in Latin America*, ed. William Ascher and Natalia Mirovitskaya, Politics, Economics, and Inclusive Development (New York: Palgrave Macmillan US, 2012), 52, https://doi.org/10.1057/9781137272690_2.

¹³³ Daniel Higgins et al., “Investigating the Impacts of Increased Rural Land Tenure Security: A Systematic Review of the Evidence,” *Journal of Rural Studies* 61 (July 2018): 46, <https://doi.org/10.1016/j.jrurstud.2018.05.001>.

¹³⁴ de Soto, *The Other Path*, 233–34. 4

¹³⁵ Melanie Lombard, “Land Tenure and Conflict in Urban Mexico,” Working Paper (Manchester, UK: Global Urban Research Centre, University of Manchester, October 2016), 57.

increase in legal conflict due to the reforms, the expression and resolution of disputes via institutional means should be viewed as an improvement.

E. SUMMARY

This chapter examined whether Mexico's 1992 land tenure reforms made an impact in three major areas: tenure security, credit access and conflict. Establishing linkage or absence thereof between the reforms and these areas subsequently dictates whether livelihood outcomes resulted from the reforms and if so, the mechanism that led to that outcome. Tenure security did improve through the reforms, though not as significantly as might have been hoped. The direct connection found between tenure security and rural outmigration presents an additional mechanism to be explored in Chapter 3. However, there were no discernible changes in credit access linked to the reforms. Meanwhile, utilization of legal processes and a reduction in violent deaths in connection with the reforms reflect improvements in conflict resolution and reduction in levels of extra-legal conflict.

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III. RURAL WELFARE

A. INTRODUCTION

This chapter examines how improvements in tenure security and conflict resolution have affected rural welfare in the *ejido*. Though, to a degree, better tenure security and improved conflict resolution were positive outcomes of the reforms in their own right, they were hoped to generate tangible economic benefits as the central aim of the reform. A “common benchmark” of successful land reform is that “reform allows peasants to escape from poverty.”¹³⁶ Accordingly, the primary metric used to evaluate welfare will be household income using what the literature refers to as a “livelihoods approach.” This chapter focuses on three components of household income affected by the reforms: on-farm income, migration income and income from off-farm activities. While welfare encompasses more than income, concentrating on economic impact at the household level helps to isolate changes in behavior and outcomes to those caused by the land market reforms at a time when Mexico’s social welfare system was in flux. It will be demonstrated that the reforms had a minimal impact on *ejido* farming with reform actually being associated with a fall in farm incomes, a result inconsistent with reform expectations. However, the new tenure regime generated results in areas not predicted nor intended, increasing migration out of *ejidos* as well as contributing to a rural shift towards off-farm employment.

B. LIVELIHOODS APPROACH

Rather than use poverty rate or aggregated household income as an indicator of rural welfare, this research uses a “livelihoods” approach that decomposes household income into the variety of activities (sources of income) that a household may simultaneously engage in or benefit from. The livelihoods approach allows a more fine-grained understanding of rural welfare than by looking only at broad indicators of rural welfare derived from large-scale economic surveys such as rural poverty rates or total

¹³⁶ Albertus et al., “Authoritarian Survival and Poverty Traps,” 155.

household income which may obscure dramatic changes in rural life.¹³⁷ Examining sub-Saharan Africa primarily, Frank Ellis defines livelihood diversification as “the process by which rural families construct a diverse portfolio of activities and social support capabilities in their struggle for survival and in order to improve their standards of living,” as opposed to the concentration of a household on a single activity.¹³⁸ If, rather than rely on agriculture as a single source of livelihood, rural households instead cultivate multiple livelihoods to sustain themselves, they may engage in livelihood diversification in response to economic or policy changes. Structural shifts in rural life might not be reflected in aggregate data, but the livelihoods approach helps bring such shifts to the fore.

Considering the significant shifts in the Mexican economy and agricultural policy happening concurrent with land tenure reforms, a closer look at disaggregated and granular income data can reveal significant and positive changes in household income strategies that might otherwise be obscured. For example, falls in farm income and government transfers might be balanced by higher remittances and increased off-farm labor. But, is this livelihoods approach appropriate in the Mexican context?

Like many of their counterparts in Africa, *ejidatarios* do also engage in multiple livelihoods of which farm income is only one (albeit significant) component. A 1997 national *ejido* survey found that while 93.7% of households received crop income, that income was only 32.6% of that group’s total income with significant income received from sources such as non-agricultural wage labor or remittances.¹³⁹ Indeed, a four *ejido* study of the same year found that a typical household had 4–7 major income sources.¹⁴⁰ For this

¹³⁷ Deborah Fahy Bryceson, “Multiplex Livelihoods in Rural Africa: Recasting the Terms and Conditions of Gainful Employment,” *The Journal of Modern African Studies* 40, no. 1 (March 2002): 2, <https://doi.org/10.1017/S0022278X01003792>.

¹³⁸ Frank Ellis, “Household Strategies and Rural Livelihood Diversification,” *Journal of Development Studies* 35, no. 1 (October 1998): 4, <https://doi.org/10.1080/00220389808422553>. See also Frank Ellis, *Rural Livelihoods and Diversity in Developing Countries*, 1 edition (Oxford ; New York, NY: Oxford University Press, 2000).

¹³⁹ Paul Winters, Benjamin Davis, and Leonardo Corral, “Assets, Activities and Income Generation in Rural Mexico: Factoring in Social and Public Capital,” *Agricultural Economics* 27, no. 2 (August 2002): 142, <https://doi.org/10.1111/j.1574-0862.2002.tb00112.x>.

¹⁴⁰ S. Wiggins et al., “DISCUSSION - Agricultural Policy Reform and Rural Livelihoods in Central Mexico,” *Journal of Development Studies* 38, no. 4 (April 2002): 188, <https://doi.org/10.1080/00220380412331322461>.

paper, three groups of sources are considered in turn: farm income (income derived from held land, such as sale of agricultural products), migration gains (e.g., remittances) and local off-farm activities (artisan production, agricultural and non-agricultural rural wage labor). These are areas where the reforms were either expected or demonstrated to have had a significant effect.

C. FARM INCOME

This section considers farm dynamics in the *ejido*, specifically looking at investment decisions and land access in the context of a net fall in farm income tied to the reforms. Mexico's reforms were expected to lead to significant improvements in farming for *ejidatarios*. A more secure investment environment and more certainty in land use were expected to encourage *ejido* farmers to improve their efficiency and increase output of farm products. As Dunn points out, a major objective of the neoliberal agricultural reforms undertaken by the de la Madrid and Salinas de Gortari administrations was "to promote the willingness and capacity of agricultural producers to invest."¹⁴¹ However, detractors of the reforms feared negative welfare effects, with PROCEDE's path towards full privatization leading to the concentration of land among private holders.¹⁴²

It is not apparent that either improved productivity or higher farm income occurred following the reforms. Rather than encouraging a virtuous cycle in agriculture between productive investments and higher profits, the reforms do not appear to have generated income gains from farming. But, PROCEDE's land regularization process, separate from privatization, also provided a pathway for previously unrecognized holders to improve their tenure security and for the formerly landless to gain access to land via rental and extra-familial *ejidal* rights transfers. This improvement to land access benefited those hitherto excluded from the *ejido* system. Thus, neutral or negative changes in overall farm income might mask reductions in inequality between households which could be considered positive aspect of the reforms. Accordingly, newcomers to the *ejido* system, some who had

¹⁴¹ Malcolm H Dunn, "Privatization, Land Reform, and Property Rights: The Mexican Experience," *Constitutional Political Economy* 11, no. 3 (2000): 220, <https://doi.org/10.1023/A:1009093922472>.

¹⁴² Grenville Barnes, "The Evolution and Resilience of Community-Based Land Tenure in Rural Mexico," *Land Use Policy* 26, no. 2 (April 1, 2009): 398, <https://doi.org/10.1016/j.landusepol.2008.05.007>.

worked *ejidal* land without possessing *ejidal* rights and others who gained formal access to *ejidal* lands, can separately be judged to have better farming outcomes from the reforms even if farm income fell in aggregate for the sector.

1. Investment and Income

To the extent that the reforms did lead to a better investment environment, *ejidatarios* largely did not act on it. There are a number of studies that find no clear relationship between PROCEDURE and agricultural production. Nancy Johnson concludes that “the PROCEDURE program is unlikely to achieve its goals of increasing the capital intensity and productivity of *ejido* agriculture,” finding no significant relationship between PROCEDURE participation and access to irrigated land or machinery ownership.¹⁴³ In a Zacatecas case study following the reforms, Hernández Santos et al. found that 88.3% of producers had not altered the intensity of their land or capital use, specifically finding “that the legal certainty in the possession of land associated with PROCEDURE has not had economic effects in better cultivation practices, nor a change toward crops of higher value.”¹⁴⁴ This finding is corroborated by similar results from case studies in central Mexico and Chiapas.¹⁴⁵

The lack of improvements in agricultural productivity from the reforms are reflected in farm income data. Most directly, a World Bank study found that “farm income in households who adopted Procedure was lower by about [200 pesos] than in those who did not participate in the program.”¹⁴⁶ Though the study posits that this number underestimated gains from the reforms due to omission of rental income and considered future increased from anticipated agricultural investment, it is more likely that the fall in farm income reflected farmers following land that they otherwise would have been required

¹⁴³ Johnson, “Tierra y Libertad,” 304.

¹⁴⁴ María I. Hernández-Santos et al., “El Programa de Certificación de Derechos Ejidales y Titulación de Solares Urbanos (PROCEDURE): Su Impacto En Fresnillo, Zacatecas, México,” *Agrociencia* 40, no. 2 (April 2006): 253, http://www.scielo.org.mx/scielo.php?script=sci_abstract&pid=S1405-31952006000200249&lng=es&nrm=iso&tlng=es.

¹⁴⁵ Wiggins et al., “DISCUSSION - Agricultural Policy Reform and Rural Livelihoods in Central Mexico,” 194; Dunn, “Privatization, Land Reform, and Property Rights: The Mexican Experience.”

¹⁴⁶ World Bank, “Mexico - Land Policy,” 48.

to work to maintain control. However, this neutral-to-negative relationship between the reforms and farm income may obscure how increased access to land as a result of the reforms might have significantly increased farm income for those who were formerly landless.

2. Land Access

In rural areas, access to land may be an essential condition for a household's economic stability, allowing them to work their own land rather than rely wholly on insecure employment by others. *Avecindados* are those living on the *ejido* but without rights to individual farming plots and potentially without access to communal lands. The reforms appear to have increased their access to land through participation in rental markets.¹⁴⁷ Given high returns to land access below 4 hectares, even small plots gained by *avecindados* could generate large welfare increases.¹⁴⁸ Assuming a low-level of starting capital and potentially limited agricultural experience, *avecindado* farm income could lag behind that of longer-established *ejidatarios* thus pulling average *ejido* farm income down as more *avecindados* enter the market. As a starting point, this logic is supported by increases in the proportion of *ejido* residents with access to land in the early 1990s.¹⁴⁹ And, as USAID relays, "certification of land rights appears to have increased overall demand for cultivated land and allowed small producers to enter the market on the demand side."¹⁵⁰ However, the absence of data that distinguishes between long-standing *ejidatarios* and *avecindados* or new *ejido* members with recently gained land access precludes rigorous analysis. Tentatively, it would seem that while *ejidatarios* took advantage of the reforms to rent out their plots or fallow their land and shift to other activities leading to a fall in

¹⁴⁷ Fabrizio Bresciani, "Tenure Security, Land Markets, and Household Income: PROCEDE and the Impact of the 1992 Reform in Mexico" (PhD diss., University of Maryland, College Park, 2004), 142.

¹⁴⁸ Frederico Finan, Elisabeth Sadoulet, and Alain de Janvry, "Measuring the Poverty Reduction Potential of Land in Rural Mexico," *Journal of Development Economics* 77, no. 1 (June 2005): 27–51, <https://doi.org/10.1016/j.jdeveco.2004.02.004>.

¹⁴⁹ Sarah Hamilton, Billie R. Dewalt, and David Barkin, "Household Welfare in Four Rural Mexican Communities: The Economic and Social Dynamics of Surviving National Crises," *Mexican Studies/Estudios Mexicanos* 19, no. 2 (August 2003): 452, <https://doi.org/10.1525/msem.2003.19.2.433>.

¹⁵⁰ USAID, "Mexico," LandLinks, December 2017, <https://www.land-links.org/country-profile/mexico/>.

their farm income, *avecindados* gained access to land thus improving their farm income and economic stability.

Theoretically, the activation of land rental markets stemming from the reforms should have contributed to farm livelihood in two ways: first, the rise in farm income for *avecindados* or other tenants and second, the rise in rental income to offset potential declines in direct farm income for landholders. However, a limitation of data available is that income from land transactions (notably rental income) is not included in the surveyed datasets. The absence of data on proceeds from land sales is not problematic as such income is likely to be inherently infrequent and thus not a dependable livelihood source. The low adoption rate of fully privatized *dominio pleno* titles also means the volume of such transactions would be small. However, without more granular data in the literature, no conclusions can be drawn on the significance of rental income relative to other livelihoods for *ejido* households.

3. Summary

The farming outcomes from the reforms are judged to be mixed, with a demonstrated overall fall in farm income and lack of productive investment traced to the reforms potentially counterbalanced by posited but not demonstrated rises in rental income for established *ejidatarios* and boosted farm income for new ones. The decrease in farm income was likely due to increased fallowing of land thanks to higher tenure security, coupled with limited changes in productive investment and falling labor inputs generated by mechanisms discussed in following sections. But, positive farming outcomes are suspected to have occurred for entrants into the formal *ejido* system, especially for the formerly landless who gained the ability to rent out, buy or inherit *ejidal* land use rights as a result of the reforms.

D. MIGRATION

The reforms generated increased outmigration from *ejidos* which resulted in a rise in household income, an unintentional and unexpected result of the reforms. As discussed in Chapter 2, improved tenure security resulted in a surprising rise in migration out of *ejidos* towards other areas in Mexico as well as the United States. Whether permanent or

temporary migrants, these workers tend to divert large proportions of their income back to family members in the *ejido* in the form of remittances. As a result, household income rose in aggregate. Though the wider implications of the outmigration trend from rural Mexico are outside the scope of this study, a focus on economic outcomes more clearly isolates effects of reforms. It is thus otherwise assumed that the portion of outmigration associated with land market reforms generated marginal social and sociological costs and benefits to rural welfare consistent with migration literature.

To review, the reforms led to migration out of *ejidos* above and beyond the overall trend of rising migration (especially to the United States) in the 1990s and 2000s. The logic behind the linking the reforms to outmigration is that prior to the reforms, *ejidatarios* faced institutional restriction on labor mobility given the threat of expropriation if they were not working their plots. This impediment to labor mobility in turn depressed labor productivity, leading *ejidatarios* to continue “to apply labor beyond the point where diminishing marginal returns per day worked set in.”¹⁵¹ With the changes to Article 27 eliminating the threat of expropriation and PROCEDE reducing conflict and threats to tenure security, surplus labor could move elsewhere. This phenomenon explains “31% of the 1994–1997 increase in Mexican migrants from *ejido* areas,”¹⁵² totaling approximately 70–100,000 people during the active years of PROCEDE (1993–2006).¹⁵³ Based on data of emigrants who sold all of their land, principal destinations were “the United States, urban municipalities of the same state or border cities (Tijuana and Ciudad Juárez).”¹⁵⁴ Furthermore, a rise in agricultural labor productivity following certification verifies the initial assumption that pre-reform *ejido* labor allocations were inefficient.¹⁵⁵

¹⁵¹ John Richard Heath, “Evaluating the Impact of Mexico’s Land Reform on Agricultural Productivity,” *World Development* 20, no. 5 (May 1992): 701, [https://doi.org/10.1016/0305-750X\(92\)90146-M](https://doi.org/10.1016/0305-750X(92)90146-M).

¹⁵² Michele Valsecchi, “Land Property Rights and International Migration: Evidence from Mexico,” *Journal of Development Economics* 110 (August 2013): 25, <https://doi.org/10.1016/j.jdeveco.2014.01.010>.

¹⁵³ de Janvry et al., “Certified to Migrate: Property Rights and Migration in Rural Mexico,” 15; Alain de Janvry et al., “Delinking Land Rights from Land Use: Certification and Migration in Mexico,” *American Economic Review* 105, no. 10 (October 2015): 3139, <https://doi.org/10.1257/aer.20130853>.

¹⁵⁴ Hernández-Santos et al., “El Programa de Certificación de Derechos Ejidales y Titulación de Solares Urbanos (PROCEDE),” 254.

¹⁵⁵ de Janvry et al., “Delinking Land Rights from Land Use.”

Rural outmigration generated economic improvements in rural welfare, reflected both in terms of increasing remittances as a component of livelihoods and potentially in consumption. Emigration from rural areas does not necessarily lead to abandonment of the countryside. Instead, “it is often part of a temporary or multifaceted family strategy for generating the much-needed monetary income required to maintain roots in rural communities of origin.”¹⁵⁶ Studies consistently indicate an increase in household income associated with migration. Taylor and Lopez-Feldman find that households with a U.S. immigrant in 1990 had a 2002 average per-capita income 51% higher than those that did not, almost entirely due to remittances.¹⁵⁷ Wiggins et. al find similarly on a smaller scale, with 20% of adults migrating being associated with an increase in household income of US\$144 a head.¹⁵⁸ Indeed, rural outmigration rather than rural development has been generally identified in Latin America as responsible for falls in rural poverty.¹⁵⁹

1. Migration and Agricultural Productivity

There is significant literature on the potential for migration to spur higher agricultural productivity and farm income in sending communities via investment from remittances. Such a link, if present, would appear to contradict the previous findings that the reforms notably increased migration without a commensurate increase in farm income. While the link appears weak in a comparative analysis, Mexico may be an outlier as Davis et al. find that in Mexico’s case, “both [remittances] and public transfers appear to have more synergistic linkages with agricultural investment and production.”¹⁶⁰ Indeed, other studies have identified increases in agricultural productivity from the reforms with De

¹⁵⁶ Darcy Victor Tetreault, “Alternative Pathways out of Rural Poverty in Mexico,” *Revista Europea de Estudios Latinoamericanos y Del Caribe / European Review of Latin American and Caribbean Studies*, no. 88 (April 2010): 87, <https://www.jstor.org/stable/25676408>.

¹⁵⁷ J. Edward Taylor and Alejandro Lopez-Feldman, “Does Migration Make Rural Households More Productive? Evidence from Mexico,” *Journal of Development Studies* 46, no. 1 (January 2010): 10, <https://doi.org/10.1080/00220380903198463>.

¹⁵⁸ Wiggins et al., “DISCUSSION - Agricultural Policy Reform and Rural Livelihoods in Central Mexico,” 191.

¹⁵⁹ Alain de Janvry and Elisabeth Sadoulet, “Rural Poverty in Latin America Determinants and Exit Paths,” *Food Policy* 25, no. 4 (August 2000): 21, [https://doi.org/10.1016/S0306-9192\(00\)00023-3](https://doi.org/10.1016/S0306-9192(00)00023-3).

¹⁶⁰ Benjamin Davis, Gero Carletto, and Paul C. Winters, “Migration, Transfers and Economic Decision Making among Agricultural Households: An Introduction,” *Journal of Development Studies* 46, no. 1 (January 2010): 10, <https://doi.org/10.1080/00220380903198000>.

Janvry et al. finding that “an important consequence of land certification is to reduce the prevalence of inefficiently small farms”¹⁶¹ and that “the reform succeeded in shifting labor out of agriculture without affecting the overall amount of cultivated area.”¹⁶² This indicates that agricultural *labor* productivity rose as a consequence of the reforms.

The conclusion that the reforms did improve agricultural labor productivity is not inconsistent with the previous section on farm income. First, the previous section considered agricultural productivity from the perspective of capital investment, better farming practices and crop choice. Second, higher farm output per capita does not preclude a fall in total agricultural output given a shrinking workforce. Reform-driven migration thus likely had both a positive and negative effect with respect to farm income: while it did lead to increases in agricultural labor efficiency due to some consolidation of inefficient small farms, it contributed to a decline in on-farm labor.

2. Migration and Off-Farm Activities

Similar to the logic linking migration and agricultural productivity, it has been hypothesized that migration may encourage the development of off-farm activity. The core idea is that “having a migrant member working elsewhere loosens risk and liquidity constraints on household productive investments at origin.”¹⁶³ Mendola’s review of the effects of out-migration on sending communities does not find strong relationships in general between the incidence of migration and rural investment in productive activities (either on or off-farm). However, Hamilton points to instances in Mexico of investment in off-farm activity being associated with more migration in a community.¹⁶⁴

¹⁶¹ de Janvry et al., “Delinking Land Rights from Land Use,” 3141.

¹⁶² de Janvry et al., 3143.

¹⁶³ Mariapia Mendola, “Rural Out-Migration and Economic Development at Origin: A Review of the Evidence,” *Journal of International Development* 24, no. 1 (January 2012): 108–9, <https://doi.org/10.1002/jid.1684>.

¹⁶⁴ Hamilton, Dewalt, and Barkin, “Household Welfare in Four Rural Mexican Communities,” 455.

3. Summary

The link between rising tenure security and rural outmigration observed in response to Mexico's reforms is a relatively recent discovery. This link can be framed as a net positive for rural households, as increases in household incomes from remittances outweighed farm losses. However, the amount of migration from *ejidos* linked to the reforms is only a small portion of the larger trend of migration out of rural Mexico. Nevertheless, the existence of a demonstrated relationship between tenure reform and migration complicates analysis of rural livelihoods, as migration itself (independent of the reforms) affects other household income activities. Last, though this section has presented income gains as a positive given economic framing, migration may have detrimental social effects.

E. OFF-FARM ACTIVITIES

The reforms contributed to more off-farm activity as a major source of income, an additional unintentional result of the reforms. This section focuses on rural off-farm activity as income derived not from sale of farm products, but instead from artisan work and agricultural and non-agricultural wage labor. First, to what degree does off-farm activity reflect a distinct aspect of rural livelihood? Off-farm activity shares some correlations with farm income and migration, but it is nonetheless a distinct variable. In regard to the relationship between farm income and off-farm activity, off-farm activity actually includes farm work in the form of agricultural wage labor. Accordingly, income from this work does track closely factors like agricultural productivity which strongly affect farm income.¹⁶⁵ However, agricultural wage labor is a relatively small contributor to total off-farm income.¹⁶⁶ Off-farm activity is distinct from migration as the former consists of labor in rural areas, while the latter is mainly a rural to urban transition. Though a rural household can shift efforts between farm and off-farm activity relatively easily given geographical proximity, a household with migrant members cannot as easily shift

¹⁶⁵ Alain De Janvry and Elisabeth Sadoulet, "Income Strategies Among Rural Households in Mexico: The Role of Off-Farm Activities," *World Development* 29, no. 3 (March 2001): 467–80, [https://doi.org/10.1016/S0305-750X\(00\)00113-3](https://doi.org/10.1016/S0305-750X(00)00113-3).

¹⁶⁶ Janvry and Sadoulet, 469.

their labor back to the farm if desired. Additionally, in Mexico as well as Latin America more broadly, local non-farm activities generate many times more household income than remittances.¹⁶⁷

Income from non-farm activity increased significantly following the reforms largely due to improvements in tenure security. The World Bank found that by 2001, “adoption of PROCEDE is estimated to have increased annual real off-farm income by 1,014 pesos, mainly as a result of the relocation of labor toward non-farm activities with higher returns to human capital that was facilitated by higher levels of tenure security and the ability to rent out land.”¹⁶⁸ As Davis et al. find that each household member with non-agricultural labor market experience adds 1,296 pesos to household income, the off-farm increase of 1,014 pesos from PROCEDE equates to nearly one additional member in rural non-agricultural activity.¹⁶⁹

While off-farm activity is a major contributor to positive welfare effects from the reforms, it may depress other income activities. Though higher off-farm activity does increase agricultural efficiency and input productivity, agricultural output declines overall as workers reduce their on-farm time in favor of leisure or more lucrative off-farm income sources.¹⁷⁰ With agricultural output as a proxy for farm income, this relationship helps explain why the reforms had a limited or even negative effect on farm income. Pfeiffer et. al. find that facilitating “access to nonfarm income opportunities as well as productivity-enhancing agricultural investments” could raise rural incomes and alleviate poverty.¹⁷¹ However, they also find “a greater access to off-farm opportunities induces rural

¹⁶⁷ Thomas Reardon et al., “Effects of Non-Farm Employment on Rural Income Inequality in Developing Countries: An Investment Perspective,” *Journal of Agricultural Economics* 51, no. 2 (November 5, 2008): 122, <https://doi.org/10.1111/j.1477-9552.2000.tb01228.x>.

¹⁶⁸ World Bank, “Mexico - Land Policy,” 48.

¹⁶⁹ Benjamin Davis et al., “Policy Reforms and Poverty in the Mexican Ejido Sector,” in *Policy Harmonization and Adjustment in the North American Agricultural and Food Industry: Proceedings of the Fifth Agricultural and Food Policy Systems Information Workshop*, ed. R. M. A. Loyns (College Station, TX: Texas A&M University, 2000), 104–24.

¹⁷⁰ Lisa Pfeiffer, Alejandro López-Feldman, and J. Edward Taylor, “Is Off-Farm Income Reforming the Farm? Evidence from Mexico,” *Agricultural Economics* 40, no. 2 (March 2009): 137, <https://doi.org/10.1111/j.1574-0862.2009.00365.x>.

¹⁷¹ Pfeiffer, López-Feldman, and Taylor, 137.

households to shift out of crop production,” leading to an overall decline in agricultural output.¹⁷² The corresponding fall in household farm income tied to the reforms (fall of 200 pesos in farm income compared with a rise in off-farm income of 1,014 pesos) was examined in the previous section on farm income and productivity.

F. CONCLUSION

Mexico’s land market reforms were a net positive for rural *ejido* households from an economic perspective. Outmigration from the *ejido* coupled with an increase in rural off-farm activity directly raised household incomes. And, while farm output and household income from the farm decreased as a result of the reforms, not only was this decline minimal as a share of household income, but it may also obscure income inequality improvements in favor of the formerly landless.

Coupled with reform-driven migration, the shift towards off-farm activities validates the theoretical assumption behind the reforms that the *ejido* structure contributed significantly to an over-concentration of labor on minimally productive farm plots. By transitioning towards market-based land rights rather than usufruct, better tenure security allowed households to reallocate their resources from an efficiency-maximizing perspective without risking security of control over *ejido* plots.

Though this livelihoods approach to examining the outcomes of Mexico’s 1992 reforms has demonstrated a net positive effect on overall household income, other welfare effects from the reforms are mixed. Rather than an income approach, a consideration of patterns of rising consumption in the wake of reforms yields results consistent with reform-driven welfare improvements due to increases in migration.¹⁷³ A potential negative side effect of rural shifts towards migration and off-farm activities is that of income gains from these livelihood activities being captured by a narrow slice of the population, thus exacerbating income inequality. Reardon et. al. find mixed results on this issue globally,

¹⁷² Pfeiffer, López-Feldman, and Taylor, 137.

¹⁷³ de Janvry et al., “Delinking Land Rights from Land Use,” 3143.

but find that in Latin America rural off-farm employment decreases inequality.¹⁷⁴ The relatively low involvement in farming throughout rural areas with agriculture providing work “equivalent to less than one full-time job for the large majority of households” bolsters the likelihood that off-farm employment is a widely viable alternative to farming and rather than being captured by a small subset of the population.

Given the large potential income gains from livelihood diversification into migration or off-farm activities relative to chronically poor farm income and employment outcomes, it is surprising that the reforms did not presage a wholesale shift out of *ejido* agriculture. As an explanation, one study of an *ejido* in Campeche finds that “increased income from remittances, off-farm employment and governmental cash transfer programs have tended to stabilize household economies and decrease households’ dependency on agricultural production allowing households to maintain [their traditional farming practices] for subsistence production and cultural reproduction.”¹⁷⁵ While outmigration from rural Mexico is a long-running narrative, the extent and durability of rural unemployment persisting through the reforms suggests a factor causing stickiness in rural labor markets slowing movement away from subsistence farming to other economic activities. To the extent that the reforms may have been intended to yield modernization results, including encouraging farm consolidation and commercial agriculture or enabling national labor reallocation away from *ejido* agriculture to urban industries, the actual effects were marginal rather than transformational. While the migratory effect of the reforms was demonstrated, it is not visibly evident in Mexico’s urbanization rate (see Figure 2). The lack of a pronounced inflection point following the reforms supports a conclusion that the reforms have been more marginal rather than transformational.

¹⁷⁴ Reardon et al., “Effects of Non-Farm Employment on Rural Income Inequality in Developing Countries,” 283.

¹⁷⁵ Birgit Schmook et al., “Persistence of Swidden Cultivation in the Face of Globalization: A Case Study from Communities in Calakmul, Mexico,” *Human Ecology* 41, no. 1 (February 2013): 104, <https://doi.org/10.1007/s10745-012-9557-5>.

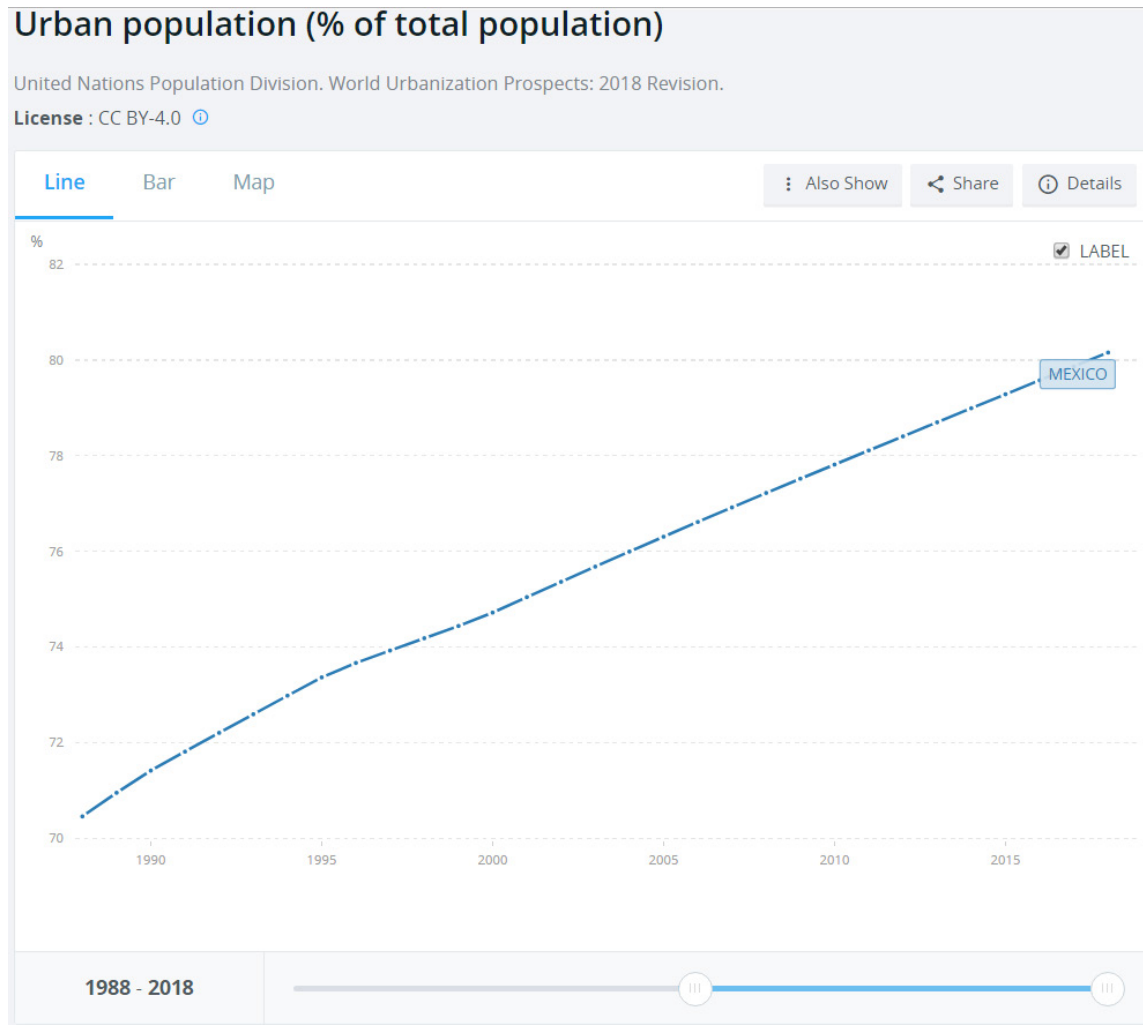


Figure 2. Mexico's Urban Population (Percentage of Total Population, 1988–2018).¹⁷⁶

¹⁷⁶ Source: "Urban Population (% of Total Population) | Data," accessed August 14, 2019, <https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?end=2018&locations=MX&start=1988>.

IV. CONCLUSION

A. PRIMARY FINDINGS

Mexico's 1992 land reforms, consisting of a land title administration program (PROCEDE) and constitutional changes to land markets, led to marginal changes for rural *ejidos* rather than a major transformation. Though policymakers had hoped that the reforms would spur a virtuous cycle of higher agricultural investment and productivity leading to welfare improvement and more income available for reinvestment, detractors of the reforms feared that the neoliberal-oriented reforms would impoverish peasants and lead to the destruction of the *ejido* system. In actuality, reforms did generate higher tenure security and reduce conflict by channeling disagreements into formal legal systems. However, these improvements had little to no effect on *ejido* agriculture, instead contributing moderately to trends of rural outmigration and seeking of off-farm activities, which predate the reforms. While these trends appear to have been favorable for household income (as a proxy for rural welfare), they were not intended outcomes of the reforms.

The primary mechanisms by which the land reforms were expected to spark positive change were by improving tenure security, increasing credit access and reducing conflict. By demarcating and titling individual *ejido* plots and expanding rights associated with those plots, such as allowing land rentals and transfers of *ejido* rights outside families, the reforms heightened the security of tenure for *ejidatarios*. However, credit access derived from property-based collateral did not increase, reflecting on one hand relatively low demand for credit (i.e., lack of credit access was not the main constraint on agricultural development) and on the other that titling without full privatization (*dominio pleno*) of *ejido* plots was ineffective in providing creditworthy collateral. In terms of conflict, the reforms led to improved conflict resolution mechanisms by creating new formal legal institutions such as an agricultural ombudsman (*procuraduría agrarian*) and a system of Agrarian tribunals. Though the expansion of *ejidal* inheritance rights allowing designation of non-familial heirs did create new potential for land disputes, the institutional innovations channeled land disputes into official processes thus reducing levels of extralegal conflict.

Considering changes in rural welfare, given moderate improvements in tenure security and the conflict environment, it was found that the reforms did not generate expected substantive improvements in *ejido* agriculture though they did lead to increases in rural household income via outmigration and off-farm labor. Using a “livelihoods approach” which decomposes household income based on the activities from which it is derived, little evidence was found that would have supported policymaker hopes that the reforms would lead to more productive and more profitable farming in the *ejido*. Instead, farm incomes for PROCEDURE participants actually fell as *ejidatarios* responded to higher tenure security and the improved conflict environment to fallow land that they previously would have been required to work in order to maintain control. However, this decrease in farming activity was compensated for by more remittances and more off-farm activity. The decreasing need for family members to engage in farming accelerated rural outmigration in search of higher paying work and allowing those remaining to find higher compensation off the farm. However, these shifts associated with changes in the *ejido* do not appear to have been major inflection points in context of broad shifts in the rural economy. That is, the reforms appear to have only marginally increased outmigration and the share of off-farm activity in rural household income rather than accelerating those trends.

The low adoption of fully privatized titles and continuing participation in relatively unproductive subsistence agriculture represents inertia in rural development not anticipated by the reforms. Recall that PROCEDURE certification formalized *ejido* plots and solidified usufruct rights, but did not allow the purchase or sale of *ejido* land without conversion of a PROCEDURE certificate into a fully privatized *dominio pleno* title, thus removing the land from the *ejido* system. More than two decades following the reform, while 95% of *ejidos* and over 90% of *ejido* land has been certified, but only 5.12% of *ejido* land is under *dominio pleno* title.¹⁷⁷ Given the potentially substantial gains to household income from a complete shift away from *ejido* agriculture, the economically optimal decision would be to opt for *dominio pleno* and sell their *ejido* land. This would allow them to redirect household resources and labor towards more productive opportunities off the farm or outside the local

¹⁷⁷ Registro Agrario Nacional, “Información Estadística de La Estructura de La Propiedad Social En México [Statistical Information on the Structure of Social Property in Mexico]”; Registro Agrario Nacional, “Información Sobre Dominio Pleno [Information on Dominio Pleno].”

area. Instead, *ejidatarios* have overwhelmingly opted to maintain and formalize their ties to the *ejido*, not pursuing a path to privatization and exit from the *ejido* system.

B. FUTURE RESEARCH

This work suggests two major avenues for further exploration of Mexico's *ejidos* reforms: first, the need for collection of new data on the effects of the reforms, second, further testing of reform outcomes with respect to theoretical expectations, and third, a better understanding of sticky behavior in response to land policy changes. Almost three decades removed from the introduction of the reforms, a generation of rural Mexicans have reached adulthood within a context of land holding fundamentally different from that of their parents. Yet, puzzles remain as to why rural economic behavior did not shift in the manner or to the degree expected by land reform theorists. Namely, why have so few *ejidos* opted for full privatization? Why did the reforms fail to produce a market for *ejido* rights? Why do so many rural Mexicans remain engaged in subsistence agriculture? Additionally, the reforms and land regime may be instrumental in explaining the emergence or persistence of currently relevant issues in Mexico such as the drug war, regional differences in development and indigenous grievances. But, in order to reach rigorous and pertinent conclusions, new research requires more up-to-date data than is currently available.

Further policy analysis of Mexico's *ejido* reforms could yield additional insights on the functions and utility of market-led land reforms for policymakers and development practitioners but the literature is most limited by a lack of recent data at national, state, and household levels. The bulk of national and state information on progress in the *ejido* and responses to the reforms is derived from an examination of just two main data points: *ejidal* censuses in 1991 and 2007. Meanwhile, data on household behavior is inferred either from a few small-n comparative case studies of individual *ejidos* conducted around the year 2000 (approximately halfway through the period that the reforms were being actively promoted), or from aggregated rural data collection that often does not distinguish between *ejido* and non-*ejido* households. Considering the persistence of parallel land systems (*ejidos* and fully private land) in rural Mexico, significant opportunity exists for research to more specifically isolate the role of differences in property right regimes to both agricultural and rural development.

C. IMPLICATIONS

This research suggests three major implications for the use of land market and tenure reform as a tool for economic development or alleviation of rural grievances. First, land reforms may have the potential to generate significant change in aspects distant from original reform intentions. Second, non-economic aspects of the relationship between farmers and their land are necessary to explain rural behavior in a reform context. Third, though formalization may deeply transform *de jure* land regimes, the smaller the difference between the pre-reform *de facto* regime and post-reform *de jure* regimes, the lower the magnitude of change generated by reform. And last, that the role of formal land and property rights may be less integral to rural development than previously assumed.

The main causal chain examined in the research is the assumed link between tenure security and agricultural performance, a link that appears much weaker than expected. Much of the existing literature, both on land reform writ large and Mexico's reforms specifically, is centered on the link between reform and agricultural performance, but it is outside the farming context that the reforms had their strongest effects. Reform in a similar market-oriented vein as Mexico may yet prove to have subtle yet consistent effects on agriculture, but Mexico's case demonstrates that better tenure security does not automatically result in more agricultural investment or commercialization/modernization of agriculture.

Applying a livelihoods approach to Mexico's *ejidos* illustrates a high degree of complexity in the decision making of its households that belies simplistic assumptions of how rural households respond to shifting incentives associated with better tenure security. Rather than face an exclusive choice in the wake of reforms between increasing farming efficiency or intensity, migrating, or moving into off-farm employment, a sufficiently large household could plausibly engage in all those activities simultaneously. A consideration in the literature is that in the wake of land titling, inefficient, small holders will be incentivized to either improve their practices or dispose of their land. As has been demonstrated, households actually face a much larger set of options, in this case tending to opt for one (reducing labor or fallowing land but not selling land) seemingly inconsistent with rational economic behavior. By considering a more complete range of responses to reform, as well

as behaviors beyond economic maximization, a more accurate set of reform expectations can be reached.

Perhaps the main factor behind the marginal results of the reforms is that *ejidos* had a choice in the degree to which would adopt the reforms, and they chose largely to formalize existing land practices; reforming rather than revolutionizing or eliminating the *ejido* as an institution. Despite de jure restrictions on the sale and rental of *ejido* land prior to the reforms, such practices were not uncommon. But neither did these activities increase notably once a legal pathway was established to sell their land or *ejidal* rights. The end result was a land regime which on one hand allowed for the complete dissolution of *ejidos* with constitutional changes and an institutional apparatus to support potentially dismantling half the country's land system, but on the other led to just over 5% of that land leaving the *ejidos*. Both neoliberal reformers and their detractors did not accurately predict how peasants would respond to the reforms. When given a choice, a populace can defy expectations. But was it the right choice? Are *ejidatarios* better off today than they would have been if the government had forcibly dismantled the *ejido* or doubled down on redistributive land reform?

A foundational assumption of modern land reform has been that more secure, individual, and formal property rights are a necessary condition for agricultural modernization and rural development. This research has not disproven that assumption, but instead leaves open the need for other complementary measures to achieve desired results from land reform. It is important to note Mexico's development efforts were hampered by unfavorable agricultural market conditions for much of the reform period (1992–2006), largely outside its control due to global macroeconomic circumstance. In the face of such headwinds, reforms of any type would have faced similar challenges. But, given its promise, the limited results from land reform are disappointing. However, land reform was but one of many possible tools in the development toolbox to address its rural issues. Among other measures, market controls, technical assistance, financial sector reforms, direct subsidies and infrastructure development, in addition to land reform, have been part of the rural development landscape in Mexico. Just as two major rounds of land reform have had mixed results with respect to its agricultural sector, Mexico has yet to assemble a package of reforms to achieve its rural development goals. Neither hero nor villain, the

reform experience paints a complex picture of the role of ejido life in Mexico's evolving economic landscape requiring more research to understand what land reform in Mexico did and what it can do.

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