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ABSTRACT

This dissertation examines the creation of a road transportation network in Mexico during the twentieth century. In 1920, at the conclusion of the Mexican Revolution, the significance of motorized transportation was negligible. Forty years later Mexico’s economy depended heavily on road transportation. This transformation wrought important economic, political, and cultural changes, and played an important part in Mexico’s shift from a rural, agrarian nation to an urban, industrial one. This study examines several components of Mexico’s transportation revolution including the planning and construction of roads, the emergence of the trucking industry, and efforts to ensure an adequate supply of cars, trucks, and buses.

The study links these changes to the development of Mexico’s postrevolutionary state. By examining an important development project that spanned the entire postrevolutionary period, this study offers a revised vision of Mexico’s national state. Its pages highlight the consistency of postrevolutionary administrations when it came to economic policy and analyze the economic model that they pursued throughout the period from 1920 to 1960. In so doing, the study depicts a state that drew its strength from pragmatism, flexibility, and a willingness to devolve and decentralize important decisions to local actors. This approach, especially after 1940, helped Mexico achieve remarkable
economic growth but also limited who would enjoy the fruits of that growth. Finally, this
dissertation demonstrates how the shift to road transportation bound the United States and
Mexico into a more integrated and interdependent relationship, redefining ideas about
Mexican nationalism and the legacy of the revolution.
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INTRODUCTION

“We do consider in a respectful way that we may more truly stop the migration by building a kilometer of highway in Michoacán or Zacatecas than 10 kilometers of walls [on the border].”

-Felipe Calderón, 2007

On March 13, 2007, Mexican president Felipe Calderón uttered the above words as he welcomed his U.S. counterpart, George W. Bush, to Mexico to discuss the contentious issue of Mexican migration to the United States. The catalyst for the meeting was the decision by the U.S. government to build a security fence the length of the border in order to prevent Mexicans from crossing into the United States. As other Mexican presidents during the late twentieth and early twenty-first century have done, during his speech Calderón repeatedly highlighted the closely integrated relationship between Mexico and the United States and pointed out the intricate connections between issues such as security, migration, drug trafficking, and economic development. With his words about road building Calderón was drawing on a powerful metaphor. Since the 1920s Mexico’s leaders have invoked roads and automobile transportation as symbols of both U.S.-Mexican cooperation and the utopian promises of capitalist economic development. Among state leaders, the temptation to imagine and describe roads as a panacea for Mexico’s ills – from

economic inequality to the challenges of sharing a border with the powerful United States – has consistently proved irresistible.

But consider another symbolic use of roads in recent years. By the beginning of the twenty-first century it was commonplace for social groups protesting economic and social injustice to occupy major roadways, often those leading into and out of Mexico City and other state capitals, closing them to traffic and grinding commerce to a halt. These methods peaked in the aftermath of the contentious 2006 presidential election when supporters of Andrés Manuel López Obrador shut down Mexico City by blockading the Paseo de la Reforma for several weeks, transforming one of the city’s major thoroughfares into a continuous protest rally.\(^2\) This tactic was employed by other groups as well. For example, in November of 2006 supporters of the Ejército Zapatista de Liberación Nacional (EZLN) and the Asamblea Popular de los Pueblos de Oaxaca (APPO) closed down major highways throughout the state of Chiapas to demand the removal of an unpopular governor.\(^3\) Mexicans blockaded roads for several reasons. Aside from being an obvious way to call attention to their cause, protesters also clearly invested roads with a kind of symbolism very different from that employed by Calderón. The act of closing down a road was a way of pointing out the uneven distribution of the fruits of Mexico’s twentieth-century economic growth. In popular imagination, road transportation benefited some but hurt others. Roads became symbolic of the economic model that Mexico’s leaders promised would make all Mexicans better off, but which had largely failed to live up to that promise.

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These two symbolic uses of roads at the beginning of the twenty-first century suggest important questions about Mexico’s twentieth-century history. In the first place, what role did road-based transportation play in transforming Mexico from an agrarian society to an urban, industrial one? How did the shift to roads intersect with the creation and consolidation of the postrevolutionary Mexican state? How did the creation of a road transportation network affect the complex and increasingly interdependent economic and political relationship between the United States and Mexico? This study explores and attempts to answer these questions.

The Roots of Mexican Modernity: From Díaz to the Revolution

As recent scholarship has made clear, any explanation of Mexico’s twentieth-century economic and political history begins with the last quarter of the nineteenth century. During the period known as the Porfiriato (1876-1911) Mexico was governed by an upstart Oaxacan soldier named Porfirio Díaz.\(^4\) Díaz rose to power in the aftermath of a chaotic half century. Between independence in 1821 and Díaz’s ascension to the presidency in 1876, Mexico endured constant political turmoil, a disastrous war with the United States which cost it half its national territory, a prolonged civil war between liberals and conservatives, and the indignity of seeing a foreign monarch installed as emperor. When Díaz finally took power in his second effort at a military coup in 1876, he initiated a regime that would finally bring some measure of stability to Mexico. As a result of the nineteenth century’s chronic disruptions, many in Mexico did not object to continual rule

by Díaz. In exchange for abiding his perpetual reelection, Mexican elites received political and economic stability and a period of sustained economic growth.⁵

Although the Díaz years were an acceptable bargain for many of Mexico’s elites, for the poor the Porfiriato was mostly downside. To encourage growth, Díaz launched a campaign to privatize land, in the process taking it out of the hands of indigenous communities and enabling its sale. The process facilitated the increasing commercialization of agriculture and forced many Mexicans into a more dependent relationship with local landholders. Many of these large landholders took advantage of this opportunity to increase the size of their properties and to settle old scores with communities which had successfully resisted the loss of their land for centuries.⁶ The combination of stability and a regime committed to the protection of private property rights unleashed a flood of foreign investment in Mexico, which by one estimate multiplied by a factor of thirty during the Porfiriato.⁷

By the beginning of the twentieth century there were growing signs that many were rethinking this bargain. Especially in the north of the country, local elites began to rankle under a system in which their political power was curtailed. Francisco Madero was one of them. Madero was the somewhat eccentric son of a prosperous Coahuila family. He


⁷ Knight, The Mexican Revolution, vol. 1, 22.
believed that Diaz’s authoritarian style of government had run its course, and that Mexico was ready for real democracy rather than the strong arm of a dictator. Madero made vague calls for agrarian justice, but his enthusiasm for social reforms such as labor rights and land reform was tepid. At the same time, economic pressures put new strains on Mexico’s poor. The economic and social policies of the Porfiriato continued to squeeze rural Mexicans. Many lost access to workable land and were forced into dependent relationships as workers on large estates or for foreign-owned mining companies. The final spark was a catastrophic drought that devastated the 1910 maize harvest, provoking scarcities and inducing widespread hunger and desperation.¹ Díaz had Madero arrested in June. In October he escaped, and in November he launched his revolution. Madero was able to capitalize on widespread discontent in the countryside to raise an army that would fight under his name. The Mexican Revolution had begun.

The revolution was a bloody civil war that was fought in earnest for ten years and had violent reverberations for decades more.² Between 1910 and 1920, hundreds of thousands of people, perhaps even a million, died as a result of the conflagration. The revolution was really a succession of conflicts replete with unpredictability and dramatic reversals of fortune. Madero’s revolution proved to be only the first phase. In 1913 Madero was overthrown and assassinated, setting off a new wave of fighting. For four more years, Mexico was engulfed in violent conflict. In Morelos, Emiliano Zapata led a

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peasant army that fought on behalf of agrarian justice. Zapata and his army consistently resisted the encroachments of other groups into their territory and also remained steadfastly opposed to compromise on the issue of land reform. Zapata managed to gain temporary control over Morelos, but his movement was not suited to governing nationally. Zapatismo was eventually defeated on the battlefield and Zapata himself was assassinated in 1919.

The other revolutionary factions hailed from the north. Pancho Villa, a charismatic and skilled military leader, eludes easy labeling. Villismo was a distinctly regional phenomenon. The movement was supported by Mexico’s poor and made calls for social and economic justice. However, these assertions were vague and in any case adhered more to the unique environment of northern Mexico in which the ideal was private property rights for smallholders. This ideal had little resonance for the campesinos of Morelos who drew on a long tradition of indigenous communal landholding. These differences drove a wedge between Zapata and Villa and abetted the military victory of a third faction, the Constitutionalists. The Constitutionalists, as they called themselves, were led by men like Venustiano Carranza, Álvaro Obregón, and Plutarco Elías Calles. Their outlook was elitist. Their platform incorporated some of the demands of Mexico’s poor, but did so while maintaining a commitment to a vision of a capitalistic Mexico led by enlightened elites such as themselves. In April of 1915, a Constitutionalist army under the command of Obregón decisively defeated Villa’s army at the Battle of Celaya. Villa never recovered from this blow, and with it the Constitutionalists won the revolution on the battlefield.

Military victory and the establishment of a functioning government were two different tasks, however. Although it was increasingly clear after 1915 that Carranza had won, he faced several major challenges to consolidating his rule. In the first place, he still
had to wage war against the Zapatistas and the remnants of Villa’s army, which had reverted to a guerrilla force. Second, he needed to legitimate his victory on the battlefield through political channels. He was aided in both these tasks by the official recognition of his government by the United States in 1916. In 1917, he signed into law a new constitution that codified some of the principles of the revolution and provided political legitimacy for the new state. The Constitution of 1917 did not immediately solve the problem of ensuring a peaceful transfer of power; Carranza was assassinated in 1920 during a rebellion led by Obregón. It did, however, provide the basis for the creation of a new national state in Mexico. As Mexico entered the 1920s, its leaders embarked on the long project of consolidating and legitimizing this state. This process provided the basis for the astonishing transformations of the long postrevolutionary period.

The Long Postrevolutionary Period: Mexico’s Twentieth-Century Transformation, 1920-1960

After the revolution, Mexico thoroughly changed. In 1900 the country was an agrarian, rural society ruled by an aging dictator who had been in power for a quarter century. Although they had witnessed the first steps of industrialization in the last decades of the nineteenth century, in 1900 about 80 percent of the sixteen million or so Mexicans lived in the countryside and made their living from the land.¹⁰ There were small numbers of factory workers and artisans, nearly all of whom lived in the cities and especially the capital of Mexico City. But one hundred years later the Mexico of 1900 was barely recognizable. Population had increased more than five-fold to over one hundred million,

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nearly a quarter of whom lived in the sprawling megalopolis of Mexico City.\textsuperscript{11} Subjected to an increasingly commercialized and capitalistic agricultural landscape, rural people steadily left the countryside and headed to the cities or north to the United States in search of work. Mexico at the dawn of the twenty-first century was a primarily urban country, characterized by a huge gap between a small elite and a slightly larger middle class, and an enormous number of poor people who struggled in the informal economy to keep themselves and their families afloat.\textsuperscript{12} Its close economic and cultural ties to the United States were everywhere evident. This transformation, remarkable enough on its own, was all the more astonishing considering that this society was the inheritance of a social revolution that had been fought and then mythologized in the name of land reform, social justice, democracy, and economic nationalism.

Understanding this transformation requires an examination of the “long” postrevolutionary period that lasted roughly from 1920 until 1960. Beginning in the 1920s, Obregón (1920-1924) and Calles (1924-1928) presided over a national state engaged in the complex process of consolidating its legitimacy and authority. Given the priorities and worldviews of these men, the challenges were immense. The first batch of problems were political. The revolution dealt a blow to Mexico’s tenuous national unity, creating opportunities for caciques to solidify their autonomy over localities throughout Mexico. The leaders of a state that aspired to govern nationally had to find some way of curtailing the economic, political, and military clout of local powerholders. In the 1920s this was not merely an abstraction; the threat of military resistance and revolt from the regions was real.


Calles tried to achieve stability in part by creating a national party that he hoped would help mediate disputes and disperse the benefits of holding national power.\textsuperscript{13}

The second major challenge was to find a way to restart a stagnant economy while preventing U.S. economic domination. This was a complex task. For Calles and his contemporaries, reviving the economy had a specific meaning. Their vision was one of a decidedly capitalist Mexico, but one in which the worst excesses of capitalism were alleviated. Thus, the leaders of Mexico’s new state had to perform a difficult balancing act in which they oversaw the development of a capitalist economy but also appeared to protect those whose interests were harmed by that economy. This balancing act was especially difficult for two reasons. First, the revolution had overturned the expectations of millions of Mexicans about the bargain they struck with their leaders. In short, the revolution gave birth to new ideas about social and economic justice and the state’s role in fostering them. After all, millions of Mexicans had taken up arms against a Porfirian state that had gone too far in neglecting these rights. Second, the revolution reconfigured the meaning of economic nationalism, sharpening ideas about Mexican sovereignty and economic independence. Creating an economically prosperous capitalist Mexico, however, was not a project that could be carried out as if the United States did not exist. In fact, it required Mexico’s state builders to juggle collaboration with resistance when it came to U.S. power and influence. Calles selectively invited foreign capital back into Mexico, but simultaneously mythologized the nationalism of the revolution in an effort to burnish the state’s nationalist credentials.

These two fundamental challenges that emerged at the end of the revolution – achieving political stability and encouraging capitalist economic growth – remained acute throughout the long postrevolutionary period. This persistence should not obscure, however, the dynamic nature of these twin challenges. Between 1920 and 1960, Mexican leaders faced a shifting landscape of economic, political, and social conditions. Some of these changes were external; the Great Depression, World War II, and the onset and intensification of the Cold War exerted powerful influences on Mexico’s options. Others were the result of Mexico’s ongoing transformation into a different kind of society with a new political economy. The need to confront these challenges in the face of rapidly changing circumstances was consistent.

While during most of the 1920s the state’s priority was to strengthen its authority and nurture the growth of capitalism, the Great Depression was the defining challenge of the late 1920s and most of the 1930s. The 1929 stock market collapse triggered a cascading economic calamity that Mexico could not escape. As the world economy shrank, Mexico lost markets for the exports that comprised the bulk of its trade. Perhaps equally important, the Depression took the shine off global capitalism. This presented new challenges and opportunities for Mexico’s leaders. Calles, still wielding power through a succession of temporary presidents, attempted to combat the Depression by continuing to defend property rights and by maintaining fiscal and monetary orthodoxy. These commitments, however, put him increasingly at odds with the organizations representing campesinos and workers, whose members wanted land reform and more assurances and protections from the state, especially in light of the economic hardships induced by the

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In a context in which unchecked capitalism appeared to hold out little promise for Mexico’s popular classes, the government’s vision of political economy threatened the country’s fragile stability.

Into this crucible stepped Lázaro Cárdenas in 1934. Cárdenas became Mexico’s president under very different circumstances than those faced by Calles ten years earlier. The Depression changed the rules of the game for Mexico’s national state. Although the authority and legitimacy of the state had clearly increased in the fifteen years since the end of the revolution, the conditions of 1935 posed new challenges to economic and political stability. Cárdenas’s political instincts were acute, as was his sense of how to strengthen the national government in the face of these circumstances. Cárdenas’s generosity was genuine and his sympathy for the plight of ordinary Mexicans was sincere. Whatever their origins in the complex mixture of calculation and commitments that drives all politicians, the policies and symbolism of his sexenio effectively reinforced the national state’s claim to be a product of a social revolution fought on behalf of the majority of Mexicans.

First, Cárdenas orchestrated a major agrarian reform that transformed rural Mexico. Land reform was codified in the Constitution of 1917, but no president had aggressively implemented it. Cárdenas did, overseeing the distribution of about eighteen million hectares, more than double the total handed out by all three of his predecessors combined, to over 800,000 people. Second, he often wielded the power of the state to defend the claims of workers against capital, including supporting strikers in the mining, electrical,

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and textile industries. Third, his dramatic appropriation of U.S. and European oil companies in 1938 reaffirmed the state’s commitment to protecting Mexico’s sovereignty and economic independence, another ideological pillar of many people who took up arms during the revolution. The whole of these policies was even greater than the sum of their parts, however. The attitude he conveyed – a genuine concern for the poor by those in power, a more open and accessible government – was an effective response to the challenges Mexico faced as a result of the Great Depression and the collapse of the world economy. As we will see in Chapter 2, a careful reading of the Cárdenas period reveals that his fundamental vision for Mexico did not differ dramatically from those of the men who came before and after him. He faced different challenges and opportunities than other presidents, and he skillfully navigated them to keep Mexico on the path towards becoming an urban society with an industrial economy.

As one crisis abated and gave way to another, the ground under Cárdenas and his successors shifted again. By 1939 the Depression had ended, but the approach of World War II and its outbreak in September prompted another reshuffling of internal and external pressures. State builders still faced the fundamental challenge of balancing support for a capitalist economy with the preservation of economic independence and sovereignty. But World War II prompted a host of changes. The war gave the United States a new stake in the Mexican economy at the same time that Mexico was cut off from trade with Europe. It created opportunities and pressures for the redefinition of Mexican nationalism and justified calls for national unity from Mexican leaders. It also had important consequences for Mexico’s economy by generating scarcities and new patterns of supply and demand.

17 Ibid., 148-152.
Both Cárdenas and his successor, Manuel Ávila Camacho (1940-1946), took advantage of the chance to resolve past conflicts with the United States, paving the way for a more collaborative relationship in the decades to come. At the same time, early evidence of Mexico’s ongoing transformation into an urban, industrial society prompted different economic and social policies in the period immediately before the war and throughout the conflict. After the expropriation of the oil companies in March of 1938, Cárdenas shifted his approach. The pace of land reform slowed considerably, and he scaled back his support of workers in conflicts with capital.18 He also signaled his willingness to work with the United States and attempted to negotiate a bilateral trade agreement with the Roosevelt administration. Finally, he supported the moderate Ávila Camacho to succeed him as president, providing continuity with the policies of the second half of his sexenio. It is difficult to exaggerate how dramatically the domestic and international circumstances faced by Mexico’s state leaders had changed in a mere ten years between the height of the Depression and the middle of World War II.

This maelstrom of events and transformation process did not end with the war. Rather than creating stability, the end of World War II and the emergence of the Cold War proved tumultuous. The postwar crisis that lasted roughly from 1944 until 1948 further plunged Mexico’s economy into chaos. The return of the United States to peacetime production again shook up trade flows with Mexico. The war also gave the United States a new geopolitical and economic prominence. This situation interacted with volatile domestic conditions in Mexico. In 1946, in the middle of this crisis, Miguel Alemán

18 Scholars disagree on the exact date of this policy shift but it was clearly in full swing by the end of 1938. For a discussion see Daniela Spenser and Bradley A. Levinson, “Linking State and Society in Discourse and Action: Political and Cultural Studies of the Cárdenas Era in Mexico,” Latin American Research Review 34, no. 2 (1999): 227-245; see also Hamilton, Limits of State Autonomy.
replaced Ávila Camacho as Mexico’s president. The Mexico of Alemán was a different place from that of his predecessors. By the late 1940s, the long-term vision of Mexico’s postrevolutionary leadership was visibly coming to pass. Statistics tell part of the story. Electricity use was accelerating at a remarkable rate, doubling between 1940 and 1950. Industrial GNP doubled as well.\textsuperscript{19} Equally important, if more difficult to measure, was a recognizable shift in how many Mexicans perceived their country. Mexico’s agrarian past was clearly giving way to something else: in the eyes of contemporaries, the country was becoming “modern” and industrial.\textsuperscript{20} Industrialization brought with it a new set of attitudes and expectations with which the state had to grapple, and also new economic conditions that, as always, were closely tied to politics.

As Mexico’s transformation proceeded, continuing industrialization required more imports of capital goods to build and equip factories. In the late 1940s and 1950s, these imports were only available from the United States. Another hitch was a continuing lack of credit and liquidity among Mexico’s business classes. To be sure, Mexican entrepreneurs and wealthy capitalists had more money for investments during this period than ever before, but the speed and thoroughness of Mexico’s economic transformation made lack of capital a constraint on continued progress. Foreign investment was needed to maintain robust economic growth. These factors helped make the United States more important than ever to Mexico. At the same time, the postwar development of the United States into one of the world’s two superpowers and the emergence of the Cold War injected new currents into Mexican politics. The Cold War, by invoking the threat of Communism, provided a

\textsuperscript{19} Sergio de la Peña and Teresa Aguirre, \textit{De la Revolución a la industrialización} (México: Universidad Nacional Autónoma de México, 2006), charts A.24 and A.1.2.

\textsuperscript{20} For a good impression of this shift in the national mood see José Agustín, \textit{Tragicomedia mexicana}, 3 vols. (México: Planeta, 1990-1998).
language which the Mexican state could use to limit the influence of labor and other forces on the left. Doing so helped combat resistance to the state’s project within Mexico and also fostered a more cooperative relationship with the United States. The environment of the Cold War provided opportunities for state officials to cultivate closer ties with the United States by presenting Mexico as an ally in the battle against Communism, even as the requirement that the state appear to defend Mexico’s sovereignty and economic independence remained as important as ever.

Road Transportation During the Long Postrevolutionary Period

Throughout all of these twists and turns, Mexico steadily became a society dependent on motorized transportation and paved roads. Road-based transportation was a critical part of Mexico’s transformation during the long postrevolutionary period. In 1920, at the end of the revolution, the significance of automobile transportation was negligible. By 1960 cars, trucks, buses and the roads on which they were driven had become essential features of Mexico’s economic and social landscape. This dissertation explores this essential development by examining the creation of a road transportation network. Making road transportation feasible required several interrelated steps. Most obviously, roads had to be built. This was not quite as simple as it sometimes sounded. Road building in much of Mexico was difficult; mountains, deserts, tropical zones, and seasonal rains presented constant engineering challenges and hindered the construction of all-weather, paved roads. Second, a functioning road network in Mexico required an organized and efficient system of bus and truck transportation. In a country where passenger cars were only affordable to the well-off, trucks and buses were especially important to fostering economic and social
change. Thus, this dissertation examines in detail the emergence of the trucking and busing industries and the efforts of the national state to manage them through a system of federal regulation. Finally, roads and regulation meant little without an adequate supply of trucks, buses, and cars. Automobiles, especially earlier in the century, were essentially foreign products. Ensuring their availability was a constant problem for the Mexican state. These three components, although closely related, contained separate challenges and processes. Taken together they constituted a remarkable shift in Mexican society; the development of a road transportation network had far-reaching consequences for millions of Mexicans.

By examining road transportation, this project seeks to broaden our sense of how we understand Mexico’s transition to modernity and its transformation into a capitalist, urban, and industrial society. Road transportation was a crucial development project with enormous consequences for the country but one that has received very little scholarly attention. For several reasons, this study provides a unique vantage point from which to examine the postrevolutionary state and its role in Mexico’s great transformation. The project spanned the breadth of the long postrevolutionary period. Begun in earnest in 1925 during the first Calles Administration, it did not culminate until the late 1950s. The reorganization of the Ministry of Communications and Public Works in 1959 that created a new division concerned solely with transportation provides a symbolic institutional bookend to the process. A study that spans the years 1925 to 1960 is an unconventional way of periodizing Mexico’s twentieth-century history, but one that reveals some of the features of that history that are often obscured by treating the pre- and post-1940 eras separately. As we will see in these pages, the creation of a road transportation network was

a unique kind of development project. Resistance to roads did occasionally emerge, but for the most part Mexicans saw the project as less of a state imposition than other signature modernization projects such as dam building and education reform. The history of Mexico’s road network is in many ways a laboratory for understanding how the state set about accomplishing its goals of transforming Mexico into a modern nation.

For this reason, this history also provides a good vantage point for viewing the relationship between modern state-building and economic development throughout the world. As James Scott has argued, modernizing states have pursued their aims through a process of state simplifications and efforts to increase the “legibility” of the people and places over which they claim authority.\(^{22}\) These simplifications do not merely make the complex reality of human societies comprehensible for state leaders, but also reshape that reality in ways that facilitate the ends of modern states. In the case of transportation, state policy has often led to the creation of highly centralized networks that disregard economic and social realities in service of the state’s goals of tax collection and military control.\(^{23}\) Scott has shown how state leaders during the twentieth century sometimes combined these ideas with a faith in science and technology to disastrous effect, such as during collectivization campaigns in Russia and Tanzania. In Mexico, the creation of a road transportation network followed a different pattern. A consolidating national state spearheaded a centralizing development project aimed at economic growth while utilizing local knowledge and resources.


\(^{23}\) Ibid., 73-76.
Arguments

By examining the creation of a road transportation network, this study suggests a number of new ways to think about Mexican history during the crucial middle decades of the twentieth century. Four central arguments emerge. All of them are linked together by the defining feature of the period: a recognition of Mexico’s extremely dynamic international and domestic situation during these years and the fact that modern Mexico was forged in the context of multiple and constant crises.

First, the focus on road transportation illuminates the consistent vision of the ideal political economy held by different administrations throughout the long postrevolutionary period. The vision was this: a capitalist economy focused on consistent growth, made possible by political stability achieved at virtually any cost. Given the prevailing economic conditions in a country with a small and privileged upper class, a large number of poor, and hardly much in the way of a middle class, this vision became one in which state leaders imagined the wealthy to be the motor of economic growth, and easing the lot of the poor was the key to preserving the stability necessary for continued growth. Inherent in this shared vision of political economy was a belief that prosperity for Mexico required leaving behind its agrarian past. This conviction was articulated differently at various times, but the consistent element was that Mexico would never prosper as a country of self-sufficient agriculturalists. Indeed, this idea had long been present in Mexico, at least as long ago as the liberal reforms of the mid-nineteenth century. This vision guided agents of the Mexican state throughout the tumultuous middle decades of the twentieth century.

However, just because Mexican state builders consistently ascribed to this particular vision of Mexico’s ideal political economy, it did not follow that the path
towards the fulfillment of this vision was smooth or easy. The second major argument is
that during the long postrevolutionary period, and especially during the “Miracle Years”
after 1940, the state’s authority and stability were far from secure. As we have seen, the
search for political and economic stability was a key goal of the postrevolutionary state.
Given Mexico’s history of regionalism, fragmentation, and violent civil conflict, the
Mexican state’s achievements in the decades after the revolution were undeniably
impressive. Between 1920 and 1960, the state successfully staved off military rebellion,
expanded the size of its administrative and bureaucratic apparatus, and increased the reach
of its institutions deeper into the economic, political, and social lives of Mexicans.

However, this study is part of a growing body of recent scholarship that suggests
that the one-party state that emerged out of the revolution was far less hegemonic than it
appeared to both contemporaries and to historians. In large measure because of its
consolidation during a four-decade period characterized by crisis after crisis, the state faced
substantial challenges to its rule. These included political challenges from outside and
from within the ruling party. As Elisa Servín has convincingly demonstrated, the official
party encountered significant electoral opposition throughout the twentieth century,
especially in 1940 and 1952, as well as other kinds of political resistance and
organization. The state’s economic policies created dissent as well. As with political
opposition, objections to the state’s agenda came from a variety of sources. Some, like the
movement led by Ruben Jaramillo in Morelos, continued to resist the imposition of the
state’s vision of a capitalist and commercialized Mexico. Less broadly, state leaders

24 On the elections of 1940, 1946, and 1952 see Elisa Servín, Ruptura y oposición: El movimiento
henriquista, 1945-1954 (México: Cal y Arena, 2001); for a more general overview of opposition politics see
Elisa Servín, La oposición política: Otra cara del siglo XX mexicano (México: Centro de Investigación y
Decencia Económicas and Fondo del Cultura Económica, 2006).

25 Tanalis Padilla, Rural Resistance in the Land of Zapata: The Jaramillista Movement and the Myth of the
faced continual challenges to their policies from Mexicans who agreed in principle with the state’s goals, but differed in their interpretation of the best way to achieve them. As the story of the creation of a road network highlights, consensus did not exist about the appropriate role of the state in developing and managing the economy. Part of this resistance was interest group politics, but there was also real ideological debate taking place throughout the period. In sum, the long postrevolutionary period was characterized by resistance, opposition, and dissent as much as it was by stability.

Despite the contingent nature of Mexico’s political and economic history during these years, state actors not surprisingly mythologized their successes and incorporated them into a specific narrative about Mexico’s twentieth-century history. In this narrative, the rise of state power was depicted as an inexorable process of centralization that overwhelmed Mexico’s natural tendency towards fragmentation. The truth, however, is more complicated. This study’s third major argument is that the real strength of the Mexican state during the long postrevolutionary period lay in its flexibility, pragmatism, and willingness to work within local traditions and power structures in order to achieve its goals. This approach often meant decentralizing key decisions to local authorities. Despite a considerable expansion in the size of the national state’s bureaucratic apparatus during these years, the reality was that the state lacked the resources to impose its will. The story of road transportation reveals how much of the state’s success was the result of collaboration between local and national powerholders, rather than the top-down imposition of an expanding “leviathan” state. This process necessarily involved compromise as well as collaboration, and was often piecemeal and ad hoc as state leaders

tried various policy approaches and changed their position based on the results.

Fourthly and finally, this conceptualization of Mexico’s postrevolutionary state suggests a new way to view the key issue of U.S.-Mexican relations. Between 1920 and 1960, national leaders faced the difficult challenge of balancing the nationalism inherited from the revolution with the reality that U.S.-Mexican integration was necessary to achieve their long-term hopes for Mexico. In fact, as the example of road transportation demonstrates, this integration was a necessary condition of Mexico’s great twentieth-century transformation. Thus, the fourth overarching argument of this study is that Mexico’s model of economic development inevitably tied the United States and Mexico together in an increasingly interdependent relationship. In this as elsewhere, successive critical junctures presented new challenges and opportunities and facilitated the reconceptualization of U.S.-Mexican relations. However, Mexico’s extraordinary demographic transition and the economic and political model that the state sought to implement consistently had the effect of linking the fate of each country more tightly to the other despite Mexico’s nationalist rhetoric.

**Historiography**

This dissertation links with several strands of the existing historiography about Mexico’s postrevolutionary history including state formation, the history of development, and the meaning of modernization. Using the history of road transportation as a vehicle to explore the historical landscape of the period, it builds on recent work by scholars of Mexico to strive for a nuanced and sophisticated interpretation of the four decades between 1920 and 1960. In the paragraphs that follow, I suggest several places in which this study
intersects with recent historiographical trends and briefly attempt to situate this work within the larger body of historical writing about this period.

First, by narrating the early history of how Mexico came to rely on automobile transportation, this study bridges a glaring gap in Mexico’s economic history. No scholar has thoroughly studied the history of Mexico’s transformation into a nation of roads and automobiles. Some have acknowledged the importance of road transportation in passing or as part of larger works on transportation history, but detailed narrative histories are almost non-existent. This is an especially odd omission considering the attention paid to Mexico’s nineteenth-century transportation history. The path here was blazed by John

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Coatsworth, who wrote a series of articles and a highly influential book about the importance of railroads for the economic and social history of the Porfiriato.\textsuperscript{27} His work was followed by several quality studies that have deepened our understanding of how railroads transformed Mexico during the late nineteenth century and into the twentieth.\textsuperscript{28} Finding inspiration in this scholarship, the present study is the first study to explore how the transition to road transportation during the twentieth century affected Mexico’s economic, political, and social history.

Second, the concerns of this dissertation engage with a large body of scholarship that examines state formation in the aftermath of the revolution. This scholarship, it is fair to say, is itself divided chronologically by those that consider the period 1920 to 1940, and those that examine state formation after 1940. This periodization, although based upon logical and reasonable assumptions, tends to obscure more than it reveals about the nature of the postrevolutionary state and its role in Mexico’s twentieth-century transformations.

The scholarship that treats state formation during the years from 1920 to 1940 is sizable, especially that dealing with the Cárdenas presidency between 1934 and 1940. For the period before 1934, historians have focused on several aspects of the Obregón and Calles regimes. Earlier histories tended to view the 1920s and early 1930s as one in which


the victorious constitutionalists consolidated their legitimacy by enacting social reforms, especially land reform, but also in education, health care, and political enfranchisement. Studies concerned with political economy have focused on the twin challenges of creating political stability and restarting an economy devastated by the revolution, arguing that the achievement of both was the key accomplishment of Obregón and Calles.  

The most recent wave of scholarship has approached state formation from several new perspectives, including examining the history of women, revolutionary anticlericalism, and Mexico’s urban history.

The historiography of state formation during the Cárdenas period is even more extensive. It has now matured to the point of being categorized under the usual scholarly labels of orthodox, revisionist, and postrevisionist. In the orthodox approach, Cárdenas is seen by scholars as the pinnacle of the revolution, a true social reformer who was determined to advance the popular revolutionary causes of land reform, worker’s rights, and the protection of Mexican sovereignty. In response, beginning in the 1970s, others reexamined cardenismo and pointed out how his sexenio served to solidify the state’s political control over various groups, thereby paving the way for an increase in state power.

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29 Lorenzo Meyer, Los inicios de la institucionalización: La política del Maximato (México: Colegio de México, 1978); Rafael Loyola Díaz, La crisis Obregón-Calles y el estado mexicano (México: Siglo Veintituno Editores, 1980); Córdova, La revolución en crisis; Mary Kay Vaughan, Cultural Politics in Revolution: Teachers, Peasants, and Schools in Mexico, 1930-1940 (Tucson: University of Arizona Press, 1997).


31 Examples include Frank Tannenbaum, Mexico, the Struggle for Peace and Bread (New York: Knopf, 1950); Fernando Benítez, Lázaro Cárdenas y la Revolución Mexicana (México: Fondo de Cultura Económica, 1977).
at the expense of enduring and meaningful reforms aimed at social and economic justice.  

In the last twenty years the predominant interpretation of Cárdenas has shifted substantially enough to warrant the label postrevisionist. Recent scholars have presented a more nuanced portrait of the Cárdenas years in which revolutionary idealism and political calculation combined in often-complex ways to shape policy and the nature of Mexico’s national state. As Daniela Spenser and Bradley Levinson put it, this scholarship responded to the need to explain, “how the ‘hegemony’ of the Cardenista state could be at once a genuine articulation and empowerment of popular demands (a more ‘democratic’ form of politics) as well as a political form and discourse that would later sustain regimes far less responsive to such popular demands.” The fruits of this approach have been a far more sophisticated understanding of the complexity of Cardenismo and its legacy.

The depth and sophistication of historical studies dealing with state formation during the Cárdenas years (and to a lesser extent the 1920s) makes glaringly apparent the dearth of such studies for the post-1940 period. With a few notable exceptions, historians have not seriously examined the relationship between political economy and state formation during this period. Most of the scholarship that treats the period has


34 Examples that are especially relevant to the present study include Adolfo Gilly, El Cardenismo, una utopía mexicana (México: Cal y Arena, 1994); Gustavo López Pardo, La administración obrera del los Ferrocarriles Nacionales de México (México: Universidad Nacional Autónoma de México and El Caballito, 1997); For a thorough review of the recent scholarship on Cárdenas see Spenser and Levinson, “Linking State and Society in Discourse and Action.”

35 These exceptions include Servín, Ruptura y oposición; Jeffrey W. Rubin, Decentering the Regime: Ethnicity, Radicalism, and Democracy (Durham, N.C.: Duke University Press, 1997); Daniel Newcomer, Reconciling Modernity: Urban State Formation in 1940s León, Mexico (Lincoln: University of Nebraska Press, 2004); Steven R. Niblo, Mexico in the 1940s: Modernity, Politics, and Corruption (Wilmington, Del.: Scholarly Resources, 1999); Stephen R. Niblo, War, Diplomacy, and Development: The United States and
approached state formation after 1940 from a cultural perspective. These studies have pointed out how the creation of modern Mexico was both a “bottom-up” and a “top-down” process and illuminated the ways in which popular culture interacted with state-led initiatives to redefine conceptions of Mexican modernity. The cultural approach to the post-1940 period has contributed immensely to how historians understand the Mexican Miracle. However, these studies have generally not incorporated political economy into their analyses. As this dissertation demonstrates, the links between the Mexican state and interest groups representing politicians, Mexican entrepreneurs, and U.S. capitalists were crucial. This study is part of a new wave of historical scholarship on the post-1940 period that attempts to build on the cultural studies of the previous twenty-five years by analyzing these interactions.

In the absence of this kind of analysis by historians, the prevailing interpretation of the period’s political economy is still largely derived from the work of political scientists and economists. These studies take political economy seriously, but generally suffer from an overly state-centric approach that has fueled the myth of the postrevolutionary “leviathan” state. Underlying the model-building approach of political scientists such as Ruth and David Collier is a tendency to underestimate the dynamism of the political and economic situation faced by the Mexican state. As a result, these studies depict an all-powerful state that steadily accrued the capacity and authority to impose its will on non-

Mexico, 1938-1954 (Wilmington, Del.: Scholarly Resources, 1995).

state actors. This dissertation poses a serious challenge to this interpretation by demonstrating how the state’s real strength was its flexibility in the face of rapidly changing international and domestic circumstances in the years between 1920 and 1960.

Roadmap

Chapter 1 explores the early history of road transportation under Calles and Cárdenas. Before 1925 Mexico had few automobile roads. Surveying this absence, Calles envisioned the creation of a highway transportation network as a way to address several challenges facing his administration. These included restarting the economy, encouraging political centralization, and facilitating more efficient troop deployments to quell uprisings. His first priority was to create an institutional framework for road construction. To this end Calles oversaw the creation of a national road agency that was in charge of planning, financing, and building a network of national roads. He also oversaw the establishment of a nationally regulated trucking and busing industry that on paper gave the national state extensive control over trucking, but in practice left much to the initiative of non-state actors. However, for several reasons this highly centralized approach failed to deliver rapid progress. In the later years of his administration Calles moved in the opposite direction. Through a series of new agencies and institutions, the Mexican state created several institutions and programs that effectively devolved both decision-making and funding for road projects to the local level. This set important precedents for later developments.

President Cárdenas, for all his differences with Calles, saw little need to modify substantially Mexico’s approach to creating a road transportation network. Between 1934 and 1940, road building continued apace, highlighted by the opening of a major highway connecting Mexico City with the U.S. border in Laredo. Cárdenas also made some changes to the rules governing trucking regulation and tried to limit the power of large trucking organizations. Both men also faced similar circumstances when it came to making sure Mexico had enough cars, trucks, and buses. Throughout the years from 1925 until 1940, the effort to improve automotive transportation was hampered by a harsh reality: mass-produced automobiles were a U.S. invention and their production during this period was dominated by three U.S. companies – Ford, General Motors, and Chrysler – collectively known as the Big Three automakers. Despite false starts and challenges, by the end of the Cárdenas sexenio Mexico’s political economy and social landscape were showing signs of being transformed by road transportation.

World War II accelerated these transformations. Chapter 2 details the war years and the post-war crisis and their effects on Mexico’s developing road transportation network. World War II brought with it the deepening involvement of the U.S. government and U.S. corporations in Mexico’s transportation system. Wartime conditions gave each country a new stake in the other’s economy by increasing U.S. demand for Mexican exports and also by forcing Mexico to depend ever more on the United States as a source of imports. At the same time, the U.S. shift to a war economy meant scarcities throughout the automotive industry. These unsettled the trucking and busing industries, prompting a wave of challenges to the system of regulation that was increasingly criticized for failing to provide efficient and affordable service, especially in Mexico City. Once the war ended
imports from the United States flowed once again, provoking a new kind of transportation crisis. With the return of peace the regulated trucking industry proved unable to handle the increased volume of imports unleashed by the release of pent-up demand. This caused Mexican president Manuel Ávila Camacho to temporarily suspend regulation in 1947. These developments, previously unstudied, shed light on the nature of the Mexican state during these crucial years, the complex and increasingly integrated relationship between Mexico and the United States, and the shifting contours of Mexican nationalism.

Chapter 3 examines the critical years of Mexico’s transportation revolution. Between the end of the postwar crisis in 1948 and 1960 Mexico was definitively transformed into a nation of roads and automobiles. By the end of this period, major highways connected the entire country, many of which passed through the mushrooming capital city. Roads also reached more deeply into isolated parts of Mexico. Through a series of government initiatives in collaboration with the private sector Mexicans began to build rural roads. Following earlier precedents, road building during this period was increasingly decentralized. As we will see, the campaign to build rural roads was a state-led development project that put great power in the hands of local elites and the wealthy.

As roads became more important to Mexico’s economy, the liabilities of Mexico’s regulated trucking industry became clear. The holders of government permits to operate trucking routes on Mexico’s national highways increasingly resembled a cartel, charging high prices for poor service. The fallout from this development, however, was borne primarily by Mexico’s middle sectors – small entrepreneurs, shopkeepers, and consumers. Large capitalists, the favored sons of the Mexican state’s development model, avoided the liabilities of poor public trucking service by operating their own fleets of trucks.
Throughout the 1950s the number of privately-owned commercial trucks soared. At the same time, the Mexican automobile industry shifted away from a model of imported assembly operations towards true manufacturing, highlighting the way in which integration with the United States, economic growth, and the rising importance of road transportation interacted with the development model favored by the postrevolutionary Mexican state.

Chapter 4 provides a detailed on-the-ground view of Mexico’s twentieth-century transportation revolution by examining the mechanics of road construction, work, and the informal segments of the road-based economy. Building roads in Mexico was an engineering challenge, especially in light of the country’s extremely varied environments and landscapes. Road engineers responded to these challenges with flexibility and inventiveness by adapting to local conditions. This same flexibility applied to labor patterns in the construction industry as well as among men who became truck drivers. In fact, labor patterns throughout the period from 1920 until 1960 were remarkably open-ended and loosely codified. This allowed the state to draw successfully on local labor traditions even as it engaged in a modernizing development project. Finally, the chapter explores the extralegal component of Mexico’s shift to roads. From graft in construction contracts, black markets, and unauthorized trucking operations, much of Mexico’s shift to an economy based on roads occurred outside the boundaries of the state’s institutions. The chapter highlights how a key aspect of Mexico’s roads revolution was the way in which it represented a blending of the local and national – a national development project that accommodated the diversity of local conditions and left considerable scope for initiative by poor and rich alike.

The conclusion briefly explores the relationship between road transportation and
environmental change and contains an epilogue discussing the continuing importance of roads. Most prominently, the reliance on motor vehicles led to extensive air pollution. During the 1970s and 1980s, it became clear that motorized transportation was primarily responsible for the horrific air quality that plagued residents of Mexico City. Policymakers appeared to pay no attention to the mounting problem until it became so acute that the state was forced to take action, finally implementing a series of measures in the late 1980s and the 1990s that partially alleviated the situation. The prominent issue of air pollution, however, was only one facet of the relationship between roads and environmental change. Deforestation, erosion, and ideas about the aesthetics of nature were all part of Mexico’s twentieth-century transportation revolution. Among state agents, concern for these issues appeared to diminish over time. The conceptualization of the Mexican postrevolutionary state revealed in these pages has important implications for explaining that decline. In illuminating where the state found its strength and efficacy, this study also suggests the limits to what the state could achieve.
CHAPTER 1
The Foundations of Mexico’s Road Transportation Network Under
Calles and Cárdenas, 1925-1940

The automobile age dawned in Mexico in the early decades of the twentieth century. From humble beginnings as an expensive amusement for the wealthy, automotive transportation became a transformative technology. In Mexico, the shift to motorized transportation coincided with the conclusion of a ten-year revolution that wreaked havoc on existing economic infrastructure and fragmented the country’s tenuous national unity. Thus, the emergence of the new technology came at an especially good time for Mexico’s rulers as they sought to construct a new national state and restart the country’s severely damaged economy. For the first time since the railroad boom of the late nineteenth century, a new transportation technology offered the promise of economic growth and national integration.

During the 1910s and 1920s, motorized transport began to transform many national economies. For the first time, it seemed possible that a network of paved roads combined with a sufficient supply of automobiles could meet a major portion of a nation’s transportation needs. World War I was critical for two reasons. First, vehicles with internal combustion engines had played a significant role in supply and logistics during the war. The reality that automobiles could be helpful in warfare spurred the development of heavier vehicles, first to move and supply troops, and then to engage in battle themselves. Second, demobilization at the end of the conflict produced a glut of heavy vehicles for

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which national leaders attempted to find a use.\textsuperscript{39}

Almost overnight, the technology opened up an unprecedented opportunity for Mexico’s new rulers. By the end of Álvaro Obregón’s administration in 1924, it was possible for men like incoming president Elías Plutarco Calles to imagine that an all-weather road network could be a significant component of Mexico’s transportation infrastructure. For many reasons, his notion appealed to much of Mexican society. Most of the initial interest came from mining companies, who bent Calles’s ear about the advantages of road and truck-based transportation.\textsuperscript{40} In the first place, they explained, it was cheaper than building and maintaining rail links to the country’s mining centers. Second, trucks and roads offered more flexibility than railroads. By the 1920s, the mining industry in Mexico (and indeed the world over) was far from stable. More intensive extraction technologies and constantly shifting demand for new minerals and metals made it hard to predict future transportation needs. To the owners of mines, roads seemed to promise a cheaper and easier way to shift transportation resources to meet changing demands than had previous reliance on railroads. By the middle of the 1920s, automotive technology and road engineering were advanced enough to warrant serious consideration by policymakers.

The early period of automotive transportation in Mexico lasted from 1925 until 1940. In these years, the state carried out the first institutionalized efforts at road construction, established the basis of government regulation in the trucking industry, and took steps to make sure Mexico had enough cars, trucks, and buses for use on its

\textsuperscript{39} García Martínez, \textit{Las Carreteras de México}, 39.

\textsuperscript{40} Ibid.
burgeoning road network. The postrevolutionary state’s first attempt to build roads was a highly centralized effort. Calles oversaw the foundation of a national agency charged with planning, building, and maintaining automobile roads. But this effort was soon supplanted by a more decentralized approach that featured a blend of local and national institutions. Simultaneously, the state adopted a system of trucking regulation to manage Mexico’s transition to roads and struggled in its efforts to procure affordable motor vehicles.

The story of the first fifteen years of Mexico’s transportation revolution reveals that, even as early as 1925, the postrevolutionary state’s goals for Mexico’s economic and political order were clear. Although facing different circumstances, Calles and Cárdenas both sought to direct Mexico’s shift to road-based transportation in a manner that preserved political stability but privileged economic growth above all else. As we will see, this goal was pursued in different ways – so different that at times they could appear contradictory. In the case of road construction, it meant relinquishing control and authority to local actors. At the same time, managing the emergence of the new trucking industry prompted a high level of state intervention and involvement. Nationalism, claims for social and economic justice, and the deepening economic relationship between the United States and Mexico all exerted pressure on Mexico’s leaders as they attempted to transform Mexico into a modern, developed, and capitalist country. From the very beginning, these forces had important effects on Mexico’s shift to automobile transportation and on the consolidation of the postrevolutionary state.

First Steps: Calles and the Creation of the Dirección Nacional de Caminos, 1925-1932

Road transportation appealed to Calles for a number of reasons and his ascension to
the Mexican presidency in 1924 jumpstarted Mexico’s transportation revolution. In the first place, roads offered new possibilities for economic growth. In the middle 1920s, the economic potential of roads was imagined in many ways. Most importantly, they would expand the scope of the national economy into previously isolated communities, transforming rural Mexicans into producers and consumers in a national market.41 Early proponents of road building also imagined how a mature network of road and truck transportation would make the Mexican economy more efficient by providing a flexible yet speedy means of moving goods and people around the country.

Calles was also interested in roads from a political perspective. It was impossible for someone in the new president’s position not to see roads as a way to legitimize and consolidate the fledging revolutionary state. Their basic military appeal was obvious. Violent opposition to the regime popped up repeatedly during the 1920s as the national state struggled to expand its authority into enclaves of local power. The ability to get troops more quickly to hotspots of resistance would clearly be a welcome development for statebuilders. In addition, better transport links via roads could help re-stitch a Mexican national fabric that had been shredded during ten years of conflict. Mexico emerged from the revolution more regionally fragmented than at any time since the 1870s. Local caudillos, with their own military armies, operated with near autonomy in many parts of the country. They managed this in part because of their isolation. To all but the least imaginative of Mexico’s new national leaders, roads promised to penetrate that isolation; economic, political, and social links between Mexico City and the rest of the country would

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41 There was nothing especially new about this goal, which had also been a key project of the Porfirian state. See Haber, Razo, and Maurer, Politics of Property Rights. The development of the internal combustion engine provided a new way for state builders to pursue this objective.
help undermine and erode local bases of power. Finally, road-building projects were public works. If not quite on the same scale as a large dam or a new port, roads could be touted as achievements of the new government. Mexico’s leaders hoped that citizen participation on road construction projects would make them feel like they were doing the essential work of uniting the country, thereby fostering a sense of mexicanidad that could overcome regional loyalties.  

Importantly, the president’s interests were in line with those of Mexico’s Congress. In the 1920s Mexico’s national legislature still wielded substantial power through its control of the laws the national executive was using to build a legalist, corporatist state. Although Calles saw road building as a way to strengthen the power of the national state by forging links between the center and the regions, congressmen representing state and local government saw it as way to create the kind of economic growth that would reinforce their right to rule by delivering economic gains in their regions. This consensus further contributed to road building’s appeal. In fact, it appears that as the era of the automobile was dawning in Mexico, there were few, if any, objections raised among policymakers to such a project.

In reality, obstacles did exist. In the first place, the capacity of civil engineers to build safe and reliable roads through Mexico’s diverse and difficult terrain was by no means assured. By one account, fully half of Mexico’s territory was impossible for contemporary road engineers to build in. Even in the United States, where road

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43 For more on the significance of Mexico’s Congress during the 1920s, see Elisa Servín, “Another Turn of the Screw: Toward a New Political Order,” in Servín, Reina, and Tutino, Cycles of Conflict, Centuries of Change, 363-388.

44 García Martínez, Las Carreteras de México, 30-40.
construction was most developed, there were few roads through mountains or desert, although civil engineering there was poised for rapid technical advances. In any case, in 1925 Mexico’s small corps of civil engineers lacked the numbers or the training to do the job. Capital goods needed for road construction were also scarce. Most importantly, Mexico had few automobiles and no way to acquire them short of buying from abroad. All three of these considerations could have given Calles and congressmen pause, yet none appear to have generated much hesitation. Not for the last time, the seductive promise of roads’ economic and political potential eclipsed any doubts.

Early in his administration Calles took a series of steps intended to propel road-building efforts. Shortly after taking office the president met with state governors in order to gather information about the status of roads and road construction projects in their states. This was followed in March of 1925 by the creation of the Comisión Nacional de Caminos (renamed the Dirección Nacional de Caminos (DNC) in 1932), Mexico’s first national organization created to plan, build, and operate auto roads. The establishment of the DNC was an important moment in the story of Mexico’s twentieth-century transportation revolution. Like many other initiatives of the 1920s and 1930s, the Roads Commission was a centralizing government body with broad powers and a large scope. It was run by a small coterie of government officials with a handful of trained engineers.

45 The difficulties encountered by Eisenhower’s famous 1919 military expedition that traveled cross country via roads is emblematic of the challenges faced by those who wanted to connect to the United States via roadways. See Owen Gutfreund, Twentieth Century Sprawl: Highways and the Reshaping of the American Landscape (New York: Oxford University Press, 2004).

46 Wendy Waters, “Remapping the Nation,” 39.

47 Despite the name change, the organization will be referred to in the text at all times as the DNC to avoid confusion with the well-known Confederación Nacional Campesina.
Business and other private interests were not officially represented. The DNC was in many ways a creation typical of callismo. Calles’s overriding priority was to create institutions to bolster the legitimacy and authority of the Mexican state after its dissolution during the revolution. The DNC fit into this project. It was a national organization focused on improving communications within the country. It gave authority to experts handpicked by the president and his advisors. And it created a national body with considerable power to claim jurisdiction over projects that were in many cases carried out far from Mexico City. Although the goal of getting roads built was certainly in earnest, the creation of the DNC and its operation in the first seven years of its existence also served the important political end of “claiming turf” for a rebuilding national state. It was also part of a co-optation process in which those with expertise in road engineering (in the late 1920s still a small group) were incorporated under the wing of the national state.

One of the DNC’s first official acts was to draft legislation that would set the parameters for future road-building efforts. Given the convergence of interest over road building between the executive and the legislature, the plan was approved by Congress apparently without much debate. The Ley de Caminos y Puentes (Law of Roads and Bridges) published in the Diario Oficial on April 26, 1926 created, on paper at least, a clear framework for road building that gave considerable power to the president and his representatives on the Roads Commission. For Calles it provided a blueprint for road building that placed the national government firmly in control. For members of Congress it promised roads for economic development that would be paid for by the state.

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48 The Commission was run by a three-person executive committee, comprised of representatives from the Ministry of Finance and the Ministry of Public Works. The jobs initially went to León Salinas, Andres Ortiz, and Octavio Dubois. See Waters, “Remapping the Nation,” 40.

49 Medina Peña, Hacia el nuevo estado, 50-63.
At the outset, Mexico’s laws and institutions regarding road building created a framework in which the national state was dominant. This fit with the goals of a political regime still in the process of consolidation. Little of what was considered the important work was to be left under the jurisdiction of local and state governments. The decree designated a variety of road projects as “national roads” subject to the DNC. First and foremost were roads that connected Mexico City to international borders, ports, state capitals, or federal territories. Going further, the legislation required that roads connecting state capitals were also caminos nacionales, as well as all roads inside the Federal District and the territories of Quintana Roo and Baja California. To drive home the message that the government in Mexico City would exercise authority over the wave of road building to come, the Roads Commission was given jurisdiction over roads that “owing to the general good should be declared national roads by the Federal Executive through the Ministry of Public Works.”

This effectively gave the national government the ability to place any road in the country exclusively under its control, even if it never crossed state lines. Once a route was designated as a national road, the federal government ran the show. The DNC, directly responsible to the President, was charged with planning the way and granted powers of appropriation to claim land for construction.

When it came time to begin building, the DNC had three options: it could build the road itself, offer construction contracts, or hand out a concession. In Mexico during the 1920s, the differences between contracts and concessions were far from minor. Not for the last time, the historical memory of the Porfirian railroad boom loomed large in the imaginations of all concerned with road building. The majority of railroads built in Mexico

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during the 1880s and 1890s were constructed by means of concessions; in order to get a rail route constructed, the Porfirian government offered foreign firms the right to operate and profit from its construction for a set period of years. Often, the concessions were generous. In fact, given the importance of the railroad concessions as symbols of Porfirian betrayal, it is remarkable that the emerging regime included them at all.

In 1925 it was not easy for the authors of this legislation to anticipate Mexico’s precise road-building needs. Therefore, the variety of funding schemes effectively kept all the options on the table. In practice, however, the vast majority of national roads built in upcoming decades were built on a contract basis. “Economic independence” was a continual preoccupation of all those concerned with Mexico’s road network in the coming decades. To this end, this early legal framework also stipulated that a firm or individual granted a road-building contract or concession would be considered a Mexican citizen under the law.51 This was a departure from the legal system governing the railroad boom, in which laws requiring Mexican involvement were easily skirted as U.S. firms created subsidiary organizations by colluding with wealthy Mexicans. As the law explained, “Any concessionaire or business will be considered Mexican, even when the company has been organized abroad, and even when all or some of its members are foriegners.”52 There would be no ambiguity this time: anyone who built a road in Mexico would be subject to Mexican authority.

This law highlights the continuing importance of Mexican nationalism in the history of road building. Calles was committed to a policy that favored Mexican

51 See Article 21 of the Ley de Caminos y Puentes in Angel Marín, Documentos para la historia de las carreteras en México.

52 Ibid.
businesses and engineers. This position created difficulties in 1925, since Mexico lacked the expertise and technological capacity to build modern paved roads. In fact, the first large road-building contract handed out by the DNC went to a Chicago-based construction firm called Byrne Brothers Construction. The terms of this contract made clear, however, that national policy towards road building would be defined by a commitment to revolutionary nationalism. The deal with Byrnes Brothers stipulated that seventy-five percent of all technical personnel, eighty-five percent of administrative personnel, and one-hundred percent of laborers hired by the firm be Mexican.\(^5\) The contract with Byrnes Brothers was also the exception rather than the rule; by the end of the 1920s Mexican construction firms dominated the industry and would continue to do so in the decades ahead.

This commitment to revolutionary nationalism in road building was notable, especially because in other key sectors of the economy Calles quickly reached agreements with foreign capital to maintain its role in Mexico’s development. By 1934, foreign capital, mostly originating in the United States, had established strong positions in petroleum, mining, and commercial agriculture.\(^4\) Calles’s specific determination to keep road building in Mexican hands, and his subsequent success in achieving this goal, was the result of a number of factors.

In the first place, the technological and educational demands of road construction in the 1920s and 1930s were not quite as high as some other branches of civil engineering like mining, dam building, and petroleum extraction. Although in 1925 Mexico lacked the

\(^{53}\) Waters, “Re-mapping Identities,” 223.

\(^{54}\) Hamilton, The Limits of State Autonomy; Medina Peña, Hacia el Nuevo Estado.
capital goods and the expertise it needed, it would not be long before the machinery and the requisite knowledge could be found inside the country and without recourse to foreigners. Thus it was realistic for Calles to envision a road-building industry predominantly in Mexican hands in the near future.

Second, road-building contracts handed out to Mexican firms were an important part of Calles’ strategy of encouraging potentially rebellious military generals to retire into private business. Helping to make military men rich through business, thereby inculcating loyalty and giving them a stake in social order, was an important strategy of both Calles and Cárdenas. Given the relatively low financial and technological requirements for road construction, handing out road contracts was a simple way to achieve this. Examples of this practice abound. Aarón Sáenz, a close associate of Calles and related to him by marriage, became wealthy through a construction company he founded called FYUSA. Sáenz made his military reputation in Obregón’s army, and was considered by many to be a likely presidential candidate after Obregón’s assassination in 1928. In large part because of the financial success he achieved through FYUSA and other ventures, Sáenz effectively withdrew from politics to concentrate on making money. The case of General Juan Andreu Almazán is another prominent example. Calles encouraged Almazán to found his own road construction firm, the Anáhuac Construction Company. Throughout the years of the Maximato, Almazán’s firm received lucrative road-building contracts, and Almazán used his connections to become the head of the Ministry of Public Works in 1930,

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furthering the financial interests of his firm.\textsuperscript{57} Despite the wealth he acquired, however, Almazán did not retire from politics, instead running an opposition campaign for the presidency in 1940. Nevertheless, both examples demonstrate how keeping the road construction industry in Mexican hands offered the national state opportunities to tame generals by offering them wealth instead of power.

Finally, the legacy of the revolution imposed real constraints on government decision makers by making revolutionary nationalism an important factor in transportation policy. After a revolution in which the defense of national sovereignty had been important to mobilizing millions of Mexicans, the idea of encouraging foreigners to play a major part in constructing a road network was never seriously considered. The public perception that Mexico’s railroads had been constructed by foreigners with foreign interests in mind made it impossible for a government claiming revolutionary credentials to permit U.S. capital a prominent role in building Mexico’s roads.\textsuperscript{58} In sum, Calles and others believed that Mexico could build roads on its own, and ideological and practical considerations reinforced this position and led to a policy that was unequivocally nationalistic.

As the DNC codified a framework for road building, local powerholders, especially state governors, made their own attempts to build roads. To complement the DNC’s large highway projects, state governors were encouraged to engage in road construction efforts of their own. The governors responded with enthusiasm, launching a number of projects entirely under their own planning and with money raised entirely within their states. The results were uneven. By 1934, there were officially 3,400 kilometers of state roads

\textsuperscript{57} Waters, “Re-mapping Identities,” 223.

\textsuperscript{58} Coatsworth, \textit{Growth Against Development}, 175-189.
compared with only 1,500 kilometers of federal ones. However, it would be a mistake to evaluate success merely by looking at these numbers. Many of these roads were poorly planned, poorly built (almost all were classified as terracerías – essentially dirt roads – with technical deficiencies that prevented upgrades), and haphazardly located. Many were later abandoned. It was possible as late as the 1980s to find abandoned automobiles from the period in isolated areas where a road had once gone.\footnote{García Martínez, 
Las carreteras de México, 43.}

These early efforts by local and state authorities were largely unsuccessful; little money was available and construction projects were poorly executed and uncoordinated.

On April 28, 1932 the DNC was reorganized by presidential decree after seven years of work. While maintaining the same general structure, the organization was brought more squarely into the institutional fold of the federal bureaucracy. In addition to its new name it was officially incorporated into the Secretaría de Comunicaciones y Obras Públicas (SCOP), the national executive agency responsible for public works projects. This was more than just a cosmetic change. Previously, funds for the DNC had come directly from the national budget. Now federal money destined for road construction and conservation were apportioned through the SCOP.\footnote{Instituto Mexicano del Transporte, Historia de las Juntas Locales de Caminos, 1933-1980 (México: Instituto Mexicano del Transporte and Secretaría de Comunicaciones y Transportes, 1980), 24.} This may have been partly a matter of bureaucratic convenience. But it also reflected a new confidence on the part of Calles and his followers that the importance of road building had become generally accepted. As an independent commission answerable only to the president, the DNC had been somewhat shielded from the competition of interests that existed within the SCOP between advocates of rail, road, maritime transit, and the incipient air travel industry. Its incorporation into one of the
federal government’s largest bureaucracies was a sign that the importance of road construction had become entrenched among those who oversaw Mexico’s transportation infrastructure. The incorporation of the Commission into the SCOP was described by the authors of an institutional history as an example of “the rapidity and effectiveness of the changes carried out to optimize the transformation of the country.”

In sum, the first seven years of organized road building efforts under Calles’s direction demonstrated many of the features associated with his regime. In the first place, it was part of a focus on developing infrastructure and other communications. In addition to constructing roads, Calles focused his energies on building irrigation works, installing telephone lines, and improving the country’s port and rail facilities. The creation of an independent commission with broad powers to plan and build roads was also in keeping with an emphasis on enlarging the power of a reemerging national state. Road building also linked with another feature of Mexico’s political economy under Calles: the reality that revolutionary nationalism was a pillar of legitimacy. Despite the dearth of Mexican expertise when it came to road construction, Calles was not willing to allow foreign firms to have a direct part in building roads over the long-term. This unwillingness meant that projects initiated by the DNC in the late 1920s and early 1930s were funded primarily through a gasoline tax and not foreign direct investment or extensive borrowing, which certainly limited the extent of road building during the period. This approach was forged

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61 Ibid., 24-26.

62 Córdova, *La ideología de la revolución mexicana*.

63 Calles oversaw the creation of the Banco Nacional Hipotecario Urbano y de Obras Públicas as a source of funding for public works projects and urban development, but it was not until the Cárdenas sexenio that it routinely issued large bonds specifically for financing roads. See Hamilton, *Limits of State Autonomy*, 82, 82n, and 208.
in the late 1920s by Mexico’s leaders at both the local and national level through a combination of presidential decrees and legislation passed by Congress. Despite its concentration of power in the hands of the federal government through the establishment of a national gas tax and the creation of the DNC, it did not appear to generate much conflict among national and local powerholders.

The Late Maximato: Decentralization and the Creation of the Juntas Locales de Caminos, 1932-1934

Calles was the president of Mexico from 1924 until 1928. Alvaro Obregón maneuvered to retake the presidency in 1928, but was assassinated before he could install himself. This left a power vacuum that only Calles could fill. Since the Constitution prevented serving consecutive terms, Calles ruled as the jefe maximo behind the scenes during the two-year administrations of Emilio Portes Gil, Pascual Ortiz Rubio, and Abelardo Rodriguez. Known as the Maximato, this period of Mexican history was characterized by a general continuity with the years of Calles’s direct rule, but also demonstrated important differences as Calles reacted to changing circumstances brought on by the Great Depression and the challenges of wielding power through provisional administrations.

During the later years of the Maximato, the pattern of increasing centralization and federal control over road building was altered. Beginning in 1932, national leaders devised a new approach to road construction that would place more of the responsibility for planning and decision-making on the shoulders of local actors such as entrepreneurs and power brokers. In the closing months of the administration of Abelardo Rodriguez, the outgoing president issued a decree that launched Mexico into a new stage in its road-
building history. On April 20, 1934, the Ley Sobre Construcción de Caminos en Cooperación con los Estados became law. Unlike the earlier legislation in 1925, the Caminos en Cooperación (Roads in Cooperation) program was implemented in the context of a weakened Congress and a stronger presidency. In the eleven years between the laws, Calles had consolidated his executive power and diminished the prestige and authority of Congress. Like many others during the 1930s, the law was dictated to Congress after it had granted special dispensation to the President to bypass the congressional procedures laid out in the Constitution. Making use of the special faculties granted by Congress, President Rodríguez created a program that was to have long-lasting consequences for the history of roads in Mexico. Appearing a little less than eight months after the Roads Commission was reorganized and renamed, the law obliged the states to help the federal government with the construction of roads, since the project was of vital importance to the nation.64

Most importantly, the law provided guidelines for establishing Juntas Locales de Caminos (Local Road Boards) throughout the country. The Road Boards were created to help the federal government administer the new Roads in Cooperation program. After the early years of tight centralized control, first the presidents of the Maximato and later Cárdenas as well decided that efficient road building could not be carried out with the current system that effectively placed much of the financial and planning burden on officials in Mexico City. With the establishment of the Roads in Cooperation program, the federal government offered to match any funds that individual state governments would commit to spending on road construction.65 This was not limited to roads deemed


“national” roads by previous legislation; local roads could also qualify for the bipartite funding scheme. This financial commitment from the federal government came with strings, however.

In order to be eligible for federal funds, each state would be required to establish a Local Road Board which would include representatives from the State Government, the Ministry of Communications and Public Works, the automotive industry, and “Commerce, Industrial, or Agricultural committees.”66 The law was written in an open-ended way, but in practice it seems that this requirement was filled mostly by local cámaras de comercio from all over the country.67 Any specific projects under the auspices of the program required the approval of both the State government and the SCOP.

Importantly, however, specific proposals for roads were generated initially by the Local Road Boards – organizations that on paper reflected the interests of national authority, state government, and whichever business interests were dominant in a particular state. In practice this decision decentralized the planning process. The initiation of the Roads in Cooperation program was part of the recognition by the national government that it did not have the resources or information to micromanage road construction throughout the country. The federal government retained nominal control through representatives from the SCOP, but, in practice the Road Boards influenced Mexico’s emerging road network considerably by making initial suggestions about where roads should go. Moreover, once approved, the funds for the program were sent to and administered by the Road Boards themselves. These groups did not just meet, talk, and plan; money from both

66 Ibid., Article II.

67 Although the law stipulated that a number of organizations could fulfill the need for local representation on the Local Road Boards, the related correspondence in the national archives was almost entirely generated by cámaras de comercio.
the state and federal coffers passed to them. In effect, when a contractor or day laborer got paid, the Road Boards were the ones writing the checks.

The scope of the program was substantial. If the project was designated a “local” road, the funding would pay for everything until the completion of the route. If “national,” funds would be forthcoming until the road was surfaced (but not paved). This included any necessary bridges that were less than 50 meters long. Paving and any bridges longer than 50 meters were excluded from being part of the Roads in Cooperation system and would be carried out entirely under federal auspices.68

Two other provisions of the program deserve mention. First was the issue of conservation. In the earliest days of road building, maintenance had not been a significant concern. But as the network began to grow, a larger portion of the funds available for highways and roads had to go to repairing ones already constructed. The Roads in Cooperation system included an important provision about maintaining the network. When a completed road project required fixing, whether it was local or national, the Road Boards were responsible if the road was not paved. If paved, the federal government would tend to roads designated national, while the state government was responsible for those that were labeled local roads.69

There was also the question of accountability. To this end, the law required each Road Board to submit a monthly progress report spelling out what work had been accomplished and to what end the previous month’s funds had been allotted. This increased the size of the national bureaucracy, but not the national state’s capacity to


influence the emerging road network. State and local authorities seemed to have no trouble complying with these requirements. After 1934 the SCOP and the office of the president received a deluge of memos, reports, and other correspondence dealing with the progress of roads in their region, detailing information such as how funds were allotted, resource scarcities, recent washouts that required repairs, and the progress of particular projects. In this case as in others, an expanded bureaucracy that placed the national state at the center did not equate to an expansion of that state’s real power and influence. This would become increasingly clear as the number of road-building projects increased during the 1940s and 1950s.

Calles and the presidents of the Maximato created an enduring framework for road building in Mexico. During Calles’s four-year term as president (1924-1928), the national state created the DNC and established the authority of national leaders to oversee road construction in Mexico. It did so while maintaining a commitment to fiscal orthodoxy and funding construction primarily through a gas tax. However, in the remaining years of the Maximato Calles presided over a policy shift. The establishment of the Roads in Cooperation program and the Local Road Boards transferred much of the important decision-making about road construction to capitalists and entrepreneurs at the local level through the influence of members of the cámaras de comercio who served on the Road Boards. Even as this was happening, road construction in Mexico became an increasingly bureaucratic process. Finally, Calles and his allies succeeded in their goal of keeping road building in Mexican hands. Even as other key industries fell back under the sway of

70 See for example, Bencio Lopez Padilla, Letter to Office of the President, AGN, RP, MAC, Expediente 515.1/425, February 26, 1945; Felix Ireta V.-Rúbrica, Memorandum para El Sr. Presidente de la Republica, AGN, RP, MAC, Expediente 515.1/3, August 26, 1943; Senador Dr. Conrado Torres Ortiz, Memorandum para El Sr. Lic. Jesus Gonzalez Gallo, AGN, RP, MAC, Expediente 515.1/4, December 16, 1941.
foreign capital, road building under Calles was carried out primarily by Mexican construction firms using Mexican labor under the direction of Mexican civil engineers.

Callismo and the Origins of Trucking Regulation, 1925-1934

Transforming Mexico’s transportation infrastructure was not simply a matter of building more roads, however. As a road network emerged in the 1930s, a nascent trucking industry sprang up alongside it. This presented a number of new challenges to Calles and subsequent presidents. Trucking was no less important than road construction. Without an efficient and effective system of trucks to carry goods on the nation’s new roads the money and energy spent on building them would be wasted. The challenge for Calles and the postrevolutionary regime was to shepherd the creation of a trucking industry that was profitable enough to keep truck owners and drivers in business and be able to provide reliable, consistent service. At the same time, however, high prices to transport goods by truck would have a ripple effect throughout the entire economy, driving up costs for both producers and consumers and possibly increasing inflationary pressures.71 Which policies would strike the right balance between the interests of truckers and consumers?

This issue put Mexico’s leaders in a bind. Their twin goals – promoting a capitalist economy focused on growth and maintaining political stability – were at odds over the question of how to manage Mexico’s incipient trucking industry. The best way to promote economic growth was to let Mexico’s trucking industry develop according to the dictates of the market uninhibited by the state. As we will see, the Mexican postrevolutionary state lacked the power and authority to regulate trucking without introducing inefficiencies into

71 The dynamics of this were not understood at the time, but this would likely have generated what economists today call “price-push” inflation.
the industry. But letting the market determine the nature of trucking posed serious risks. Principle among them was the worry that trucking would be taken over by foreigners. As in the case of road construction, this was a political danger in a country that had just endured a revolution triggered, in part, by the perception that Mexico’s leaders had sold out to the United States. But the state also feared that without its intervention, the industry would develop significant autonomy and power over Mexico’s transportation system.

The situation was complicated by other factors as well. Truck transportation was a new technology with unique characteristics. Moreover, it was new not only in Mexico but throughout the world, making it especially difficult to foresee how the nature of truck transportation would affect state attempts to regulate it. The most striking features of the new technology, one that was noticed immediately by most observers, were the low capital requirements and barriers to entry into the business. In clear contrast to railroad shipping, anyone with a little capital could buy a truck and enter the trucking industry on a fulltime or part-time basis. However, it was not clear whether this made regulation desirable or undesirable. Contemporary economic thought could be marshaled to make either argument. On one hand, low barriers to entry meant a decentralized and highly responsive industry in which the pursuit of individual profit would lead to efficient service. Or, the same low barriers to entry would lead to price wars, unsustainable businesses, and the kind of chaos and unreliable service that strong national planning could help avoid.72

This confusion had much to do with the fact that road-based transportation emerged in a moment of crisis for the world economy. Thus, answers to big questions that were of central importance for Mexico’s trucking industry, such as the advantages and

72 This debate is described well in Childs, Trucking and the Public Interest, 25-43.
disadvantages of monopoly and the efficacy of state regulation in transportation policy, did not come easily for governments anywhere. For example, in the United States the experience of the Great Depression prompted a public debate about the appropriate degree of control the government should exercise over trucking. As the U.S. economy suffered through the Depression, the trucking industry was one of the few sectors that grew. Throughout the early 1930s, politicians and businessmen involved in the trucking industry argued about the appropriate role of government regulation. Temporary experiments with regulation by individual states and efforts at “self-regulation,” which essentially amounted to associations of trucking businesses agreeing to set rate minimums, culminated in the 1935 Motor Carrier Act. This law established federal regulation of the trucking industry, a system that endured until deregulation occurred in 1980. In Mexico, as well as the United States, the economics of trucking were easy to argue about throughout the 1920s and 1930s.

Prior to 1931, the Mexican state did not interfere in trucking at all. The predictable results of an unregulated, highly decentralized industry was a haphazard situation. Official government figures, although unlikely to be precise, do give a general sense of the scale of the early trucking industry. As late as 1930, there were fewer than twenty thousand trucks in the entire country, and most of these were nothing more than converted passenger vehicles of very low capacity. Owners were free to make contracts with whomever they could and to service whichever routes seemed the most profitable. It was, depending on one’s point of view, either a near-perfect market system or complete and utter chaos.

73 Childs, *Trucking and the Public Interest*, 118.

74 See Rodríguez Ruiz, *Isodoro Rodríguez Ruiz y el autotransporte en México*; see also Appendix A.
In the latter half of the Maximato, Mexico began to resolve some of these questions. In 1931, only six years after the first concerted national efforts at road building, the government began to craft a regulatory system that would shape Mexico’s transportation system for decades. Although it would undergo substantial change over the next thirty years, what emerged during the 1930s and remained largely intact in its basic contours was an approach that created two primary legal categories: public service and private service. Truckers fell under the rubric of public service if their primary business was transporting goods and people for others on a contractual basis. A business’s trucking operations were classified as private service if they were only adjuncts to the business’s main source of revenue – be it mining, agriculture, or cigarette manufacturing – and were only used to transport goods that were a part of that business.

At the most basic level, the distinction was between those who were authorized to use a private fleet for their own personal and commercial use, and those who were legally permitted to make contracts with others to ship their goods on the national highways. In other words, private fleets were a capital investment in a specific business venture while public service trucks were exclusively in the business of transportation. Early on, the relative scarcity of trucks gave primacy to the public sector of the industry. It made little sense for businesses to make significant capital outlays for trucks that were prone to breaking down, and that had few good roads to travel on in any case. For example, in 1932 official sources registered 12,074 trucks as engaged in public service against only 7,825 in private service.75

In addition to creating the distinction between public and private sector trucking,

75 See Appendix A. Private sector trucking became more economical in later decades, but during the 1920s and 1930s public service was the dominant form of trucking. See Chapter 3 for details of this shift.
the 1931 Ley de Vías Generales de Comunicación y Medios de Transporte, published on
August 29, established a legal regime that gave the national state the difficult task of
closely regulating the public service portion of the industry. The law required that the
national government determine who could legally run trucking businesses, what they could
haul, and what prices they could charge. On one hand, the task the state had set for itself
seemed manageable because of the small size of the industry. On the other, successful
regulation required accurate information about dynamic market conditions throughout the
entire country. This was data the postrevolutionary state did not have at its disposal.

There were two primary mechanisms through which the national state attempted to
manage the new industry. One was a system of permits and concessions. The 1931 law
stipulated that a legal concession from the government was required before being allowed
to carry goods or people along a particular route. These concessions could be issued only
in the name of a single individual, and each was only entitled to operate three vehicles. Beyond this, the law was vague about what obligations and responsibilities were implied
by a concession. In fact, the initial law made no clear and meaningful distinction between
the concept of a concesión and a permiso, and even used them interchangeably.

The meanings behind these terms were important, and were grounded in
collectors’ understanding of Mexico’s difficult experience building railroads during the
Porfiriato. The details of the rights and obligations the government was bestowing upon
those who were granted permisos or concesiones were not minor. In reality, as legal
concepts these ideas were evolving along with a new state in the context of a new industry.

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76 See Appendix to Waters, “Re-mapping the Nation,” 293-331.

What the state was attempting to leave behind was the legacy of the railroad concessions handed out to foreign firms in the late nineteenth century. Historically, concessions were a way for a relatively weak state to get somebody else to do what it could not. The most obvious examples were in the railroad and oil industries. During the nineteenth-century railroad boom, for example, the Porfirian state handed out concessions to foreign firms that granted them the right to build and operate railroads along designated routes. In return, the state got railroads built with minimal financial risk in the hope that this would facilitate economic growth and thus increase tax revenues.\(^{78}\)

Despite a long history of handing out concessions to foreign and domestic entrepreneurs to develop certain industries or exploit particular resources, in reality the mechanisms and concepts involved were murky. In this way, the postrevolutionary state was in uncharted territory when it came to regulating the emerging trucking industry. The original 1931 decree had used the terms *permiso* and *concesión* interchangeably, and it is clear that the situation caused a great deal of confusion. The crux of the problem was the question of exclusivity. Was the government merely authorizing someone to exploit a particular route, as *permiso* seemed to indicate, or did it also intend to provide some degree of protection from competition more in line with the idea of a concession? In response to a wave of popular confusion, a 1932 amendment to the law clarified the language by referring to the government’s issuance consistently as a *permiso*. This made clear that the state was not making any guarantees of exclusivity, but it still did little to clarify the rights and responsibilities that were included when one received a *permiso*.\(^{79}\)

\(^{78}\) Coatsworth, *Growth Against Development*, 38.

Regulating the forms of organization available to truckers was the second mechanism the Callista regime employed to oversee the emerging industry. In addition to establishing, however vaguely, the state’s right to control who was legally authorized to haul cargo on the nation’s highways, the 1931 law imposed certain organizational requirements on truckers. From the beginning of government efforts at regulation, the law required that concessionaires who provided the same service on the same route be organized into cooperatives of some variety.\(^80\) There were a number of acceptable forms of cooperatives but the details of each were opaque and cloaked in bureaucratic legalese.\(^81\)

There were several motivations behind the idea of organizing truckers into cooperatives, both economic and political. From an economic standpoint, having stepped in to regulate trucking, the national government had taken on the obligation of making it function smoothly. The Callista state thus adopted the point of view that the great appeal of trucking was also the greatest threat to its success: fragmented and flexible, government policy makers decided that unrestrained entrepreneurship and competition would be the ruin of the industry. Rate-cutting, in which upstart trucking ventures offered service at prices well below profitability, threatened the viability of more established businesses. With almost infinite possibilities for new entrants into the market, Calles and his advisors probably feared that the incipient industry would collapse before it got off the ground without some way of keeping prices sustainable.\(^82\)

There was also a class-based component to these worries. Because trucking was an

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\(^80\) There were several different cooperative forms available legally which are documented in Nájera Rodríguez, “Los servicios públicos de autotransporte.”

\(^81\) Ibid., 50.

\(^82\) These same concerns were loudly voiced by U.S. leaders as trucking rose to prominence in the 1920s. See Childs, *Trucking and the Public Interest*, 47-64.
economic opportunity that was available to people of modest means, economic elites and their allies in government feared that independent truckers were unable to understand the economics of trucking, and hauled goods at prices so low they could not recoup their costs. This would ultimately lead to price wars with “legitimate” businesses, individual financial disasters, and the general ruin of the industry as a whole. Such sentiments were present in the United States, and influenced the federal government’s decision to regulate the trucking industry there. Despite the rhetoric of revolution, there were many in the Mexican government under Calles who questioned the business-savvy of laborers and rural people.

There were also political considerations. As in road construction, nationalism was important to the development of trucking regulation and was clearly one of the main factors behind the system of permits and cooperatives. These regulations were crafted explicitly with the goal of keeping the emerging industry in Mexican hands, or more accurately, to keep it out of U.S. hands. The grantees of concessions were not required, at this stage, to be Mexican citizens. As long as they had lived in Mexico for at least one year, citizens of Spanish and Portuguese-speaking countries were also eligible for concessions to haul freight and people on the national highways. It is not hard to understand the reasons for this arrangement. As always, the Porfiriato cast a long shadow over the transportation policy of the new regime. The creation of a highway network filled with trucks held out great promise to Mexico’s leaders. But for economic and political reasons, it had to be accomplished in a way that excluded U.S. capital.

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83 Disparagingly dubbed “gypsies” by businessmen in the United States, during the Great Depression independent truckers were beginning to be perceived as a serious danger to the stability of the trucking industry by lowering prices to the point where long-term profits were unlikely for anyone. Such independent truckers often came from a working class background. See Childs, *Trucking and the Public Interest*, p. 130-136.

84 Nájera Rodríguez, “Los servicios públicos de autotransporte,” 50.
These regulatory policies also fit nicely with the new state’s tendency to seek tools of political control wherever it could in an effort to solidify its authority. By requiring cooperatives to be formed under the close supervision of the national state, the Calles administration was hewing very closely to its tendency towards corporatist inclusion. A system of trucking regulation in which concessions from the state were handed out to cooperatives put the national government at the center of trucking policy.

The 1931 law and its adjunct in 1932 defined the basic outline of trucking regulation in Mexico until the deregulation of the industry in the 1980s. Although there would be periodic implementation of “free transit” (the temporary suspension of regulation) over the years, a regulatory regime in which the national government set prices and schedules and required truckers to organize themselves into cooperatives remained in place throughout the years of the Mexican Miracle. This system was far from perfect; rather, it was chaotic, confusing, and unfair and would lead to structural inefficiencies that put inflationary pressure on transportation costs. But it helped establish the state’s role in the emerging trucking industry – something national leaders saw as essential to preserving political and social stability by keeping the United States out of the industry and by preventing the creation of a powerful new group that could threaten the state’s control over the direction of the national economy.

In sum, Mexico took the first steps towards the transformation of its transportation infrastructure during the Calles sexenio and the six years of the Maximato. The emergence of automobiles after World War I created an opportunity for Mexico that Calles quickly grasped. With the creation of the DNC in 1925, Calles established a national institution to oversee the construction of roads. Despite the lack of engineering expertise and road-
building machinery in Mexico in the 1920s, the DNC and the legislation it sponsored created a framework for road construction that favored Mexicans over foreigners, and by the 1930s road construction contracts were being fulfilled using mostly Mexican engineers and Mexican money. Funds for road building came primarily from a gas tax rather than foreign direct investment and borrowing. In a period in which foreign capital was again dominating key sectors of the Mexican economy, the early institutionalization of the road-building industry along nationalistic lines was a notable success for the postrevolutionary state. With respect to the trucking industry, too, the Mexican state under Calles and his allies managed to keep foreigners out by establishing an enduring legal framework for state regulation of interstate trucking. Thus, in one sense, the Calles period was one of increasing state control and consolidation over a new technology that would become central to its economy in the coming decades.

Viewed another way, however, the early history of road-based transportation reveals some of the limitations of state power that would become more evident in later decades. The creation of the Roads in Cooperation program was in part a recognition that the national government did not have the capacity to create a road network in Mexico on its own. Although expanding the national bureaucracy, the Roads in Cooperation program also delegated much of the decision-making authority to the Local Road Boards, again, setting an important precedent for later road construction. Finally, although the national state legally regulated trucking on the national highways, its authority was tenuous. The system of permits and concessions was confusing even to those who made a living in trucking and its regulations were largely unenforceable in any event. Trucking was still a small part of the national economy in the early 1930s, and so the limitations of national
truckng regulation did not yet pose a serious problem for Mexico’s leaders.

Road Building under Cárdenas, 1934-1940

Calles and his clique were forced out of power in the middle of the 1930s. For reasons we will explore below, the ascension of Lázaro Cárdenas as the undisputed leader of the Mexican state in 1935 meant that the government shifted to become more responsive to the concerns of workers and rural people. How did this affect Mexico’s transportation revolution? With good reason, historians have spent considerable energy exploring the continuities and disjunctures between the Calles and Cárdenas regimes. In many respects, Cárdenas heralded a new era in Mexico’s postrevolutionary history, one characterized by new political, economic, and social priorities that favored the demands of labor and peasants over those of capital.85 This, at least, was how it seemed to people at the time. Cárdenas gained a reputation as the president who fulfilled the promises of the revolution, primarily by distributing unprecedented amounts of land to peasants. But he also prominently asserted Mexico’s economic independence by nationalizing the oil industry in 1938, launching new healthcare initiatives, and supporting a campaign for what he called “socialist” education throughout Mexico.86 Cárdenas adopted a different style, too. He traveled extensively throughout Mexico and made it a point to be receptive to the concerns of workers and rural people. For these reasons and others, Cárdenas alarmed many segments of Mexican society who saw him as a radical, or even a socialist. This was true of people both outside and inside the ruling party. The period from 1935 to 1940 was

85 See above notes on historiography of Cardenismo.
86 Vaughan, Cultural Politics in Revolution.
marked by conflict and internal struggles within the Partido Nacional Revolucionario (PNR) – the national party founded by Calles – culminating in the contentious presidential succession of 1940 that pitted General Juan Andreu Almazán against Manual Ávila Camacho.

Given these differences, the striking similarity between Calles and Cárdenas with respect to road-building policy is noteworthy. In general, transportation policy during the Cárdenas sexenio continued much as it had under Calles and the presidents of the Maximato. The institutions governing road construction were left intact. The pace of building retained the same trajectory as it had under Calles. The money spent on road building increased, but not overwhelmingly. In short, the creation of a road network in Mexico remained important under President Cárdenas, and he saw little need to change the general approach to its creation. The national government continued to consider road building an important economic priority and Cárdenas himself was at the center of public events commemorating the opening of new routes.

Federal expenditures on road construction remained mostly constant during the Maximato and the Cárdenas sexenio. The percentage of state spending on road building between 1926-1933 averaged 3.4 percent with little variation from year to year. The first four years of the Cárdenas period witnessed a jump in road spending, but this expenditure remained stable. The average spending during those four years amounted to 3.9 percent of the national total.87 In sum, throughout the entire period from the initiation of national efforts at road building until the onset of World War II, the national state was remarkably consistent when it came to spending money on road construction.

This consistency between two administrations with priorities as different as those of Calles and Cárdenas is especially surprising in light of two additional factors. First, the political economy under Cárdenas had undergone a dramatic shift away from the orthodox fiscal policies of Calles towards a heterodox policy of deficit spending and public works projects. Mirroring a similar shift in the United States under Roosevelt’s New Deal, Mexico between 1934 and the onset of World War II embraced a political economy in which large infrastructure projects were seen as a way to both boost employment and restart an economy that had stagnated during the worldwide economic depression of the early 1930s.\textsuperscript{88} Since road construction was an obvious choice for governments interested in increasing public spending along Keynesian lines (again the United States is a prime example), it is surprising that the intensity of road construction did not change much under Cárdenas.

The second factor was related. Road spending rose, but not dramatically so, despite a large increase in the overall budget of the Public Works Ministry. Under Cárdenas, especially between 1936-1938, the Mexican state dedicated a larger percentage of its spending to the Ministry of Communications and Public Works. This was a logical outcome given the shift towards deficit spending advocated by Cárdenas. The key figure in this development was Francisco Múgica. First as the head of the Ministry of National Economy and then, after 1935, as the head of the SCOP, Múgica oversaw a massive increase in the percentage of the federal budget destined for public works projects. During the ten years of the Maximato, the SCOP’s percentage of the federal budget averaged 12.3 percent. In the three year period between Múgica’s arrival at the SCOP and the effects of

\textsuperscript{88} Medina Peña, \textit{Hacia el nuevo estado}, 94-105; De la Peña and Aguirre, \textit{De la Revolución a la industrialización}, 69-70.
the oil appropriation began to be felt, the SCOP averaged 15.8 percent of federal spending, reaching an all-time high of 18.2 percent in 1937.89 In addition to road construction, SCOP funds went to finance things such as dams, railroads, port facilities, air travel, and telegraph and telephone installation. Yet, despite huge budget allotments for public works and communication projects, federal spending on road construction did not increase dramatically under Cárdenas.

Nor did Cárdenas do much to increase the authority of the national state over planning and building roads. Rather, as the 1930s continued, the president strengthened the Roads in Cooperation program with the states, and he oversaw new legislation that increased the independence of the Local Road Boards. Amendments to the Ley Sobre Construcción de Caminos en Cooperación con los Estados in 1935, 1937 and 1938 clarified the institutional character of the Road Boards, effectively making them more autonomous and affirming their independence from both the state and federal governments. The 1937 amendment, in an effort to free up bureaucratic entanglements that were perceived to be slowing the pace of road construction, declared that the Road Boards were “entities officially charged with the construction of local and national roads, with the right to assert their juridical and administrative rights.”90 In addition, the amendments made the transfer of federal money more direct. After 1937, the Ministry of the Treasury handed over the portion of federal funds destined for the Roads in Cooperation program directly to the Road Boards, rather than apportioning it through the Ministry of Public Works.91 All of this

89 Wilkie, The Mexican Revolution, 144-145.

90 Instituto Mexicano del Transporte, Historia de las Juntas Locales de Caminos, 28.

91 Ibid.
bolstered the Roads in Cooperation program. Clearly, it was an arrangement that seemed to suit all involved, including federal and state government officials, prominent local businessmen, and members of the automotive industry.

There were some important differences between the Calles and Cárdenas administrations. Not surprisingly, road building under Cárdenas was characterized by an increased responsiveness to worker demands. Those who labored in road construction throughout Mexico responded to the Cárdenas regime’s receptivity to the needs of workers and peasants by asking for presidential support for higher wages and the right to organize. In Durango, contractors hired members of a local agrarian league to work on a portion of the national highway connecting the city of Durango with Ocampo. Leaders of the agrarian league wrote to Cárdenas complaining that the contractors, “don’t pay the workers the promised wages and demand that they perform work that is unbearable.”

We don’t know what response Cárdenas offered them in this case, but it is likely that he made some effort to address their grievances as he did in many other cases throughout the early years of his presidency.

In the south, members of the Sindicato Nacional de los Trabajadores de la SCOP wrote to Cárdenas complaining of attempts to exploit workers and to prevent them from organizing while working on a section of highway connecting Peto and Chetumal. Writing on behalf of these workers, General Secretary Ricardo Natos invoked their dual identity as both workers and peasants in order to request shorter working hours and a reaffirmation of national support for their union. As the request explained, “The workers of the Peto-Chetumal [road] respectfully request: being workers of the shovel and spade and

92 José Quiñones, Manuel Fierro, Manuel Gándara T., Asociación Agrícola Local de San Juan del Rio, Durango, Extract of missing document, AGN, RP, LC, Expediente 515.1/1, May 4, 1935.
campesinos of the ax and machete, for the sake of our spirits we need to rest our tired bodies which are wearied by the demands of labor and work carried out during the day.”

In a subsequent telegram, Cárdenas appeared to show his support for workers on this road, affirming their request for justice although avoiding specifics.

Cárdenas, more than Calles, took concrete steps to encourage automobile tourism in Mexico as a way to acquire much-needed foreign exchange. The official opening of two major routes during the Cárdenas sexenio, the highway between Mexico City and the U.S. border in Nuevo Laredo and a road connecting Acapulco with the capital, created new financial opportunities. Hotels, service stations, and shops were needed in order to encourage U.S. tourists to take driving vacations in Mexico. Foreign entrepreneurs were quick to express their interest in taking on some of these projects. Tourism along these new routes put Cárdenas in a difficult position. Encouraging U.S. automobile tourism on Mexico’s highways demanded a certain amount of diplomatic friendliness towards U.S. organizations that encouraged people to take car trips to Mexico, especially the newly-fashionable driving clubs. At the same time, Cárdenas was committed to supporting Mexican capital whenever he could, both for the purposes of bolstering his legitimacy and because of his long-term vision for Mexico’s economic future.

It is clear that the opening of the Mexico City-Laredo route prompted U.S. entrepreneurs to cultivate their relationship with President Cárdenas in the hopes of making money. From Texas, a woman named Rose Dawn, who published a travel magazine, wrote

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93 Ricardo Natos, Secretario General, Sindicato Nacional de los trabajadores de la SCOP, Letter to President, AGN, RP, LC, Expediente 515.1/176, December 11, 1939.

to Cárdenas praising Mexico and dropping the name of a friend who built and ran hotels.95

Another U.S. entrepreneur requested a meeting with Cárdenas to discuss the economic potential of the new road. To demonstrate his seriousness, he included in his letter a copy of an extensive report detailing the research he had carried out, explaining that, “This exhaustive study comprehends the economics of turismo and the educational advantages that are to accrue when every psychological advantage is taken of the opportunity offered through the formal dedication of your Highway.”96 These entreaties included the truly bizarre, such as the case of “Texas Mack,” self billed as a “vagabond cowboy, bullwhip artist, and hypnotist and escape artist,” who sought the permission of Cárdenas to promote a fair in Mexico celebrating the opening of the road.97

Even as he continued to support a nationalistic program for building roads in Mexico, Cárdenas could not unambiguously exclude United States’ capitalists from profiting from the expansion of tourism. Their goodwill and support were required to encourage people in the U.S. to drive their cars through Mexico on vacation in the first place. Instead, Cárdenas gave vague answers to questions about whether U.S. capital would be welcomed in building Mexico’s tourism industry. For example, in an interview given to the Chicago Daily News in 1936 he said, “I am eager as a true Mexican to hasten the prosperity of my country. I welcome all investment from interests who sincerely attempt to understand our national aims and needs and who will work as friends toward


96 Estey S. Smith, Letter to the President, AGN, RP, LC, Expediente 710.1/414, 1936; for other plans that supported joint profit making ventures see Mexican Enterprises, Inc., Proyecto de Plan para Publicidad y Promocion en la Inauguración de la Carretera Nacional de Laredo Texas a la Ciudad de Mexico, AGN, RP, LC, Expediente 515.1/10, unknown day, 1935.

mutual benefit and advantage.”

Simultaneously, however, Cárdenas and his allies among Mexican entrepreneurs took what steps they could to build Mexico’s tourism industry along lines that would benefit Mexicans. For example, in 1937 Luis Montes de Oca and Alfonso Cerrillo helped establish the Crédito Hotelero to help private firms finance hotel construction. Cárdenas also enacted a series of lesser measures to maximize the benefits Mexicans would receive from the opening of new highways and the tourism they brought. For example, the administration made it a requirement that all tourists driving in Mexico possess Mexican insurance. In the last days of the administration, the government also mandated that all foreign automobiles be marked with red decals that read “turista.” This requirement was designed in part to “help vendors better identify their market.” In plain language, it was to encourage higher prices for U.S. tourists. Cárdenas also mandated that all tour guides hired by U.S. visitors be Mexican. A school was even set up in Monterrey to train guides in English, as well as give them a crash course in Mexican history and culture – or at least the version of that history and culture that foreigners wanted to consume. Calles, too, had encouraged tourism as a way for Mexico to acquire the dollars it needed to purchase imports. But the connection of Mexico’s incipient highway grid with the United States border at Nuevo Laredo in 1936 left to Cárdenas the task of balancing the promotion of

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98 John Jenkins, Editor sobre asuntos automovilisticos, Chicago Daily News, Special Dispatch, AGN, RP, LC, Expediente 515.1/10, undated but probably 1936. The Spanish phrase was “con un fin de beneficio y provecho mutual.” John Jenkins, the article’s author, translated it as “mutual benefit and profits,” not exactly the same thing.

99 Hamilton, Limits of State Autonomy, p. 208.


101 Ibid., 75-76.
tourism with supporting Mexican economic development.

What conclusions can we draw about road-building policy under Cárdenas? Cárdenas seemed to share many of Calles’ ideas regarding roads. Despite a shift towards deficit spending and a Keynesian approach to political economy, spending on road construction remained largely consistent with the years of the Maximato. Nor did Cárdenas do much to strengthen the national state’s control over road building, even as he expanded the state’s reach in other areas. In fact, the program of building roads in cooperation with the states through the creation of the Local Road Boards was given new initiative under Cárdenas. There were some differences, though. For example, in keeping with his emphasis on promoting political and social stability, Cárdenas altered the trucking laws to better protect small businesses and workers. Overall, however, the years between 1935 and 1940 demonstrated mostly continuities with earlier administrations. The goal was the development of a capitalist Mexico that was well positioned to achieve economic growth. Calles and Cárdenas both viewed road construction from a long-term perspective; neither did anything to reverse the trend of road building as an increasingly decentralized process that turned over key decisions to local actors.

Trucking Regulation under Cardenas: Economic Nationalism, Worker Identity, and Bureaucratization

Trucking, like road construction, did not receive a major policy overhaul during the Cárdenas administration. The Cardenista state saw no reason to question the principle of federal trucking regulation. State control of an emerging road transportation grid was consistent with the goal of expanding the reach of the national government. Moreover, although the number of trucks on Mexican roads had nearly doubled since the last years of
the Maximato, trucking was still peripheral enough to the overall functioning of the economy to prevent it from being an urgent economic problem. Of course, the ultimate purpose of regulation was to ensure that efficient and effective truck transportation was available, and this goal remained important. But widespread complaints about bottlenecks and inefficient service were still to come. Thus, the Cardenista state was free to intervene in trucking regulation without the pressures of an industry-wide crisis.

Although Cárdenas did not challenge the basic principles of trucking regulation, the law governing national trucking regulation was revised during the last year of his presidency. The changes made to the Ley de Vías Generales de Comunicación in 1939 had two major goals. First, consistent with other Cardenista policies, they intended to strengthen the class-consciousness of those who worked in the trucking industry and incorporate them into the political orbit of the state. Second, they were designed to improve the mechanisms through which the national state regulated the trucking industry. In the first of these goals the regime was undoubtedly successful. In attempting to achieve the second, however, Cárdenas and his advisors ran up against the same stumbling blocks as Calles: the limited power of the government to achieve its ambitious goals forced an effective decentralization of decision-making over trucking, despite an expansion of the national bureaucracy. Moreover, the new Cardenista emphasis on worker groups and their incorporation into a centralized political system created additional complications for state leaders as they tried to extend state control over trucking.

Before attempting to change the federal law that governed the trucking industry, Cárdenas first solidified the mechanisms used to include the transportation sector in the

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102 Between 1932 and 1940 the total number of officially registered commercial trucks increased from 20,701 to 41,935. See Appendix A.
evolving corporatism of the state. As he did with industrial workers, peasants, government workers, and urban commercial groups, Cárdenas encouraged the establishment of a national cámara through which businesses involved in the communications industry would interact with the state. In 1937, he convened a national assembly during which major businesses in the air, railroad, telephone, telegraph, and trucking and busing industry met under the leadership of Gustavo Espinosa Mireles. The Cámara Nacional de Transportes y Comunicaciones (CNCT) was officially established on May 18 as a result of this assembly. All businesses involved with the transportation and communications industry were required to be members of the cámara.\textsuperscript{103} With this act, which was characteristic of Cardenismo in general, the national state created a direct mechanism for negotiating with business leaders in this sector of the economy by including them within the expanding state bureaucracy.\textsuperscript{104}

This act of political incorporation set the stage for changes to the law governing national trucking that became official in 1939. The system of regulation changed in two major ways. First, the state tightened the restrictions on who could receive government permisos to operate trucking businesses on the national highways. Previously, permisos were legally handed out only to citizens of Spanish and Portuguese-speaking countries in a clear effort to prevent the intervention of U.S. businesses. The 1939 reforms limited foreigners even further by requiring that recipients be Mexican citizens by birth. Additionally, it established the restriction that permisos could only be granted to people who already worked in the automotive industry, such as drivers, dispatchers, and mechanics. Finally, permisos would now only be issued for individuals to operate routes

\textsuperscript{103} Rodríguez Ruiz, Isodoro Rodríguez Ruiz, 56.

\textsuperscript{104} Similar changes were made in other sectors, see Hamilton, Limits of State Autonomy, 96, 201.
near where they lived. No longer would someone from Mexico City, for example, be legally permitted to operate a trucking business in Sinaloa.\textsuperscript{105} Finally, the Cárdenas administration shortened the term of government-issued permits from twenty to five years.\textsuperscript{106}

These changes were made in keeping with Cárdenas’ emphasis on satisfying worker demands and promoting the interests of small producers. In addition to the transportation sector, small producers who worked in the mining and manufacturing industries were favored by the Cárdenas administration through tax exemptions, subsidies, and credit provision.\textsuperscript{107} Truckers, many of whom came from a middle or working-class background, feared the economic power of larger businesses (whether Mexican or foreign) to dominate the market if they were permitted to enter the industry. The above changes to the law were intended to keep trucking and busing businesses small-scale and prevent the entry of powerful potential monopolists.

These adjustments provoked conflict, however, primarily from the Alianza de Camioneros. The Alianza was a private organization of bus owners with important political links to the regime. It was created in the 1920s as part of President Obregón’s effort to improve urban transportation services in Mexico City. In the face of intransigence from trolley workers at a time when it was critical for the emerging regime to provide orderly and timely transportation in the capital, the national state lent considerable economic and political support to the Alianza throughout the 1920s and 1930s. Urban

\textsuperscript{105} Ortiz Illescas, “El autotransporte público federal de carga,” 53-56.

\textsuperscript{106} Rodríguez Ruiz, \textit{Isodoro Rodríguez Ruiz}, 61.

\textsuperscript{107} Hamilton, \textit{Limits of State Autonomy}, 200-201.
busing provided a counter-weight to the power of the trolley companies (most of which were foreign-owned) and their assertive workers. By the end of the Cárdenas sexenio, the Alianza was well established as a privileged economic group with close ties to the regime. The alterations to the national law overseeing permisos, especially the restriction of terms from twenty to five years, threatened the economic and political clout the Alianza had obtained.

In response to the reforms introduced by Cárdenas, the Alianza organized a work stoppage at the end of 1939 that was intended to paralyze Mexico City by shutting down urban transportation. The strike was ultimately averted as the result of negotiations between Cárdenas and the leaders of the Alianza. Temporarily acquiescing, the Alianza canceled the strike. It continued its battle behind the scenes to restore longer terms for permisos and to rescind the restriction that permit-holders were required to live where they operated their lines. But the group had made its point. Cárdenas and subsequent presidents would have to heed the demands of the Alianza.

Cárdenas and his administration had good reasons to avoid a hard line against the Alianza and other financial interests involved in trucking, even as they sought to protect the interests of small scale trucking businesses. During his sexenio, railroad workers constantly made the government nervous by demonstrating an independent streak and a willingness to disrupt the economy. This situation came to a head in 1937, when leaders of the railroad workers union played prominent roles in walking out of the CTM’s national council meeting. Although most of the errant unions (which included some of the

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country’s most important such as the railroad workers, the electricians, and the teachers) eventually returned to the national fold, the incident highlighted the danger posed to the regime by unions unwilling to concede their independence.\textsuperscript{110} In this climate, maintaining peace with the Alianza de Camioneros seemed wise.

The second way in which trucking regulation changed under Cárdenas was a reorganization of the institutions that governed it. Following on the heels of the creation of the CNCT in 1937, the 1939 law placed trucking under the authority of the Ministry of National Economy. On the surface this change expanded the reach and scope of the national government. On the other hand, the key decisions about routes and pricing were not made exclusively by bureaucrats in Mexico City. Recognizing the inability of the national government to grasp the details of what was a dynamic and decentralized industry, the law also required the creation of “cooperative federations” at the regional level to help make key decisions. In consultation with these federations, the Ministry of National Economy would determine requirements of major routes and use this information to issue new \textit{permisos}, always with an eye toward striking the right balance between keeping existing businesses profitable and insuring timely and efficient trucking. This was a necessary step because, in practice, the national government had little choice but to rely on the local federations to provide information about changing supply and demand.\textsuperscript{111}

Thus, the reorganization of the trucking industry under Cárdenas had paradoxical effects in a number of respects. Although the reforms placed the industry more squarely within the federal bureaucracy, they also created local trucking organizations with

\textsuperscript{110} For details about the 1937 walkout see Hamilton, \textit{Limits of State Autonomy}, 156-160.

\textsuperscript{111} Gauging the supply and demand for trucking was never easy, even in the United States where the national state was stronger. Before and after the initiation of regulation in 1935, the U.S. government relied on local bodies to suggest appropriate rates. See Childs, \textit{Trucking and the Public Interest}, 130-136.
considerable power to influence the routes, prices, and number of vehicles that would operate on highways throughout the country. Inevitably, this fragmentation of decision-making over trucking weakened the national state’s power and transferred influence to entrepreneurs, both large and small-scale. Cárdenas took measures to prevent the consolidation of powerful monopolies in trucking, but the power of the railroad labor movement tempered his willingness to push too hard. In the end, Cárdenas did not do much to change the system of regulation put in place by his predecessor. It remained extremely difficult for the national government to effectively set prices and enforce its regulations, even on an industry that was still in its early stages. In the cavernous spaces of the SCOP’s headquarters on Tacuba street bureaucrats wrote more memos and compiled more reports under Cárdenas, but Mexico’s trucking industry remained on the same general path set by Calles.

Cars, Trucks, and Buses: The Automobile Industry in Mexico, 1925-1940

There was another crucial element of Mexico’s transportation revolution. Road construction and managing Mexico’s fleet of trucks were only parts of the equation. Despite the enthusiasm with which government officials promoted the construction of a highway network as a cure for the nation’s ills, the difficulty of providing an adequate supply of vehicles was always a pressing issue. Between 1925 and 1940, motor vehicles were not easy to come by. Mexico had no automobile manufacturing industry of its own and had to rely on imports. Imported cars, trucks, and buses were overwhelmingly of U.S. provenance, and they were expensive. Moreover, there were few mechanics and no spare parts industry to keep vehicles on the road.
These difficulties pointed out both the complexity of orchestrating a nationalistic transportation policy in postrevolutionary Mexico and how the shift to roads entangled the United States and Mexico in new ways. For even as the Mexican state was investing in road building and crafting a regulatory regime to govern the emergence of motor trucking, nearly all the trucks on Mexican roads were effectively made and sold by U.S. companies. Acquiring them necessarily enmeshed Mexico in a negotiated process that involved the governments of both countries as well as representatives of private capital on both sides of the border, all thrown together in a complex jumble of security concerns, macroeconomic policy, and revolutionary nationalism.

Despite the language employed by U.S. firms like GM that the cars it sold in Mexico were “Hecho en México,” the truth was not so simple.\(^\text{112}\) In the 1920s and early 1930s, all the vehicles in Mexico were imports. Then, in 1937, General Motors opened its first assembly plant. Vehicles made in assembly plants were built by a technique called “completely knocked down” (CKD) kit assembly. In this process, vehicles were shipped to Mexico in kits that were then put together in Mexican plants. The kits contained everything that was needed to make the car. Assembly plants did not purchase or otherwise receive additional parts; they simply provided the labor that was needed to make the vehicle road-ready.\(^\text{113}\)

There were a few different arrangements that existed in Mexico for assembling cars imported in CKD kits. General Motors and Ford, by far the two largest manufacturers in

\(^{112}\) General Motors, Advertisement “Productos Nacionales de Alta Calidad al Servicio de Mexico,” HN, Más Caminos!, Tomo I, Numero 13, October, 1950, Inside Cover.

Mexico, directly owned their assembly plants. Chrysler and a few other smaller automakers licensed their assembly operations to Mexican entrepreneurs. U.S. automakers found that assembly operations worked well. In the first place, they required only minor attention from the home offices in Detroit. Ford and GM, for example, spent very little money on the assembly plants once they had been installed. Mostly for this reason, Latin American assembly operations utilizing CKD kits appear to have been relatively profitable for the big carmakers. Although there does not exist much reliable information on the subject, this was probably true until the depression of the 1930s. In 1925-26 Ford reported making a profit of $6 million in Argentina and $4 million in Brazil.\textsuperscript{114} Mexican figures were probably similar if slightly lower.

These CKD kit assembly operations were almost completely unregulated by Latin American governments. In fact, their actions had the effect of bolstering the CKD model. Most Latin American states imposed high tariffs on the handful of cars that were shipped to Mexico as pre-assembled vehicles. This arrangement benefited the automakers because the tax raised the cost of pre-assembled, imported cars and helped set higher retail prices for vehicles made from CKD kits. The U.S. companies could then sell their CKD cars at prices that increased the profit margin. All in all, this arrangement suited the carmakers just fine; they received substantial profits without incurring any of the risk of manufacturing cars in Mexico.\textsuperscript{115}

From Mexico’s perspective, however, this state of affairs presented a number of problems. In the first place it meant that policy makers in Mexico had next to no control

\textsuperscript{114} Ibid.

\textsuperscript{115} Ibid.
over the type and number of vehicles available for sale in the country. Equally important was that cars and trucks cost more in Mexico than in the United States. Finally, foreign ownership and the CKD business model did little to create backward economic linkages with the rest of the economy. As long as labor was Mexico’s only contribution to the manufacture of automobiles, the industry would play only a small role in developing the national economy. These difficulties would become acute during the global crisis caused by the Second World War.

**Conclusion: Mexico’s Road Network before 1940**

The year 1940 marked an important watershed in Mexican history. As the world descended into the catastrophe of world war, Mexico experienced its own political and economic convulsions. The triumph of Manuel Ávila Camacho to succeed Cárdenas as president over the right-leaning opposition candidate Juan Andreu Almazán and the more radical Francisco Múgica signaled a retreat from the populism of the Cárdenas years. At the same time, changing economic and political conditions created by the onset of World War II created new challenges for the country. These all had profound effects on the ongoing transformation of Mexico’s transportation infrastructure. But what can be said about the progress of this transformation on the eve of World War II?

Mexicans officially built 9,929 kilometers of federal highways between 1925 and 1940. This total reflects major highway projects that were built entirely with funds from the federal treasury and designated as *caminos nacionales* by the DNC. Although they were all intended to be paved and thus passable in all seasons and weather conditions, it is clear that this was not the case by 1940.\(^\text{116}\) Despite the variation in quality of Mexico’s

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\(^{116}\) See for example Manuel Avila Camacho, Srío. of SCOP, “Report to President,” AGN, RP, MAV,
national roads and the difficulty of precise analysis, the official map of Mexico’s highway network in 1940 reflects the general patterns of road construction and suggests ways in which roads were beginning to transform the country. As they had been for centuries, the valley of Mexico and the capital were central. By 1940, in the core of the country, decent roads existed connecting Mexico City with Acapulco, Veracruz via Jalapa and Córdoba, Guadalajara via Morelia, and Zacatecas by way of Morelia, Guanajuato, and Aquascalientes, and finally with Oaxaca via Puebla. In the north, road workers built a highway linking Chihuahua with Ciudad Júarez and El Paso, but this road did not meet up with the rest of the grid until later. Similarly, a handful of highways that were not connected with other routes were built between important Mexican cities such as Mérida and Valladolid in Yucatán.

Without doubt, the most important route constructed before 1940 was the national highway that ran from Mexico City all the way to the U.S. border in Laredo, Texas. By the time of the highway’s inauguration in 1936, travelers could drive on a well-paved road directly north to Monterrey and then on to the United States. As we have seen, this opened up new possibilities for promoting tourism, as well as ample opportunities for Cárdenas and other Mexican leaders to extol publicly the virtues of national integration and the value of a cooperative relationship with the United States.

In addition to the national highways, thousands of kilometers of roads were built through the Roads in Cooperation program by 1940. The nature of the program, with its bureaucratic requirements and decentralized planning, makes it difficult to recount its accomplishments with much precision. The need to report progress and justify the use of

Expediente 562.3/66, October 11, 1944.
federal funds made for untrustworthy reports. Unlike other civil engineering projects – dams for example – roads could be reported as “complete” many times over. A tramo, or section, could be redefined. Or a segment could be reported as complete when it was surfaced and again when it was paved. It is safe to assume that the available statistics on roads built in cooperation with the national government overestimate the quality and serviceability of these routes. Despite these caveats, the general outline of the program’s achievements is impressive. The Roads in Cooperation program contributed about four thousand kilometers of serviceable new roads to the nation’s total before 1940. Their importance, however, was probably greater than this number indicates since they were often built in places where communications were historically weak and thus they represented a significant improvement over what had existed before.117

To the extent they are available, statistics about the number of vehicles and the frequency of automobile travel on Mexico’s highways contribute to a picture of a network that was still in its early stages in 1940. According to census figures Mexico contained only about 145,000 vehicles at that date, of which 42,000 were trucks of some kind.118 This amounted to only one vehicle for every 132 Mexicans.119 Only 3 percent of the 10,000 or

117 The statistics available on roads constructed through this program are difficult to parse. There is a good deal of variation between sources, which probably reflects the malleability of definitions of what constituted a “complete” road, as well as confusion about what was new and what was maintenance or improvement of an existing route. Finally, the Public Works Ministry would often reclassify roads several times, switching their designation from national roads to roads that were built as part of the Roads in Cooperation Program. This figure of four thousand kilometers was arrived at by averaging the numbers reported in various sources. See Instituto Mexicano del Transporte, Historia de las Juntas Locales de Caminos, 407-413; see also Secretaría de Comunicaciones y Obras Publicas and Augustín García Lopez, Memoria de la Secretaria de Comunicaciones y Obras Publicas, presentada por el C. secretario del ramo, Lic. Agustín García Lopez, Septiembre 1949 - Agosto 1951 (México: Secretaría de Comunicaciones y Obras Públicas, 1950-1951), 136-137.

118 See Appendix A and Presidencia de la Republica, 50 años de revolucion mexicana en cifras (México: Nacional Financiera, 1963), 98.

so kilometers of national highways were used by 1,500 or more vehicles a day; this 3 percent included only the roads connecting Mexico City with Cuernavaca and Puebla.120 On most highways it was possible to wait for hours without seeing a truck or car pass by.

Gasoline consumption tells a similar story. Annual sales of gasoline amounted to only 670 million liters in 1940, less than one seventh of what it would be just twenty years later.121

From these statistics we can conclude that before 1940 Mexico’s motor vehicle transportation network had not grown large enough to effect massive economic and social transformations on a national scale. It did, however, have a noticeable impact on the shape of Mexico’s economy as well as social life in certain localities. Both anecdotal and statistical evidence about the effects of road building and automobile transportation up to 1940 point out the ways in which the new technology was beginning to reshape the country, as well as offer a preview of the rapid changes ahead as roads, trucks, buses, and cars became more prevalent in the 1940s and 1950s.

As touted by planners, the arrival of a road into a community brought with it a deeper integration into the national market and a host of other changes. The case of Cherán, an indigenous community in the Tarascan sierra of Michoacán, is illustrative. In 1941, Cherán became the focus of a major ethnographic study led by the U.S. anthropologist Ralph Beals.122 The village was distinctive because it was one of the largest

121 Rene Etcharrán Gutierrez, Manual de Caminos Vecinales, 19.
122 Beals’ personal reasons for choosing to study Cherán reveal another way that roads mattered in this period. Beals probably choose this location because he was worried about providing health care for his ill daughter. Concerned about the “medical uncertainties” of living in an isolated Mexican village for a year, Beals choose to rent a comfortable house in the nearby town of Uruapan. As a result of the new road, he was able to drive his car the half-hour to Cherán each day, thereby combining research needs with comfort and health care for his daughter. Communities discovered by anthropologists tend to be revisited for decades because the earlier work provides a good background for measuring change. Since Cherán has followed this pattern and become one of the communities best known by Anglo scholars, it would not be an
Tarascan-speaking communities in the *sierra*, but also because the highway connecting Mexico City and Guadalajara had recently been completed nearby. Beals and his team were aware of the importance of this development and paid careful attention to the changes the road brought to the town. The construction itself altered economic conditions in the community. The grading for the highway had been completed in 1937, and it took three years for the road to be paved completely. To do this work, the federal government hired local labor and paid them each one peso per day, relatively high wages by the standards of highland Michoacán. Beals speculated that this was enough to considerably upset the wage scale in the *sierra* as members of the community abandoned other wage jobs when they could secure work on the highway.123

Beals saw nothing less than a “revolution” taking place in Cherán because of the road. Within months of the road’s completion, local truck trails began springing up in the *sierra* connecting local communities with the main highway as well as each other. These truck trails often developed along the routes that had for centuries been plied by *arrerios*, muleteers who had traditionally conducted most of the village’s long-distance trading. Although unpaved and often unreliable in bad weather, the trails connected the community to the national market almost instantaneously.124 They might not have shown up on official road maps, but they were nevertheless important to the local economy of Cherán. In the decades to come, many of them would eventually become all-weather roads paid for with federal or state funds.

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124 Ibid., 75-79, 87.
A combination of the federally-built highway, locally-built feeder roads, and informal truck trails transformed the economic life of the community. The new transportation network opened up markets that had previously been closed to the inhabitants of Cherán. Cherán had been part of a monetized, commercial economy for decades, but the new road network extended the community’s economic reach. The net effect was better prices for local commodities. Trucks driven by outsiders began to arrive periodically in Cherán, offering to pay decent money for local wheat, maize, charcoal, and timber. Villagers responded enthusiastically. Rather than taking the time to haul these goods to markets in Uruapan and Carapan, it was much easier to sell them to whoever happened to come by with a truck. Prices seem to have increased substantially in the months after the highway arrived; chickens, for example, could be sold for three times as much as just one year earlier. Buses, too, became common in the community. While the people in Cherán were willing to sell commodities to merchants who came to the village, they preferred to take buses to commercial centers to sell things like shakes, roofing shingles, and higher-priced fruit themselves.\(^{125}\) Similar changes took place in Tepoztlán. There, the introduction of a federally-funded paved road connecting Tepoztlán and Cuernavaca in 1936 created new opportunities for agricultural exports such as plums, tomatoes, and flowers. These developments in turn weakened the ability of local caciques to control the economic life of the community.\(^ {126}\)

There were regional changes as well. The most important occurred in the area surrounding the northern city of Monterrey. Although the city itself had long been a

\(^{125}\) Ibid., 75.

dynamic commercial and manufacturing center, in 1930 the surrounding region was still dominated by agriculture. The opening of the Mexico-Laredo route, which passed directly through the city, and a highway connecting Monterrey with Saltillo and into the Laguna region near Durango made possible the dramatic shift away from agriculture of the region as a whole. In 1930, census data listed the bulk of this area as one in which 15 percent or less of the economically-active population was engaged in non-agricultural economic activities. By 1940, this had changed dramatically. Now between 16 and 30 percent of the workforce labored outside agriculture, and in a huge swath of the region near Torreón the numbers were even higher. There, between 31 and 45 percent earned a livelihood through something other than farming.\textsuperscript{127} In fact, the expansion of industry and commerce into a sizable region outside of the city of Monterrey is hard to imagine without the simultaneous introduction of highways. These roads forged physical connections between Monterrey and its hinterland and between the Mexican north and the United States.\textsuperscript{128}

These specific cases highlight the economic changes roads brought, especially what amounted to an expansion of the national market into places reached by the 14,000 or so kilometers of roads built before 1940. This expansion of Mexico’s national market helped fuel what recent scholarship has recognized as the beginnings of import substitution-based industrialization during the 1930s, a decade or so earlier than previously thought. It also acted as a brake on inflationary pressures – the kind that would haunt Mexico’s economy for decades – since the economic stimulus provided by the growth of the early road network consisted largely of introducing cheaper ways to transport small volumes of goods


over short distances. More generally, Nora Hamilton notes that any public investment in economic infrastructure projects such as roads was bound to benefit private capital, a fact which helps to explain how the Cárdenas period was one of remarkable economic growth despite occurring within a political climate of confrontation between labor and capital.

Between 1925 and 1940 Mexico took its first steps in the shift to an economy dominated by motor vehicles. Viewed from a national perspective, the changes it brought were significant but not yet complete. Calles’ goal of establishing a national framework for road construction and trucking had clearly been achieved. Mexico built thousands of kilometers of paved roads financed largely on the basis of its own resources. Despite this accomplishment, the Mexican state was forced to recognize the limits on its power to control the growth of its road network. Local entrepreneurs and politicians influenced road building through the Local Road Boards and the Roads in Cooperation program. National regulation of the trucking industry was constrained by political considerations and the inability of the national state to exert its authority. Maintaining a reliable supply of trucks, cars, and buses was complicated by the domination of U.S. firms in the motor vehicle industry. By the end of the period, what began as a highly centralized and state-directed effort had been transformed into a fragmented and negotiated process involving national leaders, local governments, and both Mexican and U.S. capitalists.

This transformation reveals much about the goals and methods of the postrevolutionary Mexican state under Calles and Cárdenas. Several priorities stand out clearly when examining how the administrations of both men shepherded Mexico through

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the early stages of its transportation revolution. Economic growth was the focus. Road-based transportation was seen as a way to expand the reach of the national economy, dismantle regional economic isolation, and break the economic power of caciques. Roads were also imagined to have political consequences that would facilitate the goal of promoting capitalist economic relations. For example, a viable road transportation network would weaken the power of railroad labor and pave the way for a more acquiescent workforce. But both Calles and Cárdenas were constrained by economic, political and social realities. It was politically impossible for road transportation to be dominated by foreigners. This applied to both construction and trucking. The state also had limited resources at its disposal and so decided to decentralize much of road building and to give local groups greater control over the mechanics of trucking regulation. At the same time, both Calles and Cárdenas had to confront a difficult reality: the shift to road-based transportation necessitated that the U.S. and Mexican economies become more closely linked. This last fact would become even clearer during World War II.
CHAPTER 2
World War II, Postwar Crisis, and the Development of Mexico’s Road Transportation Network

In December of 1940, *El Nacional*, the Mexico City daily most closely linked with the government, ran a story about three U.S. road engineers who were taking an official tour of northern Mexico. The three men – S.G. Richardson, Arnold Whitaker, and Keneth Van Hoe – were spending several weeks driving on the existing roadways in the region. Having recently inaugurated the Mexico City-Laredo highway, the authorities at the Ministry of Public Works were intent on showing off recent accomplishments and also seeking advice for how to proceed with road building in the expansive northern region of the country. On one level, it is not surprising that Mexican engineers and bureaucrats were interested in suggestions from trained and experienced U.S. engineers. However, the fact that the state heavily publicized the trip did signify something new. As we saw in Chapter 1, since the early days of Mexican road building the project had proceeded in conjunction with a strong nationalist discourse. As with the oil and mining industries, the memory of the Porfirian railroads assured that the transportation sector would remain symbolically important to those who wished to protect Mexico’s economic independence. In the 1920s and 1930s a nationalistic approach to road building and recollections of U.S. interventions meant that stories about U.S. citizens reconnoitering northern Mexico did not appear in official state media.

Yet, by the end of 1940 the government was going out of its way to circulate information about the trip as an example of goodwill and U.S. collaboration in Mexico’s....

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future economic development. The promotion of this kind of collaboration was a distinct departure from the standard rhetoric of the previous fifteen years, which had touted whenever possible the exclusion of the United States from participation in Mexico’s road network. Even more interestingly, these developments took place in the final year of the Cárdenas administration – an administration that just two and a half years earlier had brazenly defied the United States by expropriating the U.S. owned oil companies.

What changed? The short answer is World War II. The war years and their aftermath had important consequences for Mexico and its shift to automobility. For one thing, World War II gave the U.S. government a new stake in Mexico’s transportation infrastructure. This new concern was both military and economic. Mexico was a potential staging ground for Axis intelligence and even invasion. At the same time, Mexico became a crucial provider of the raw materials, products, and workers deemed critical to the U.S.’s capacity to wage an industrialized total war. In addition, U.S. automakers and road construction companies acquired a new interest in Mexico as a land of vast potential profits. As we will see, the U.S. government and the U.S. automobile industry often found their interests at odds more intensely than in the past. Yet the war years witnessed the deepening involvement of both in Mexico’s transportation system. This reality provided the context for the engineers’ official tour. It also redefined the boundaries of nationalist

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132 Emilia Paz Salinas points out the way in which the stigma of U.S. observers, consultants, and advisors with their boots on the ground in Mexico was noticeably relaxed during the war years, even as some Mexican officials strongly resisted the presence of uniformed American military personnel. Maria Emilia Paz Salinas, *Strategy, Security, and Spies: Mexico and the U.S. as Allies in World War II* (University Park: Pennsylvania State University, 1997), 72.

discourse concerning roads.

The war and its aftermath affected the development of a road transportation network in Mexico in complex ways. This chapter explores this critical period and its consequences. The first part deals with the years 1940 to 1944 as World War II was being decided on the battlefield. The second treats the period from 1944, when the inevitability of an Allied victory initiated postwar planning in earnest, until the end of the postwar crisis in 1948. The most salient feature of this period for Mexico’s shift to roads was clearly the increasing integration between the United States and Mexico. In ways both obvious and subtle, the changing relationship between the two countries affected everything from road construction to trucking regulation to the acquisition of trucks and buses. The war and its aftermath profoundly altered the political and economic context in which the Mexican state operated. Yet, despite the extent of the changes, the narrative that follows demonstrates how the Mexican state remained committed to an economic vision for a road transportation system that had been laid out in previous years. Between 1940 and 1948, Mexico’s policymakers negotiated a dynamic and difficult political environment but emerged along the same path as they had entered. That path, first embarked upon by Calles, saw Mexico developing a road transportation network that would boost economic growth while checking the power of railroad labor, keep the emerging industry in Mexican hands, and privilege large and politically connected groups over the needs of those with modest means.

**Part I: Alliance and Scarcity During World War II, 1940-1944**

**Historical Overview**
The year 1940 was pivotal to Mexican history for two reasons. In the first place, it marked an important political transition in which Manuel Ávila Camacho replaced Lázaro Cárdenas as Mexico’s president. The end of the Cárdenas \textit{sexenio} was seen as a crossroads by many in the country. By distributing more land than all previous postrevolutionary presidents combined, protecting the rights and legitimacy of labor, and ultimately nationalizing the foreign-owned oil companies, Cárdenas had publicly fulfilled many of the promises of the revolution. The overriding political question was what Mexico’s next step should be. Would the next president follow in Cárdenas’ footsteps and steer Mexico down the path preferred by those on the left side of the political spectrum? Or had the reforms gone far enough, signaling that it was time to tack back toward the right, as many business groups and others preferred? Second, in May of 1940 Hitler’s armies invaded France, subduing it by the end of June. This intensified what became the most cataclysmic war in human history, one that dramatically reshaped the global political and economic systems of not only the belligerents, but the rest of the world’s as well. Mexico was no exception. The war created a new political context inside the country and thoroughly remade the economic situation.

Mexican politics during this period were tumultuous. By 1939, the country’s political transition was in full swing. The postrevolutionary political order, in which the sitting president was more or less entitled to choose his party’s candidate, predisposed presidential transitions to closed-door maneuvering and public speculation. As the public waited and politicians tried to guess at the direction of the political winds, three major candidates emerged as contenders. Within the ruling party, campaigns coalesced around Francisco Mújica and Manuel Ávila Camacho. On the right, General Juan Andreu
Almazán gained substantial support from the military, religious groups, and some members of the business community. He would ultimately run as a formidable opposition candidate; his defeat by the official party would require all the tricks in the book of election rigging.134

The most intrigue, however, swirled around whom Cárdenas wanted as his successor. On the one hand, Mújica seemed to be the logical choice. He was closely affiliated with the land reform that had been a centerpiece early in the Cárdenas administration, and he was a well-established figure on the left. However, in the final years of his sexenio, Cárdenas had tempered his radicalism and begun to move the Mexican government away from policies that explicitly favored peasants and labor.135 This was true also of his public commitment to economic nationalism. The expropriation of foreign oil companies carried out in March of 1938 was a dramatic assertion of Mexico’s sovereignty and its economic independence, but it did not mean that Cárdenas was determined to develop Mexico’s economy without the cooperation and involvement of the United States. For example, throughout 1938 and 1939, Cárdenas tried unsuccessfully to negotiate a trade agreement with the U.S. that would lower tariffs and boost trade in both directions.136 In sum, although it was difficult to perceive at the time, Cárdenas himself had begun to roll back the more radical aspects of his own program in the later years of his administration. This made it unlikely he would favor Mújica.

Thus, Manuel Ávila Camacho was tapped to run as the candidate of the official

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134 Niblo, Mexico in the 1940s, 87.

135 Different scholars date the rollback to different moments. Alex Saragoza finds the key event to be the recession of 1937 while Nora Hamilton dates it to the oil expropriation in March of 1938. It seems simplest to conclude that it was clear by late 1938 that Cárdenas had shifted directions. See Hamilton, Limits of State Autonomy, 237-239; Alex Saragoza, The Monterrey Elite and the Mexican State, 1880-1940 (Austin: University of Texas Press, 1988), 197; and Niblo, Mexico in the 1940s, 84-85.

136 Blanca Torres Ramírez, México en la segunda guerra mundial (México: Colegio de México, 1979), 154-155.
Partido de la Revolución Mexicana (PRM). He was inaugurated on December 1, 1940, with the full weight of the party behind him. After an especially contentious election process, Ávila Camacho projected himself as a moderate and a man who could unite the country. Indeed, his first cabinet contained a mix of men on both the right and left.\textsuperscript{137} He proclaimed a policy of “national unity” and billed himself as a president who could govern pragmatically and temper the worst excesses in Mexican politics. Owing to his considerable skill as a mediator, Ávila Camacho was able to overcome the uncertainty with which he began his administration and eventually define and implement his own agenda.\textsuperscript{138}

As the new president solidified his authority, this agenda became clear. Ávila Camacho reorganized the political system in ways that centralized power and gave more authority to the federal government and to the president. Changes to the leadership of the Confederación Nacional Campesina (CNC) and the Confederación de Trabajadores de México (CTM) shifted these organizations more towards the right. In addition, Ávila Camacho created the Confederación Nacional de Organizaciones Populares (CNOP), a heterogeneous organization comprised of shopkeepers, small businesses, and other non-worker urban groups. This organization was incorporated into the party and into Congress. Mostly loyal to the president, the CNOP gave the administration more leverage over worker and peasant groups.\textsuperscript{139} As Elisa Servín puts it, these changes were part of a process by which the party and the presidency were strengthened and the “political game became

\textsuperscript{137} This Cabinet included men on the left such as Minister of Labor Ignacio García Tellez, the Minister of the Navy Heriberto Jara, Antonio Villalobos, the president of the PRM. Representing the right were Foreign Minister Ezequiel Padilla, Minister of the Economy Francisco Javier Gaxiola, and Minister of Health Gustavo Baz. See Niblo, \textit{Mexico in the 1940s}, 90.

\textsuperscript{138} Servín, \textit{Ruptura y oposición}, 28.

\textsuperscript{139} For a good account of the creation of the CNOP see Davis, \textit{Urban Leviathan}.
increasingly closed.”

Along with solidifying political control, other pillars of avilacamachismo included efforts to weaken the political influence of the military, control labor, and bolster private property in agriculture. Ávila Camacho tried as much as possible to elevate civilians to important positions over military men. In one of his first acts as president, he dissolved the military sector of the PRM and declared that government and party officials had to retire from active service in order to continue their political careers. The goal of controlling labor was made clear by the reshuffling of labor leaders within the party, most prominently with the replacement of Lombardo Toledano with Fidel Velázquez. The government’s approach to agriculture also received an overhaul. Throughout his administration, Ávila Camacho demonstrated a preference for private property over ejido forms of land tenure, believing that agriculture should respond above all else to the needs of the market. The idea was that any program of industrialization would have to be financed, at least initially, by agricultural exports. Thus, in order for the economy to grow it was important that the agricultural sector experience capital accumulation and reinvestment.

World War II facilitated these changes. As all wars do, the international crisis created political opportunities that Ávila Camacho was quick to exploit. Increased demand for Mexican exports provided a political opportunity to adjust agricultural policy. War also tamed class conflict. Repeated calls for Mexicans to fight the “battle for production” induced quiescence among many labor groups. The CTM even went so far as to renounce

140 Servín, Ruptura y oposición, 30.

141 Ibid., 40.

the right to strike for the duration of the war.\textsuperscript{143}

And yet, it is important to realize that these changes, made possible by the war, did not comprise a sudden reversal in the policies and approaches of the ruling party. There is no good evidence that anything pursued by Ávila Camacho seriously rankled Cárdenas, and in fact many of these changes had been initiated by Cárdenas himself in the last two years of his government. World War II provided a useful pretext for the state to tighten its political control and to relax the concessions that had been granted to labor and peasant groups in the early years of Cardenismo. After the oil expropriation in March of 1938, Cárdenas himself backed away from many of the reforms pursued earlier in his sexenio. Ávila Camacho was governing in a vastly different political context than Cárdenas. This tempers the view of Ávila Camacho as representing a stark break with the policies of earlier administrations.

The war also had consequences for the Mexican economy and for the choices available to Ávila Camacho concerning economic policy. First, the wartime mobilization of the U.S. economy created a new demand for Mexican products that provided a powerful stimulus to Mexico. Indeed, during the war Mexico’s economy grew by 34 percent measured by raw GDP.\textsuperscript{144} Exports fueled this growth. Simply put, U.S. wartime requirements created more demand for nearly all that Mexico had to offer, including food, minerals, and raw materials. For example, the total production of three of Mexico’s most important exports to the United States – raw cotton, coffee, and henequen – increased substantially. Cotton production increased from 65,000 tons in 1940 to 115,000 in 1943.

\textsuperscript{143} Torres Ramírez, \textit{México en la segunda guerra mundial}, 278.

\textsuperscript{144} De la Peña and Aguirre, \textit{De la Revolución a la industrialización}, Table A.1.2 in Appendix.
Henequen production multiplied similarly, from 96,000 to 131,000 tons over the same period. Mexico also increased its production of corn, beans, grapes, rice, and sugar cane.\textsuperscript{145} Combined with the reality of continuing population growth, World War II was a period of general economic expansion.

Second, the war forced Mexico to depend on the United States as both a buyer and a seller. Before 1940, about one-third of Mexico’s foreign trade, including imports and exports, had been with Europe and Asia. Now cut off from these markets, foreign trade in Mexico increasingly came to be synonymous with the United States. During the duration of the conflict, 90 percent of Mexico’s overall foreign trade was with its northern neighbor.\textsuperscript{146} Mexico needed markets for its exports, primarily agricultural products. Likewise, unable to turn to the other industrialized economies of the world for capital goods and manufactured consumer goods, Mexico had no choice but to rely on the United States to acquire these things. Moreover, wartime economic growth led to absolute increases in both imports and exports. Between 1939 and 1945, overall exports increased 72 percent. Mining continued to be important, but the fastest growth was in agricultural exports of products like coffee, bananas, beef, tomatoes, and cotton. All agricultural exports rose from 176 million pesos in 1939 to 479 million in 1945.\textsuperscript{147} It was the same story with imports; these grew 153 percent during the war years. Practically all of that increase was attributable to trade with the United States.

Third, deepening economic interdependence led to increasing collaboration and a

\textsuperscript{145} De la Peña and Morales Ibarra, \textit{El agrarismo y la industrialización de México}, 259.

\textsuperscript{146} Torres Ramírez, \textit{México en la segunda guerra mundial}, 154.

\textsuperscript{147} Ibid., 196-197.
new impulse towards cooperation. Although this trend culminated in Mexico’s declaration of war against the Axis in May of 1942, close collaboration had other consequences for both countries. Mexico took advantage of the war to negotiate a resolution to several serious conflicts. The most contentious was the controversy over the oil nationalization. As soon as Cárdenas declared the nationalization in 1938, the U.S. oil firms had appealed to the U.S. government to help secure a favorable settlement. Three years on a solution was still elusive. But the U.S. government softened its position by the middle of 1941 and by the end of that year Mexico and the U.S. had agreed to a settlement that valued the oil companies at only $24 million. The companies held out for another year, but finally agreed to the terms of the deal, putting to rest a divisive issue. Mexico also used the opportunity of the war to negotiate an agreement about its foreign debt. The details were complex, but Mexico won a major concession in 1942 when the U.S. agreed that the debt could be paid in either dollars or pesos and that a fixed exchange rate of 4.85 would be used for all future payments. Finally, the war prompted a bilateral trade agreement, something that Cárdenas had pursued but had been unable to achieve because of the controversy over the oil nationalization. The agreement was signed in November of 1941. The outcome was less of a clear-cut victory for Mexican diplomats than the other agreements, but in the short-term it seemed to benefit Mexico and was hailed as a success by the press.149

148 Torres Ramirez, México en la segunda guerra mundial, 38; see also Lorenzo Meyer, Mexico and the United States in the Oil Controversy, 1917-1942 (Austin: University of Texas Press, 1977).

149 The treaty was considered a success at the time because it managed to open up U.S. exports to Mexico while continuing to protect fledgling Mexican industries. For the most part, the treaty only lowered Mexican tariffs on goods that Mexico did not produce or those for which demand was not met by national industries. The trouble was that as Mexico rapidly industrialized rapidly, it suddenly required protection for industries that had not needed it in 1941. As will be discussed later, the tire and the automobile spare parts industries are good examples. The other problem with the treaty was that prices on Mexican exports rose more slowly than those for U.S. exports. As a result, as the war went on Mexican exports acted as
Mexico’s close economic collaboration with the United States, however, meant sacrificing a measure of economic independence. These agreements and treaties gave the United States a new influence over Mexico’s economy. As Mexico became increasingly dependent on the United States for the provision of capital goods and certain manufactured consumer products, the U.S. took advantage of the opportunity to influence the direction of Mexico’s political economy. In addition to calculations of economic necessity and the war effort, U.S. decisions about relaxing export restrictions had a political component. For example, one of the guidelines for deciding to lift export quotas for a particular item emphasized that, “private channels of commerce, without the obstruction of state monopolies, should be maintained.”150 As Blanca Torres Ramírez has pointed out, U.S. officials did not hide their disdain for organizations that were designed to help control prices such as Nacional Reguladora, which one U.S. official considered “in reality . . . an instrument that serves the purpose of political manipulation.”151

The fruits of close collaboration with the U.S. could also be put to useful ends by Mexican leaders. Torres and other scholars have pointed out another way in which Mexican and U.S. collaboration during the war shaped Mexico’s economy: the increased demand for exports made it easier for Ávila Camacho and his government to shift the focus of agriculture toward production for the market.152 The example of henequen is illustrative. Under the pretext that production had to be increased to meet Mexico’s treaty obligations

what Torres Ramírez has called a “subsidy” for the Allied war effort. See Torres Ramírez, México en la segunda guerra mundial, 161-165.

150 Ibid., 167.

151 Ibid., 168.

152 Medina Peña, Hacia el Nuevo Estado, 127-140.
to the United States, Ávila Camacho returned many henequen plantations in Yucatán to their original owners, just a few years after Cárdenas had expropriated them and converted them into *ejidos*. Without the opportunity provided by skyrocketing demand for Mexican henequen as a result of the war, such a maneuver would have been far riskier politically. Thus, wartime conditions had an effect on Mexico’s shift towards private property and away from collective forms of ownership.\footnote{Torres Ramirez, *México en la segunda guerra mundial*, 163.}

In sum, World War II and the political transition to the Ávila Camacho administration ushered in a new era of Mexican history. Although opposition to the government and the national party did not disappear, Ávila Camacho’s skillful politicking and the opportunities presented by the war strengthened the government, at least for the duration of the conflict. More importantly, between 1939 and 1944 Mexico and the United States engaged in unprecedented collaboration, resolving outstanding controversies and each gaining more of an economic stake in the other. The result was a new paradigm in U.S.-Mexican relations. On the one hand, it was a more trusting and open relationship that deepened economic ties in a lasting way. However, it was also in many ways a more complex relationship, since the new model did not erase the past and was instead grafted onto a long history of antagonism, wariness, and Mexican nationalism. For Mexico’s leaders, the war presented new opportunities and challenges for preserving social and political stability as they pursued their goal of creating a capitalist Mexico focused on economic growth. Mexico’s transition to automotive transportation was bound up with all of these developments.
Good Roads Make Good Neighbors

World War II prompted a new wave of interest from U.S. actors in Mexico’s road network. As we have seen, the presence of the United States had always been a factor in Mexico’s shift to roads, but the war years intensified this involvement. Part of the rationale behind the formation of the DNC was to systematize the process of road building to avoid the excesses of Porfriean railroad building, in which U.S. companies had been granted concessions to build and operate railroads in Mexico.\textsuperscript{154} In fact, in the early 1920s Obregón had tried to hand out concessions to U.S. firms, a process that appeared very similar to the one that had occurred in the 1880 and 1890s.\textsuperscript{155} By creating the DNC, Calles hoped in part to lesson the likelihood that like-minded future presidents would see fit to hand off control of Mexico’s highway system to eager foreign investors. But it was not so easy as simply shutting out the United States from road building altogether. The United States was the birthplace of the mass-produced motorcar, the world leader in road design and construction, and the source for the capital goods required for road construction. As a result, the history of road building in Mexico was inescapably intertwined with the changing relationship between the two countries in the middle-third of the twentieth century, and often exerted considerable influence on that relationship itself.

Conditions surrounding Mexican road building during World War II were to have important long-term consequences for the future of the country’s roads. But in the short-term the most noticeable results were delays and cancellations of new road projects. For the first time since the creation of the DNC in 1925, official statistics about roads showed a

\textsuperscript{154} Coatsworth, \textit{Growth Against Development}, 38-46.

\textsuperscript{155} Waters, “Re-mapping the Nation”; also Coatsworth, \textit{Growth Against Development} for the best overview of the Porfriean railroad boom.
decline in the rate of growth between 1939 and 1942. The dramatic reorientation of the U.S. economy towards war production sharply altered hemispheric patterns of supply and demand, and Mexican resources were shifted quickly to take advantage of new opportunities. This included shifts in federal spending: the federal budget for road construction was cut by approximately 50 percent between 1939 and 1942.\textsuperscript{156} This lull in spending and construction was reversed by 1943, and by 1945 Mexico was once again adding new roads at an impressive clip.

As noted above, during World War II the United States government became preoccupied with security and maintaining a steady flow of primary materials and agricultural products to feed its war effort. During the war, German submarines menaced the Atlantic and cut the United States off from crucial supplies of raw materials.\textsuperscript{157} Forced to look south to Latin America to provide the inputs for its military-industrial production, the United States government discovered that Latin America’s economic infrastructure was woefully inadequate. The problem was especially worrying in Mexico’s case because of the country’s proximity and its economic importance to the U.S. economy. State Department officials were troubled by Mexico’s overall transportation infrastructure; they were particularly interested in roads because they viewed Mexico’s railroad system as a disaster, having never recovered from the damage incurred during the revolution, subsequent mismanagement, and a strong union presence. Moreover, the railroads were already bending under the strain of increased U.S. demand. Owing to the spike in exports to the U.S., demands on the railroad system increased by as much as 250 percent after

\textsuperscript{156} Wilkie, \textit{The Mexican Revolution}, 300.

\textsuperscript{157} Niblo, \textit{War, Diplomacy, and Development}, 63-85.
Thus, much of the hope for improving transportation was invested in auto roads. The United States Department of State, in close cooperation with the Office of the Coordinator of Inter-American Affairs (OCIAA), developed a multilayered strategy for addressing Mexico’s economic infrastructure. This plan addressed the most pressing wartime needs first, but it also included a long-term vision of how U.S.-Mexican cooperation would proceed after hostilities ended. One of the most important goals of U.S. government involvement in Mexico was simply to collect information and appraise the transportation situation. As U.S. officials soon learned, what might have appeared on a map as a road or even a major highway could sometimes be little more than a graded dirt path. As described in Chapter 1, the quality of Mexico’s road network at the beginning of the war was varied. Thus, the OCIAA sent economists and engineers into the field to report on the state of Mexico’s roads. At least one surveyed was flown around the country in an impressive effort to figure out which roads and highways were complete and which ones needed the most work. Whether or not the three engineers mentioned at the beginning of this chapter were working officially on behalf of the U.S. government, it is safe to say that representatives of the U.S. would have been interested in what they found while on their tour.

Part of this reconnaissance effort was towards the alleviation of short-term supply problems. For the most part, though, the surveyors and their government employers imagined their work to be the first stages of a long-term project to bolster Mexico’s transportation system. For example, Norman Frees was sent to Mexico in 1943 by the Mexican American Commission on Economic Cooperation (MACEC), another agency set

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158 Clipping from El Universal, undated, USNA, OCIAA, Record Group 229, Entry 31.
up during the war to aid in the defeat of the Axis, to “serve as a consultant and advisor on
the problems of automotive freight and passenger service.” He stayed for five months,
offering advice to Mexicans about the country’s transportation needs – both during and
after the war. At least as early as 1944, reports that projected Mexico’s future economic
requirements were prepared by the OCIAA and sent to the State Department. The
priorities of these reports were indicative of the high value U.S. officials placed on
transportation funding in developing Mexico’s economy. One projected the value of
equipment and material “likely to be required” from the United States in the first ten-year
period after the war. Among important economic categories like “power and
communications” and “manufacturing,” over 56 percent of the total money Mexico was
expected to need fell under the label of “transportation.”\footnote{159}

The U.S. government also had important military and security goals in mind when
it took an interest in Mexican road building during World War II. Especially early in the
war when an Axis victory seemed possible, nervous U.S. officials feared that an eventual
invasion of North or South America would prove difficult to repulse because of poor
highways and a consequent inability to quickly move troops around the continent. The
concern was not limited to Latin America. In late 1941, Congress passed the Defense
Highway Act, which earmarked money for the planning of new highways in the United
States. If state governments promised to match it, Congress agreed to provide $10 million
for the purpose of surveying and planning new trunk highways.\footnote{160} This worry abated, but
never entirely disappeared from U.S. planning. It culminated in the National Interstate and

\footnote{159} General Report on Mexico, USNA, OCIAA, Record Group 229, Entry 31, page 3.

\footnote{160} Mark H. Rose, \textit{Interstate: Express Highway Politics, 1941-1956} (Lawrence: Regents Press of Kansas,
1979), 17.
Defense Highways Act of 1956, which laid the groundwork for the United States’ modern interstate system.

This concern was extended to Latin America. Many of the officials sent by the OCIAA and the Mexican American Commission on Economic Cooperation were military men. During the war a man named General Julian Schley was the head of the OCIAA’s transportation department. Schley and other generals were concerned about an absence of highways connecting important ports, and they also wanted better roads to make troop deployments easier if it ever became necessary. They worried most about the lack of roads in areas rich in strategic materials, especially oil producing regions. Thus, their priorities were to build highways from Mazatlán to Tampico, Puerto Mexico to Minatitlan (a growing center of oil refining), and connecting Campeche to the central highway system. Slightly less urgently, the army recommended improving the highways from important ports like Acapulco, Veracruz, and Magdalena Bay to the Mexican capital.\footnote{Memorandum from Lt. George Abell to Lt. David McMillan, August 25, 1943, USNA, OCIAA, Record Group 229, Entry 31.}

The increased participation of the U.S. in Mexico’s transportation network coincided with changing economic conditions created by the war. These had important consequences for Mexico and its relationship with the United States. Although Mexico had always relied on the United States for its supply of vehicles, shifting international trade patterns and new wartime economic conditions such as the scarcity of non-military production made Mexico’s reliance on U.S. automotive products more apparent. A trade agreement signed in December 1942 that arranged tariffs and customs duties between the two nations was revealing. At the top of the list of United States imports from Mexico were large quantities of basic foodstuffs, raw materials, and other natural resources. The
list of principle exports to Mexico included passenger automobiles and parts, motor trucks, steel sheets, gasoline, and lubricating oil, all important products for a well-functioning road network.¹⁶²

These exports were in short supply as production capacity was shifted to making the tools of war. In the absence of any domestic auto manufacturing industry that could take advantage of the growing road network, the war gave U.S. automobile companies like Ford and General Motors economic leverage in the Mexican market, especially between 1939 and 1942. This led to what State Department officials recognized as price gauging on the part of the large U.S. auto companies.¹⁶³ As we have seen, well into the war General Motors’s and Ford’s operating plan was to assemble separately the motor, chassis, and body of the vehicle and then send all three parts to Mexico where they could be easily put together and sold by Mexican vendors. Combined with the lack of competition, this allowed the companies to maximize their profits while avoiding the risks they might have incurred by operating physical plants on Mexican soil. This strategy bore fruit in the last years of the war and the immediate postwar period, when a backlog of demand was met by the automakers as the U.S. economy resumed peacetime production patterns. Especially when the war began to wind down, this activity attracted the interest of State Department officials who did not always see U.S. national interests being served through these sorts of business practices.¹⁶⁴

As the reality of war altered the way the U.S. government viewed Mexico’s

¹⁶² Trade Agreement 6091, December 1942, USNA, OCIAA, Record Group 229, Entry 31, page 2.

¹⁶³ Memorandum from Julian Schley to Files, May 10, 1945, USNA, OCIAA, Record Group 229, Entry 31, page 1.

¹⁶⁴ Memorandum of conversation with George Harrington, Vice-President of General Motors Export Division, USNA, OCIAA, Record Group 229, Entry 31, page 1.
expanding road network, it also affected how it saw the activities of U.S. companies doing business there. Specifically, the war reconfigured attitudes towards Ford and GM – the companies that provided almost all of the vehicles for Mexico’s road network. In some respects, the interests of automakers and the United States government were at odds with each other. The government wanted to improve Mexico’s road network for both military and economic reasons. GM and Ford were in search of extra profits by utilizing the time-tested model of assembly operations.165 This was especially true between 1943-1946, the worst years of supply shortages. U.S. officials recognized that an important reason for Mexico’s transportation bottlenecks was the lack of trucks, caused in part by a tradition of price speculation by the Big Three U.S. automakers. In 1943, as the U.S. industrial behemoth got into full swing and began to pump out thousands of trucks per month for the U.S. military and its allies, members of the MACEC noted that a Ford truck that cost the equivalent of 5,000 Mexican pesos in the United States sold for 30-35,000 pesos in Mexico.166 The MACEC concluded that the price of automobiles and parts in Mexico needed to be controlled if Mexico’s highway system were to function efficiently.

The automakers were reluctant to acquiesce to government pressure. Yet, the emergency of the war years encouraged U.S. industry and the government to cooperate, at least rhetorically. In conversations with State Department personnel, executives of General Motors in Mexico worked out an agreeable arrangement whereby GM would fund a campaign to help Mexicans learn about proper truck maintenance. This “solution” stemmed from the observations of U.S. officials that Mexicans took poor care of their

165 This model is described in Chapter 1.

vehicles. Complaints of overloading, improper maintenance, and reckless driving by Mexican truckers were common. In their view, the overworking and abuse of their vehicles led to an inordinate number of breakdowns – hampering the war effort and stifling Mexico’s economic efficiency. In reality, the rough conditions on Mexico’s highways probably had more to do with the short life span of trucks than any abuse heaped upon them by careless operators.

General Motors responded to the concerns of the State Department by publishing pamphlets for distribution to Mexican truckers beginning in 1943. One, entitled “Hagan durar su camion (Make your truck last),” offered Mexican drivers caricatured images of themselves driving recklessly and ignoring what GM considered to be proper vehicle maintenance. The booklet then offered paternalistic instructions about how to make their trucks last as long as possible, something hardly necessary in a country used to squeezing as much life as possible out of scarce imports. The campaign even reached the ears of Nelson Rockefeller. The father of the OCIAA commented on the project approvingly, congratulating GM of Mexico in 1944 on its attempts to inform Mexicans about the existence of supply shortages. The campaign was, he wrote, “a splendid way to convert the Mexican operators from their vain hope of new equipment under present conditions to a dependence on conservation.” In reality, the campaign was a compromise between the automakers and the government, brought about by wartime conditions, in which General

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167 Memorandum from Gilmore to Schley, August 24, 1944, USNA, OCIAA, Record Group 229, Entry 31, page 5.

168 Hagan Durar su Camion, USNA, OCIAA, Record Group 229, Entry 31.

169 Letter from Nelson Rockefeller to Allen Ellis, General Motors of Mexico, April 12, 1944, USNA, OCIAA, Record Group 229, Entry 31, page 3.
Motors came out on top. GM and other automakers acted cooperatively yet remained able to do mostly as they pleased in Mexico, and U.S. government officials convinced themselves that campaigns such as this would at least help to keep a steady supply of Mexican imports flowing north.

During World War II, automobile manufacturers like Ford and General Motors and U.S. construction and manufacturing interests became more heavily involved in Mexico than ever before. Both recognized Mexico’s potential as a market for all manner of industrial goods relating to road transportation. At the same time, wartime cooperation between the two countries taught Mexican leaders a lesson: the U.S. government was a potential ally in checking the worst excesses of monopolistic U.S. businesses. The war reoriented the U.S. economy southward and placed Mexico in a more central role. As long as the spirit of cooperation persisted, Mexico could potentially use the interests of the United States government as leverage against profit-seeking businessmen. U.S. leaders would not discontinue their habits of protecting the interests of U.S. companies doing business in Mexico, but wartime conditions had begun to break down this attitude. Suddenly, one of the guiding principles of FDR’s Good Neighbor Policy gained new momentum and substance: what was good for Mexico was good for the United States.

The emergency of World War II changed the dynamics of U.S. participation in Mexico’s evolving road network. Road construction firms, automakers, and other businesses that benefited from an expansion of automotive transportation in Mexico experienced the war as an opportunity to expand deeper into the Mexican market. The war’s devastating effects on Europe coupled with the almost complete isolation of the Americas from Western Europe during the fighting sharpened the teeth of U.S. business
and left little choice for Mexico about where to turn for the means to expand its road network. At the same time, the exigencies of the war altered the calculus of the U.S. government about Mexico’s transportation system. The war made it apparent that the economic and military security of the United States extended to assuring the development of Mexico’s economic and transportation infrastructure – for its own sake and not just in ways that specifically served U.S. businesses. This development helps explain the remarkable attitudinal shift by both governments that occurred during the war and that informed U.S.-Mexican relations for decades. The mutual project of developing Mexico’s road network contributed to bringing Mexico and the United States into a more sustained, integrated, and cooperative relationship.

Challenges Met: Nationalism and State Regulation of Trucking and Busing

The war years also changed the dynamics of trucking. As in road construction, World War II was a watershed moment for the history of Mexico’s trucking industry. In the first place, the war created something approaching a crisis situation because of the shortages it created. These shortages had their roots in the United States. The scale of U.S. wartime mobilization was unprecedented; instead of churning out cars, trucks, and buses, the factories of the major automakers turned out tanks and planes instead. Little was produced for the U.S. domestic market, and even less for export to places like Mexico. Between 1942 and 1945, it was very difficult to obtain new trucks and buses in Mexico. Likewise, acquiring spare tires and other replacement parts became a challenge, as nearly everything produced in the United States was sent to the front. Throughout this period buses and trucks were arriving in Mexico “in very limited quantities and at very high
This had important consequences for Mexico’s system of national trucking regulation. Undoubtedly, the economic difficulties faced by many Mexicans, described by the shorthand expression *carestía*, especially between 1941 and 1943, contributed to a public backlash against the system of permits and concessions that was the foundation of the regulatory system. This backlash was evident most publicly in the Distrito Federal, and especially in the busing industry. Busing was subject to the same national system of regulation as trucking. Since the Federal District in the 1940s had little in the way of an independent municipal government, the national state was in charge of regulating and managing the public transportation in the city. Thus, the bus and trucking industries were closely intertwined. They were governed by the same national laws and involved many of the same groups and individuals. Developments in busing affected the trucking industry and vice versa.

By the early 1940s the growing capital city faced new difficulties providing effective public transportation. As the city expanded outward, the bus system struggled to maintain reliable and affordable service to new parts of the city. The war made this situation worse. The unavailability of replacement parts and new buses contributed to increasing numbers of accidents and a generally unpleasant experience as buses became overcrowded. Worse, the price of bus fares went up several times during the war as inflation (and a steady wave of petitions from bus and truck owners) accelerated, further exacerbating the economic difficulties of many Mexicans who saw their real wages decline throughout the war years.171 Although these pressures affected the automotive


171 See Niblo, *Mexico in the 1940s*, 121.
transportation industry throughout the country, it was in Mexico City where the tensions spilled over. This led to a situation where the system of state regulation in which the government handed out concessions and set prices for truck and bus transportation came under attack.

The main target of public opprobrium was the Alianza de Camioneros, the organization of bus owners who had managed over the previous decade to accumulate the government concessions to operate most of the bus lines in the city. By the early 1940s, articles condemning the Alianza began to appear frequently in the daily press. In the first place, the group was attacked for its complicity in the deterioration of service in the capital. The group was consistently referred to as the “shame of the city,” and even the “monopoly of death.”

Topping the list of complaints were the overcrowded conditions on the city’s buses. The city’s bus system was overflowing with passengers navigating to work and running daily errands in the growing city. Many bus lines were operating at twice their capacity, creating dangerous and uncomfortable conditions. Anecdotal evidence of this was not difficult to come by, such as the case of Angelina Herrera who suffered serious injuries on her way to work on an overcrowded bus when a fellow passenger’s cigarette lit her wool sweater on fire. The Alianza, it was alleged, was also putting passengers at risk by refusing to replace worn out or damaged buses, many of which had over ten years of demanding service on Mexico City’s roads under their belts.

172 “El Trust Camionero Trafica Con la Vida de Sus Propios Trabajadores, Sin Compasion,” La Prensa, April 4, 1941.

173 “El Monopolio Camionero Comete Abusos Hasta Con Los Choferes de Sus Vehiculos,” La Prensa, April 18, 1941.


175 “Las Rutas Camioneras Se Niegan a Renovar Sus Viejos Equipos,” Gráfico, April 9, 1941.
Another common complaint against the transportation system in Mexico City during the war was that it gave bus owners no incentive to open new routes to service outlying areas. The Alianza, secure in its position and legally protected from competition from upstart ventures, saw no reason to expand service to the furthest reaches of the city. It was more profitable to continue cramming as many people as possible onto the shorter and quicker routes close to the city center. The tide of popular opinion had clearly turned against the Alianza, and by extension threatened the system of government regulation over the *autotransporte* industry. This had important ramifications outside of Mexico City, since by the late 1940s the Alianza had managed to use its control over truck and bus lines in the center of the country to expand from busing into one of the largest trucking organizations in Mexico.\(^{176}\)

Busing in Mexico City received the most attention, but there were similar problems elsewhere in the country that affected both busing and trucking. Wartime conditions made it especially difficult to gauge supply and demand, prompting several presidential decrees issuing new permits and reorganizing existing ones. The problem here was similar to what was occurring with bus lines in Mexico City; spikes in demand, in this case due to growth of exports, led to an undersupply of authorized truck lines. For example, in early May of 1942 President Ávila Camacho issued a decree that reorganized the permits for trucking lines throughout the country. These were supposed to go into effect by the twentieth of the month, but by this time the situation was still so disorganized that several commercial groups suggested publicly that Avila Camacho ought to permit free transit on the nation’s

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\(^{176}\) Diane Davis, *Urban Leviathan*, 141-142.
highways for the remainder of the month. Without a temporary suspension of the permiso system, the cost of living would rise because of “the lack of provision of articles of first necessity among various populations, on account of the fact that the National Railroads and private railroads are inadequate for the transportation of goods throughout the country, especially because many places can only be reached by truck because of the lack of rail lines.” During the war the liabilities of national regulation were becoming clear as the government’s system proved inadequate to meet Mexico’s transportation needs.

In general, though, these complaints did not evolve into serious threats to the principles underlying the national state’s regulation of the autotransporte industry. Campaigns for reform were usually couched in terms that appealed to the government to enforce existing laws rather than questioning the wisdom of state regulation. Common were requests directed towards President Ávila Camacho to intervene to expand the number of lines in service and to issue new permisos for operating lines to and from city’s expanding outskirts. The perception among many capitalinos was that the Alianza and other bus owners were taking advantage of prevailing conditions to profiteer. The solution did not require a looser approach to automotive transportation, but rather a beneficent intervention from the president to check the avaricious impulses of the owners.

In fact, both Congress and the president were unable to ignore these demands during the war. In September of 1941, Ávila Camacho issued a directive to the Transit Office of the Distrito Federal that responded to the difficult situation in the capital by “increasing the capacity of existing lines, offering service in poorly connected areas or in

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177 This request was made jointly by the Cámaras Nacionales de Comercio de la República, the Cooperativas Camioneras de Carga, the Asociaciones de Pequeños Comerciantes, and other groups.

those that lack good communication . . . adjusting the process by which permits are distributed, and modifying present transport conditions so as to improve service.”

A month later, the Cámara de Diputados, the lower house of the Mexican Congress, was the scene of a lively debate about the chaotic transportation situation. Representative Carlos Zapata Vela gave a lengthy discourse on the transgressions of the Alianza and its deleterious effects on the nation’s transportation system. The primary complaint was that the Alianza continued to ignore the decrees emanating from Congress and even the president, and refused to expand service or offer safer and more comfortable transportation for its passengers. Ultimately the session ended in a resolution to form a committee to study the problem further. It was a typical result from the ineffectual legislature of the time, but it serves to point out the extent to which the system of permisos combined with wartime conditions to make automotive transportation an important public issue.

Most often, frustration towards the Alianza was channeled towards its treatment of drivers and mechanics. This resulted in appeals to the authorities to hold the grantees of permisos accountable to the federal labor laws. The case of Manuel Martínez Quesada was typical. Martínez was a driver on one of the lines owned by Valeriano Urraca, a prominent member of the Alianza. In addition to forcing his drivers to work extra hours with no extra pay, Urraca required them to sign documents renouncing their rights as workers. In addition, Urraca and other permit-holders demanded that drivers sleep in their buses to protect them from vandals and thieves. This led to numerous instances when drivers became ill, owing to “the excess of work and the lack of hygiene and comfort, since by

179 “Ahora si es cierto” *La Prensa*, September 11, 1941.

180 “Energica accion de la Camara contra el monopolio camionero,” November 8, 1941.
sleeping in the vehicles drivers catch colds, influenza, etc., which degenerate into tuberculosis."\textsuperscript{181} For the unfortunate Manuel Martínez, these conditions led to a nasty case of tuberculosis, which worsened since he was not given any time off during his illness. Buses crammed with passengers and drivers infected with tuberculosis were a clear threat to public health.

Yet poor service, the mistreatment of drivers, and threats to people’s health were not enough to create calls for eliminating state control over truck and bus transportation, in the Federal District or elsewhere. Much of the antipathy towards the Alianza derived from the owners’ status as a state-sanctioned monopoly, but this did not prompt a general questioning of the principles of state regulation. The problem was with the “monopoly of death” and the “hateful” monopoly, not the prevailing system of state regulation.\textsuperscript{182} In effect, it became clear in Mexico City during World War II that by pooling government permisos, the owners of buses and trucks could effectively eliminate competition. In a system in which prices were set by the state, the degradation of service quality was an unsurprising outcome. The war years and the scarcity they occasioned brought the inadequacies of Mexico’s state-regulated truck and bus industry into public view, yet did not lead to a general call for the heavy hand of the state to be lifted.

Part of the explanation for this lies in nationalism’s continuing importance to the way people thought about Mexico’s transportation system. Wartime conditions created a situation in which trucking organizations could play the nationalism card with extra effectiveness, in fact arguing for the continuation of a system that afforded them special

\textsuperscript{181} “El trust Camionero trafica con la vida de sus propios trabajadores, sin compassion,” April 4, 1941.

\textsuperscript{182} Ibid.
privileges in the face of accelerating public criticism. For one thing, they exposed the extreme vulnerability of the industry to fluctuations in the policies and economy of the United States. Although there was real substance behind the charges of profiteering leveled at the Alianza, it was also true that there was not much that could be done about the scarcity of new vehicles and spare parts beginning in 1940. These things originated in the United States, and the war made the consequences of this especially clear—Mexico had little recourse if the United States decided to stop selling them. Road transportation was directly linked to Mexico’s economic independence. This underscored the importance of transportation policies that protected Mexican interests, and reinforced the need for state supervision of trucking and busing as a way to keep the industry in Mexican hands.

This dependence made it possible during the war for organizations such as the Alianza de Camioneros and the CNCT to sound the alarm about the possibilities of a foreign takeover of Mexico’s transportation industry. Echoing the emerging official history of the revolution, one editorial explained in 1943 that the situation facing Mexico with respect to the trucking industry could be compared to the earlier battles of the Carranza administration against “powerful foreign monopolies.”\textsuperscript{183} The author continued, “If we pay attention to what we are doing, maybe we can save ourselves, if not, the industry will die... and probably become the property of foreign capitalism.”\textsuperscript{184} This position was publicized in the press as well as drilled into the heads of drivers and owners through the cooperatives and their publications. This message may have had some effectiveness in keeping a lid on the building pressure to make changes to the system of regulation governing trucking and busing.

\textsuperscript{183} “Un Cuarto de Siglo,” \textit{El Informador Camionero} 29, January 1, 1943, 39-41.

\textsuperscript{184} Ibid.
After all, these were not just empty threats. At the same time that World War II changed the situation of trucking in Mexico by provoking scarcity, it also prompted an unprecedented expansion of trucking in the United States, further fueling concerns about keeping Mexican trucking in Mexican hands. The end result was that as the battles over regulating the industry were taking place, a quick appraisal of the situation over the border showed a well-developed trucking infrastructure that had new potential to expand into Mexico.

In the United States, trucking had already established itself as an economic force by the early 1930s. It was accompanied by a host of other society-wide transformations that fit well with the advantages offered by trucking. These included growing consumer demand, the expansion of mass production techniques, and increasing public investment in infrastructure projects like highways, tunnels and bridges. The transition was aided by the fact that trucking was not limited to a handful of industries; by the 1930s trucking had become an important part of a wide variety of commercial enterprises including those in agriculture, lumber, consumer manufactures, meat-packing, and the oil and gas industries.\textsuperscript{185}

It was clear, though, that the most noticeable impact of trucking occurred in the shipment of agricultural commodities and other food products. Although trucking had emerged in the late 1910s and 1920s as a way for farmers to bring their products to local markets more easily and cheaply, it did not take long for trucking to expand into and transform regional and national markets. This transformation was facilitated by the creation of regional distribution centers designed for trucks such as the one established for

\textsuperscript{185} Childs, \textit{Trucking and the Public Interest}, 19.
fruits and vegetables in Benton Harbor, Michigan in 1925. Between 1925 and 1932, the proportion of truck and rail shipping into the port reversed completely. In 1925, 90 percent had arrived by rail and only 10 percent by truck; seven years later 90 percent arrived by truck. Similar transformation took place in other parts of the country including New York, Los Angeles, and Philadelphia in the early years of the 1930s. In sum, by the early 1930s truck transportation in the United States was propelling a remarkable change in the economy of Mexico’s northern neighbor, in which “a predominantly durable goods, producer economy was giving way to a consumer-oriented one, and in transportation specifically, a slow, rigid, and coordinated system was changing into a fast, flexible, and chaotic one.”

This ongoing process was not without difficulties. Although trucking weathered the Great Depression far better than other segments of the transportation industry, by the middle of the 1930s several challenges had emerged that threatened its sustainability. The problem was often summed up with recourse to complaints about the general “chaos” in the industry. Underlying this catch-all word were two primary problems. First, the replacement of rail transport with truck transport had made markets more flexible, but also reduced the reliability of deliveries and pickups. Some days too much product arrived, some days not enough. Second, the low barriers to entry in trucking set off price wars and rate-cutting that seriously threatened the long-term viability of trucking businesses and the stability of the industry as a whole.

The roots of both these developments lay in the rural origins of many of those who became truckers in the 1930s. As the result of increasing mechanization and a general downtown in U.S. agriculture beginning in the 1920s, many young, rural men with farming

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186 Childs, *Trucking and the Public Interest*, 21-23.
roots turned to trucking in the 1930s as a way to avoid leaving behind their familiar (often southern) rural culture by seeking factory jobs in unfamiliar (often northern) cities and towns. Trucking offered these young men “a chance to remain in the country while, at least theoretically, becoming the owners of their own small businesses rather than factory hands deprived of their independence.”

Described variously as “wildcatters,” fly-by-nighters,” and “gypsies,” these independent truckers helped shape trucking into a cutthroat, highly competitive, and chaotic industry. Many had entered trucking because they saw few opportunities in staying on the farm, and were willing to work long hours and charge low prices in order to pay back the loans they had taken to buy their truck. Most of them had little business experience to boot, and were not familiar with asset depreciation or skilled at keeping careful track of expenses. But they were adventurous and restless by nature, and, if there was money to be made, the prospect of extending their work into Mexico was not likely to frighten them.

The situation led to the passage of the 1935 Motor Carrier Act which established a strongly regulated trucking industry in the United States. At first, wary of government interference, large trucking firms attempted to self-regulate by forming trucking associations that would effectively cartelize the industry and rein in some of the unchecked rate-cutting that threatened long-term stability. These efforts did not meet with much success, and their failure eventually prompted the owners of many trucking businesses to throw their weight behind state regulation. This effort was led by Joseph B. Eastman, a longtime member of the Interstate Commerce Committee (ICC), and after 1933 President Roosevelt’s selection for the newly created position of Federal Transportation Coordinator.


188 Ibid., 56.
Eastman believed in the power of government intervention to rationalize and guide economies. With support from trucking associations, Eastman spearheaded the passage of the Motor Carrier Act by Congress. With this law, the ICC gained extensive powers to determine who could run trucking businesses, what rates they could charge, and where trucking businesses could operate. As Mexico had done four years earlier with the passage of the 1931 Ley de Vías Generales, after 1935 the U.S. federal government established considerable authority over the trucking industry. \(^{189}\) Importantly, however, the Motor Carrier Act included a loophole that would gain increasing importance in the 1940s and 1950s: the law exempted from federal regulation farmers who hauled their own produce to markets. As Shane Hamilton has pointed out, this loophole would be expanded considerably during and after World War II to include most truckers who shipped agricultural and food products. \(^{190}\)

Thus, as World War II began, the United States contained a sizable and well-developed trucking industry. The establishment of federal regulation led to the rise of the International Brotherhood of Teamsters, which soon became one of the most important labor unions in the United States. Alongside this regulated segment of the trucking industry existed a sizable group of independent, owner-operator truckers who would play an increasingly important role in the U.S. transportation industry after World War II.

In the context of greater U.S. involvement in Mexico’s economic infrastructure during the war, these developments in the U.S. trucking industry had important implications for Mexico. In the first place, the size and sophistication of the U.S. trucking industry stood as a warning to those who would relax state regulation. As mentioned

\(^{189}\) Ibid., 56-61.

\(^{190}\) Ibid., 12.
above, threats made by the Alianza de Camioneros and other powerful organizations resonated more deeply in light of the rapid expansion and organization of U.S. trucking. Moreover, the existence of a large, unregulated sector of the U.S. trucking industry that transported agricultural and food products probably made the threat seem starker. Independent and unregulated truckers were less dependent on the state and thus more willing to take risks. They further threatened the Mexican trucking industry because they hauled primarily food, which was probably Mexican trucking’s most significant shipping category. During and after the war, defenders of regulation were quick to invoke their role in fending off a foreign takeover of this important new industry. Whether true or not, policymakers found these sorts of statements from the Alianza and other beneficiaries of regulation to be useful for their own ends. By encouraging them, or at the least not discouraging them, the government found a way to bolster its legitimacy as a defender of Mexican sovereignty and national pride in a crucial industry.

These developments in trucking over the border had other effects on Mexico’s own transportation history that became apparent in the climate of World War II. Even as the realities of the U.S. trucking industry created the perception that the United States was poised to take over Mexico’s fledgling trucking network, some observers aspired to replicate what they saw as the success of the U.S. system. During the war and the close identification with the United States and the cooperation it engendered, Mexican commentators in the press began to draw more often on comparisons with the United States to help illuminate the issues. One of these issues was the increasing difficulty of regulation in general. State regulation was a demanding project that involved balancing the needs of truckers by maintaining prices that were high enough to keep them in business with the
need to not pass on elevated transportation costs to consumers. Complaints against the
system were usually focused on the lack of reliable methods for gauging supply and
demand for both passenger and freight motor transportation. Without this information, the
system of handing out permisos and setting rates would lead to bottlenecks and bankrupt
truckers rather than facilitating a fair and orderly system of motor transportation for
Mexico’s expanding economy. Significantly, this argument was marshaled by those who
favored increased state control.

Miguel Mazín Cervantes, an editorialist who wrote frequently in newspapers and
journals about transportation, brought attention to the issue by singing the praises of the
United States’ Interstate Commerce Commission. In his view, the ICC’s ability to
accumulate data that charted the shifting patterns of supply and demand helped it
effectively regulate the trucking industry in the United States. In Mexico, the federal
government tried to determine who would be allowed to ship freight along which roads as
well as the prices they could charge. However, according to Mazín they did this “without
knowing anything about the rates of transportation and use; without knowing the costs of
trips, without even being able to divide the routes among a single business or line.”\(^{191}\) If
the Mexican transportation industry was going to help solve the problems of the postwar
era, he added, Mexico would have to meet its “urgent need for rational organization.”\(^{192}\)

The events of World War II had important consequences for Mexico’s truck and
bus industries. The system of close state control and regulation that had been created over
the fifteen years prior to 1940 was strained in new ways by wartime conditions. In the first
place, the reorganization of the U.S. economy for war combined with the isolation of the

\(^{191}\) “Nuestros Transportes y la Economía Dirigida,” El Informador Camionero 33, March 1, 1943.

\(^{192}\) Ibid.
Americas from Europe made clear that Mexico’s road network was closely linked with the U.S. economy. By 1940 it had become obvious to all that if vehicles were not forthcoming from the United States for any reason, Mexico’s increasingly important road network would feel the effects. This reality was most palpable in the capital city, where population growth and sprawl combined with inflation to make the quality of federally-regulated bus transportation a major public issue. Outside the Federal District, rapidly-changing economic conditions as a result of the war challenged the national state’s capacity to regulate and control effectively the movement of goods and people on the nation’s roads. Yet, these difficulties did not result in major changes to the principle of state control over trucking and busing. As had always been the case in road transportation, Mexican economic nationalism remained a critical factor in the equation. The reality of close integration with the United States, laid bare during the war, had paradoxical effects. On the one hand, it contributed to highlighting the inadequacies of Mexico’s trucking and busing industry, creating pressures for change to a system that had already developed serious limitations. At the same time, it sharpened the sense of danger and threats to Mexico’s economic sovereignty posed by the increasing importance of road transportation and its close links with the United States. Pressure for change was defused by the possibility of a foreign takeover. Even as the war brought challenges to those who benefited from the system of state regulation, it also allowed them a way to reinforce their privileged position.

Roads, Rails, Labor and the United States

The rise of trucking had enormous consequences for Mexico’s other transportation sectors, especially the railroads. In fact, it was during the years of the Second World War
that the rise of a road network began to exert significant influence on the government’s relationship with one of Mexico’s most important groups: railroad labor. The interplay between roads and rails had both economic and political overtones. As we have seen with the early development of the regulatory system, the nineteenth-century experience of building Mexico’s rail network was never far from the minds of policymakers, especially when it came to the role of foreign capital. In this sense the railroads were an example. But they were also a critical (if fading) link in the overall transportation infrastructure that would undergird the state’s economic development model. For this reason it was important for policymakers to understand and manage the transition to an automobile-based economy in a way that complemented rather than threatened the country’s rail network.

In part, the urgency of this task was a natural consequence of a growing road network, but the deepening involvement of the United States in Mexico’s transportation system during World War II also played a role. The antagonism between railroad and motor vehicle interests was fueled during World War II and the increased U.S. involvement with Mexico’s transportation infrastructure. The government’s experiences with railroad labor during the war gave it reasons to continue to pursue an alternative to railroad transportation. Given the immediacy of the war and pressing need for resources, U.S. and Mexican officials alike were keen on checking the power of railroad labor.

Since even before the Revolution, the railroad sindicatos had been among the most militant unions and some of the sharpest thorns in the sides of Mexican presidents. By 1943, the 75,118 members of the Mexican Railroad Workers’ Union (STFRM) made it second only to the National Education Workers’ Union (SNTE) in size among unions.

193 See Coatsworth, Growth Against Development, 176.
comprised entirely of workers from the same industry.\textsuperscript{194} The STFRM was also ideologically committed to the most left-wing agendas within Mexican labor politics, counting thousands of Mexican communists among its ranks. As Kevin Middlebrook explains, the STFRM possessed several strategic advantages because of the importance of the railroads. “The ease of movement that the railroad system offered union organizers,” he writes, “and the union’s financial resources gave it greater capacity for coordinating political activities during the 1940s than any other labor organization except the CROM.”\textsuperscript{195} Equally important, the railroad workers had the capacity to grind commerce to a halt with a well-coordinated strike, which they nearly did on several occasions during the 1940s and later with great effect in 1958.

With the outbreak of war and the adjustment of interests it produced, the United States took a close interest in rehabilitating the Mexican railroads. The United States Railway Mission was sent to Mexico in November 1942 with the hopes of working closely with the Mexican government to get the railroads running effectively. Headed by O.M. Stevens, the Mission was charged with suggesting initiatives for the modernization of the Mexican National Railroads, which the U.S. would either pay for directly or fund through its Export-Import Bank.\textsuperscript{196}

Throughout 1943 and early 1944, the Railway Mission worked closely with the Mexican government to draft a revision of the working regulations overseeing the National

\textsuperscript{194} Kevin J. Middlebrook, \textit{The Pradox of Revolution: Labor, the State, and Authoritarianism in Mexico} (Baltimore: Johns Hopkins University Press, 1995), 120.

\textsuperscript{195} Ibid.

\textsuperscript{196} Ibid., 373 n80.
The Ávila Camacho administration and its U.S. allies believed that the prevailing labor contract gave too many concessions to the union and significantly hampered the efficiency of railroad transportation. Quite naturally, the STFRM leadership took a different view. They also no doubt resented the recent entry of official envoys from the United States into the fray. The labor history of the Mexican railroads was, after all, dominated by confrontations between Mexican workers and the U.S. owners who built and operated many of Mexico’s railroad lines. In the years leading up to the Revolution, Mexican railroad workers had consistently struggled against U.S. owners to win improved conditions and opportunities to work in the highest paid jobs. By the 1940s the railroad workers had developed a strong sense of nationalism as well as a tradition of combativeness against Mexican authorities. The presence of a U.S. Mission that was working closely with the administration and was authorized to make significant investments in railroad “modernization” likely sounded ominously familiar to older workers and those well-versed in history.

The tension finally boiled over in the spring of 1944. In March, the president issued a decree including new regulations governing hours, hiring practices, and the organization of the STFRM itself, due to go into effect in late May. The STFRM leadership responded by scheduling a general work stoppage for May 16, whereupon Ávila Camacho proposed for May 12 a meeting to discuss the matter. The first two weeks of May were filled with concern by U.S. officials. Cable traffic between the embassy and the Office of the Secretary of State increased, and embassy staff worried about the possibilities.

197 Cable from William F. Busser to U.S. Secretary of State re: Mexico’s Reaction to the President’s Decree Reorganizing the Administration of the National Railways, March 28, 1944, USNA, OCIAA, Record Group 229, Entry 41.

198 Middlebrook, Paradox of Revolution, 121-122.
of a work stoppage serious enough to strain the Allied war effort.

As negotiations proceeded, an “unauthorized” strike was orchestrated by Section 19 of the STFRM on the strategic Monterrey and Golfo lines. The mini-strike demonstrated to all involved how crippling even a small-scale work stoppage could be. Although workers allowed some of the most important trains to go through, over thirty locomotives were stopped literally in their tracks. Union workers also cut power and telegraph service all along the lines; this hampered commerce throughout the route. Not confined just to skilled laborers who operated the trains, the strike involved a number of important sectors within the railroad industry including yard crews and telegraph and office workers. Whether the strike was really “wildcat” or not, it clearly demonstrated to the President and the U.S. Mission that the STFRM could not be pushed too far. Ávila Camacho agreed to suspend the implementation of the new regulations.  

The incident above occurred immediately after the first head of the Railway Mission, O.M. Stevens, resigned his post to take up a more lucrative job with the American Refrigerator Transit Company in the United States. Stevens left Mexico with an overwhelmingly negative view of the Railroad Union. Stevens and his Mission had cooperated closely with the Ávila Camacho administration and shared many of the same concerns about Mexico’s railroad problem. His impression of the situation stemmed partly from his own dogmatic views, but was also indicative of the common interests of the Mexican and United States governments during the 1940s. It also shows how, for U.S. officials, especially those involved with the Railway Mission, the power of the STFRM loomed large. Two years after returning to the United States, Stevens published his take on

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199 Busser to Secretary of State, March 28, 1944, USNA, OCIAA, Record Group 229, Entry 41.
the Mexican railroad industry in a trade publication called Railway Age:

I wish I could entertain you with a travelogue if Mexico, but for two long years during 1942, 1943, and 1944 I lived through an experience which, so far, at least, has rarely come to a citizen of our land. The experience took me into a seething hotbed of socialism and communism. It occurred on the railroad system of Mexico, owned by the government but completely in the hands of the railroad labor unions. That railroad system is nationalized; it is socialized; it is owned by the state; and it is operated “for use and not for profit”; but it is managed and operated by labor unions.200

Although reminiscent of the views of many U.S. businessmen involved in Mexico since the Revolution, Stevens’ comments were made in an entirely new context after 1940. Rather than a private citizen pursuing personal enrichment, Stevens was an official agent of the U.S. government during the war – and one who seems to have had a good rapport with the Mexican president. During the war, the decades-long struggle of the Mexican government to tame the power of railroad labor intensified and was joined by the U.S. government. Railroad labor unions had always been a concern so far as the railroads were owned and operated by U.S. investors and the state saw fit to protect U.S. interests abroad. But with the onset of the war and the conditions it created, men like O.M. Stevens acting on behalf of the U.S. government signified a new paradigm. Intransigent railroad labor unions in Mexico threatened the economic and military security of the United States, even when those railroads were nationalized or owned by non-U.S. capital. This shift was surely noticed by Mexican leaders and businessmen alike.

200 “How Not to Operate a Railroad,” O.M. Stevens, March 30, 1946, USNA, OCIAA, Record Group 229, Entry 41.
World War II created new conditions for Mexico’s ongoing shift to automobility. The war deepened the participation of U.S. actors, both public and private, in Mexico’s transportation network. As the U.S. government developed a new stake in Mexico’s economy, automakers and railroad interests were quick to respond to the opportunities and threats this situation created. The presence of the United States also redefined notions of Mexican nationalism. Rather than receding into the background, Mexican nationalism acquired new meaning during the war. As the United States took a closer interest in the problems of Mexico’s transportation network in an official atmosphere of cooperation, the threat of a powerful and expansionist United States lost none of its importance as a factor in the politics of Mexican transportation. This deepening U.S. involvement was accompanied by the closing of world markets and supply shortages. These years were a fulcrum point in Mexico’s history. This was not merely the result of one president’s replacement by another, but rather a confluence of factors stemming from World War II that reshuffled the economic, political, and social landscape in Mexico.

Part II: Postwar Crisis, 1944-1948

Historical Overview

As World War II wound down it became clear that Mexico faced different challenges. By the middle of 1944 an Allied victory looked likely and world leaders began looking ahead. The stakes were high for Mexico and the rest of Latin America. Mexican leaders hoped that the unprecedented cooperation and conciliation between the United States and Mexico would carry over into the postwar period. As we have seen, the war dramatically reshaped the international economic and political landscape. But as the
United States took the lead in the creation of a postwar world order, the big question in Mexico was how far the U.S government would be willing to go to accommodate Mexico’s economic and strategic interests. Adding to the uncertainty was another important presidential transition. Already by 1944 potential candidates had begun organizing and lobbying on their own behalf. Not surprisingly, Mexico’s transportation revolution was affected by both the economic and political tumult of the postwar period, which lasted roughly from the Bretton Woods Conference in 1944 until the middle of 1948, when Mexico was forced to devalue the peso.

In between these two events, Mexico inaugurated Miguel Alemán as the country’s first postrevolutionary civilian president. Alemán’s ascendance had by no means been a foregone conclusion. As early as 1944, loci of support had coalesced around several men. Alemán was the preferred candidate of Ávila Camacho; he had served in Ávila Camacho’s administration as the Minister of Government, after first directing his presidential campaign. As a member of Ávila Camacho’s government, Alemán played a crucial role in shoring up the independence of the federal bureaucracy by weakening the influence of the official party and organizations like the CTM and the CNC. Alemán had the double advantages of being long thought of as Ávila Camacho’s natural successor and enjoying the support of most of Mexico’s state governors.201

Alemán was not, however, the unanimous selection of the party’s most influential leaders. In particular, he did not appear to be the choice of former president Cárdenas, who still retained enormous influence in Mexican politics. Throughout 1944 and 1945, it seemed that Cárdenas supported the candidacy of his friend and fellow general Miguel

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201 Servín, Ruptura y oposición, 68-72.
Henríquez Guzmán. Henríquez was a member of a prosperous Coahuilan family. He had a long and successful military career, fighting with the Constitutionalists in the Revolution and then serving in various posts throughout the country which had allowed him to cultivate a wide network of political alliances.\footnote{Ibid., 50.} Henríquez had the support of the military but also many members of the official left within the party. Although ex-president Cárdenas continued his commitment to not back publicly any of the presidential candidates, many on the left interpreted his close friendship with Henríquez as a sign that he favored a return to the pro-worker and pro-campesino policies of early Cardenismo.\footnote{Niblo, 	extit{Mexico in the 1940s}, 163-166; see also Servín, 	extit{Ruptura y oposición}, 62-67.} Javier Rojo Gomez, the head of the Distrito Federal during Ávila Camacho’s sexenio, rounded out the group of frontrunners.

The year 1945 was filled with suspense as the secretive official party attempted to tamp out conflict and emerge with a candidate for the 1946 election. In the end, Alemán prevailed. Rojo Gomez and Henríquez submitted to party discipline and refrained from running as opposition candidates. Alemán was named as the candidate of the official party, renamed once again and now called the Partido Revolucionario Institutional (PRI), on January 18, 1946 and inaugurated as Mexico’s president on December 1.\footnote{Servín, 	extit{Ruptura y oposición}, 91.}

President Alemán shared many of his predecessor’s sensibilities, but had far less use for mediating conflicts between left and right within the government. His \textit{sexenio} was characterized by an increasing emphasis on promoting private property in agriculture at the expense of \textit{ejidos}. The maximum size of private landholdings was increased and property
rights were made more secure by exempting certain industries and properties from expropriation by the state. The cumulative effects of these changes were sufficient to help create a new class of “neolatifundias” in many parts of rural Mexico. These large landholders benefited the most from public investment in infrastructure like irrigation projects and, as we will see, national programs for road construction. As the first postrevolutionary president without a military background, Alemán continued Ávila Camacho’s efforts to domesticate the military and reduce its influence in the political arena.

Where Alemán stood out from previous Mexican presidents, however, was his willingness to marginalize the official left from the party and influential posts in the federal bureaucracy. He was aided in this project by the onset of the Cold War. As the victorious Allies clashed over how to reorder world politics in the aftermath of World War II, Mexico’s official alignment with the United States and the forces of democracy against those of communism provided the perfect pretext for purging the left from the PRI. Just as occurred in the United States, Alemán branded communists within the party and its affiliated organizations like the CTM as disloyal and “anti-Mexican.” The most prominent confrontation took place between President Alemán and Vicente Lombardo Toledano. After repeated clashes during the early years of his administration, Alemán finally expelled Lombardo Toledano from the PRI in June of 1948. He went on to help found the Partido Popular (PP), a new party that grouped together various elements on the left that found themselves increasingly unwelcome in the so-called “revolutionary family.” Far from

205 Ibid., 106-108.

206 Ibid., 113-118.
being concerned about the alienation of the left, Alemán actually encouraged the formation of the dissident party. It served his interests of keeping the left out of power and at the margins of Mexico’s political life.207

This political transition came right in the middle of what amounted to a postwar economic crisis that lasted from the summer of 1944 until the summer of 1948. As the world debated how to create a postwar economic order that would ensure peace and facilitate prosperity, Mexico found itself struggling alongside the rest of Latin America to guarantee some protection of its own economic interests, which had changed substantially as a result of the war. No longer was Mexico primarily interested in promoting its exports. The closing of markets during the war had kickstarted import substitution industrialization and given Mexican leaders an incipient industrial manufacturing base to protect. The country still needed a strong export sector, but a large swath of Mexican society including workers, business groups, and politicians no longer saw Mexico first and foremost as a market for industrialized nations and an exporter of raw materials. Instead, the war prompted Mexicans to articulate a new economic vision, one of Mexico as an industrialized, modern and, most importantly, rich country.

This vision conflicted with what the United States saw as Mexico’s contribution to the future international economy. The negotiations led by Eduardo Suárez at Bretton Woods in July of 1944 seemed promising, but tensions surfaced at the Inter-American Conference on War and Peace held in Mexico City early in 1945. The U.S. negotiators made clear that they saw the postwar economic role of Mexico and the rest of Latin America in very concrete terms: the region was to be a source of raw materials and

207 Ibid., 104.
agricultural products and a market for U.S. manufactures. Mexico insisted on its right to industrialize and to negotiate a new place in the international economy. The U.S. position was epitomized by its commitment to what became known as the Clayton Plan, which called for a hemispheric commitment to free trade and for “the elimination of economic nationalism in all its forms.”\(^{208}\) Clayton, who led the U.S. delegation at the Chapultepec Conference, was an assistant secretary in the Commerce Department and also a prominent Texas businessman who had accumulated a fortune selling cotton. In addition to being unequivocal about the U.S. pursuit of free trade with Mexico, he also made clear that the United States would favor private capital for its investments and that the guaranteed contracts for certain goods that had existed during the war were a thing of the past. At Chapultepec, Clayton and other U.S. representatives met with strong resistance from the Mexican delegation and the two sides left the meeting at odds.\(^{209}\)

These negotiations continued throughout 1946 and 1947, at international summits and through private correspondence. In the meantime, postwar economic adjustment brought a new set of challenges and gave new urgency to the debates about Mexico’s role in the international economy. As the war ended, pent-up demand within Mexico for U.S. imports resulted in a flood of purchases of everything from capital goods for industry to luxury items missed by the wealthy during the conflict. Although Mexican exports continued to increase, it was nowhere near sufficient to offset the rash of imports. The difference between 1945 and 1946 was stunning. In only one year, Mexico's balance of payments went from a $128 million surplus to a $30 million deficit.\(^{210}\) Although this

\(^{208}\) De la Peña and Aguirre, *De la Revolución a la industrialización*, 409.

\(^{209}\) Urquidi, *Otro Siglo Perdido*, 122-123.

\(^{210}\) De la Peña and Morales Ibarra, *El agrarismo y la industrialización de México*, table 8, 123.
improved a bit in 1947, the country was still facing a shortage of dollars and was recognized as having a serious financial problem that required action. The Mexican government, first under Ávila Camacho and then under Alemán, tried to combat the problem by raising tariffs on imports, first limited to luxury items but later broadened to include a variety of industrial and manufactured goods. It also imposed new value added taxes on many imports.²¹¹ These measures were intended to address the balance of payments problem, but it was obvious to all that they would also have the effect of protecting Mexican industry from cheaper U.S. imports.

This did not greatly upset Mexican policymakers, who were already moving in the direction of a protectionist economic policy as the gaps between U.S. and Mexican goals continued to widen. The resistance with which the United States met Mexico’s stated goal of industrialization incited nationalism at many levels of Mexican society. This made it politically easier to pursue an economic policy that afforded substantial protection to domestic industry, even to the point of restraining competition and allowing monopolistic business practices. As historians have pointed out, Mexico’s protectionist response was a sensible option in the face of U.S. hostility to Mexican industrialization and the economic conditions of the postwar period. The liability of protection was that Mexican industry, which under Alemán enjoyed a cozier relationship with the Mexican state than it had at any moment since the Porfiriato, did not face much pressure to operate efficiently or to develop ways to be competitive internationally.²¹²

For several years after the war there still existed an atmosphere of uncertainty about

²¹¹ Ibid., 133.

²¹² De la Peña and Aguirre, *De la Revolución a la industrialización*, 408-412.
the possibilities for creating a new postwar international economy. But by the middle of 1948 it was becoming clear that the United States would never whole-heartedly support Latin American industrialization and that the economic development of the region was not a priority. There would be no Marshall Plan for Latin America. Mexican industrialization demanded industrial imports and the devastation of Europe and Asia’s economies required that they come from the United States. This put tremendous pressure on Mexico’s export sector to bring in the dollars to buy U.S. imports. Yet the prices of Mexican exports increased more slowly than those of the imported goods it was buying from abroad. Without substantial aid from the United States it became inevitable that the country would have to devalue the peso in order to boost exports. Alemán did so in the summer of 1948, putting a symbolic end to the postwar period and the hope that the U.S. would support Mexican development with aid.

However, this development should not obscure how the path chosen by Mexico’s leaders mandated a closer and more integrated economic relationship with the United States. The war years made this clear. Despite the political importance of Mexican nationalism and the disagreements about Mexico’s role in the world economy, it was increasingly the case during the postwar crisis that Mexican leaders’ goal of economic growth would require a partnership with the United States. This has been easy for analysts to miss, since the debates of the postwar period were contentious and seemed to put the United States and Mexico at odds. But during this period the economic vision of the Mexican state – encouraging economic growth while maintaining political and social stability – could not be achieved without accepting the reality of closer integration with the United States.
Thus, as Mexico entered a new phase of its transition to roads and autos in the aftermath of World War II, it did so in the context of a political economy that was undergoing rapid change. On one hand, Alemán was a pro-U.S. Mexican president who touted cooperation with U.S. capital. In public he was a staunch cold warrior and a devoted U.S. ally in that country’s struggle to extirpate communism wherever it appeared. As we have seen, this suited his political purposes at home and helped facilitate the removal of leftist elements from the PRI. But at the same time Alemán rejected the economic role dictated by the United States. Determined to industrialize Mexico, and receiving little support from a United States that still saw Mexico and the rest of Latin America as one giant farm and mine, Alemán turned to Mexico’s private sector to carry out the industrialization project. In exchange for their participation, large capitalists in Mexico sought protection and handouts from the government to shield them from the competitiveness of U.S. imports. In this way the twin pillars of alemánismo, hostility to the left and a focus on industrialization, reinforced each other. In addition to offering tariff protections and tax subsidies to industry, Alemán also fostered a “pro-business” environment by marginalizing the left politically and sending the message that government would not be quick to defend the interests of worker and peasant groups. Not surprisingly, Mexico’s transition to roads and autos was affected by these changes.

Planning for Profits

As we have seen, World War II challenged Mexico’s transition to automobility by provoking scarcity and laying bare the industry’s complex relationship with the United States. Although the transition to roads and autos was framed as a nationalistic

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development project, U.S. automobile manufacturers and road construction companies saw opportunities for economic gain in Mexico. The cooperation during the war fueled these hopes, and the environment of the postwar period stoked the flames even higher. Mexico held out great economic promise for these groups between 1944 and 1948. The country was governed by men who seemed sympathetic to the United States, and, moreover, roadbuilding and other infrastructure projects were at the heart of both Ávila Camacho and Alemán’s economic vision. This conjunction motivated U.S. businesses to anticipate new opportunities in Mexico.

They did more than hope. As the postwar planning ratcheted up, U.S. auto manufacturers, road construction firms, and other boosters for the automobile industry took concrete steps to take advantage of the closer relationship between the U.S. and Mexico. Both the construction and auto industries in the United States were thinking ahead and imagining a postwar future where millions of Mexicans would travel in U.S. cars on roads built with U.S. equipment and technology. Aside from trying to get the ear of the U.S. government to encourage aid for road projects, as World War II wound down business interests launched some interesting projects intended to advance their vision of a postwar Mexico saturated with roads and cars.

One such project was the Inter-American Highway Training Program. Although the program was initiated in 1928 during the first stage of road building in Mexico, it had remained small and ended after only a few years. Towards the end of World War II, members of the American Road-Builders Association (ARBA) approached the State Department about the possibilities of reviving the idea. The project was a good fit with the government’s goals of promoting cooperation and technology exchange, and so the
government signed on. The program offered twenty scholarships to trained engineers from Latin American countries to spend a year in the United States learning about U.S. road-building technology. The first twelve weeks were dedicated to all-day lectures and classes and the remaining months were spent working in the field on construction projects somewhere in the United States.\footnote{213 Information Packet on Inter-American Highway Training Program, USNA, OCIAA, Record Group 229, Entry 33, page 1.} Applicants were required to possess an advanced degree in engineering or be a foreman with considerable experience. Candidates also had to meet with both Mexican and U.S. officials in separate interviews. Both parties demanded that in addition to being intellectually prepared and sufficiently dedicated, a successful candidate be a model citizen and a good representative of Latin America while in the United States.\footnote{214 Memorandum re: Transmitting Recommendations of Selection Committee for Mexico, and Applications Executed by Candidates, for 1946 Highway Training Award, USNA, OCIAA, Record Group 229, Entry 33.}

Although it was launched in an atmosphere of mutual cooperation, the members of the ARBA did not initiate the project out of simple goodwill. In fact, the goals of the Highway Training Program were clearly spelled out at the organization’s 1945 annual meeting in Chicago. One important aim was to expose highway engineers from Latin America to construction equipment built in the United States in the hopes that they would prefer it in their own projects. As supporters explained in an address to the association explaining the significance of the program and others like it, the enterprise could potentially harvest substantial rewards for the manufacturing industry in the United States. The ARBA believed that if Latin American engineers gained experience and a comfort level with U.S.-made equipment, they would be far more likely to purchase it for big projects back home, even though “similar equipment of European make is often from
twenty-five to forty percent cheaper.” Thus, the most important goal of the program was to increase the market for the U.S. capital goods industry. The ARBA rhetoric was combative. The published version of the address explained:

Highway construction is the stabilizer of the nation’s economic structure. It fulfills every requirement needed for prosperous conditions. It produces transportation facilities without which this nation or any nation becomes stagnant. It is the backbone of the important durable goods industry which controls the nation’s labor force. . . The highway dollar is an all-powerful economic weapon.

Clearly, corporate interests in the United States envisioned and planned for an imminent and profitable “invasion” of Mexico at the conclusion of World War II.

Roads, Rails and Tránsito Libre: Trucking in the Postwar Period

Federal regulation of the trucking and busing industries confronted new challenges as the war years transitioned into the postwar period. By the end of 1944, the terms of the debate over Mexico’s trucking and busing industry had changed. With the end of the war in sight, the focus of public and government attention shifted. While during the war the main problem had been managing the scarcity of vehicles and parts and responding to a public outcry over poor quality and high prices in the industry, by war’s end the focus was on providing an adequate level of service in the face of exploding consumer demand.

Mexico’s transportation system was straining under the weight of postwar

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215 Advanced Training Program for Latin American Engineers, January 1945, USNA, OCIAA, Record Group 229, Entry 33.

216 Ibid.
economic growth. As we have seen, the end of World War II unleashed a flood of consumer and industrial demand within Mexico. Imported machinery and consumer goods that had been impossible to obtain during the war were suddenly available. Following several years of supply shortages, between 1945 and 1947 the total value of imports almost doubled from $372 million to $720 million.\textsuperscript{217} Transportation was also needed for getting Mexico’s exports to the U.S. border – where nearly all of them were headed. The postwar period was characterized by a booming economy that surpassed the capacity of existing transportation infrastructure. Leaving out inflation, the country’s GDP grew by more than 18 percent between 1944 and 1948.\textsuperscript{218} Not surprisingly, the sudden influx of imports tested Mexico’s capacity to distribute these products. By all accounts the transportation situation in the immediate postwar period was in tumult - even those who benefited most from a system of regulation that limited who could run trucking businesses were worried. None other than the Secretary General of the Alianza de Camioneros, Martín Ruiz Gomez, explained that, “The opportunities for trucking arose in the years of the postwar period when Mexico went through very difficult circumstances, especially related to transportation.”\textsuperscript{219} In addition to economic growth and rising trade, population growth and increasing rates of urbanization in the postwar period put new stresses on Mexico’s transportation system. Moreover, the rapid urbanization of Mexico City continued to fuel demand for products from outside the metropolitan area. The result was a renewed focus on the regulatory system and increasing tension between advocates of roads and rails over

\begin{itemize}
\item De la Peña and Morales Ibarra, \textit{El agrarismo y la industrialización de México}, 123.
\item De la Peña and Aguirre, \textit{De la Revolución a la industrialización}, table A.1.2.
\item Rodríguez Ruiz, \textit{Isodoro Rodríguez Ruiz}, 76.
\end{itemize}
the future of Mexico’s transportation system.

Beginning in 1944, debates over transportation policy became increasingly urgent. For their part, most state policymakers continued to view the rise of trucking in terms of the political opportunities it presented. Although national officials were careful never to admit it, it is hard to escape the conclusion that trucking was deliberately encouraged as a way to gain leverage against the railroad workers and their powerful union. For the railroad unions, the ongoing expansion of the road network raised questions about the relationship between rails and roads. It was a sign of the network’s increasing importance that by the end of the war, concerned groups began to voice their worries over the battle for supremacy between roads and rails. Not surprisingly, representatives of organized labor were often the most vocal among those who expressed concern that roads and rails were headed down the path to “ruinous competition.”

Salvador Rodríguez L., who headed the Legal Affairs Division of the Sindicato de Trabajadores Ferrocarrileros de la República Mexicana, explained that although competition was generally a good thing for the country, it was bordering on destructive for the National Railroads because “in some places highways have been constructed parallel to the railroads.” According to the railroad unions, the solution to the problem was more government regulation. This request had two components. In the first place, they wanted the federal government to tighten its controls over trucking in general by administering a more consistent policy regarding who had the right to haul goods by truck. Second, they requested more federal oversight in general over the nation’s transportation system. There were repeated calls for something akin to a

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220 “$1.150,000.00 Erogados en Carreteras Durante los Ultimos Veintecinco Años,” El Nacional, December 25, 1945.

221 Ibid.
national transport director, whose job it would be to head an organization charged with overseeing the competition between the various forms of shipping in the country.  

Union leaders were not the only ones who questioned the efficacy of government transportation policy during the postwar period. In fact, the major dailies of the capital published editorial after editorial that called into question the wisdom of the current approach. These articles, which in many instances were highly critical of government policy, may have irritated officials and state representatives, but judging from their continued appearance it does not appear that the government exerted much pressure on the more independent-minded newspapers to curtail them. Several factors help explain this. In the first place, they were always couched in language that treated the normative value of rapid economic growth as a given, and so did not really threaten the government’s values. And second, they projected an image of an active government. Even if the details of improving Mexico’s economic infrastructure could be questioned, so federal officials might have thought, these editorials left no doubt that the PRI regime was expanding the country’s transportation system.

Although these editorials were usually partisan, their authors often had a point. In a 1945 editorial in the Revista de Economía, for example, Manuel Aguilar Uranga pointed out what he called “subsidies” given to motor transportation over rail. For example, railroads paid a 10 percent tax on their gross income. They were obligated by law to transport mail, government property, and government employees for a 50 percent discount. And they were also prohibited from refusing cargo, no matter if it was profitable or not.

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Although this last point was a simplification of a more complicated reality, in its general sense it was correct: the auto transport industry was governed more by market forces than the more heavily regulated railroad sector. These policies were holdovers from earlier transportation legislation when railroads were the only real shipping option, and their continued existence did provide a competitive advantage to truck-based shipping.

In the midst of these debates about Mexico’s transportation policy, one thing was clear: it was easier to recognize a problem than it was to agree to a solution. For some, the answer lay in more government regulation – a transport coordinator to oversee the process and make sure that one branch of the transportation grid was not unfairly privileged over another. For others, the overregulation of the railroads was the main culprit in their decline. One thing was clear by the mid 1940s, however: many of Mexico’s leaders and businessmen were beginning to perceive unchecked competition as a major threat to the profitability of the railroads.

Concerns about the railroads’ decline in the face of competition from motor vehicles often appeared side-by-side with articles proposing or announcing new roads, many of which encroached upon what had previously been considered the domain of the railroads. This furthered the public perception that road building was speedily supplanting the railroads as the most important cog in the country’s transportation network. In 1946, for example, the Mexico City papers published a series of articles about a planned trans-isthmus highway that would connect the Gulf with the Pacific. Mexican and U.S. officials had long held up such a route as a critical link in the world transportation system. In imagination and in practice, however, it had always been a rail link. But by 1946 this critical route was no longer being planned as a railroad. Government officials announced
in that year the initiation of a high-capacity trans-isthmus highway that would run 270 kilometers between Coatzacoalcos, Veracruz and Salinas Cruz, Oaxaca. Although the plans seem to have involved little more than an announcement, newspapers made it with great fanfare – pushing the railroads further out of the popular imagination and provoking wider concern about government neglect of the railroads. El Universal explained, “It has been decided to construct this interoceanic highway that will employ enormous trucks of ten or more tons, instead of constructing a railroad . . . which in addition to being more expensive, will take longer, will yield less practical results, and ultimately will not fulfill the same ends, especially in an emergency such as the present situation.”

It was in this context of increasing political awareness and economic difficulty that important debates about the regulatory system of trucking and busing took place. Amid widespread recognition that transportation bottlenecks were hampering Mexico’s economy, in late 1945 president Ávila Camacho established the Comisión Mixta para el Estudio de los Problemas de la Industria del Autotransporte to study the trucking industry and make recommendations. Officially, the Commission was charged with “achieving as quickly and as smoothly as possible the normalization of activities and the development of the automotive transportation industry.” There was also a more political goal in mind: to bring representatives from many different organizations together in an effort to diffuse criticism of any new transportation laws. The Commission included representatives from four government offices, including the Ministries of Government, Economy, Agriculture, and Public Works. Represented also were the four largest non-government organizations

224 “Carretera que une al Golfo con el Pacifico,” El Universal, October 20, 1946.

225 Ing. Pedro Martinez Tornel, Letter to President, AGN, RP, MAV, Expediente 545.3.10, June 28, 1946.
that held an interest in trucking and busing. In addition to the Alianza de Camioneros, the group included members of the Liga Nacional de Transporte, the Confederación de Cooperativas, and the Cámara Nacional de Transportes, all of which were important trucking organizations. 226

This group worked quickly and on January 22, 1946 it concluded its labors with a comprehensive plan for adjustments to the regulatory system. Many of its recommendations would eventually be enacted under Alemán at the end of 1947. In the interim two years, however, economic developments outstripped the careful planning orchestrated by the Mexican government and its appointed commissions. A few months after the Commission presented its findings, the transport situation had deteriorated to a point where urgent action was required. Between the deluge of imports and the shifting patterns of supply and demand brought about by the return of peacetime production in the United States, the inability to move goods around the country was severely hampering the economy. In response to this crisis, as his presidential sexenio wound down Ávila Camacho took the remarkable step of declaring “free transit” – the temporary suspension of most trucking regulations. Implicit in the measure was the recognition that the established system of permits and government control was not adequate to meet Mexico’s transportation needs. In practice, under “free transit” anyone with a vehicle was allowed to make contracts with producers and distributors to haul freight, regardless of whether or not they possessed a permit from the government to operate that route.

The declaration of free transit was met with indignation by permisionarios both large and small. At the same time, the decision was hailed by the cámaras de comercio

and the cámaras de industria as the best way to nudge the economy through the transportation crisis of the postwar period. Large trucking organizations like the Alianza lobbied to have the regulatory system restored, but similar concerns were expressed by smaller trucking companies. For example, Agustín Hernández, the president of a trucking cooperative called the Cooperativa Fletes y Pasajes, wrote to President Ávila Camacho shortly after the declaration of free transit to explain that the suspension of regulation was simply putting him out of business. As he pointed out, without regulation there was no protection from ruinous competition even in times of high demand, leading to the collapse of established trucking businesses. According to him, this was no way to solve the transportation crisis. From other corners, however, the declaration of free transit prompted letters of appreciation and praise. Even as Agustín Hernández worried about his business, men who represented the Chambers of Commerce and Industry, as well as the banking sector, wrote to Ávila Camacho in support of free transit. In particular, they applauded how the free transit decree permitted “privately owned trucks to transport goods on the national highways,” which before had often sat idle.

The suspension of truck and bus regulation lasted exactly thirteen months, from April 29, 1946 until May 29, 1947. From the beginning free transit was an emergency measure promulgated to deal with the sudden onset of postwar demand; it was intended to be temporary. But the episode had important consequences. Most notably, the period of free transit probably did much to undermine respect for national regulation. For more than a year, anyone with a truck was legally permitted to work as a trucker if an economic


228 Multiple authors, Letter to the President from Confederacion de Camaras Nacionales de Comercio, AGN, RP, MAC, Expediente 512.51/3 Transportes Citadinos, Camiones, September 5, 1946.
opportunity existed. For many these opportunities were infrequent and sporadic, but there were also truck owners who took advantage of free transit to start full-time, small-scale, trucking businesses. When regulation resumed, these businesses were suddenly illegal. Incorporating them into the sphere of government regulation would have irritated members of the Alianza and other groups of permit-holders. According to one account, the resumption of regulation left 2000 vehicles at “the margins of the law.”

The postwar crisis strained Mexico’s entire transportation network. Both rail and truck transportation struggled to keep up with the surge in demand at the end of World War II. These difficulties sharpened the competition between roads and rails. Advocates of railroad transportation, including groups that represented railroad workers, worried about the neglect of the railroads by the national government and pointed out the hidden subsidies that favored trucks over railroads. Concurrently, road advocates continued to stress how better road transportation could offset the decline of Mexico’s rail system. Eventually, the transportation situation deteriorated to the point that the government decided to declare free transit and temporarily suspend the rules governing trucking. This action highlighted the liabilities of national regulation, but did not ultimately lead to a reconsideration of policy. For Alemán, the basic model established by Calles was still the best fit with the state’s overarching goals.

Automotive Technology, Refacciones, and Black Markets: Mexico’s Automotive Industry in the Postwar Period

The end of World War II prompted other important developments in Mexico’s transportation economy that extended beyond the policy debates taking place in

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229 Rodríguez Ruiz, Isodoro Rodríguez Ruiz, 76.
government offices. Technological change was an important and noticeable example. As had occurred during the First World War, motor vehicle technology leapt forward as societies devoted their energies to producing and improving the tools of war. In addition to new designs in engines and axles that contributed to larger and faster trucks with more hauling capacity, a glut of vehicles at the end of the war helped to spread the use of motor vehicles the world over. Although Mexico struggled in the postwar period to acquire enough trucks to fulfill its economic needs, the immediate aftermath of the war was accompanied by a substantial increase in the size and capacity of the new vehicles that wound up on Mexican roads. The advertisements for new trucks placed by GM and Ford (these two companies accounted for the vast majority of truck sales in Mexico) in trade publications demonstrate remarkably rapid progress in truck design, size, and hauling capacity. Almost from month to month beginning in 1945, trucks were undergoing changes that within a few years had resulted in a significant transformation. In 1945, trucks were still mostly glorified pickups, with a cab and a back chassis that could support either a bed or an enclosed container. Ten years later, trucks had nearly taken on the appearance of the fifty-foot semi-trailers that we know today.\footnote{See the ads in \textit{Más Caminos!} and other periodicals.} This burst of technological development was not merely cosmetic; by increasing capacity, larger trucks heightened the importance of trucking for Mexico’s economy.

As Mexico’s road network continued to grow in the 1930s and into the early years of World War II, a palpable fear arose among businessmen and government officials that Mexico would not be able to acquire enough vehicles. This concern originated in the scarcity of supply that occurred during World War II combined with growing demand as
roads became increasingly numerous and important. During the early 1940s, this situation spurred the development of a local spare parts (refacciones) industry that was critical to keeping Mexico’s aging fleet of cars, trucks, and buses on the roads. This new sector—which included products such as tires, sparkplugs, and valves—was developed for the most part with Mexican capital and without much involvement from the major foreign automakers.\textsuperscript{231} Once again, the transport situation in Mexico City was responsible for calling attention to the limitations of Mexico’s automotive industry. As service deteriorated in the capital, bus owners defended themselves by pointing out the lack of repair shops.\textsuperscript{232} By the end of the war this scarcity had combined with ingenuity and economic opportunity to sow the seeds of a vibrant spare parts and repair industry. Once World War II ended, the Mexican government was thus confronted with two new circumstances. In the first place, the Mexican state had for the first time a group comprised of exclusively Mexican capital to protect in the automotive industry. Second, the pent-up demand of previous years led to an increase in the imports of vehicles, substantial enough to comprise a significant portion of the mounting balance of payments issue in Mexico and the other big countries of Latin America.\textsuperscript{233}

The solution to both problems was deemed to be strict import restrictions through the use of both high tariffs and quotas. This involved the continuation of prohibitively high tariffs on pre-built vehicles, and restrictions on the number of cars and trucks that could be assembled and sold in any given month. This both protected the domestic parts industry


\textsuperscript{232} “Fue, Es, y Será,” October 16, 1941.

and helped move the country in the direction of manufacturing automobiles rather than merely assembling them. Throughout the 1950s the Mexican state required a specific percentage of parts used in assembly operations to be of Mexican origin. There were two justifications for these requirements. First, they kept dollars inside the country instead of being sent abroad. Second, they helped develop and protect Mexico’s fledgling spare parts industry. These actions “prompted an increase in the number of firms engaged in assembly operations and an increase in the local sourcing of parts and components that entailed, in the case of a few firms, operations beginning to approach true manufacturing.”

234 The example of Mexico’s automobile industry highlights what Luis Medina Peña has recognized as one of the crucial features of Mexico’s political economy during the 1940s: the move towards industrialization though import substitution began as the result of prevailing economic conditions rather than a conscious policy decision.235

The quota system was not sufficient to meet the demand for new cars, trucks, and buses, especially in light of the pent up demand that was released as soon as the war ended. Not surprisingly, this situation led people to look for solutions outside the legally-sanctioned and state-managed system. Extralegal activities soon became a noticeable part of the conversation on the subject of Mexico’s road network and the tasks of repairing and acquiring vehicles. Unmet demand after 1944 spurred the creation of black markets. In addition to posing a threat to the legitimacy of the government’s efforts to manage the economy, black markets were a real concern for Mexico’s economic security.

Why was this so? Part of the macroeconomic vision for the country was to

234 Ibid.

cultivate a pool of domestic capital for investment in new businesses. Running counter to this was the long-standing tendency towards capital flight, both from the need to make purchases abroad and from the habit of the rich of converting money into other currencies to protect against unexpected upheavals at home. Black markets in automobiles and parts contributed to this problem because many of the products being sold originated in the United States and thus skirted Mexico’s import restrictions and the requirement that assembly plants use domestic parts. It was not difficult to purchase vehicles or parts over the border in the United States and drive them into Mexico for sale. Although it is difficult to get more than a rough sense of the size of the country’s black market for both parts and autos, rumors of its significance abounded during the postwar period. On the one hand, illegal markets for cars, trucks, and parts for maintenance threatened the government’s policies of keeping foreign exchange inside the country and the legitimacy of its regulation over the transport industry. On the other hand, black market sales explain how the trucking industry continued to grow rapidly despite inadequate numbers of legal vehicles. Despite the difficulty of gauging the size of illegal markets in the auto industry, perhaps the best evidence for its growing importance in the years after World War II is the sudden appearance of articles in trade publications that mention the problem. The issue of black markets highlights the informal transnational integration that building a road network in Mexico entailed.

Conclusion

The years between 1940 and 1948 were critical to Mexico’s transition to roads. As

we have seen, World War II brought enormous changes to international politics and the
global economic system and provided Mexico with fresh opportunities as well as a
complex set of challenges. In the first place the war gave the United States a new interest
in Mexico’s transportation infrastructure. This injected new dynamics into the country’s
political economy and had important consequences for the ongoing development of a road
transportation network. As the U.S. and Mexico negotiated the limits and opportunities of
their relationship as wartime allies, a curious situation emerged. While U.S. automakers
and the U.S. construction industry saw new economic opportunities in an allied and
friendly Mexico, the U.S. government recognized that U.S. interests were best served by
Mexico having a smoothly functioning road network. To some extent, the profits of U.S.
companies were secondary. This was one example of the genuine cooperation that
redefined Mexico’s relationship with the United States during World War II and its
aftermath.

At the same time, the close interest of the United States in improving Mexico’s
transportation system, especially its road network, helped prop up a system of truck and
bus regulation that increasingly came under attack during the war as inefficient. There was
a paradox here: World War II and the postwar crisis simultaneously bolstered and
undermined the system of regulation that had been established between 1925-1940. In the
first place, the war revealed the extent to which Mexico’s road network was dependent on
imported equipment and technology. Simultaneously, however, deepening U.S.
involvement in Mexico’s transportation system reinforced the industry’s claims that
regulation was necessary in part to prevent a U.S. takeover of the industry.

The events of the postwar crisis also changed the system of regulation in key ways.
The industry’s struggles to keep up with demand after the war prompted the state to declare the temporary suspension of regulation. Thousands of Mexicans who owned trucks responded by joining the ranks of the trucking industry on terms that suited them; some hauled goods part-time to supplement their income as opportunities arose, but thousands became full-fledged participants in the industry. When the crisis abated and the state re-regulated trucking, it placed these Mexicans outside its legal and formal structures. In effect, the state had legislated the creation of an extensive, informal trucking industry that complemented the formal, regulated one.

Increasing U.S. participation in Mexico’s economy interacted with Mexican politics in important ways. Under Ávila Camacho, the war provided the opportunity to tame labor unrest by making appeals for national unity in the midst of a global crisis. Alemán took advantage of the emerging Cold War to further marginalize the left from the official party by espousing a strict anti-communism. Mexico’s changing political landscape was driven to some extent by the personalities and priorities of Ávila Camacho and Alemán, but more by the conditions and opportunities presented by the war and the postwar crisis.

In fact, in contrast to much historical writing that sees during the 1940s a dramatic ideological reorientation of the Mexican state towards the “right,” the focus here on automotive transportation reveals something different. The Mexican state under Ávila Camacho and Alemán confronted vastly different political and economic circumstances than it had under Calles and Cárdenas, but when it came to something as critical as transportation infrastructure what emerges most clearly is the consistency with earlier administrations about the economic vision that guided policy.

Ultimately, Mexico’s approach to developing a road transportation network was not
radically changed by the tumult of the war years and the postwar crisis. In 1948, the state retained its commitment to using road construction and automobile transportation as a tool of development and as a counterweight to the power of railroad labor. Despite the challenges posed during and after the war it insisted on a heavy-handed policy of state regulation of the trucking and busing industries that was impossible to enforce and riddled with inefficiencies. Although the development of a spare parts industry during World War II gave Mexican capital its first real stake in the automotive industry, the entire project of developing a well-functioning road transportation network remained dependent on an imported technological base which, as was clear during the war, deeply integrated Mexico’s road network with the United States. As Calles and Cárdenas had realized during the previous decade, it remained politically necessary during the 1940s to keep the industry in Mexican hands; the long shadow of the railroad boom made this imperative. Most importantly, despite the changing political and economic circumstances surrounding World War II, the priorities of the Mexican state as it sought to build a road network were strikingly consistent between 1925 and 1948. The state privileged economic growth and industrial development above all else. During this period it did so in a way that consistently favored groups like the Alianza – large capitalists with political connections and thus ties to the state, while balancing that support with the need to maintain social and political stability.

World War II and its immediate aftermath presented Mexico’s leaders with challenges and opportunities. The postrevolutionary state was constrained in new ways, but it also discovered new tools with which to pursue its long-term goals. This was especially true for the creation of a road construction network. Heightened U.S. interest in
Mexico’s transportation infrastructure facilitated road construction, but also sharpened concerns about a foreign takeover of the trucking industry. The reordering of the world economy during and after the war put pressure on Mexico’s leaders to do more to get cars, trucks, and buses on the road. But it also made this task harder by straining Mexico’s economy, which struggled with inflation and recurring balance-of-payments crises throughout the period. While continuing their efforts to develop a road transportation network Mexican state agents negotiated a difficult landscape as best they could. It was clear during the period that the Mexican state’s power and reach were more limited than its rhetoric suggested. Through a mix of negotiation, coercion, and flexibility, Mexico’s leaders during World War II and its aftermath continued to pursue the state’s long-standing goal of creating an urban and industrial economy. As would become clear during the next decade, roads were an important part of this transformation.
CHAPTER 3
Road Transportation and the Mexican Miracle, 1948-1960

In April of 1950 Miguel Alemán’s administration threw a public party to celebrate
the official opening of the Carretera Cristobol Colón. This was the name given to
Mexico’s section of the Pan-American Highway, a project that had been envisioned by
both countries since at least the 1920s. Although the idea of the Pan-American highway
conjured up images of an epic engineering feat demonstrating unity between the United
States, Canada, and Latin America, the reality in Mexico was different. The project never
had much coherence, and the route that was officially opened in 1950 actually comprised
several different road projects that were carried out at different times. This did not,
however, dampen the enthusiasm with which the accomplishment was celebrated. The
administration spared little expense. In addition to the customary ribbon-cutting ceremony
involving prominent businessmen and politicians, and the celebratory banquets and
dinners, the government sponsored a thirty-car automobile race from Juarez, on the U.S.
border to the north, to El Ocotl, on the Guatemalan border to the south. Planning for these
events was in the works for at least a year, and the opening ceremonies were covered
extensively in the press.237

In some ways, the fanfare was appropriate. Only twenty-five years after President
Calles had established a national agency to oversee the construction of motor roads,
Mexico had undeniably been transformed into a country that could boast of a reliable and
important road transportation network. This was a major accomplishment for the

237 Unknown author, “Memorandum: Carrera Automobilistica Panamericana Mexico,” AGN, RP, MAV,
postrevolutionary Mexican state that saw road transportation as a modernizing project that facilitated economic growth and political stability. But in other ways the celebration was premature. Between 1948 and 1960, Mexico’s road transportation network continued to evolve. As it did, many of the deficiencies inherent in Mexico’s approach came into focus.

Between the end of the postwar crisis in 1948 and 1960 road transportation became an entrenched feature of Mexican life. This critical period is best understood as one of qualified success. As we shall see, through a flexible and decentralized process, the Mexican state oversaw the expansion of the road network despite limited resources. State agents were not able to dictate the terms of this expansion. Instead, they negotiated alliances and partnerships with key groups in order to continue expanding the reach of roads and to make sure that there continued to be an adequate supply of vehicles. This approach had consequences, many of them negative. In practice, the state ceded control over road construction, trucking, and (to a lesser extent) the automobile industry. As the road transportation network matured, the benefits accrued disproportionately to private groups over the interests of the country as a whole. Furthermore, although roads did provide some of the important economic gains that their boosters imagined, the transition also contributed to some of the period’s less triumphant features such as a growing disparity between the rich and the poor.

**Historical Overview**

As we saw in Chapter 2, the 1947-1948 peso devaluation marked an end to the postwar crisis faced by Mexico’s leaders in the aftermath of World War II. Before the devaluation, Mexican policymakers still held out hope that a combination of loans and aid for industrialization would be forthcoming from the United States. But by 1947, U.S.
leaders had made it clear that they would not support industrialization in Mexico or elsewhere in Latin America with a program of direct aid or loans. Thus, Mexico was forced to finance its program of rapid industrialization in the only way possible: with the dollars earned from exports. The devaluation was a recognition that exports would have to be bolstered, even at the expense of wages and living standards for those under the protective umbrella of the ruling party. The devaluation ushered in a ten-year period of economic challenges that came to an end after 1958 with the advent of what came to be called “stabilized development” under President Adolfo López Mateos (1958-1964). The second half of Miguel Alemán’s sexenio and the six years under Adolfo Ruiz Cortines were characterized by significant oscillations in economic policy as the state attempted to pursue its goal of rapid industrialization in the face of difficult international and domestic circumstances.

The last four years of Alemán’s presidency were marked by intense efforts to industrialize the country. Alemán believed that Mexico’s future economic success depended on Mexico’s capacity to be industrially self-sufficient, especially in such vital industries as chemicals, metals, petroleum, machinery, and electricity.\textsuperscript{238} With inflation temporarily under control because of the peso devaluation and renewed demand for Mexican exports because of the Korean War, Alemán found himself in a position to indulge in his preferred method of government spending: the inauguration of grandiose public works projects named after himself. During the last three years of his presidency, Alemán spent unprecedented amounts of public money on dams, irrigation projects, roads, and buildings. Road spending in all its different forms expanded, but Alemán capitalized

\textsuperscript{238} Blanca Torres Ramírez, \textit{Hacia la utopía industrial} (México: Colegio de México, 1984), 26.
on two major projects to generate publicity. The first was the construction of a freeway running east-west through Mexico City that the president immodestly named the Viaducto Miguel Alemán. The second was the inauguration of Mexico’s segment of the Pan-American highway, known in Mexico as the Carretera Cristobol Colón. But roads were just one part of the mania for public works. Alemán also took advantage of economic growth to build public housing in the Distrito Federal, inaugurate a new airport, and begin the construction of Ciudad Universitaria, an enormous, sprawling campus for Mexico’s national university.239

After 1947, Alemán presided over a period of impressive economic growth but high inflation. Between 1947 and 1952, Mexico’s economy grew by an average of 5.7 percent per year.240 However, there were several factors that prevented growth from translating into widespread gains in living standards. In the first place, the country’s dramatic population explosion was in full swing by 1950. Between 1940 and 1960, Mexico’s population increased from 19 million to 35 million. Simply put, the pie may have been bigger, but there were also more mouths to feed. Second, inflation continued to plague the Mexican economy during these years of rapid growth. This cut into the living standards of ordinary people in both the cities and the countryside and continued to be a defining feature of Mexico’s economy. In the latter half of Alemán’s sexenio, the main culprits were the continuing effects of the devaluation of 1947-48 and the new wave of scarcity engendered by U.S. involvement in the Korean War. Despite vigorous action by the government that included establishing agencies to regulate prices and in some cases ration a wide variety of


240 Medina Peña, Hacia el nuevo estado, 136.
products and services, in September of 1951 wholesale prices were rising at an annual rate of 24 percent.\textsuperscript{241} Price indexes of basic bulk goods tell a similar story: in 1940 the index was 23.9 but by 1955 it had risen to 113.6. Between 1950 and 1955 alone it jumped 41 points.\textsuperscript{242} These factors combined to make the period one of growth, but also increasing inequality. Many studies have shown how the economic expansion of the 1950s led to deteriorating conditions for those at the bottom of the socio-economic ladder, in spite of the absolute growth of the economy.\textsuperscript{243}

Among those most affected by inflation were groups on fixed incomes. Importantly, this included organizations that were most closely integrated with the governing regime: organized labor, government employees, and other close allies of the PRI. From the beginning of his term, Alemán had made no secret of his expectation that the laboring classes would be the ones required to sacrifice in pursuit of an industrial Mexico. As the President himself had said during a campaign speech to members of the CTM, “Workers must be conscious of the fact that excessive demands will be harmful to them. The country demands industrialization.”\textsuperscript{244} As inflation ravaged the Mexican economy in the late 1940s and early 1950s, Alemán was as good as his word. There was little tolerance for strikes or worker demands for higher wages to keep up with rising prices. As part of his efforts to control worker discontent, Alemán took action whenever

\textsuperscript{241} Blanca Torres \textit{Hacia la utopia mexicana}, 132-133.

\textsuperscript{242} Olga Pellicer de Brody and Jose Luis Reyna, \textit{El Afianzamiento de la estabilidad política} (México: El Colegio de México, 1978), 89.


possible to replace independent-minded union leaders with more loyal ones. Although workers resisted Alemán’s assertions of control, by and large the president was successful at bringing major unions under the close supervision of leaders loyal to the president. When these efforts failed, Alemán was quick to resort to violence. In March of 1951, for example, miners from Nueva Rosita embarked on a hunger march from Coahuila all the way to Mexico City, where they were quickly repressed by the police and sent back to Nueva Rosita on trains.\footnote{Agustin, Tragicomedia mexicana, 110.} Thus, through both violence and skillful politicking, Alemán mitigated the threat to stability and industrialization posed by inflation.

Alemán could not, however, completely paper over the fissures that were developing in Mexican politics over the direction of the country. As a result of these divisions, the 1952 transfer of power was one of the most contentious in Mexico’s postrevolutionary history. The battle over who would succeed Alemán as Mexico’s president began early. In keeping with his enormous egoism, Alemán’s first choice was himself. As early as 1950, the president began to explore the possibility of having himself re-elected and spending another six years in the presidential residence.\footnote{Servín, Ruptura y oposicion, 119-127.} After these efforts were rebuffed, it became clear that the official party faced a serious challenge to its hegemony in the figure of Miguel Henríquez Guzmán. As during the run-up to the 1946 election, Henríquez tried to maintain a low profile while his supporters organized and gathered local support for his candidacy.\footnote{See Chapter 3 above.} At the same time, Henríquez played politics behind closed doors to secure his nomination as the PRI’s candidate. However, having
been rebuffed six years earlier, he was far more open to the possibility of breaking with the official party and running for president as an opposition candidate. By the middle of 1951, it was clear to Henríquez and his supporters that he would not receive the PRI’s endorsement. Instead, Adolfo Ruiz Cortines was nominated as the official candidate and Henríquez entered the ranks of the opposition.

In June, Henríquez finalized his long estrangement from the PRI and became the candidate of the newly-founded Federación de Partidos del Pueblo Mexicano (FPPM). The FPPM and *henriquismo* represented an eclectic collection of interests. For many, the movement reflected a return to *cardenismo* – a “purer” form of revolutionary government – after the betrayal of Avila Camacho and Alemán. For others *henriquismo* was a campaign for more open and democratic government. At the same time, the FPPM found support among business groups and military men, many of whom were personally connected to Henríquez and his family. Ultimately, the party was the vehicle of the man, and Henríquez himself was the glue that held together this collection of assorted interests.

*Henriquismo* posed a serious threat to the regime in the 1952 elections. But Henríquez did not become Mexico’s president. The official party ultimately prevailed through a mixture of patronage and a brutal wave of violent repression in the aftermath of the election. When the dust settled, Adolfo Ruiz Cortines took over as Mexico’s president on December 1, 1952. Ruiz Cortines had campaigned as the antidote to the corruption and flamboyance of the Alemán years. At sixty-two, he was the century’s oldest Mexican president, and he cultivated an image of austerity and uprightness that many found

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248 Servín, *Ruptura y oposición*, 144-152.

249 Ibid., 171-175.
refreshing. Much to Alemán’s chagrin, Ruiz Cortines used his inauguration speech to proclaim that he “would be inflexible with public servants who stray from honesty and decency.” The message, and its reference to Alemán, was clear. He also made public his relatively modest personal finances and made a show of refusing gifts and other perks customarily heaped on the Mexican president.²⁵⁰

Ruiz Cortines’s public image of austerity was matched by his approach to Mexico’s macroeconomic situation. He hoped to extract Mexico from the inflationary spiral that had plagued the economy throughout the previous twelve years. This meant stabilizing prices, especially of food staples, and reining in government spending to control the money supply. His timing was off, however. World economic conditions were not favorable to this kind of approach in 1953. The end of the Korean War reduced the demand for Mexican exports and depressed prices for many of Mexico’s agricultural exports. Combined with a major drought in 1952, the country’s food production plummeted and had to be supplemented with imports. These factors reduced the incomes of many Mexicans and were reflected in lower demand for manufactured goods. Mexico’s economy had stagnated.²⁵¹ National GNP growth in 1952 was half what it had been in 1951, and in 1953 the national economy did not grow at all.²⁵² Although Ruiz Cortines’s administration managed to achieve the goals it had set for itself of limiting government spending, keeping prices stable, and bringing the country’s balance-of-payments under control, it meant little in an economy that had stopped growing and was consequently being buffeted by rising

²⁵⁰ Krauze, Biography of Power, 601 -603.

²⁵¹ Olga Pellicer de Brody and Jose Luis Reyna, El Entendimiento con los Estados Unidos y la gestacion del desarrollo estabilizador (México: El Colegio de México, 1978), 117-120.

²⁵² Brody and Reyna, El Afianzamiento de la estabilidad politica, 14.
unemployment.

As a result, by the end of 1953, the administration abandoned these goals and reversed course. In 1954, the administration once again increased government spending, loosened credit, and capped it off with another big peso devaluation. This had the predictable result of boosting exports and restarting the economy, but with the equally predictable consequence of more inflation.\footnote{Medina Peña, \textit{Hacia el nuevo estado}, 127-140.} As had been the case with Alemán, these policies threatened the social stability that was always an important goal of the government. Massive strikes by the national teachers union and the railroad unions rattled the administration. They also reflected the lack of political options that existed for those who wanted to challenge the system. The defeat and subsequent repression of \textit{henriquismo} in 1952 left little space at the national level for political dissent. There were some successful state-level political movements that challenged the regime in the 1950s, such as those in San Luis Potosí and Tijuana.\footnote{See Servín, \textit{La oposición política}, 56.} But in many ways the years under Ruiz Cortines were the height of the postrevolutionary regime’s political success. Many groups had been incorporated into the political orbit of the state through unions and other corporatist structures. Moreover, after 1952 it seemed that there no longer existed any real possibility of military revolt.

In sum then, the next stage of Mexico’s transition to a road-based economy unfolded against a backdrop of relative political stability and familiar, if still difficult, economic challenges. The late 1940s and early 1950s were years of substantial growth, although this did not translate into gains at all levels of Mexican society. Among political
and business elites, growth created considerable optimism and an abiding faith in the economic model pursued by the government. Simultaneously the marginalization of many groups and the unequal distribution of wealth helped fuel the henriquista movement that threatened the regime in the 1952 elections. But with the repression of political opposition through the crackdown on henriquistas after the election, national leaders found maneuvering room over the next several years to begin moving towards the constellation of economic policies that became known as “stabilized development.” By 1956, the outlines of this program were clear. Economic growth was still the priority, but inflation was finally brought to heel by relying on money borrowed from abroad instead of exports to fund industrialization. Debt replaced exports as the pillar of Mexico’s economic model. Government spending was also reduced from the levels it had reached in the 1940s and early 1950s. Private capital was expected to shoulder more of the burden of promoting economic growth.\textsuperscript{255} Thus, throughout the 1950s spending on roads and other infrastructure remained a priority for the government, but, as we will see, the state also orchestrated policies that elevated the participation of the private sector in Mexico’s road network to unprecedented levels.

\textbf{Expanding the Network: Politics, Caminos Vecinales, and the Asociación Mexicana de Caminos}

Mexico entered a new era in its shift to roads during the late 1940s. While Mexican leaders, especially Alemán, continued to view road building as a crucial part of their modernization program and continued to spend lavishly on road construction and other communications and transportation projects, as the road network expanded, policymakers

\textsuperscript{255} Brody and Reyna, \textit{El Entendimiento con los Estados}, 171-176.
began to realize that interstate highways were not enough. The goals that lay behind the creation of a road transportation network – integrating the country, spurring economic growth, and supporting industrialization – required roads to reach deeply into Mexico. This resulted in new approaches to financing and managing road-building efforts.

In the first place, road construction was financed in new ways after 1945. The Mexican state continued to impose a national tax on gasoline as a way to pay for roads, but it increasingly looked for additional funds to support the expansion in road construction. A national gas tax was part of the original 1925 legislation that created the Dirección Nacional de Caminos. Originally set at three pesos per liter, the tax was raised to four in 1930, then doubled to eight in 1935, and raised to nine in 1940. It was raised slightly again in 1950 to ten pesos per liter, where it would remain for the next twenty years. By the late 1940s, the gas tax was no longer viewed as the most important source of government money for road construction. Instead, the government began to rely heavily on an underused provision of the original communications law: road bonds.

Road bonds were issued by the Mexican government and floated on international bond markets. Not surprisingly, the capital that eventually purchased many of these bonds came from U.S. financial institutions. As early as 1940, reports were circulating in Mexico that U.S. bankers were making organized efforts to purchase Mexican road bonds. As the significance of bonds as a source of funding increased through the 1940s, U.S. investors were probably the primary creditors of Mexican road construction, albeit indirectly through the purchase of road bonds. An article in Excelsior that appeared in

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257 “Infrastructura del Transporte-Carreteras,” *Excelsior*, November 27, 1940.
1947 reported that slightly more than half of the nearly one billion pesos spent on road building during Ávila Camacho’s sexenio came from road bonds, many of which were probably purchased with U.S. capital. Thus, as Mexico’s road network expanded, it outstripped the capacity of gas taxes to fund continued growth and Mexico instead turned to road bonds sold abroad.

Second, President Alemán made caminos vecinales, or local roads, a cornerstone of his vision for Mexico’s transportation infrastructure. Following up on his campaign rhetoric, Alemán created the Departamento de Planeación y Fomento de Carreteras Vecinales (DPFCV) in 1947. This organization was charged with studying and planning the possibilities of building local roads in Mexico, especially in isolated rural areas. Although a “new” department, it was styled along the lines of the earlier road organization and conceived as a way to provide institutional support for a specific goal – in this case building rural roads – that would transcend the limited scope of a single sexenio. The department was entirely a government office, within the institutional framework of the SCOP. The group accomplished little in its early years. Perhaps slowed by bureaucracy or by administrators angling for political or economic advantage, the DPFCV seemed to drag its feet on implementing a system for getting more roads built in Mexico. This early government-directed effort amounted to little.

In the end, private capital kickstarted the effort to build caminos vecinales. In 1949, a group of businessmen with interests in the automotive industry proposed the creation of the Asociación Mexicana de Caminos (AMC), an organization that would play a leading role in the history of Mexican road building during the crucial decade of the

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258 “Un Timo Colosal,” Excelsior, April 28, 1947.
1950s. In a way that was characteristic of postwar Mexico, the AMC was simultaneously based on a concept borrowed from the U.S. and uniquely Mexican. The AMC was a member of the International Road Federation, an organization founded in the United States in 1948 by a coalition of businesses representing the gasoline, auto manufacturing, and rubber industries. Its mission statement declared its goal was to support “the interests of those who are dedicated to the construction of roads and road transportation and provide a strong voice for road users.”

In effect it was an organization created with the express purpose of lobbying in support of more roads and more automobiles within the borders of the United States and beyond. By 1955 fifty-seven countries had founded branches. Mexico was one of the first to sign up by establishing the AMC in 1949.

The AMC, however, was not just a collection of businessmen with a general interest in road building. It soon became the leading vehicle for the creation of caminos vecinales in Mexico, exercising substantial influence over how the process of building local roads in Mexico would proceed over the next decade. The AMC painted a grand portrait of what local roads meant to Mexico. Before a room full of people at the Hotel del Prado in Mexico City, Enrique Carniado laid out the AMC’s vision for rural roads. “Trunk highways, railroads, navigable rivers, even airports,” he explained, “do not matter in the most isolated parts of the country; the geographic accidents of our country, the enormous mountains, the extensive deserts and forests, make it necessary that existing routes be complemented by a network of local roads that will nourish the economies of isolated regions by circulating their products, like a system of veins and arteries.”

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At the same time, President Alemán, working in close collaboration with the members of the newly founded AMC, created an organization called the Comité Nacional de Caminos Vecinales (CNCV). Although there was some overlap between the CNCV and the earlier DPFCV, it was in reality a very different sort of organization. Rather than strictly an arm of the federal bureaucracy, the CNCV was a semi-public organization with very close links to the AMC and the businessmen who headed it. The government, through its official newspaper, referred to it as a “collaborationist” organization and promised that it would “fully harmonize the interests of private initiative with the highest interests of the patria.”

The CNCV was headed by a five-person committee comprised of two members selected by the government, two by the interests of private capital involved in the automotive industry, and a fifth who was selected by a consensus of the other four. Representatives of labor were not included. The committee members were united in the mutual goal of quickly building thousands of kilometers of local roads to further develop the effectiveness and reach of Mexico’s burgeoning road transportation network. The mission of the CNCV and the AMC was explicitly to develop the capacity of Mexico’s private capital to build roads. For members of the AMC and Mexico’s business class, the very idea of such an organization was exciting. After decades of looking elsewhere for money, Mexico’s new capitalists were reveling in their newfound prosperity. This was reflected in the substantial role allotted to private capital in the CNCV. As one observer noted at the time, the CNCV was created to be an “autonomous entity in which private initiative, represented by the Asociación Mexicana de Caminos, has been given

Thus, the institutional framework that guided the construction of local roads was a blend of private initiative and government structures, but one in which capital would take a leading role.

When members of the automotive industry decided to form the AMC, they backed their enthusiasm with cash. The AMC was representative of the many different business interests involved; its membership included men from industries that stood to benefit from expanding the reach of a road network including the automobile, gas, rubber, and spare parts industries. Company owners in these industries were quite willing to sacrifice short-term profits for the possibilities of future growth. The AMC promised to help fund the construction of caminos vecinales in a variety of ways, and it initiated its commitment by creating a startup fund of three and a half million pesos raised by a 10 percent tax on the industries represented by the AMC. The government then matched this money to create a starting pool of 7 million pesos. Some of the money may have gone to funding early road projects, but it seems more likely that the money was used as startup costs for running the AMC. It was not, after all, a barebones organization. Over the next ten years, the group hosted banquets to fete both Mexican and international businessmen, maintained an elaborate monthly publication called Más Caminos, sponsored tourism throughout Mexico, and was involved with a host of other events such as grand openings and expos.

This establishment of the AMC and the willingness of its members to pony up money suggest a number of things. In the first place, it reveals the stability that the new

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regime had already achieved in the eyes of at least a subsection of the business community. A willingness to accept less money now in anticipation of future returns demonstrated faith in what the PRI regime had achieved in only thirty years. Second, the founding of the AMC reveals the scale and scope of road building’s links with the rest of the Mexican economy. The variety of businesses, as well as the consensus that existed among them when it came to roads, suggest yet another reason for the rapid push towards roads; the AMC and the campaign for *caminos vecinales* illustrate how roads were, at least in the Mexican context, the perfect project for a close collaboration between private capital and the state. This was in fact an important third feature of the AMC’s program. Building on earlier precedents, the AMC created a way in which private capital with links to the national government could undertake major economic projects in collaboration with a state that remained pressed for resources. This requires further explanation.

The entire project clearly emerged from the earlier experiences with the Roads in Cooperation program and the Local Road Boards, which by all accounts had been highly successful. The AMC, according to a contemporary observer, was an organization that “with its decentralized character finds itself in a position to encourage and obtain financing, and to deal with private iniciatives in a way not always permitted by the rigidity of bureaucratic norms.”

Essentially, the AMC and the CNCV created what became known as a “tripartite” funding system. In this system *caminos vecinales* were built by funds contributed in equal parts by the federal government, the state government, and “private interests.” This last group was kept so vague and ill-defined in both official government documents as well as newspapers and trade publications as to appear nearly conspiratorial.

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In document after document that referred to the tripartite scheme the identity of the “private interests” was left unexplained, almost as if no explanation were required. This frustrating (for the historian) practice continued even as the tripartite funding arrangement became known internationally as a success, and emulation was attempted in other Latin American countries with great encouragement from U.S. authorities.

One of the most important characteristics of this arrangement was that private interests often initiated projects. Building on, and going one step beyond, the decentralization of planning roads that was a feature of the Roads in Cooperation program, the tripartite system most often placed the “burden” of initiative in the hands of businessmen or prospective entrepreneurs. This turn of events created a close collaboration between private capital and the Mexican state. On one hand, this was something that could have provoked caution among Mexico’s rulers, since it effectively meant losing a bit more of the control over the details of road planning and building. In theory, only a national government represented a broad enough set of interests to plan something as basic as a national road network that would be rational and designed to benefit the greatest good. On the other hand, this could be viewed as a continuation of the earlier trend signified by the Local Road Boards; it was, in other words, a compromise borne out of the recognition that the national government did not have the resources to go it alone when it came to road building.

In fact, this approach to building local roads directly served the interests of private capital. The story of the construction of a road in 1949 through Loma Bonita in the southern state of Oaxaca reveals how the process seemed to work in practice, and suggests the ways in which the end result favored the interests of capital. The area lying in between
Loma Bonita and Papaloapan in the north of Oaxaca had long been a pineapple growing region characterized by a pattern of smallholders who largely controlled the rights to their own land. Although the area was isolated from the rest of the country due to the lack of transport links, in the late 1940s nothing of much consequence had been done to connect it, despite the presence of a nearby federal highway in Ciudad Alemán, from which one could follow the road to Córdoba, Veracruz and the rest of the highway network. The impetus for change stemmed from an event in 1947, when a retired general named Juan G. Valdés purchased a six thousand hectare property not far from Loma Bonita known as El Cascajal. El Cascajal was a mix of grazing and agricultural lands, but it is clear that General Valdés had bigger plans for his new property. Around the same time he bought the property, Valdés got in touch with Agustín García López, the head of the Public Works Ministry, about the possibilities for building a camino vecinal in the region. As the head of the CNCV explained the situation to the government, “Being a completely isolated colonia, it is not hard to understand the problems that result from the lack of communication, both in attending to social needs and managing their products.”265 SCOP officials believed the general idea of building a road in the area was a good one and soon commenced planning.

Once accepted as a project, the engineers of the DNC were sent to study the area and plan a route. What happened next reveals a great deal about how much power lay in the hands of the “private interests” when planning caminos vecinales in this way. Effectively, the private interests – in this case a coalition of pineapple growers headed by none other than General Valdés – exercised a large influence over the final outcome by

265 Ing. Rene Etcharren, “Historia de un Camino Vecinal,” HN, Más Caminos! 1, no. 2, October 1949, 2, 42-45
possessing veto power. At first the DNC engineers, the trained experts who presumably were best equipped to plan the route, suggested a road running through the following communities: Palo Gacho-Zacatlixpan-Otatitlaan-Tinaco-Ciudad Alemán. As a cheaper alternative they proposed Palo Gacho-Alta Luz-Pueblo Nuevo-Papaloapan-Tinaco-Ciudad Alemán. The respective costs of these routes were $2,139,000 and $1,740,000. Both were rejected, again in the words of the head of the CNCV, because they were “beyond the economic possibilities of the growers.”

The third proposal was the winner and the route that was eventually constructed. It was narrower, windier, passed through fewer communities, and was nearly half the cost of the earlier proposals. It did, however, cut directly through El Cascajal. It then passed through only two other communities – Las Piñas and Agua Fria – before arriving in Papaloapan and then on to Cuidad Alemán. It is hard to escape the conclusion that the process had been carefully managed by the new owner of El Cascajal to achieve a new road at minimal cost that would serve his personal economic interests rather than the region as a whole. This conclusion is bolstered by the subsequent opening of four pineapple packing plants on the property, which contributed to a dramatic increase in the quantity of the region’s pineapple exports, and one suspects, a considerable fattening of General Valdés’ personal bank accounts.

Something similar happened in Jalisco in 1950, this time involving a large foreign company. On September 18, officials inaugurated a thirty-kilometer road between Lagos de Moreno and Unión de San Antonio. Officially, the road cost half a million pesos to

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266 Ibid., 44.

267 López de la Parra, “Los caminos vecinales y su influencia el en desarrollo económico,” 32.
build and was touted by the AMC as an important project that would affect over twenty thousand people along the length of the road. As was the case in Oaxaca, the local road was built through the tripartite funding system that characterized the AMC and the CNCV’s approach. Here the project was spearheaded by Nestlé, the Swiss-owned food company, which had opened up a large factory in Lagos de Moreno several years earlier. It is likely that the company paid most or all of the third owed by private interests, and received in exchange an enormous boost to their business.\textsuperscript{268} The new road undoubtedly facilitated the economic shift that took place over the next several decades as many of the ranchers who lived in the highlands of Jalisco converted from meat producers to dairy farmers to meet the demands of Nestlé’s operations in Lagos de Moreno.\textsuperscript{269} This was another example of how the \textit{caminos vecinales} program in practice supported the interests of large, capitalized businesses, even foreign ones.

The \textit{caminos vecinales} program proved popular and expanded quickly. In 1950, the first year of participation by the AMC, there were forty-seven official road projects that fell under its auspices. Most were of modest size, like the examples above. But the addition of a thirty-kilometer road to an area that had previously lacked transportation access could reorganize a local economy, as in the case of the ranchers in the Jalisco highlands. All told, the budget for 1950 included plans for 1,751 kilometers of rural roads.\textsuperscript{270} The program was also institutionalized. Even as the mania for public works projects that characterized the

\textsuperscript{268} “Primer Camino Vecinal Terminado,” HN, \textit{Más Caminos!} 1, no. 13, 32-33.


Alemán administration subsided under Ruiz Cortines, the *caminos vecinales* program thrived. In 1954, the number of road projects had almost tripled to 138 and the total length of those projects was slightly over 4,500 kilometers. Significantly, these projects included roads in twenty-four of Mexico’s thirty-one states.271

The budgets and reports from these projects reveal several interesting features of the program. The total cost for all of the local roads under construction in 1950 was 25.7 million pesos, a considerable sum if the cost had to be borne entirely by the federal government. But only $2.8 million of the total was paid by the national state directly through a government agency, in this case the SCOP. Another $8 million was paid by the CNCV, which used government funds but was also supported with money raised by the AMC and private money from the road transportation industry. Seven million pesos came from state governments out of their own resources, and nearly $5 million came from private sources. A small percentage, $2.5 million, was paid for by debt, probably issued by the central bank in Mexico City. All told, in 1950 the Mexican state managed to plan and build $25 million pesos worth of roads while shelling out approximately only $10 million.272 The deal was made sweeter by the fact that as the project expanded, it continued to benefit from labor donations. In 1954, sixty-seven projects were supported with private donations of labor, almost half the total.273 These were not given numerical values in the budget ledger, but could comprise a significant chunk of the total cost of a local road.

The tripartite funding arrangement that flourished in the 1950s and led to the

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273 López de la Parra, “Los caminos vecinales y su influencia el en desarrollo económico,” 10. See also Chapter 4 below for more on labor patterns.
construction of thousands of kilometers of local roads contributed to some of the trends that characterized Mexico’s economic history during the Miracle years, especially the consolidation of large-scale agriculture and the drive towards industrialization. This is not to say that caminos vecinales never improved the fortunes of poorer, agricultural communities. In the aggregate, however, Mexico’s approach to building caminos vecinales gave first priority to the needs of large-scale businesses (or would-be large scale businesses) in a way that undermined the sustainability of other forms of social and economic organization. As the above examples demonstrate, the dynamics of the process expanded the range of possibilities for capitalization and consolidation in the rural sector by offering well-connected and wealthier Mexicans more of a say in where roads went.

In the end, Mexico’s effort to build rural roads in the 1950s to complement its network of interstate highways was notable both for what it accomplished and for what it did not. The rhetoric of the state explained that local roads would act as an arterial system integrating the people of Mexico and opening isolated regions to new markets for both buying and selling. Judging from the amount of free labor volunteered by local communities to work on these projects, this idea had intrinsic appeal. But the program was carried out in a way that facilitated transformations in local economies, whether ranchers into dairy farmers or small pineapple growers into packers, that fit with the national state’s overall economic vision.

Trucking in the 1950s: The Emergence of Private Fleets

Mexico’s system of truck and bus regulation faced heavy pressure for reform during World War II and the economic and political crises of the postwar period. Having
weathered these challenges, advocates of continued regulation saw their position becoming further entrenched as the boom years of Mexico’s transportation revolution unfolded. Although voices against regulation continued to be heard during the administrations of Miguel Alemán and Adolfo Ruiz Cortines, opponents of regulation saw their position weakened and increasingly irrelevant to the concerns of Mexico’s policymakers. Even as heavy regulation led to cartelization and deep structural inefficiencies in the public service sector, hurting businesses that relied on public trucking, the political usefulness of regulation for the national state increased. In addition, the favored sons of Mexico’s development model – large, protected, highly capitalized industrial and manufacturing companies – increasingly leveraged their economic advantage to avoid relying on public service trucking altogether.

As we have seen, the debate that took place in 1946 and 1947 about the role of regulation in Mexico’s economy had resulted in important revisions to the Ley de Comunicaciones y Vías Generales. These reforms adjusted the regulatory system to favor large scale trucking organizations like the Alianza de Camioneros, while keeping the basic structure of truck and bus regulation intact. Yet, these legal changes did not put the matter to rest. The rapid growth of the road network brought new developments to the economics and politics of trucking.

Clearly, both sides in the debate over regulation did not see the 1947 law as the final word. After 1947, representatives of concessionaires, through such organizations as the Alianza de Camioneros and the Cámara Nacional de Comunicaciones y Transportes, continued to wage ideological battle with opponents of regulation in the press and in letters to the president. The main resistance came from the cámaras de comercio, vertically
integrated into the regime through Concanaco, the semi-official umbrella organization compromising local chambers of commerce. Members of the Alianza and other groups of concessionaires sought to preserve as much of state regulation as possible. The chambers of commerce wanted a looser regulatory regime or even the outright elimination of all state regulation.

The local chambers of commerce were joined in their campaign against regulation by urban interest groups that had been battling the Alianza and its monopoly of Mexico City’s bus system since the 1930s. Throughout the 1950s, appeals to abolish the system of permits and concessions that gave the Alianza its power were a continuous part of the public discourse in the capital. In 1953 the first meeting of the Congreso de Trabajadores del Transporte del Distrito Federal appealed to President Ruiz Cortines to reform the system. Among their many grievances against the Alianza were its “fraud against the workers and violations of the labor laws” and its “failure to fulfill its commitments . . . for the public benefit.” During the protests of teachers, railroad workers, and students that rocked Mexico City in the summer of 1958, student demonstrators hijacked city buses and burned them in the zócalo alongside effigies of José Valdovinos, the president of the Alianza, and painted slogans on the walls of the National Palace calling for an end to national control over bus transportation in the city.

Essentially, urban protestors and business groups represented by Concanaco were upset about the same thing: regulation of the truck and bus industries had led to poor,

274 See Chapter 2.
unreliable service and high prices. These groups had a point. The system of regulation adopted by the government and reinforced by the 1947 amendment created inefficiencies in trucking that would worsen over time. For one thing, the government’s insistence that public service truckers could only haul specific goods along specific routes created too many empty “back-hauls.” For example, trucks delivering dried meat to Mexico City from the Huasteca would have to make the return trip empty instead of shipping whatever happened to be available for sale. This raised operating costs for truckers and these costs were passed along to other parts of the economy when the government set higher prices for truck transportation. Second, there was little incentive for trucking firms to improve the quality or reliability of their service. As Mark Williams has pointed out, penalties for late deliveries were lax and shifted most of the burden of money lost from lateness onto customers rather than truckers. For example, federal regulations permitted truckers three full days to make the delivery on trips of two hundred kilometers along paved highways. After a five-day delay, customers were still required to pay 95 percent of the official price.

Indeed, during the 1950s Mexico’s system of truck regulation ossified into inefficiency and cartelization. Yet, these concerns were mostly ignored by the government. Having altered the law during the postwar period to address the urgent needs of an economy in crisis, policymakers in the fifties and sixties grew satisfied with the system of regulation and did not respond to complaints that it was broken or unfair. On the face of it, it is unusual that the regime would do so little to address the concerns of the country’s


Chambers of Commerce and Concanaco. These organizations were, after all, semi-official organs of the state whose membership was an important part of the state’s corporatist structure. But as Roderic A. Camp has shown, Concanaco, although politically important, did not represent the interests of Mexico’s largest and most powerful capitalists, most of whom did not participate much in the corporatist structures of the state.\textsuperscript{279} During these years of intensive focus on developing Mexico’s industry, the state was more concerned with protecting the interests of large capitalists who were moving the country towards industrialization. For this group, the liabilities of heavy-handed regulation were becoming increasingly irrelevant.

The reason for this is clear. Large businesses, many of them industrial enterprises, and so favored with government subsidies and other advantages, simply avoided the problems by purchasing and operating their own fleets. As the decades wore on, the size of private truck fleets grew considerably. In 1938 for example, approximately half of all Mexico’s registered trucks were employed in public service trucking. Just fourteen years later, that number had plummeted to only 10 percent.\textsuperscript{280} As Mexico’s economy grew and evolved in ways that permitted larger-scale businesses, these businesses had fewer reasons to protest against inefficiencies in the public service sector. They simply supplied their own transportation. In fact, much of the increase in officially registered trucks between 1940 and 1956 was the result of an increase in the size of private fleets. The number of trucks involved in public service trucking actually declined through the 1940s and 1950s,


even as the volume of trucks on Mexican roads skyrocketed. Thus, the emerging economic reality was that highly capitalized businesses increasingly purchased their own fleets of trucks while smaller businesses, shorter on capital, relied on the regulated public service sector. Battles over prices and the quality of public service, although initially affecting a large swath of the Mexican economy, progressively became an issue that did not greatly concern big industrialists and other large capitalists.

As noted, middle and small-sized businesses that could not afford to buy their own trucks were essentially forced to rely on public service trucking. Unlike highly capitalized enterprises that could utilize larger economies of scale, it was often unfeasible and economically inefficient for small businesses to purchase trucks which would be sitting empty the majority of the time. Amado G. Gutierrez and Vicente de la Garza from Tampico explained the situation clearly in a letter to President Alemán on behalf of the local chamber of commerce. Abolishing regulation and instituting free transit would better serve the interests of their constituents whom they described as “small businessmen and ambulantes.” They explained that the system as it was elevated the cost of living by adding to the price of nearly everything, as well as inhibiting small merchants’ ability to sell goods efficiently.

As all this was taking place, the political importance and usefulness of public service trucking and busing for the national government was growing, further limiting the likelihood of potential reforms. The trucking and busing industry remained politically involved thanks to organizations like the Alianza and the CNCT. Government regulation

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281 As noted earlier, the number of registered trucks increased by a factor of five between 1940 and 1955. See Appendix A.

had been present from the beginning of the automobile age in Mexico, so from an early
date it had been critical to these groups to develop the political channels to advance their
interests. This meant having the president on their side. Thus, both organizations were
eager to support whoever was in power. Moreover, allying with these groups had long
been a successful strategy for national administrations that found their political support
useful on both practical and ideological grounds.  

The persistence of cooperation between the Alianza and other large concessionaires
and the national government demonstrates the importance of the alliance between the state
and powerful trucking interests during the years of the Mexican Miracle. In fact, the
transportation sector was viewed by government and private capital alike as the perfect
venue for demonstrating the depth of unidad nacional and the successful incorporation of
capital into the government’s political orbit. The rhetoric of cooperation that emerged
between business and government was elevated to remarkable heights. At every
opportunity, business and government mouthpieces touted their success in solving
problems related to the country’s trucking system. For example, when conflict emerged
over restrictions on the size of trucks that would be permitted on the federal highways,
government and private interests formed a joint commission representing both the SCOP,
the AMC and an unspecified group of truckers, probably reflecting the interests of the
Alianza. This commission was able to work out a compromise solution. As the report on
this issue explained, “Today in transportation, tomorrow in government relations with
commerce and industry, is it clear that reciprocal understanding and calm consideration of

283 Presidents Carranza, Obregón, and Calles found it useful to support bus and taxi organizations as a
counterweight to the trolley companies that dominated urban transportation at the time. See Davis, Urban
Leviathan, 52-62. There was also a solid tradition of using buses in the countryside to transport PRI
supporters to the polls on election day to vote en masse for the official candidates. See Williams, Market
Reforms in Mexico, 116.
the view of both the governing and the governed is a happy formula for resolving the big problems of our time.” Doubtless, there was much in this language that was formulaic and rhetorical. However, it was also pervaded by a sense of optimism that Mexico’s economic growth would redound to the benefit of the entire nation, even as government policies favored the rich.

All of this unfolded against a backdrop of remarkable change to trucking technology that challenged Mexico’s developing infrastructure. Important routes, especially the one from Mexico City to Laredo, had been completed in the late 1930s, when trucks weighed substantially less. Bigger and heavier trucks undeniably taxed the existing road network judging from debates that began to appear about scales, weight restrictions, and road maintenance. As the problems grew, at first the government tried to step up its enforcement levels on existing weight restrictions. This proved counterproductive; not only was it impossible to enforce these regulations, but the imperative of economic development required the adoption of bigger trucks. In fact, the notion that bigger trucks were better was elevated to the status of economic verity by advocates of motor trucking. As one commentator put it in 1951 after the government raised the weight limits on federal highways yet again, “Transportation will only be cheap when high-tonnage trucks are employed over long distances.” Whether true or not, this attitude contributed to an increased strain on the existing roads in the country, few of which had been constructed to support the heavier vehicles.

By the 1950s, trucking had become important in Mexico for both economic and


285 “Nuevas Disposiciones Sobre Cargas de Autotransportes,” HN, Más Caminos! II, no. 21, July 1951, 14-17.
political reasons. As the scale of the trucking industry expanded and as it gained importance for the national economy, some of the limitations of the nationally-regulated system of concessions, price-setting, and cooperatives were acutely revealed, provoking increased resistance from small merchants and small businesses through organizations like the cámaras de comercio. The drawbacks of government regulation, which had worked well enough in the thirties when the industry was still small, emerged more clearly during the 1950s. Unable to regulate effectively an increasingly large and dynamic industry like trucking, the continuation of firm and comprehensive government regulatory policies created inefficiency, waste, and monopoly.

Yet, it was mostly smaller businesses – family stores, small merchants, shopkeepers – that suffered as a result. As private fleets expanded among highly capitalized enterprises that could afford to invest money in their own fleets of trucks, Mexico’s path toward urban-led industrialization was affected less by an inefficient public service sector. At the same time, the continuation of a vocal and active public service industry, represented by organizations of cooperatives and concessionaires such as the Alianza de Camioneros and the Liga Nacional de Transportes, served the state’s interest by aiding it politically and ideologically. Bolstering the position of these organizations within the corporatist state helped provide legitimacy for the government and aided its political control over an important economic sector.

Made in Mexico: the Shift to Domestic Automobile Manufacturing

Although Mexico’s road network was growing at an impressive rate, keeping the country provisioned with enough cars, trucks, and buses continued to be a challenge. It
was impossible to escape the reality that the success of Mexico’s road system ultimately depended on an imported technological base. This presented two major problems. In the first place, the assembly model of automobile construction fed into the country’s continual struggle to overcome its balance-of-payments deficit. Second, the reliance on U.S. technology raised uncomfortable questions for a government that presented roads and autos as a development project consistent with a commitment to economic nationalism. The end result was a sudden policy reversal in 1962 that reorganized the industry by replacing the assembly plant model with true production geared towards the domestic market.

As the postwar crisis was ending in 1948, demand for vehicles continued to outstrip supply. The solution was not simply a matter of assembling enough “completely knocked down” vehicles to meet demand. Throughout the 1940s and 1950s, Mexico’s capacity to assemble vehicles exceeded its actual production in large part because of the quotas imposed by the government. The restrictions on cars lasted well into the 1950s, while the government removed quotas on trucks earlier because of the importance of trucking to the economy. For example, in 1949 Ford, General Motors, Packard, Chrysler, Hudson, and Nash-Studebaker all operated assembly plants in Mexico with a combined capacity to produce 52,000 cars and trucks a year. Government quotas limited that production. The 1947 quota was 21,000. For the twelve-month period between July 1950 and July 1951, only 17,000 vehicles were built. In other words, after the severe shortages of the war years, in the late 1940s and early 1950s, Mexico’s automobile industry was operating at approximately one-third of its potential at a time when the country was clamoring for more

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286 See Chapter 1 for the earlier history of CKD vehicle assembly in Mexico.

trucks and buses. Recognizing the increasing importance of the road network to the economy, production quotas on cargo trucks were the first to be lifted when the state’s managers felt the balance-of-payments was under control. In 1950, the federal government authorized the unrestricted production of trucks. According to José J. March, writing in Más Caminos, in addition to an improved balance-of-payments, the government decided to act because the situation “obliges the state to take preventative measure to avoid the paralysis or collapse of the automotive transport sector.”

But these relaxations were only temporary responses to fluctuations in Mexico’s balance of payments.

In fact, quotas were part of the vicious cycle of inflation and devaluation that plagued the Mexican economy in the period from 1940 to 1958. During these two decades, Mexico’s population growth combined with the needs of an industrializing economy to create constant inflationary pressures. At the same time, industrialization required importing capital goods such as factory equipment and, as we have seen, cars, trucks, and buses. The need for imports meant that Mexico increasingly bought more from abroad than it sold, creating constant worries about the balance-of-payments deficit and capital flight. Devaluing the currency would address the import-export imbalance by making exports more competitive internationally, but would exacerbate inflation. Mexico’s leaders wrestled with this dilemma throughout the period. They tried to avoid devaluations by erecting protective tariffs instead, hoping that the lack of competitiveness abroad would be offset by a growing domestic market with increasing purchasing power. But the cycle proved unavoidable. Major devaluations in 1947-48 and 1954 hurt ordinary Mexicans by prompting inflation and also set back industrial growth by making imports expensive. It

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also held back Mexico’s transportation sector by making vehicles scarcer and more expensive.  

Assembly operations also pointed up the tensions inherent in a nationalistic project that was dependent on U.S. companies. The relationship between Mexican nationalism and the country’s urgent need for automobiles was recognized by the major automakers. Steven Bachelor has described General Motor’s efforts at improving its public image when it opened manufacturing plants in Mexico City in the 1960s. Concerned about the perception of the company as a “new invader” in the long tradition of U.S. interference in Mexico, GM and Ford went to great lengths to improve the companies’ image in Mexican eyes by creating executive positions in charge of “civic affairs” and advertising campaigns that promised to bring prosperity to Mexico. These efforts were rooted in the past. Nearly as soon as U.S. automakers began to assemble vehicles in Mexico, they launched advertising campaigns aimed at cultivating a positive public image. As early as the Cárdenas regime, U.S. automakers led by GM and Ford demonstrated an awareness of their position in the country – the enormous potential for both future growth as well as the pitfalls. The automakers attempted to offer Mexicans images of their companies that deemphasized their foreign provenance and linked their growth to Mexico’s future prosperity. Throughout the forties and fifties, GM adopted slogans such as “Made in Mexico” and “Transporting the Nation towards a better life.” These slogans were

289 For a detailed explanation of this problem see Medina Peña, Hacia el nuevo estado, 127-140.  
plastered on billboards and published in magazines and newspapers. In fact, despite the structural changes that took place in the auto industry between 1930 and 1960, U.S. automakers were remarkably consistent in the messages and meanings behind their public relations efforts. This consistency certainly helped to increase the effectiveness of the message during the decades of Mexico’s transportation revolution, perhaps helping to blunt some of the hostility and the contradictions inherent in a nationalistic project that was so deeply integrated with U.S. capital and technology.

Assembly operations by large foreign automakers did not meet Mexican demand for vehicles. Even after the immediate balance-of-payments crisis of the late forties and early fifties was alleviated with the devaluation of 1954, the shortage of automobiles remained a problem. In 1957, for example, government quotas once again limited the number of cars and trucks foreign firms could assemble. Citing the opinion of business leaders, *El Nacional* estimated that the total demand for that year reached approximately 33,000 trucks and another 33,000 cars, yet government quotas held actual production to 22,608 trucks and only 17,930 cars.\(^{292}\) Unmet demand increased the number of pre-assembled vehicles that Mexicans were willing to buy from abroad, despite the excessively high cost. Between 1952 and 1955, the number of imports more than doubled from 3,500 to almost 8,000.\(^{293}\) In 1960 it skyrocketed to more than 34,000.\(^{294}\)

These pressures pushed Mexico, as well as the rest of Latin America, in the direction of domestic manufacturing in the 1950s and 1960s. The transition was initiated


in 1955 with the founding of Diesel Nacional (Dina), a semi-public firm that built trucks and buses for the domestic market. The creation of Dina was part of the overall economic strategy of import substituting industrialization. In an effort to encourage the production of automobiles, especially trucks and buses, within Mexico, the government favored Dina with big tax breaks and other subsidies. In exchange it was expected that the firm would create forward and backward linkages to other industries such as batteries, industrial adhesives, cables, cement, glass, radios, paint, and others. Dina operated this way until 1979, when the government of José López Portillo repealed many of the subsidies that had made Dina sustainable. Unable to compete in this new economic context, a few years later its main plant in Cuidad Sahagún was closed and the firm was parcelled and sold off to investors.

The history of Diesel Nacional illustrates how moving towards direct manufacturing posed a dilemma. The thinking was that Latin American countries could mandate that most or all of the parts used in vehicle construction originate in Mexico. This would help the economy by creating linkages to other industries and eliminating the need to import parts from abroad – an obvious way to help correct balance-of-payment deficits. However, this policy could also lead to higher prices for automobiles, which could operate as a drag on economies that were becoming increasingly dependent on motor vehicles. In 1962, when Mexico took directed action to bring automobile manufacturing to the country through the passage of the Integration Decree, it did so in a way that differed from other

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295 Ibid.

Latin American countries like Argentina and Brazil. For example, unlike Brazil, which dictated in 1956 that all vehicles produced in the country contain 90 percent domestic parts by weight, Mexico adopted a less restrictive policy. In the 1962 decree that legally propelled Mexico towards actual domestic manufacturing of automobiles the law required that only 60 percent of the direct cost of the vehicle be of domestic origin. Measuring by price rather than weight was less stringent; U.N. figures put the true requirement at only 40 percent by weight. While Brazil and Argentina (which maintained stricter laws) struggled with the high cost of vehicles, Mexico’s policy initiatives helped manage prices at the expense of establishing linkages with other industrial sectors. Even so, prices remained significantly higher than in the United States and Western Europe.

As Mexico’s road network grew, acquiring enough cars, trucks, and buses to keep road transportation operating smoothly continued to be a challenge. Economic circumstances were such that throughout the late 1940s and 1950s, the supply of new vehicles was never able to meet the demands of a country in the midst of rapid economic growth. The failure of the assembly model prompted the Mexican state to abandon it, opting, as did the other industrial countries of Latin America, to create a protected market for cars and trucks. As a result, the large foreign automakers were required to open fully functional automobile factories inside the country and to use a substantial percentage of domestic parts in their operation. This arrangement was strained by the fact that the biggest of these, General Motors and Ford, were large U.S. companies in a country with a long history of foreign commercial interference. Automakers like GM were aware of this

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297 Steven Bachelor, “Miracle on Ice: Industrial Workers and the Promise of Americanization in Cold War Mexico,” in In from the Cold, ed. Joseph and Spenser, 256.

tension, and together with the government made a measured effort to appeal to Mexicans as something other than an exploitative foreign presence. Ultimately, as Mexico moved towards a reliance on road transportation, the threads that wove together U.S. capital, Mexican economic growth, and the legitimacy of Mexico’s one-party state were pulled tighter.

**Mexico’s Roads Revolution – An Appraisal**

Between 1947 and 1960 Mexico’s economy was definitively transformed by the creation of a road transportation network. Although real changes had occurred before and during World War II, in the late 1940s and 1950s automobile transportation acquired the importance and prominence it has maintained in Mexico until the present. By 1960 Mexico had completed the major highway projects that would shape its road system. Major roads had been built in enough regions of the country to make a claim that roads truly connected the nation. Road maps from 1960 show that by this time there were major routes in the south and west of the country, places where communications were traditionally weak and where roads had not played a major role in transportation prior to 1940. In 1960, Mexico’s official statistics counted a federal highway network that had nearly doubled during the previous two decades and stretched to 45,000 kilometers. A similar growth rate was maintained in the following decade bringing the total to 71,000 kilometers by 1970.²⁹⁹

More important than the total mileage was the fact that by 1960 roads comprehensively covered the country. There were several key routes. The newest was a federal highway that joined the scattered cities of the west coast with the center and with

²⁹⁹ Secretaría de Comunicaciones y Obras Públicas. *Caminos y Desarrollo*, plates IV and V.
the United States in Nogales.300 Tacked onto the road connecting Mexico City with Guadalajara, what was eventually named Carretera Federal 15 passed through the port of Mazatlán, took an inland route up the Pacific coast through Culiacán, Los Mochis, and Hermosillo before meeting up with the United States in Nogales. The center of country, the first region to experience the construction of large numbers of roads, continued its transition with additional routes that made movement between various cities in the center more direct. For example, by 1960 one could drive directly between Pachuca and Veracruz as well as between the Bajio cities of Morelia and Querétaro without passing through Mexico City.301 Also, by 1960 construction was finished on the three major “transversal” routes that complemented the three north-south ones: paved highways from Matamoros to Mazatlán, Tampico to Manzanillo, and Coatzacoalcos to Salinas Cruz in the Isthmus of Tehuantepec.302 Finally, as mentioned at this beginning of this chapter, in April of 1950 Mexico celebrated the grand opening of the Cristobol Colón highway. When the final stretch of road in Chiapas was officially opened it was possible to drive straight from Juarez at the U.S. border to El Ocotal, Guatemala.303

But the promise of automobile roads lay in more than just more long-distance highways; roads now reached into the rural areas of the country and connected isolated regions in a way that other kinds of transportation did not. By 1960, Mexicans had built

300 Ibid.

301 Secretaría de Communicaciones y Obras Públicas. Caminos y Desarrollo, Lamina III; see also Jáuregui, Los transportes, 134.


approximately ten thousand additional kilometers of state roads and local roads which complemented the emerging long-distance network.\textsuperscript{304} The construction of these smaller roads was uneven, but they tended to be built most in states like Veracruz, Mexico, and Michoacán – places with sizable populations and well-developed agriculture that could be easily incorporated into a national market.\textsuperscript{305} The economic significance of these roads was increased because they were built in places where transport links had previously been limited or even non-existent.

Evidence that road transportation had reached maturity was everywhere in the media by the 1950s. Newspapers published articles about topics concerning road transportation that they had not previously broached. These included calling attention to the conservation needs of Mexico’s road network, voicing new demands for safety standards and the alleviation of congestion on major routes, and citing the importance of cross-border trucking for both the United States and Mexico.\textsuperscript{306}

Road transportation gained at the expense of Mexico’s rail system. During the 1940s, patterns of public investment in transportation indicated an important shift in the government’s priorities as well as the significance of road transportation for the national economy. In 1939, for example, the proportion of public funds spent on road

\textsuperscript{304} It is difficult to nail down precise numbers here. Because of the decentralized process of building caminos vecinales and caminos en cooperacion, as well as the large state bureaucracy administering these programs, the numbers vary in different sources. Moreover, it was not unusual for conservation and maintenance costs to be recorded similarly by using kilometers instead of money as measurements. For example, the state of Guanajuato’s local road board reported work on 2,493 kilometers of rural roads between 1933 and 1976, but also reported the conservation totals of 2,147 kilometers during the same period. We can’t conclude from this that the state built exactly 347 kilometers of rural roads, but it does provide a sense of the scope of local road building.

\textsuperscript{305} See Instituto Mexicano del Transporte, Historia de las Juntas Locales de Caminos, Table 2.

transportation was 39 percent. Between 1945 and 1952, this number averaged 52 percent. How this money was spent is also revealing. During the 1940s and the early 1950s, far more money was invested in new roads, new vehicles, and improvements to the existing road transportation infrastructure than on the maintenance and preservation of that network – a ratio of approximately three to one. Investment in railroads, in contrast, exhibited almost the opposite profile. During the same period, 66 percent of total investment in railroads went towards conservation and maintenance, leaving only 34 percent for spending on new tracks and new cars. In 1950, the ten-year average increase in the volume of cargo hauled by rail stood at 4.5 percent. The same statistic for trucking volume was almost twice as high at 8.7 percent. These figures provide evidence of an important trend that was clear by the 1950s – road transportation had achieved a new prominence in Mexico.

With road infrastructure in place, Mexicans made cars, trucks, and buses an inescapable feature of economic life between 1945 and 1965. The utilization of automobiles skyrocketed as roads definitively replaced rails as the most important sector of Mexico’s transportation infrastructure. In 1945 there were just fewer than 200,000 officially registered vehicles throughout the country. Twenty years later that number had increased by six-fold to a total of 1.2 million. Trucks comprised a large percentage of the new vehicles appearing on Mexican roads. In 1955, almost half of all motor vehicles in the country – 220,000 out of 561,000 – were camiones. Additionally, the use of automobiles

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307 López de la Parra, “Los caminos vecinales y su influencia el en desarrollo económico, 8, 22.


309 See Etcharran Gutierrez, *Manual de Caminos Vecinales*, 19; see also Appendix.
exceeded the rapid pace of population growth. In 1945 there was one vehicle for every 118
Mexicans; in 1965 that ratio was one to 34. Gas consumption grew at a similar rate,
sextupling to 5.8 million liters.\textsuperscript{310} Mexico had been transformed into a nation of roads and
automobiles.

\textbf{Roads and Economic Growth}

Mexican elites imagined Mexico’s shift to roads to be a key foundation of future
economic prosperity. There was little resistance to the idea that building roads and creating
an automotive transportation network would expand the economy and facilitate the
country’s transformation into an urban, industrialized society. It was not difficult to
imagine all of the ways that improved communications and transportation could benefit the
country. Experts of all stripes including newspaper writers, academics, and policymakers
were quick to point out how road transportation could help. These reasons included
“breaking the isolation in which many populations and regions find themselves,”
facilitating the decentralization of industry, ending the “closed economy,” reviving
industries like mining and oil, and encouraging the population of sparsely-settled regions.\textsuperscript{311}
One writer deemed it “almost axiomatic” that new roads lead to the development of new
industries.\textsuperscript{312} Such were the lofty (and vague) expectations of what a road network could
deliver for Mexico’s economy. Those who imagined roads would help create a “modern”
Mexico were justified in their beliefs. Improved transportation contributed to nearly all of

\textsuperscript{310} Ibid.


the economic characteristics of the Mexican Miracle, including GNP growth, the colossal expansion of Mexico City, and the increasing reliance on industry rather than agriculture as the economy’s main motor.

But a closer examination of roads’ impact on Mexico’s economy reveals a number of less obvious but equally important ways that the roads revolution affected Mexico’s economic history. First, examples from the state and local level lead us to think carefully about the meaning of economic growth. What did increased GNP and production figures mean in practice? As the examples below will illustrate, growth sometimes meant little more than the incorporation into the national economy of production that had previously been left out of national bookkeeping. Second, Mexico’s shift to roads contributed to the unequal distribution of growth in key ways. Like other public works projects, the arrival of road transportation to an area provided a one-time economic boost that disproportionately benefited those who were already well-off by boosting the value of real estate and other investments.

Looking more closely at the details of how roads related to economic growth offers some illuminating examples of these processes. Take Nayarit for example, a small, mountainous state in western Mexico with a population of approximately 220,000 people in 1950. Like many Mexican states, its primary product was maize to feed its population, but the state was also known for its production of tobacco. By one estimate Nayarit provided 70 percent of all the tobacco produced in Mexico. In 1945 the number of roads in Nayarit was minimal. According to official statistics, the state could only claim 15 kilometers of “first class” roads as World War II was coming to an end. Although this figure probably adopts too restrictive a definition of serviceable roads, it is safe to say that
there were practically no paved roads in Nayarit in 1945 and that the dirt roads that existed were unlikely to be passable at all during the rainy season.

The state experienced a miniature version of Mexico’s road revolution rather quickly. In just five years, between 1945 and 1950, the official length of the state’s road network expanded from 15 to 510 kilometers. About half this total was the result of the completion of a section of the International Pacific Highway that passed through the state, which was a federally-built road. The remaining kilometers were funded under the auspices of the Roads in Cooperation program.\textsuperscript{313}

In a state of less than 30,000 square kilometers, many of which were extremely rugged, the introduction of these roads created a powerful economic jolt. Although, once again, the absolute numbers in the following statistics must be taken with caution, they do provide a good sense of the economic change roads facilitated in Nayarit. According to official census data, the maize harvest increased from 30,000 tons in 1945 to 180,000 tons in 1950. The value of the banana crop mushroomed from $400,000 pesos to $12,000,000. Likewise rice, which had not previously appeared in any official statistics as a significant product of the state (although it had long been produced on a small scale for local consumption), suddenly became an export product worth $4,000,000 a year. As an exception to the general rule, tobacco production did not notably increase according to this data. All in all, the economic windfall brought on by the arrival of these roads was quantifiably reaped by the state government whose budget increased by a factor of three and a half, since its tax revenue increased in proportion with economic growth.\textsuperscript{314}

\textsuperscript{313} Secretaría de Communicaciones y Obras Públicas. \textit{Caminos y Desarrollo}, Table 2.

These numbers deserve careful consideration and analysis. It was, after all, just the sort of economic change that Mexico’s leaders envisioned and hoped would result from building roads. But upon careful consideration the numbers tell a more complex story. Despite the remarkable increase in size and value of the Nayarit economy the total amount of land under cultivation only increased modestly – from eighty thousand to one hundred thousand hectares. This suggests, on the face of it, that the state’s economic productivity made remarkable gains during this period. Moreover, road boosters unequivocally stated that this was due in large measure to the arrival of a road network. Wrote the author of an article on Nayarit’s economic progress, “This means that, because there now exists transport capacity while before there was a lack of adequate communications, that the same land is producing more and better products.” Indeed this sort of view – that roads played a role in raising productivity – was common among many of Mexico’s leaders.

Although roads and increased productivity (defined as the quantity of product yielded per hectare) often did go hand-in-hand, it is difficult to say that one caused the other. To be sure, the arrival of a road to a region had carryover effects that could lead to getting more out of the same land. For example, Nayarit was flooded with tractors in the same years the roads were built, going from a negligible number to over 450 registered tractors in 1950. And roads did provide incentives to take advantage of other trends in Mexican agriculture – such as the incipient Green Revolution – by promising opportunities to get production to markets.

However, despite the common perception that building roads increased a region’s productivity, what the nearly instantaneous elevation of the region’s economic statistics

\[315\] Ibid.
demonstrates is that roads were incorporating more and more of Mexico’s agricultural production into the sphere of a national market. This is perhaps the most important conclusion we can draw from the economic statistics of the era. Prior to a long distance transport link via a road, large swaths of Mexico’s agriculturally productive lands were set off from the national market; whatever was produced had to be consumed locally before it went bad. The introduction of a road meant this was no longer true. Once a swath of agricultural land could have its production transported beyond local markets, and thus become integrated into national economic statistics, its productivity appeared to rise dramatically.

A similar example comes from the community of Ixtlán in the state of Michoacán. In the middle of 1950 a new road built in conjunction with the *caminos vecinales* program opened. The fifty-three kilometer road connecting the towns of Zamora in Michoacán and La Barca in Jalisco passed directly through Ixtlán, which is situated about halfway between the road’s endpoints. As in other places, the arrival of this road ushered in a statistical windfall of increased productivity and greater agricultural output. Wheat production tripled between 1949 and 1951. Maize production doubled. And new crops that had been marginal before, such as chickpeas and kidney beans, suddenly became a major part of the economy.

But these numbers, recorded by state agents and also reported in a journal promoting roads and automobiles for Mexico, tell us more about the extended reach of national bookkeepers than they do about actual production. The production figures are striking in a key way: the reports from 1948 and 1949 are all rounded numbers whereas the ones just two years later record production down to the ton. The pre-road number for

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wheat was 6000, 10,000 for corn, and 5,000 for chickpeas. After the road was built, the numbers were not just larger, but also more precise. 21,496 tons of wheat, for example, were produced by the community in 1950 and 1951. And exactly 14,468 tons of chickpeas. These numbers demonstrate the way in which the arrival of a road created a statistical windfall of increased agricultural production and economic growth for the national state. All was not illusory to be sure. Agriculturalists pointed out that the new road acted as a “guarantee” for them, enabling them to plant more knowing that the likelihood of spoilage was lower now that faster transport was available. But as in the state-wide case of Nayarit, road building in the 1950s contributed to economic growth in many ways, including bringing more of Mexico’s production under the purview of state officials who duly recorded it in the state’s official records.

The introduction of a road to a community like Ixtlán also contributed to widening the gap between the well-off and the rest of the community. The most important cause of this phenomenon was the increased value of real estate once a road was introduced. Like the introduction of irrigation and other public works projects, the arrival of a road injected new value into previously isolated properties. Closer to markets, the land furnished wider economic possibilities that could double or triple its worth.316 This did not affect just the very wealthy, but anyone who owned land near a new road. For those who did not own property, and even for ejiditarios who were legally prohibited from selling their land on the market, this particular economic benefit passed them by completely. In Ixtlán, for example, a local landholder named Sánchez Villaseñor, who owned a large, six hundred hectare property, admitted that since the opening of the road “his lands had tripled in

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Something similar was going on in the above example of Loma Bonita. There, the real estate value of El Cascajal was boosted by the construction of a road through the property, after it was bought by General Valdés at a pre-road price. By increasing the value of property and real estate, the construction of roads throughout Mexico increased the wealth of those who were already well-off enough to own property and contributed to the increasingly unequal distribution of wealth that characterized this period of Mexican history.

Summary and Conclusion

Building on the foundations laid earlier, between 1948 and 1960 the Mexican state oversaw the development of a comprehensive road network consisting of long-distance highways, rural roads, and a well-developed trucking industry. But although the Mexican state was always squarely in the middle of the story, Mexico’s transition to a road-based economy was not a simple case of an increasingly powerful government apparatus using its new authority to carry out a major development project. Instead, Mexico’s road network was constructed through a complex and negotiated process that involved entrepreneurs, state-employed engineers, local communities, and U.S. automobile manufacturers. Contrary to many interpretations of the Mexican state during the middle decades of the twentieth century, the creation of a road network suggests that its effectiveness in achieving economic growth and carrying out important development projects lay as much in its flexibility as in its increasing reach. Mexican policymakers effectively made coalitions and alliances with other segments of Mexican society to accomplish their goal of a

transportation revolution. The outcome was an impressive economic achievement, but one that resulted in contradictions and more than a few unfortunate consequences.

The evolution of road-building policy culminated during these years in a system that tended to favor the wealthy over the needs of the nation as a whole. Having completed most of the critical trunk highways, the national state shifted its priorities to building local roads that would complement the major routes. Private capital played a major role in this process. By proposing, planning, and partly funding local road projects, wealthy Mexicans were able to influence where local roads went, often in ways that directly favored their individual economic interests over regional integration. Similarly, large capitalists avoided the inefficiency and unreliability of the regulated trucking industry by opting out; businesses with enough money purchased private fleets of trucks to ship their own products. This was an option only available to established businesses and enterprises backed by wealthy individuals. Middle-class entrepreneurs and small-scale businesses were left to depend on the increasingly expensive and inefficient regulated trucking industry. The scarcity and high cost of vehicles continued to plague both groups. This pushed the Mexican state to establish a true auto manufacturing industry, with long-term consequences for the country’s economy.

Finally, during these years Mexico’s road network reached new maturity. It was an important part of the Mexican Miracle and contributed in many ways to some of the period’s defining characteristics including the expansion of a national market, industrialization, urbanization, and the persistence of economic inequality. The Green Revolution and unprecedented population growth in the middle years of the twentieth century made possible the extraordinary transformation of Mexico from an agrarian society
to an urban, industrial one. The creation of a road transportation network and the changes it brought were critical to this transformation. For the leaders of Mexico’s state, from Calles to Ruiz Cortines, roads offered the promise of creating a modern, capitalist country featuring a vibrant economy with political and social stability. The development of a road network helped make this possible, even as it exacerbated the worst features of Mexico’s economic “miracle.”
CHAPTER 4
The Local and the National: Engineering, Labor, and Extralegality on Mexico’s Roads

We now take a closer look at how Mexicans created and maintained a road transportation network between 1925 and 1960. In the first place, the mechanics of road construction were an important part of this process. Building roads in much of Mexico was difficult. Mountain ranges, tropical zones, and desert areas all presented challenges for road engineers, especially in the early years of road building. A sustained rainy season in much of the country contributed to the difficulty of the task. The result was a fitful process that in practice was far less orderly than government officials suggested. Second, in the context of these challenges road-building labor patterns evolved in ways that reflected the variety and diversity of local conditions. The “informal” components of road transportation were also important. These included both extralegal aspects of road construction and trucking. Finally, we explore the question of labor from a different perspective: those who did the work of driving trucks on Mexico’s roads. Who became truckers and what does their experience tell us about Mexico’s shift to automobility?

In examining these aspects of Mexico’s shift to roads, the argument is that a key characteristic of this transformation was the way it reflected the blending of a national development project with the diversity of local conditions. As previous chapters have shown, the creation of a road transportation network was conceived by the state as a vehicle for creating a modern and industrialized Mexico. At the same time, however, the project was executed in a way that preserved considerable flexibility at the local level. Part of this flexibility was by design, but part of it was the ironic outcome of a national state with limited power attempting to overreach its capacity to direct this development project.
Whether accidental or intentional, this flexibility created maneuvering room for ordinary Mexicans to navigate the transition to a road-based economy, reduced the potential for conflicts, and contributed to both the strengths and weaknesses of Mexico’s road transportation network.

Off the Map: A Closer Look at Road Construction in Mexico

The accomplishments depicted in road maps and atlases were real and resulted in the most significant reorganization of Mexico’s transportation infrastructure since the construction of railroads in the late nineteenth century. Yet, looking only at the lines on state-produced maps and the numbers in state-produced charts belies the spontaneous nature of day-to-day road construction in Mexico during this period. Building roads in Mexico between 1925 and 1960 ran up against considerable challenges, and resulted in progress that was often fitful and confusing. This was significant, I argue, because it lent to the enterprise a less-statist feel than other big government infrastructure projects. Road building was simultaneously a national and local undertaking. The flexibility that this entailed helped to mitigate conflict and led to a state-led development project that exhibited a great deal of local variation and met with less local resistance than other modernization efforts.

In general, Mexican roads during this period were classified as *terracerías*, *revestidos*, or *petrolizados*. These terms were part of an official lexicon of civil engineering, and so theoretically their meaning could be precisely fixed. However, in practice the terms exhibited a large degree of flexibility. Official statistics on Mexican roads usually treated the three categories as separate and precisely bounded entities, but in
reality the three classifications were fixed points on a spectrum of quality and completion. Roughly, roads categorized as *terracerías* indicated that only the first step of the road-building process had been achieved. The land had been cleared of growth and a raised and packed earthen path of reasonable width had been carved through the landscape. In most of Mexico, subject to intense rainy and dry seasons, these roads were not all-weather, since there were no permanent drainage works and they tended to wash out during periods of intense rain. At the other end of the spectrum were paved roads, which in all but most extraordinary conditions were traversable throughout the year, built with permanent drainage works and a smooth surface that repelled rather than absorbed water. Roads defined as *revestidos*, or covered, lay somewhere in between. These roads were surfaced, usually with gravel or crushed stone, but not paved. The surfacing gave them durability beyond that of dirt roads, but they could not always be relied upon during the rainy season. Much depended on the quality of construction and the weather.

In sum, Mexican roads encompassed a wide variety of quality and conditions and exhibited little uniformity. Most importantly, the process of road construction from conception to completion was often achieved in fits and starts. Certain sections, or *tramos* as they were called, of major routes would be reported as complete two or three times, as officials wanted to be the bearers of good news. A particular route could be reported as complete several times in the span of a few years, first as a dirt road or poorly surfaced one that was only reliably passable from September until April, then later as a fully paved road wide enough for two-way traffic. Usually, portions of any given route were cut, surfaced, and paved at different times.

This reality was complemented by the fact that naming practices were not well
established. Major routes were designated by their two end points, such as the Mexico City-Nuevo Laredo route, but within such clearly defined projects were seemingly infinite combinations of tramos that were cleared, built, surfaced and paved at different times depending on local conditions. Official government correspondence, progress reports, and instructions between officials in Mexico City and the Road Boards, state governments, and local contractors were almost always couched in terms of tramos, ranging anywhere from a few kilometers to a few hundred. It was not unusual for work on a particular tramo to start and then stop for months or even years at a time owing to some combination of labor difficulties, lack of funds, or shortages of material and equipment.

Complicating the picture further was the fact that roads were sometimes built by private companies or state-owned organizations like Pemex entirely for their own purposes and without any coordination with the DNC or other road-building authorities. In the state of Chihuahua during the 1940s, for example, private logging companies constructed four thousand kilometers of roads to expand the reach of the Mexico-Juarez highway into forested areas. The extraction of timber grew apace, and by 1950 the logging industry in the state included fifteen thousand workers and 87 sawmills. Most of these roads were probably abandoned as areas were cleared of timber, but some of them served as the foundations for future projects.\(^{318}\) Pemex also constructed its own roads outside the purview of official schemes.\(^{319}\) Like the roads built by the timber companies in Chihuahua, these were only slightly more than temporary paths through which vehicles could pass during the dry season, and only rarely became permanent. Whether they came and went,


or were the foundation for something more lasting, the addition of privately built roads could add to the confusion about the current state of the road network, even as they contributed to the overall goal of connecting Mexico via roads.

Part of the reason for the diversity and chaotic nature of the enterprise was so obvious as to be rarely mentioned by contemporaries: Mexico was and remains a difficult place to engineer roads. There were many challenges. Mountainous terrain was the most obvious. Constructing quality roads through the jagged mountain passes of Mexico’s twin mountain ranges required bridges, tunnels, blasting, and negotiating steep grades. The challenge was not only engineering a reasonably safe road that could accommodate the increasing speeds of modern motor vehicles, but also getting equipment and manpower to the construction sites and keeping them supported for the duration of the entire project, no easy task in more inaccessible areas. Mexico’s mountains complicated road building in more than just these obvious ways, however. Picking a good route involved weighing a considerable number of variables, which were especially important the more difficult the terrain. The evolving branch of civil engineering that dealt with road building called these “highway location controls.” In discussing the unique requirements of building roads in Mexico, one U.S. civil engineer pointed out the importance of determining such location controls as “stable ground; solid rock outcrops; unstable ground of talus slopes and alluvial fans, etc.; water saturated flats and hillsides; character and/or classification of soils (often judged by the type and amount of vegetation); drainage conditions and drainage areas, and water courses from springs and seeps to cracks and rivers; shape and steepness or ruggedness of hills and mountains and passes in them; erosion expected to occur on highway cut and fill slopes; and many others.” Misjudging these conditions could result

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320 William T. Pryor, Highway Engineer, Bureau of Public Roads, “Report given at American Society of
in delays at best, and at worst a road that washed out continuously and required constant repair.

The mountains were not the only obstacles. In regions where roads were especially needed, such as the tropical lowlands of Chiapas and Yucatán and the hot coastal regions in Veracruz and the Costa Grande, disease took its toll on road-building efforts, just as it had inhibited other forms of communication since at least the colonial era. One of the DNC’s engineers assigned to the Pacific coast complained of the difficulty of finding healthy laborers to work in the region. He explained, “In the communities of the Costa Grande where we were working during the past year 100 percent [of the workers] contracted malaria and were malnourished, [for this reason] it is not possible to get good productivity from regional workers.”321 Whether or not workers brought from outside the region often fell sick he did not say, but his complaints about even local workers being debilitated by malaria suggest that the difficulties involved with road building in this area were substantial.

Another related obstacle was the absence of quality topographical maps. As Raymond Craib has pointed out, mapping the country was a project that was still underway in the postrevolutionary period.322 Since detailed maps of most regions were not available, road builders had little choice but to do their own surveying. This narrowed the choices available to engineers. Instead of using topographical maps to create preliminary plans

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from the comfort of their offices, engineers had to head into the field to survey potential routes. Once there, the scope of their surveying was geographically limited. In effect, this meant that the general outlines of a route were planned without detailed topographical information, and then small adjustments were made along the way to make the best of difficult conditions. Engineers working in the United States, on the other hand, could often use preexisting maps to plot the best route between two points without ever having to leave their desks. It was partly for this reason that advancements in the science of aerial photography in the 1940s and 1950s held such promise for Mexican road builders.323 Aerial photography allowed an end run around the lack of maps. Despite its helpfulness, the lack of aircraft and skilled engineers limited its use in Mexico during this period.

Finally, the weather posed significant challenges to the enterprise of building roads in Mexico. Little work could be done during the months of the rainy season. Paving and surfacing, especially, required relatively long stretches of dry conditions, a rare occurrence in most parts of Mexico between June and October. This, combined with what effectively amounted to a “repair” season that lasted at least through November in order to undo the damage of the rainy season, meant that consistent progress could be expected only in the six months between December and May.

Despite these obstacles, Mexican road builders possessed some advantages over builders elsewhere. In addition to contributing to the technical difficulty of many roads, the diversity of Mexico’s climate and topography included a wide variety of soil and rock types that suited different road-building situations. Normally, engineers had plenty of

natural gravel from riverbeds and lakes at their disposal for use in building the bases of roads as well as the surfacing materials. Abundant throughout Mexico, local materials were usually sufficient. At times, “crushed rock” was required, but even this could often come from local sources. Although these materials were standard, the diversity of soil and rock types in Mexico created other possibilities for road-building materials. Engineer J. Francisco Rodríguez Cabo, who at the time was the sub-director of Roads for the DNC, explained that as of 1949 “choy, sascab, and other rocks of volcanic origin” were being investigated as possible materials as well. All in all, Mexico was largely self-sufficient in the most important road-building raw materials. In addition to gravel for surfacing, much of Mexico’s oil was of a viscosity that made it perfect for paving. Since roads were a government priority, they were rarely neglected when Pemex’s production was apportioned. Thus, Mexican roads were paved with Mexican oil. Cement, too, did not need to be imported as the nation was self-sufficient in this important material. Even more importantly in the long run, basic materials for road building were usually available locally. As Rodríguez Cabo explained, “In general, there is plenty of rock available . . . and only in exceptional cases must the materials used for making concrete be carried long distances.”


325 As soon as oil was discovered in the late nineteenth century, oilmen in Mexico got involved with road paving because the thick consistency of Mexican oil was best suited for road surfacing until technological advancements in refining gave it other uses. For a description of Mexican crude see Jonathan Brown, Oil and Revolution in Mexico (Berkeley: University of California Press, 1993), 106.


fortunate when it came to procuring the iron and steel required for the obras del arte needed to bridge the country’s many canyons and arroyos. In the forties and fifties Mexico was still developing its heavy metals industry, and could only supply some of what was required for road building. Reinforced steel up to fifteen meters long was available according to Rodríguez Cabo, but anything larger had to be imported. This then was part of the explanation for how the laying of roads seemed to outstrip Mexico’s capacity to supply bridges and tunnels through the 1950s, effectively slowing down the development of the network. Machines, too, were often in short supply. All told, however, Mexico had much of what was required without recourse to imports. In many cases, builders could use local materials exclusively. This aided the government’s mission of assuring that Mexican roads were built by and for Mexicans. It also made road construction a more local process than if materials had to be imported and then distributed throughout the country. There was less need for central planning in road construction due to the availability of local materials, and Mexico’s significant regional variability made such centralization less desirable in any case.

All of this contributed to a process of road building that in practice looked far less systematic than the carefully laid-out maps, plans, and legal presidential decrees suggested. That is not to say that the overall expansion of the network proceeded without rhyme or reason, but rather that the picture of Mexico’s roads held by contemporaries (especially drivers) at any given time was a chaotic one. Just because a road had been declared completed and open for traffic by the authorities did not guarantee that the trip would be smooth – or even possible during the rainy season. Throughout the period road

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328 It was common throughout the years of this study to send reports to national road agencies explaining that everything about a particular road project was complete except for the necessary bridges and tunnels.
construction retained a somewhat improvisational feel. Although the construction of a road transportation network was part of a large state-directed economic project, it did not always seem that way to drivers, workers, and local communities. The improvisational feel of building roads combined with a tendency to employ local building materials to make road building seem like both a local and national project.

**Constructing Roads: National and Local Labor**

Who actually did the work of building Mexico’s roads? The answer is far from straightforward. In sum, labor patterns of road building from the 1920s through the 1950s were extremely varied, and reflected the diversity of Mexico’s many regions even as workers labored in what was presented as a grand project of unifying the nation both symbolically and literally. In fact, unlike the painstaking attention to detail that went into many of the rules and regulations surrounding the legal structures of road building, official documents had very little to say about the state’s role in organizing and procuring labor. This silence lent great strength to Mexico’s efforts to create a road transportation network. By leaving open many options, state planners achieved the results they wanted despite a limited power to direct the economy. By utilizing a flexible approach to labor procurement, the state benefited from low labor costs and relative labor stability.

As road building ramped up in the 1930s, many parts of Mexico already had traditional, established ways of supplying labor. The concept of local people donating labor to road building and other public works projects has a long history in Mexico that developed out of Mesoamerican traditions. This was conducted primarily through two channels: the *faena* and the *tequío*. In the first, adult males from individual communities agreed to contribute a certain number of days per year to work for free on a project for the
public good. In the second, members of one community would lend their labor to another community to help with the completion of a project such as a church, school, or a road in the expectation that the service would be reciprocated in due course. Both practices operated in Mexico throughout the nineteenth century and well into the twentieth, although subject to regional variation.\textsuperscript{329}

In the early days of road building, it appears that these traditional forms of labor organization were often employed in central Mexico at least, where communal traditions remained strong. In the state of Veracruz under the governorship of Adalberto Tejado (1928-1932), for example, the \textit{faena} was part of a state-wide program to encourage local communities to build roads. Tejado created community-based road associations to aid road-building efforts. Local communities responded in different ways – some raised funds and others offered to contribute the community’s labor through the \textit{faena}.\textsuperscript{330} These sorts of relationships between local officials (including governors and other regional \textit{caciques}) and individual communities were nothing new, but during the 1920s they were in a state of extreme flux. A complex mix of coercion and self-interest was being combined with the rising power of a national state and an increasingly important sense of \textit{mexicanidad}.\textsuperscript{331} Road building exemplified these tensions in Veracruz. In the end, though, many of these projects suffered from being poorly coordinated and poorly constructed. Like many other state-level road projects of the 1920s they did not have a large overall effect on the country’s transportation system.


\textsuperscript{330} Ibid., 226-227.

\textsuperscript{331} See the essays in \textit{The Eagle and the Virgin}, ed. Vaughan.
Although the *faena* did not disappear from the scene, in the 1930s its importance appeared to recede. As it faded it was gradually replaced by more “modern” labor practices. What Wendy Waters noticed in the local archives of Veracruz - that during the 1930s there was a shift from “the *faena* and other forms of voluntary efforts of the late 1920s to government projects that used professional crews or paid villagers for their efforts” – was echoed on a national level. This took a number of forms including more frequent requests for wage raises and an increasing reliance on organized labor, more petitions for roads rather than materials to “do it yourself,” and a general acceptance of the national state’s duties and rights in the domain of road building.

Although it appeared at the time that traditional arrangements were increasingly being relegated to the past, this was not entirely the case. The traditions of *faena* and *tequio* demonstrated their resilience by making a comeback in the 1940s and 1950s as the national government’s priorities shifted to include local roads. From the founding of the CNCV, the possibility of tapping into traditional forms of labor recruitment appeared in the plans of government officials. When discussing these free labor arrangements, Mexican planners were enthusiastic about the advantages they offered in the campaign to build local roads. René Etcharren, who was appointed the first head of the Departamento de Carreteras Vecinales in 1947, explained in an address to U.S. road engineers that, “in Mexico and its inhabitants there exist characteristics and customs that allow the country to tap into resources that are unknown in other countries.” As he continued to explain to his U.S. audience, Mexican traditions included the “*tequio* – that consisted of communities

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332 Rene Etcharren, Jefe del Departamento de Carreteras Vecinales de la SCOP, “Importancia de los Caminos Vecinales en Mexico, Presentation to the American Society of Civil Engineers,” AGN, RP, MAV, Expediente 606.3/235, July 14, 1949, 10-12.
helping each other to construct their buildings, their roads, and their places of worship . . . and also the *faena*, by which each inhabitant voluntarily promises to work without pay on a project of public utility.**333** Mexico’s national policymakers imagined traditional Mexican labor practices as tools for the development of a modern nation. Based in part on these attitudes, the Department developed a plan in which the government would provide tools, construction materials and technical assistance and local communities “would support the project with unpaid labor.”**334**

Throughout the 1940s and 1950s, tension existed between those who wanted to make use of traditional, local forms of labor and those who saw it as counterproductive or worse. Many road engineers preferred to minimize the use of people and encouraged a move towards mechanization and a permanent, salaried labor force. But there were other voices as well that spoke against the use of communal labor for road building projects. As Maximo Rodríguez, who represented the Instituto Nacional Indigenista, wrote in 1954, reliance on the traditional forms of labor recruitment was a mistake for a number of reasons. In the first place, these traditions were easily abused. Also, traditions like the *faena* were also not well-suited to modern road building. In his estimation, “The principle object of communal work is the social part . . . the efficiency of cooperative communal labor, measured by the value system of our capitalist society, never reaches that which can be obtained from salaried labor, where economic ends are the main pursuit.”**335** In the view of Rodriguez, communal labor was “half work and half social event” and as a result “many

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**333** Ibid., 11.

**334** Ibid., 12.

illusions have been formed by overestimating the value of this kind of work.” Despite misgivings such as these, traditional labor practices continued to exist alongside new forms that relied more on workers with fulltime salaries and regular schedules.

This approach put the national government in the position of having to negotiate carefully with local communities over the terms of their labor. For some communities, such a plan for building local roads was viewed as an intrusion by local powerholders and resisted. In Zacapoaxtla in the state of Puebla, for example, local merchants resisted the introduction of a road for fear of losing their control over local markets. For most communities, though, the promise of tools and construction materials from the national state in exchange for providing labor seemed a fair trade. In Michoacán, a road connecting Capacuaro to Nahuahtzén prompted the communities of Nahuahtzén, San Isidro, and Agrarias de Emiliano Zapata to provide eighty-five men daily for work on the road. In Atoyatempana Tepexi in Puebla, the local priest directed the women of the community to donate their labor to a drainage project. In Ixtapan de la Sal, the CNCV provided tools while the local “professor” arranged for labor to be provided. Although the scope of these labor donations was often small, on occasion they could mobilize large numbers. In Oaxaca, a seventy kilometer road that joined Tlaxiaco with Yosondúa induced a promise to the authorities at the CNCV that 3,300 men would volunteer their time three days each month so that the project would always have 300 men at work on any given day. Even if

336 Ibid.


339 Rene Etcharren, Jefe del Departamento de Carreteras Vecinales de la SCOP, “Importancia de los
some of these offers were extravagant or exaggerated, it is clear that for many communities
the promise of resources from the state to build a road was sufficient to offer free labor in
return. The persistence and adaptability of community labor donations were important to
the campaign to build local roads. Rather than revealing a powerful national state
imposing a modernizing project, these arrangements demonstrate how the state negotiated
with local powerholders, be they *caciques*, priests, or teachers, over individual road
projects.

The military was also employed for the purposes of road building. By law, the
military could be utilized for road building in federal territories, such as Quintana Roo and
Baja California. Road building was a good use for idle troops, especially in lightly
populated parts of the country where it was difficult to secure adequate local labor. But the
military at least occasionally armed its soldiers with machetes and shovels and set them to
clearing and digging outside of the federal territories. This seems to have occurred most
often in the southern part of the country in states such as Oaxaca and Chiapas where
durable roads remained few and far between well into the 1940s. Military commanders
may have ordered their troops to clear brush and build temporary roads quite often, but
they were also brought more squarely into official road-building structures on occasion.
For example, General Alberto Zaldivar Ponce found himself filing reports directly to the
president’s office that detailed the cooperation between his troops and the engineers of the
DNC about a road project in Chiapas. He provided 107 of his troops for labor and the
DNC provided the necessary machinery and a few engineers to direct things.340

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340 Caminos Vecinales en Mexico, Presentation to the American Society of Civil Engineers,” AGN, RP, MAV,
Expediente 606.3/235, July 14, 1949, 10-12.

Expediente 515.1/22 Obras Publicas, March 3, 1941.
Work was certainly required of poorer Mexicans in order to get roads built, especially during the initial phases of clearing and digging. But road building was increasingly a mechanized process, mirroring a trend that was being felt in other facets of Mexican life. Many engineers suggested limits on the amount of physical labor in part in order to mitigate the effects of corruption. In a document that outlined some of the reasons for delays that could occur on projects, written under the supervision of Xavier Cleriga Vera and Simon Anduaga y Baldomero Parra, two engineers who worked for the DNC, one major theme was the overutilization of human labor at the expense of machines. According to the document, the main trouble was that contractors, whether through ignorance or through efforts to coax a little more profit out of the job, insisted on hiring men to do what machines could do more efficiently. They explained that, “Contractors, even as it raises costs, prefer to use human labor and do not use the appropriate machinery.”\footnote{“Memorandum: Comentarios de los informes que sobre costos de los caminos nacionales elaboran los señores Xavier Cleriga Vera, Ing. Simon Anduaga y Baldomero Parra,” AGN, RP, MAV, Expediente 515.1/35, December 30, 1946.} In part this attitude that developed among government engineers stemmed from the economic conditions of the 1940s, when inflation made workers’ wages unstable and created pressure on employers to offer higher pay. As these two engineers explained, this had the effect of causing the costs associated with road-building projects to rise in unpredictable ways. Ultimately, however, road engineers felt that modern road building was best suited for small numbers of well-trained engineers and skilled machine operators. This suited engineers’ sense of their work as modern, and distinguished it from the road building of the past that in their minds was associated with large groups of men with shovels and pickaxes. Humans could best be employed elsewhere they explained.
Machines should be emphasized at all times over human labor because of “the unhealthiness of many areas and the labor needs of other areas.”\textsuperscript{342} In Veracruz the experience of disease among road workers led Carlos Bello Hernández to much the same conclusions. Better to use machines whenever possible and limit human labor to such tasks as “building drainage works, ditches, and in surfacing.”\textsuperscript{343}

Despite these entreaties, the multiplication of road-building projects meant more workers were needed. As the number of roads being built increased the quantity of workers involved increased rapidly. Even as traditional forms of unpaid labor were being tapped as much as possible, the scale of labor organization among road workers continued to grow. By the beginning of the 1950s, there were about ten thousand workers directly employed by the Local Road Boards for projects built as part of the Roads in Cooperation program.\textsuperscript{344}

It is clear that road workers who worked on national projects funded directly and entirely by the national government were enmeshed in the corporatist political structures that helped undergird the PRI regime. The primary union for national workers was the Sindicato de la Secretaría de Comunicaciones y Obras Públicas, but workers from other unions were employed in road building as well. By the early 1940s, the SCOP union was incorporated into the CTM, the large confederation headed by Fidel Velázquez that was closely affiliated with the government. In fact, road workers had been one of the first groups to be incorporated into the federal legal regime overseeing labor. As early as 1929,

\textsuperscript{342} Ibid.

\textsuperscript{343} Ing. Carlos Bello Hernández, Dirección Nacional de Caminos, Residencia Acapulco, “INFORME,” AGN, RP, MAV, Expediente 515.1/5 Obras Publicas, March 5, 1939.

\textsuperscript{344} “Memo to the President,” AGN, RP, ARC, Expediente 706.1/29, January 1, 1953.
the federal government had assumed for itself responsibility for labor disputes arising in coastal zones, the railroad, mining, and hydrocarbons industries, as well as all federal-concession transportation projects.\footnote{Middlebrook, \textit{The Paradox of Revolution}, 53.} The union supplied the main body of official labor on national projects such as the three trunk routes connecting the United States to Mexico and the Cristobol Colón portion of the Pan-American highway that connected Oaxaca to the border with Guatemala. Other unions could be involved on occasion, but it seems that most of them were also tucked into the fold of the CTM. Just a few months after taking over as the head of the CTM, Velázquez wrote a letter to the president regarding the suspension of construction on the \textit{carretera internacional}. In it, he gently reminded Ávila Camacho of his obligations to the workers whose labor (and pay) had been cut off. “The above request,” he wrote, “has the purpose of avoiding possible difficulties that could arise upon the continuation of the construction of the international highway.”\footnote{Fidel Velazquez, “Letter to the President,” AGN, RP, MAC, Expediente 705.2/264, January 2, 1942.} The gentle tone of this communication hints at how the CTM and its affiliates generally worked together with the government to preserve labor peace.

This did not mean, of course, that unionized road workers did not voice grievances, but rather that the institutional systems put in place to domesticate organized labor worked well in the context of road construction. Inflation was a constant presence under the macroeconomic policies of the crystallizing regime. Workers were the people most directly affected. Requests for pay raises were incorporated into a pattern that was both formulaic and part of the emerging bureaucracy. Presidential files from the 1930s through the 1950s are filled with “mystery extracts” that summarize official documents requesting
pay raises for road workers. There are dozens of these extracts in the national archives, and they are almost never accompanied by the original document. The language was similar or even identical to the following example, where the bureaucrat who wrote the extract explained, "The workers request your intervention to increase the salaries of the road workers." It is rare to find the response, probably because once received by the office of the president these requests were farmed out to others to be dealt with. The frequency of these extracts, the almost universal disappearance of the original documents, and the similarity in how they were summarized suggests that requests such as these had been incorporated into the structure of government. They occurred for all periods under examination in this study, but seem to have been most common in the 1940s.

In addition to stock requests for pay raises, the president could be petitioned directly to address worker grievances of various sorts. Often, these included complaints against contractors who were perceived to be reneging on their promises. These were more frequent during the Cárdenas years, as Cárdenas cultivated an image of himself as willing to intervene directly in such disputes and likely to take the side of the poor. For example, in 1935 workers on the Durango-Ocampo national highway complained to the president that the contractors “either don’t pay workers the promised wages or force them to work more than they can bear.” As was usual, the paper trail ended here, with no indication of how the conflict turned out. Although there is no way to know for sure what became of individual requests, it seems reasonable to suppose that they became less effective as the Cardenista style of government was replaced by the less sympathetic personalities of Ávila


Camacho and Alemán. The decreasing frequency of personal requests suggests this was the case. Some people continued to write to the president in a style that was common during the Cárdenas years, but their decreasing frequency suggests they were less effective. Thus, the handwritten letter from Juan Ramírez Gonzáles in 1949 to President Alemán asking for help because his daily wage for roadwork in Allende, Veracruz had been unexpectedly lowered from seven to six pesos has the ring of an earlier time.\textsuperscript{349}

By the late 1940s the Sindicato de SCOP represented over fourteen thousand workers, many of whom were road workers. In 1948 Salvador Martinez Aguirre and Benjamin Dueñas Topete, General Secretary and Secretary of Work and Conflicts respectively of the Executive Committee of the Sindicato de SCOP filed a report with President Alemán suggesting that the workers in the union needed pay raises ranging anywhere from one to three pesos per day. In careful adherence to the bureaucratic protocol and rhetoric of the day they wrote, “[The workers] have not had their daily wages raised for years; these wages are relatively low and raising them will help fulfill the aspirations of a strong nucleus of workers in service to the state, who have distinguished themselves with their constructive labor and their loyalty to the regime over which you deserve to preside.”\textsuperscript{350}

The Sindicato Nacional de Trabajadores de la SCOP represented both skilled and unskilled laborers. Most workers seem to have fit into the latter group. The official scale ranged from $2.98 at the bottom to $21.08 at the top, and in general skilled workers


\textsuperscript{350} Salvador Martinez Aguirre, Secretary General, and Benjamin Dueñas Topete, Srio. de Trabajo y Conflictos, of the Comite Ejecutivo Nacional del Sindicato Nacional de Trabajadores de la SCOP, “Letter to the President,” AGN, RP, MAV, Expediente 706.1/11, December 30, 1948.
commanded four or fives times the daily wages handed out to unskilled workers.\textsuperscript{351} For example the pay for "operators of heavy machines such as graders, tractors, and rollers" in 1950 was $18.70.\textsuperscript{352} However, out of 14,000 workers in the union, 8,907 earned a daily wage of less than $5.

Despite this reality, the Sindicato de SCOP did not generate much conflict with the government over labor conditions and pay. Thus, it appears that the patterns of Mexico’s labor movement held true for road workers laboring on national projects: some real protection of their interests in the 1930s and early 1940s, with a gradual deterioration in the quality of how the labor-state alliance protected their economic position.\textsuperscript{353} This development could be counted by the state as a success; since the beginning of official road-building efforts, the government had hoped to prevent the creation of an organized, active, and independent labor force working in road transportation. As it turned out this goal was largely achieved. Even as the railroads continued to be hampered by labor unrest through the fifties, especially during important railroad strikes in 1958, problems with road construction labor were minor.

But the state’s success in limiting labor unrest in the road construction industry resulted from more than just the general strategy of cooptation and repression adopted by successive Mexican presidents between 1940 and 1960. Labor peace had its roots in the mix of centralized and decentralized labor recruitment. For even as a national core was organized and then co-opted, fragmentation and diversity of labor patterns prevailed

\textsuperscript{351} Ibid.
\textsuperscript{352} Jose Castillo Padilla, “Letter to the President,” AGN, RP, MAV, Expediente 706.1/14, February 1, 1950.
\textsuperscript{353} Middlebrook, \textit{Paradox of Revolution}. 
through such practices as the *faena* and labor recruitment from the Local Road Boards. Although this diversity could draw attention to the discrepancies in the treatment of different groups of workers, it ultimately helped to preserve labor peace.

How was this possible? On the face of it, the variation of labor patterns created obvious sources of worker discontent. It seems clear from available documents that workers who were contracted through the Road Boards, traditional labor arrangements, and even private capital were offered fewer guarantees than their counterparts working on larger and more important national projects and who were incorporated into the government’s labor structures. By the far the most common type of complaint among non-union workers was unfair pay.

Although road workers who offered their labor for building national highways were organized along familiar lines (with all the attendant benefits and costs) there was a larger body of laborers who generally fell outside of this institutional structure. When a road was built through the Roads in Cooperation program workers received fewer benefits than their counterparts who worked directly under the DNC and were members of the official union. The situation flared up occasionally, prompting a flood of correspondence about the problem. In 1947, the General Secretary of the Federación de Sindicatos de Trabajadores al Servicio del Estado in Querétaro wrote to the president complaining of unfair treatment. Workers in his union were working on a road project funded through the local road board and earning only $2.50 per day. Working right alongside them – laboring “in the same region and under identical conditions” – were workers employed by the DNC who were earning $3.50 per day.354

Occasionally the national union voiced its concern over this state of affairs. In January 1953 a memo made its way to President Ruiz Cortines that explained, “The National Executive Comittee of the Sindicato de la Secretaría de Comunicaciones y Obras Públicas wants to raise the problem of how there are more than ten thousand workers of the Local Road Boards throughout the republic who have only a fraction of the benefits enjoyed by the workers of the DNC.” A few days earlier, a memo written by lawyer Roberto Terviño Martinez explained the problem in more detail. He specifically cited the 1934 law that created the Roads in Cooperation program and its lack of attention to questions of labor. Unlike road workers who fell under the jurisdiction of federal labor supervision, those employed by contractors funded by the Road Boards were often forced to work more than eight hours, did not always receive overtime pay, and in some states were even denied the minimum wage. The biggest complaint was that these workers did not receive the benefits of free healthcare as did their counterparts employed by the DNC. By the early 1950s these were not new concerns, and, like similar complaints before them, it does not appear that anything changed as a result.

Clearly, the diversity of labor patterns in road construction generated discrepancies that were recognized as unfair. Yet this same diversity helps answer the question of how these arrangements mitigated labor conflicts in road-building projects. The flexibility of labor arrangements was the result of a system that struck the right balance between central planning and local flexibility, allowing a program of industrialization to go forward in spite of great diversity among Mexico’s regions. What is striking in the story of Mexico’s road-


building enterprise is not the increasing power and weight of the national state but the careful, negotiated, evolving structures that were worked out to carry the project forward. It helped that roads were symbolically powerful, and that leaders on both the state and national level agreed on their benefits. But because of the nature of the enterprise, the structures of road building allow a glimpse of how state and society in postrevolutionary Mexico were shaped by interactions between the local and the national.

**Outside the Law: Pirates, the Police, and “Mr. 15 percent”**

The fragmented and local nature of Mexico’s transition to automobility created considerable space outside the official system of regulations, government contracts, and price tables in which Mexicans found room to operate. Despite an official rhetoric of control and authority, the reality was that the state simply did not have all the power it claimed to enforce its will regarding road construction and trucking. This led to the existence of an “informal” component of Mexico’s transportation revolution that was not part of the official story. This informal element of the truck-based economy was extensive and varied. It ranged from extralegal truckers to a system of unauthorized toll collection on the national highways to corruption and graft in the construction industry. In fact, the parts of the road and truck-based economy that fell outside the bounds of the state’s carefully mapped legal boundaries have much to tell us about the nature of state power and the way in which Mexico’s postrevolutionary state pursued its totemic goals of economic growth and political stability.

Before detailing some of the ways in which the reality of Mexico’s road network contrasted with the neat and tidy picture painted by officialdom, it is worth pausing to ask a
question. Just how, exactly, did the Mexican government expect its laws to be obeyed? With the advent of regulation in 1931 arose the need for enforcement, and Mexico was essentially starting from scratch when it came to imposing the new rules of the road. The laws that had given wide scope to the national government in declaring roads *caminos nacionales* had also put the responsibility for policing and supervising thousands of kilometers of roads on its shoulders. In 1931 a presidential decree created the Policía Federal de Caminos to deal with the state’s new obligation to enact its rules about trucking and other activities related to *caminos nacionales*.

This police force was given the difficult task of enforcing federal regulations as well as dealing with the increasing safety concerns that were developing on Mexico’s roads. This would have been a difficult job for a large and highly trained police force yet Mexico’s highway police were, by all accounts, always understaffed and badly paid. Almost twenty years after its creation, and thousands of kilometers of roads later, the Highway Police force consisted of only 184 motorcycle police to patrol over 22,000 kilometers of national highways.357 No one could have been fooled by such an arrangement; there was little chance that violators would be caught and that such a small force would have any real power to enforce national trucking regulation or safety standards.

And yet, paradoxically, the minuscule size and power of the national government’s highway police force points to a strength of the PRI state between the late 1930s and the 1960s. As the rest of this section will make clear, the realities of Mexico’s road transportation network as it functioned on a daily basis were different from the official

version emanating from government officials. Yet, the system of regulation did not collapse in the face of this duality. It was modified, adjusted, and selectively ignored at times, but through the thousands of daily interactions between merchants, truckers, police, government-employed scale operators, and others, an equilibrium was achieved that managed to preserve the government’s regulatory regime. This outcome was obviously not the top-down imposition of a powerful national state and its handful of police, but instead the result of a modernizing state carrying out a development project that appealed to Mexicans, and doing so in a way that made allowances for the exigencies of daily life, regional variation and limited state resources.

This involved all kinds of transgressions, the most flagrant of which were probably extralegal truckers. Indeed, from the earliest days of the trucking industry there were truckers – commonly referred to as “piratas” – who worked outside the official system of permits and concessions. It is very difficult to determine precisely the size and the economic importance of this group of truckers, since they obviously made efforts to elude the gaze of the authorities. Nevertheless, there is reason to believe that they were an important part of the national economy, even as they were vilified by the government and trucking cooperatives. Estimates of the number of pirates in the period under study range from two thousand to fifteen thousand, with the majority suggesting something closer to the higher figure.\footnote{Williams, Market Reforms in Mexico suggests the high number at the end of the period for the 1960s. For the low number a 1959 estimate is suggested by Carmona, Matías L., “El Autotransporte de Carga en México,” (Ph.D. dissertation, Universidad Nacional Autónoma de México, 1959), 25.} Although there were complaints about extralegal trucking operations as early as the 1930s, the problem seems to have become more noticeable during and immediately after War World II as internal demand spiked and the number of roads and

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trucks continued to increase.

Pirates fell into several categories. The most common type was the individual owner of a truck who contracted with businesses or individuals on a one-at-a-time basis to transport a shipment.\textsuperscript{359} Next were those who made a consistent habit of this transgression; owners of one or two trucks who effectively operated a small-scale transportation business outside the bounds of the law. A third class of \textit{piratas} were those who were legally authorized to use their privately owned vehicles to transport goods exclusively for their own business, but at times contracted with others to transport goods on the federal highways.

Importantly, pirates were not completely independent flouters of the law. Rather than operating on their own, pirates were one end of a fairly sophisticated system of merchants, brokers, and drivers that evolved to skirt the national government’s rules about trucking. In fact, solid evidence for the informal sector’s size and importance comes from the existence of a universally recognized group known as “\textit{documentadoras}.” \textit{Documentadoras} were essentially middlemen between extralegal truckers and the merchants who contracted with them. The constant complaints about \textit{documentadoras} from large and legal trucking businesses suggests the scale and scope of unregulated trucking between 1930 and 1950. By one account, \textit{documentadoras} made a living from commissions paid by unregistered truckers. The middleman would find someone interested in transporting goods at a price lower than the official rate and the trucker would offer him a cut of his payment in return.\textsuperscript{360} Although government and business sources painted these

\textsuperscript{359} Manuel Gutiérrez Villegas, “Memo to the President from the Union Nacional de Transportadores,” AGN, RP, ARC, Expediente 706.1/29, MS number 5338, February, 23, 1956.

\textsuperscript{360} Ortiz Illescas, “El Autotransporte público federal de carga en la República Mexicana,” 57.
transactions as shady and sinister, it is more likely that they were common enough to be conducted with relative openness. Nor is there any evidence that most Mexicans considered this behavior as anything more serious than a simple bending of the official rules.

The majority of complaints about pirates that appeared in print suggest that the most common transgressions were made by people who occasionally used their trucks extralegally to supplement their incomes. For example, a 1949 commentary on the subject highlighted the frequency of two forms of extralegal trucking. The first was the case of truckers who had permits authorizing their trucks only for private use, yet contracted with others occasionally to haul freight for a fee, either when opportunities presented themselves or when difficult economic circumstances required supplemental income. *Ejidatarios* were the other group recognized as being common violators of the law. The changes to the laws overseeing trucking regulation under Cárdenas had clarified that *ejidos* were entitled to use communally-owned vehicles to transport their own production to markets. By law, these vehicles were not permitted to contract with others. But the same logic and economic imperatives that drove small-business owners who owned vehicles from occasionally hauling someone else’s products for a fee functioned just the same for *ejidos*. Trucks were expensive capital investments that recouped their considerable costs gradually over time. It was clear to *ejidatarios* that an idle truck was not being put to productive use. For this reason, complaints against *ejidatarios* failing to comply with the strictures of national regulation were common.361

Not surprisingly, the large trucking organizations found much to be upset about in

this state of affairs. Throughout the 1940s and 1950s they groused about pirates and the state’s apparent complacency. As an editorial in an important trade magazine explained, the problem was serious and getting worse all the time. “We are enduring an illegal commercial battle against pirates,” explained an editorial, “who not only are tolerated and not punished, but are expanding at the margins of law and order.”

The state did not respond to these concerns in any noticeable way. Big groups of permit-holders also invoked the important obligations they undertook in exchange for the privileges of holding exclusive concessions to no avail. As the same editorial stated, “The concesionario is the only one responsible for transportation contracts, because the law has chosen him to offer security to the public.”

There were some in the government who raised similar concerns, but the tone and content of government officials was more fatalistic and less sanguine about the possibilities of rigorous enforcement. Writing in response to the concern expressed by those in the trucking industry about the existence of extralegal trucking operations, one government official suggested the creation of a new agency to pull trucks over and conduct inspections, but at the same time pointed out how difficult it was to keep track of truckers in what had become a complicated legal landscape. He explained that, “not all trucking lines are organized as sociedades mercantiles, but instead there are many that operate as asociaciones en participación, permit-holders unions, and sociedades civiles, making it difficult to level sanctions against the line and making it impossible to determine the owner

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363 Ibid.
of the vehicle and, consequently, there is no effective way to sanction [the offenders].”

This kind of attitude was typical of the government response to the problem of pirates.

To be sure, the existence of pirates had consequences for the government. One of the most important results of the persistence of extralegal trucking was that it considerably hampered already tenuous government efforts at collecting accurate information about supply and demand. In theory, the entire system of effective rate setting depended on a reasonable approximation of conditions on particular routes. Moreover, pirates and their documentadora enablers were probably among the most responsive trucking operations in the entire country, able to react quickly to the fluctuations of supply and demand brought on by a good harvest or the opening of a new road, making the job of government rate-setters more difficult.

Mexican authorities and concessionaires who benefited from government transportation policy were quick to label those who violated the rules as pirates. But viewed another way, the evolution of these different scenarios reflected the ingenuity and initiative of Mexicans in finding ways to augment their incomes in light of the new industry. To the extent this helped ameliorate social pressures in the countryside and contributed to the overall goal of economic growth, it was not especially troubling to government officials. In other words, on paper there was a neat, controlled, and regulated industry while in practice Mexicans saw the new technology as a way to put a little more food on the table a little more cheaply. The national state did not begrudge them this opportunity even as it insisted that it stood at the top of a carefully controlled and regulated

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364 These terms, which refer to specific legal arrangements for organizing businesses, are difficult to render in English. Ing. Walter Buchanan, “Letter to the Subsecretario de la Presidencia,” AGN, RP, ARC, Expediente 512.51/1 Transportes Citadinos, Camiones, May 19, 1956.
trucking industry.

The extralegal elements in Mexico’s evolving road transportation network went beyond trucking operations. An additional factor was the tradition of petty fees that kept the system functioning smoothly. The temptation of police to extract the *mordida* was often too strong to be resisted. Police officers were badly paid and oversight was minimal. The concept behind the *mordida* was simple: it allowed those in authority to supplement their meager income while not cutting too deeply into the pockets of those who had to pay.

Fee collection on the federal highways was not haphazard; the collection of extra pesos from truck drivers was so routine that it evolved into a carefully organized system. In fact, fees paid to police became so expected that they were often factored into the price of a haul. Usually, the *mordida* was paid out of the drivers’ pockets rather than the permit holders’. Thus, paying off the police became one more expense in addition to gas, food, and vehicle maintenance that was often borne by the drivers themselves. Obviously, this expense was not taken into consideration by rate-setters, further complicating the effort to establish fair prices. Moreover, the extent and degree of fee extraction tended to concentrate in highly commercial areas, contributing to regional variability and more confusion. In the 1950s, the northern part of the country was noticeably more affected by *mordida* collection from police and other officials. As one concerned trucker explained, in commercial and industrial areas in the north like Monterrey and Torreón, the excessiveness

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365 I have chosen to translate *mordida*, which literally means a “little bite,” as “fee” rather than the more traditional “bribe.” The negative connotations of bribe are powerful, especially to an English-speaking reader. As I try to show here, *mordidas* were not generally condemned during this period as long as their extraction did not become too onerous.

of collection had reached “scandalous” proportions by 1952.\(^{367}\)

The collection of the *mordida* was clearly endemic among police. After being swept up in a judicial proceeding in 1953, a member of the highway police named Francisco Coutiño Yañez who worked on the Cuernavaca-México highway gave written testimony before a judge about the details of fee collection on that road. His evidence suggested unequivocally that it was the area commander, Juan Deusseau Brusset, who oversaw the operation. This is how the system worked according to Coutiño. “Each truck that passes hands over five pesos to the pair on duty; this way the pair accumulates quantities of money between 140, 170, and even 200 pesos and this money, minus 50 pesos, ends up in the locker of Commander Juan Deusseau Brusset.”\(^{368}\) This orderly arrangement reveals how systematic fee collection could be. It is unclear what became of Commander Deusseau, but any punishment he received probably had little impact on such an entrenched system.

The established practice of demanding fees from truck drivers disproportionately hurt small scale trucking operations – most of which were in a more precarious financial position and did not have extra room in their operating expenses for paying police officers. As one man explained it in a complaint to the Public Works Ministry, which was forwarded to Eduardo Medina Urbiza, the head of the Federal Highway Police, the demands of highway police for a *mordida* of five pesos was making his business very difficult. As he explained, his was a small-scale trucking operation comprised of “a large family with two

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\(^{368}\) Fernando Gutiérrez Barrios, Comandante de Agentes de al Dirección Federal de Seguridad, “Untitled document,” AGN, RP, ARC, Expediente 512.51/1, 1953.
trucks that is dedicated to transporting merchandise from places of production to their places of consumption.” The problem was not so much the required fee but the fact that it was collected multiple times. As he explained, “It is not one member of the Highway Police to whom I have to give five pesos but all the police along the route from the origin to the destination.” The *mordida* could be lived with, but not when it was demanded by several different people throughout the course of a trip. More onerous extractions were clearly felt first by family businesses and other small-scale operations who were least in a position to pay.

Another constellation of opportunities for personal enrichment on the part of government employees was created out of the need to monitor and enforce weight restrictions on national roads. This suddenly became an important issue in the aftermath of World War II, when technological innovation led to rapid increases in the size, capacity, and also weight of trucks. In many cases, roads that had been designed for what were essentially expanded pickup trucks in the 1930s were suddenly subjected to vehicles as heavy as thirty-five tons. These heavier trucks damaged the roads on which they traveled and increased the need for repairs and maintenance, something that neither local nor national governments were keen on financing. As a result, part of regulation was to construct weigh stations that could enforce restrictions on national roads. The scale operators became notorious for corruption; collecting payments and looking the other way when heavy trucks tipped the scales over the legal limits soon became routine. Worst of

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370 Ibid.

all, according to those involved with the industry, was how the culture of the *mordida* had “in effect established relations of complicity between scale operators and workers in the transportation industry.”

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As prevalent as these practices were in the trucking industry, their significance was probably surpassed by the opportunities seized by those involved with road construction to earn extra money or otherwise take advantage of their position. These ranged from the fairly innocuous appropriation of state-owned trucks for personal transportation to more serious and systematic kinds of graft. Workers building the road between Tehuacán and Teotitlán in 1954 complained in a letter to President Ruiz Cortines that the engineer sent by the national government to direct the project was incompetent and only owed his position to being the godson of a government official. This Señor Pérez shortchanged the workers on their wages, used official SCOP vehicles to drive himself and his friends to Mexico City every weekend, and knew nothing about road construction to boot. 373

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This kind of anecdotal evidence about the shady practices of the SCOP would be less interesting if not for one thing: during World War II the ministry was headed by the president’s brother, Maximino Ávila Camacho, one of Mexico’s most flamboyant and corrupt figures. First as governor of Puebla and then as the head of the SCOP, Maximino earned a reputation as a greedy, dishonest, and egotistical figure who obtained the nickname “Mr. 15 percent” by taking a cut of contracts for road building, telecommunications, and other public works projects with which the SCOP was


involved. \(^{374}\) Through this behavior he enriched himself and possibly members of his family until his sudden death at an all-night bender on his Puebla estate in February of 1945.

Maximino left his mark on the Ministry of Public Works. For decades afterward the SCOP retained its considerable reputation for corruption and graft. Road construction lent itself in any event to these kinds of practices since it was spread out geographically and not easily supervised. Although corruption in road construction was common knowledge, for obvious reasons evidence of it does not usually appear in the archives. Occasionally, though, a report would make its way into the president’s correspondence. As Alemán took over from Ávila Camacho in 1946, two road engineers sent him a report enumerating many of the ways in which inspectors, contractors, and government officials skimmed money off the top of road-building contracts, raising the cost of road projects for the state. Common practices included greatly overestimating the overall cost of a project and pocketing the difference, overcharging for major expenses like bridges and drainage works, paying off inspectors, and keeping extra (and probably imaginary) workers on the payroll. \(^{375}\) This kind of activity reached its zenith under the Ávila Camacho administration, but there is little reason to believe that it ceased being a significant factor in Mexico’s shift to roads, and almost certainly added to the overall cost to the national treasury throughout the 1940s and 1950s.

The informal and extra-legal aspects of road transportation had varied effects. Some, like corruption in the road building industry, were flagrant violations of the principles of economic growth with social justice espoused by the revolutionary state. In

\(^{374}\) Niblo, *Mexico in the 1940s*, 281.

some ways, the existence of such practices undermined the authority and legitimacy of the official party and the state it governed. But in other more important ways, the informal parts of the road economy typify one of the state’s greatest strengths. By allowing room for people to maneuver within the confines of a legalistic and bureaucratic framework, the state created a flexible system that had the paradoxical effect of legitimizing and bolstering that framework, all in the context of limited government revenue.

Driving the Goods: Truckers, the *Patria Chica*, and Mexicanidad

Who drove the trucks that rumbled across Mexico in increasing numbers during the 1940s and 1950s and what attitudes and experiences did they bring to their work? The answers are revealing. Truck drivers in Mexico were a heterogeneous yet distinct group within society. Like truckers elsewhere, the demands of their job created an identifiable culture of the road. Trucking culture in Mexico was an example of the changes taking places in definitions of *mexicanidad* and the creation of a national identity. But there were also dynamics at work in the Mexican context that posed unique challenges to Mexico’s shift to a road-based transportation network. Given their mobility, Mexican truckers were likely to take their chances as migrant workers in the United States, creating a sense in which the Mexican trucking industry was threatened by the migration of experienced drivers.

Although the industry was new, in Mexico there were important continuities with previous methods of transportation. For example, there is some indication that Mexicans who had been involved in transportation before the automobile age comprised an important part of the new industry. Transportation workers had long formed a core part of many
communities throughout Mexico. In places where railroads never reached, basic patterns of supply and demand had not altered dramatically in centuries, helping to make the transportation industry relatively stable. As a result, many places throughout Mexico included established families who worked in transportation. These were the famous *arrieros* of Mexican history. Theirs was a pivotal position; *arrieros* often managed to become politically and economically important figures.

The rapid development of a road network and a fleet of trucks challenged the livelihood of those who worked in transportation. Luckily for them, however, several factors facilitated the transition of *arrieros* into truckers. In the first place, unlike the railroads, the barriers to entry in the new automotive transport industry were not excessively high. Acquiring a truck or two was not easy, but nor was it beyond the means of many families. Second, *arriero* families were often relatively well-off in comparison with their neighbors, as control over the exit and entry of goods bestowed a considerable amount of power and prestige which was often accompanied by local wealth. Finally, *arrieros* had an existing network of contacts outside their community which made organization and cooperation easier. As we saw in Chapter 4, concessionaires were quick to take advantage of links with transport workers of the past in order to bolster their legitimacy, but there is no reason to believe that the link was fictitious.

Although anyone could get behind the wheel, driving a truck was a skilled job. It involved operating the vehicle of course, often in dangerous conditions, but there was more to it than that. Being good also meant knowing the roads well, to avoid getting lost and

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376 Several prominent figures from Mexican history, including the independence hero Vicente Guerrero and the revolutionary Emiliano Zapata, came from *arriero* families.

wasting time, but also to better navigate dangerous stretches of highway. No less important was the expertise to keep trucks in good working order, especially when trucks broke down in the middle of a haul. As a result of these demands, there was a prevailing sense by the 1950s that the country faced something of a labor shortage in the trucking sector. The concern was felt primarily by concessionaires. In some respects, this was an extension of the prevailing attitude that theirs was a specialized industry with a skilled work force that required government protection. But it also reflected something about the reality of driving a truck in Mexico in the 1940s and 1950s: it was a hard, dangerous job that was not easy to do well.

Adding to these concerns was the fact that truckers were, obviously, exceptionally mobile. Their jobs, and perhaps also their personalities, disposed them to travel. For this reason, truck owners’ concerns about finding reliable help dovetailed with worries among many in the country about the fragmentation of Mexico’s workforce as many headed to the United States in search of better opportunities, some officially through the Bracero Program and many more illegally. If any group of skilled laborers was well-positioned to find work in the United States it was truckers. The equipment they operated was of U.S. provenance. They were already accustomed to the hardships of travel and had been brought into contact with broader range of people and ideas. Like all Mexican migrants to the United States during the forties and fifties, the challenges were great but the possibility of economic advancement certainly led many to try their hand at working in the United States.

This was a concern for the leaders of the industry. Although a shortage of drivers was not likely to be a problem, the flight of those who were most skilled was troubling. As
an editorial in a trade journal noted in 1953, “The auto transportation industry today is confronting one of the most serious labor shortages in memory, since the majority of the good drivers, those who know the roads like the back of their hand and those who take good care of their vehicles and the people and cargo entrusted to them, are leaving the country . . . creating a dilemma for the industry in which it must utilize novices who learn on the job or limit service.” Both, the article concluded, were “greatly detrimental to our economy.” A year later the problem was still being mentioned. To the above considerations were added worries about safety, as inexperienced drivers were more likely to cause accidents and were being blamed for the loss of life and property. These concerns reflect the reality that truck drivers were often on the move – both within Mexico and across the border with the United States – and that skilled, experienced drivers were not easily replaceable.

As occurred elsewhere, the skilled nature of truck driving helped contribute to a distinct trucker culture in Mexico. Men, and they were overwhelmingly men, who drove trucks for a living invented a range of symbols and practices that expressed what it meant to be a trucker. Most insightfully, truckers developed a unique form of expression that gives clues about they thought of themselves and their profession; trucks throughout Mexico were plastered with slogans and sayings. For obscure reasons, these expressions of trucker culture attracted considerable attention from U.S. anthropologists between 1940 and 1970. As a result of their interest, historians have available a decent-sized collection of

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379 Ibid.

these slogans as they appeared on trucks throughout Mexico. Taken together they help offer a portrait of who became truckers in Mexico and the distinct cultural world they created.

Many of the slogans painted on trucks fell into two categories, statements that expressed a form of cultural machismo and ones that focused on the importance of the patria chica. First, Mexican truckers participated whole-heartedly in the culture of Mexican machismo. This is not surprising among a generally working-class population with extensive travel experience. Truckers were almost entirely men. These slogans, often humorous, depict a sexual ideal that afforded high status to perceived virility and the significant amount of sexual freedom that came with spending long periods of time on the road. These ideas were contained in such slogans as “Who would know?” and “I’ll trade you my new tire for your woman.” Judging by the frequency and consistency of their appearance on the sides of Mexican trucks, these sentiments were an important part of a shared culture of trucking.381

Another common theme was the expression of loyalty to the region – both ethnically and geographically. Many trucks were emblazoned with names like La Costeña, El Indio, El Potosino and, even more plainly, Jalisco, Puebla, and Zitácuaro. Given the nature of trucking and Mexico’s long history of regionalism, it is not surprising that Mexican truck drivers would announce their affinity with their home regions in this way. Yet, by the 1950s, these expressions stand out in contrast to the nearly complete absence of those that refer to Mexico as the nation. In Edmonson’s survey, which included 513 mottos observed in 1953 and 1954, “Mexico” appears only once, all the remarkable he

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381 The Spanish is a pun: “Te cambio mi llanta nueva por tu vieja.” See Munro Edmonson, The Mexican Truck Driver (New Orleans: Middle American Research Institute at Tulane University, 1959), 79.
points out because the city, state and country all share the name.\textsuperscript{382}

Truck slogans were also notable for being apolitical. Although the politics of trucking were often contentious, truck drivers did not feel compelled to use the very public space of their vehicles as a sounding board for their views. Out of more than five hundred slogans in Edmonson’s data, only seven could be classified as political, and several of these – such as “\textit{amigo de los pobres}” and “\textit{Lindo Mexico}” – were ambiguously so. Rather than advocating or advertising a political position, truck drivers in Mexico overwhelmingly chose to use their trucks as a way to announce their participation in a specific, working-class culture – one that outwardly valued pride of place, \textit{machismo}, and appeals to religious authority. Clearly, the portrait of truckers offered by the slogans they affixed to their trucks was directly connected to their profession. Driving a truck in Mexico in the forties and fifties was dangerous and required long periods of time on the road, making devotion to home life difficult. Truck drivers were also among the most mobile members of the working class, coming into contact with new places, cultural mores and the great regional variety of Mexico in a way that heightened their sense of belonging to a specific local community.

The apparent persistence of regional loyalties at the expense of national ones, as seen through the mottoes painted on Mexican trucks, sheds light on the process by which the idea of Mexico was fashioned in the middle decades of the twentieth century. What these slogans reveal more than anything else is how the introduction of rapid communications, of which roads and trucking were a large part, could go hand-in-hand with the reinforcement of local identity. Although truckers saw more of the country than

\textsuperscript{382} Ibid.
most, this did not result in a sharply defined sense of Mexico as a nation and themselves as Mexicans. Instead, the mobility of truck driving reinforced local identity and traditions even as roads, trucks, and buses pierced the isolation of communities and brought Mexicans into more sustained contact. Historians have recently begun to realize the ways in which state-led efforts to modernize the country in the aftermath of the revolution exhibited a “capacious, flexible ambivalence” that could simultaneously elevate the local traditions and aesthetics for the purposes of creating a national identity even as it was determined to annihilate and “modernize” them.\textsuperscript{383} The insistence of truck drivers on slogans that accentuated their places of origin provides evidence for how this flexibility extended beyond state imperatives and radiated throughout Mexican society. As roads and automobiles provided Mexicans with more mobility than ever, it reinforced local identities and, simultaneously, helped fuel the creation of the concept of Mexico.

As the number of trucks on the roads increased and the importance of trucking to the economy grew, images of truckers began to make their way into the public consciousness and popular culture.\textsuperscript{384} But this image was considerably ambiguous. On the one hand were the images of the trucking and busing industry as a powerful monopoly that had the potential to charge exploitative prices. On the other were those that truckers cultivated of themselves: as working class heroes of sorts, macho and worldly figures at the vanguard of cultural and social change. Through the slogans and saying truckers painted on their vehicles this image was presented prominently to anyone who came into contact

\textsuperscript{383} See Vaughan and Lewis, \textit{The Eagle and the Virgin: Nation and Cultural Revolution in Mexico, 1920-1940}, 13. See also the other essays in this volume for more on the links between postrevolutionary state formation and the creation of a national culture.

with Mexico’s new road transportation network.

**Summary and Conclusion**

Through an examination of the culture and work of trucking, labor patterns in road construction, and the informal and extralegal components of Mexico’s road transportation network, it is clear that the state’s success owed a great deal to the unique nature of this development project. Unlike dam building, for example, roads did not have to be built all at once to be considered open for business. They could be constructed piecemeal depending on the availability of resources, and improved later by paving or widening. The diversity of Mexico’s geography and environment made it impractical to centralize too much the provision of building materials and equipment, and created a situation where local supplies remained important.

Similar dynamics were at work in labor patterns. The institutions that governed road building had little to say about how labor was to be procured. This allowed great flexibility for contractors and engineers when executing construction projects. In practice, modern forms of labor such as unionized workers organized in the Public Works union and incorporated into the CTM existed side-by-side with traditional (although modified) forms of communal labor donation. In some parts of the country, particularly in the tropical areas of the south, Mexican roads were built by soldiers. And in others road construction was initiated by parastatal organizations like PEMEX or private companies, such as logging firms in Chihuahua, pursuing narrow economic goals. At times, the diversity of these arrangements could lead to tension, but more often they facilitated the construction of roads by making use of available human and material resources.
In the case of labor, this was not an accident but rather an important part of the state’s overall strategy. But a similar result, albeit an unintentional and somewhat ironic one, followed from the state’s efforts to regulate trucking. Determined to control closely the trucking industry, from the early 1930s the state set prices and decided who could haul goods on national roads. Yet, to enforce these dictates throughout the breadth of the country, state officials relied on a tiny police force. In the absence of real state power, truck drivers, truck owners, transit police, and scale operators collectively worked out the rules of the road. Fees paid to police officers and scale operators were an accepted part of this system – as long as collection was systematized by the police and did not become exorbitant. At the same time, a sizable group of extralegal truckers arose to take advantage of the rigidity of the regulated sector. Without *piratas* the trucking industry as a whole would have been less responsive to changing market conditions. Not everybody benefited of course. Big trucking organizations were better able to bear the added costs of the *mordida* than small, family-run trucking businesses that were working on the edge of profitability. And the widespread presence of extralegal trucking operations undercut these same businesses. As we have seen before, the economic model encouraged by the evolution of the trucking industry favored big capitalists, provided some space for those at the bottom, and squeezed middling groups the most.

These circumstances helped create a distinct culture among truck drivers. Their work was dangerous and uncertain, and it meant spending significant time on the road and away from family and community. Truckers imagined themselves as worldly and experienced, and they saw more of the country than most Mexicans. In this way trucking helped to break down regional barriers. But the relationship between the local and the
national in twentieth-century Mexico remained complex. Even as trucking brought people, goods, and ideas into closer contact with each other, truckers participated in a culture that elevated the importance of local and regional identities and had little explicitly to say about Mexico the country. But with their slogans extolling machismo and the patria chica painted on their trucks, Mexican truckers helped provide the raw materials the state used to foster a national sense of mexicanidad. Despite their insistence on local identities and a free-spirited, independent ethic, truck drivers who drove on Mexico’s road transportation network between 1930 and 1960 were a key part of the country’s larger transformation.

Mexico’s particular path towards the creation of a road transportation network gave that network unique characteristics. Unlike other big development projects, road building and trucking drew on local people and resources in a way that made it seem less of an imposition by an encroaching national state. Partly by design and partly the result of gaps in state power, the process left considerable room for Mexicans at all levels of society to shape the network based on their own needs. Truck drivers, scale operators, police, community leaders, road engineers and others forged a functioning road network through negotiation and collaboration with each other and with the national government, rather than along lines dictated by the state.
CONCLUSION

The development of a road transportation network was an important part of Mexico’s twentieth-century history. In the span of only a few decades, the country shifted from a transportation system based on railroads and animal power to one in which paved roads and internal combustion engine vehicles were paramount. As this study has shown, the rapidity of this transformation meant that there were inefficiencies and imperfections. These undoubtedly grew more glaring over time. During the 1950s however, in the midst of this transformation, many Mexicans saw the project as an overwhelming success. Indeed, the development of a road transportation network stood out at the time as one of the most comprehensive infrastructure projects carried out in the name of “modernization” and “development” by a Latin American state. It helped contribute to Mexico’s reputation as one of the most stable and successful countries in the region and was a highly visible result of the Mexican Miracle – the term used by Mexican and foreign observers to describe the country’s economic achievements during the 1950s and 1960s. Mexico’s success regarding road transportation was a source of pride for Mexicans and an inspiration to the rest of Latin America.

In fact, Mexico’s efforts to develop automobile-based transportation were considered so successful that by the 1950s they were actively exported to other Latin American countries as an example of Mexican leadership in economic development. As Mexico’s road network grew in size and importance, the symbolism of road building for hemispheric unity grew as well. Road transportation provided an opportunity for state and business leaders to promote Pan-Americanism while claiming the mantle of leadership for themselves. In a 1950 magazine article that appeared in an issue commemorating the
opening of the Cristóbol Colón highway, the importance of the road for hemispheric unity was clear. “To its function to the patria,” the article insisted, “so rich in national importance, is added its interamerican function, in the Bolivarian sense. Because this road, Mexico’s road, is also America’s road. The particular and the universal, the national and the international are united in it because Mexico gives it as a contribution of its own progress.”

Mexico’s road boosters and state leaders were proud of their accomplishments; they saw leadership in road construction as a measure of just how far the state had come in achieving its twin goals of economic growth and political stability. At the same time, the emphasis on the Bolivarian dream of a united Latin America was evoked as a reminder that leadership in economic matters in Latin America need not come from the United States.

These claims had special resonance for two reasons. First, Mexico had built its road transportation network along nationalistic lines. As we have seen throughout this study, both road construction and trucking regulation were influenced by the desire to exclude U.S. capital. For political and also ideological reasons, Mexican policymakers were determined to avoid repeating the perceived failures of Mexico’s nineteenth-century experience with railroads. For this reason, U.S. companies were not granted contracts to build roads and the system of national trucking regulation imposed increasingly stringent citizenship requirements on those who would operate trucking businesses. As a result of these developments, Mexico’s claims to leadership in road construction had special appeal among many in Latin America.

Second, by the late 1940s road boosters and government officials in the United

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States had begun to praise Mexico’s achievements and hail its approach to road transportation. As the Cold War ratcheted up, Mexico’s success stood in stark contrast to other parts of Latin America, especially Central America, where even direct U.S. assistance had failed to create a decent road network. As was the case in Mexico, during World War II the U.S. government took a new interest in Central America’s roads. But unlike Mexico, Central American leaders were willing to accept more direct help in the form of donations of money and labor. In fact, during and after the war the U.S. Army Corp of Engineers was involved in a project to build Central America’s portion of the Pan-American highway.

However, as a U.S. Senate Committee concluded in 1947, direct building by the United States did not always work. The committee singled out Nicaragua for special criticism. Despite the direct investment of the United States, the portions of the Pan-American Highway that were built during the 1940s were “unnecessarily winding in some places. . . and designed in such a way that they intersect with properties of the ex-President.”

Partly as a result of these frustrations, U.S. officials came to praise Mexico’s system of road construction, especially after the introduction of the Local Roads Program in 1949. As part of a group that included several U.S. senators traveling through Mexico on their return from inspecting Central America’s roads, E.W. James, the head of the Highway Department, expressed admiration for Mexico’s approach. He even suggested that Central America adopt a similar program that utilized the tripartite funding scheme used in Mexico. No doubt Mexico’s statebuilders found satisfaction in their country being portrayed by the U.S. as a leader and a model of economic development. The success of the postrevolutionary state in carrying out such an important development project seemed

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to confirm the authority, legitimacy, and power of that state. Mexico’s leaders were happy to play along.

The image misses something important, however. As this study has shown, Mexico’s achievements in road transportation were based on decentralized decision-making, ad hoc pragmatism, and the tacit acknowledgment and recognition of all the state could not control. As we saw in Chapter 1, the early efforts of Calles at a centralized approach to road building faltered. With the establishment of the Dirección Nacional de Caminos in 1925, Calles attempted to exercise tight control over the project. After a few years of halting progress, the postrevolutionary state instituted a new program – Roads in Cooperation – that was intended to jumpstart road construction by recruiting state governments to help. By enlisting state and local governments to share the financial burden of construction, the Roads in Cooperation program also gave them considerable power over where and how roads would be built.

The state’s authority was also limited by the realities and paradoxes of Mexican nationalism and Mexico’s relationship with the United States. In 1931 the national government instituted a system of national trucking regulation that was designed to keep foreign capital outside of the Mexican trucking industry. Despite the small size of the trucking and busing industry at the time, the law created a system that was largely unenforceable. The national government set rates and dictated who would be allowed to haul specific goods on the nation’s highways. As we have seen, the effective implementation of this system required a state that wielded far more power and authority than Mexico’s. Over time, as the size and importance of trucking grew, the system became more unmanageable, ossifying into a cartel backed by government monopolies even as the
official rules were ignored by many Mexicans. Regulation did, however, achieve its primary goal of keeping U.S. capital out of the trucking industry.

Calles and Cárdenas also struggled with the realities of the international market for automobiles. Despite the state’s insistence that Mexico should develop its road network along nationalistic lines that preserved Mexico’s sovereignty and economic independence, creating a road network required economic integration with the United States. This was true even in the 1920s and 1930s, when nearly all of the vehicles on Mexican roads were built by the Big Three U.S. automakers. These vehicles were essentially manufactured in the United States and then sent to Mexico to be assembled and sold. This model, known as Completely Knocked Down kit assembly, served the interests of the automakers. They avoided the risk of operating manufacturing plants in Mexico and made hefty profits on vehicles they sold. During the 1920s and 1930s the contradictions of developing a road network along nationalistic lines with what was essentially U.S. technology were already becoming clear.

These issues became more acute during and immediately after World War II, described in Chapter 2. The war provoked unprecedented U.S. involvement in Mexico’s transportation network. Mexico became an important supplier of raw materials for the war effort and also gained a new strategic importance for U.S. military planners. As a result, the U.S. government gained a new stake in Mexico’s road infrastructure, sending advisors to survey roads as well as offer suggestions about expanding and improving the network. At the same time, increased interest and involvement gave U.S automakers and construction firms a sense of Mexico’s potential as a source of profits.

The war also severely challenged the Mexican state’s model for developing road
transportation. The shift of the U.S. economy to a war footing induced scarcities that hit the road transportation industry hard. With General Motors and Ford recruited to manufacture equipment for the war, imports of vehicles and spare parts into Mexico dried up. These scarcities helped lay bare some of the liabilities of national regulation, especially in the ballooning capital city. Bus service, especially, deteriorated during the war years and become an important political issue. Poor quality and rising prices provoked outrage among working class *capitalinos* who saw their real wages deteriorate throughout the period. The state’s system of regulation was threatened by those who saw regulation as little more than state-sanctioned monopoly. The crisis peaked in the post-war period, when pent-up demand combined with an increasingly inefficient trucking industry required the state to declare the temporary suspension of national regulation in 1946, thereby allowing anyone to transport goods by truck. Although regulation was restored a year later, the incident revealed the Mexican state’s claim that it could effectively regulate trucking and busing to be an illusion.

During the peak years of Mexico’s roads revolution from 1948 until 1960, described in Chapter 3, the complexity of the relationship between road transportation and the postrevolutionary state became ever more apparent. As the road network approached maturity, the national state once again recognized its limits and began to work closely with those involved in the road transportation industry to develop the Local Roads Program. Rather than an example of the state’s ability to impose its will, the Local Roads Program put much of the important decision-making about building rural roads, which Mexico badly needed, into the hands of local powerholders. In exchange, the state found a way to fund the construction of local roads despite limited resources. The cost, however, was high.
Planning an efficient and equitable road network required central authority with an interest in the shape of the whole. The tripartite funding arrangement put considerable power in the hands of local interests, be they foreign companies like Nestle or regional caciques like former General Juan Valdés. These groups often used this power to secure roads that served their own interests, rather than the region as a whole.

Something similar happened in the trucking industry. After the postwar crisis and the temporary declaration of free transit, Mexico’s trucking industry splintered. Unwilling and unable to reform public service trucking in a way that would benefit the majority of Mexicans, public service trucking became increasingly inefficient. At the same time, though, it developed into a problem that mostly affected consumers and middle-class Mexicans. This was because large companies, already favored with tax breaks and other subsidies, avoided the liabilities of poor public service by purchasing their own fleet of trucks. Since private trucks sat idle much of the time, this practice was wasteful from a macroeconomic point of view. But it was better than relying on public service trucking that was expensive and offered low quality service to boot.

Chapter 4’s focus on labor patterns, extralegality, and road engineering further highlighted the complexity of the postrevolutionary Mexican state’s approach to creating a road network. A look at labor patterns in both the construction and trucking industries revealed the sophisticated relationship between the local and the national. The state was deliberately vague about who would build Mexico’s roads and how they would be recruited and paid. This approach led to a variety of arrangements that drew on local traditions to accomplish a national project. The state’s flexibility and pragmatism were crucial for getting roads built, but its approach also abnegated some of its responsibility to plan the
network efficiently and to ensure that those who built roads were treated fairly. It also opened up opportunities for graft and corruption.

Nowhere was the myth of the dominant state revealed to be a fallacy more clearly than in the informal sector of road transportation. Despite the insistence of state leaders that the state closely controlled and regulated the trucking industry, the reality was that the system depended for its functioning on a patchwork system of customs, improvisations, and the turning of blind eyes. Most glaring were the thousands of undocumented truckers who worked outside the official system of regulation. Pirates came in many varieties, but all helped to make Mexico’s road system work and did so entirely outside the purview of the national government. This was true also of scale operators and the remarkably underfunded highway police, who improvised their own system of compensation through the *mordida*. In effect, in the absence of real state power, ordinary Mexicans involved in road transportation kept the system working themselves through countless acts of negotiation, innovation, and compromise.

In other words, using the lens of road transportation, this study has shown some of the ways in which the postrevolutionary Mexican state drew its strength, not from increasing centralization as has often been depicted, but rather through pragmatic compromises and a willingness to devolve key decisions to local actors. When Mexican leaders and U.S officials touted Mexico’s success at creating a road network, however, this pragmatism was not what they were praising. A different sentiment animated their comments: the idea that Mexico was poised to be a leader to the rest of Latin American when it came to roads because they country had finally overcome the things that had held it back in the past – regionalism, lack of a powerful state, and pre-modern backwardness.
These were the same things that were perceived to be limiting the progress of other countries in the region. Of course, this idea was actively promoted by Mexican elites who were eager to buttress the state’s authority. But part of what I have hoped to show in this study is that the reality was far more complicated than this message would have it. A close look at one of the most important economic development projects of the twentieth century has revealed how the state’s power during the period from 1920 until 1960 was circumscribed by domestic Mexican realities and also by an especially tumultuous international situation punctuated by one crisis after another.

Implications: Roads, Automobiles, and the Environment

This more refined picture of the character of Mexico’s national state during the crucial middle decades of the twentieth century has implications for understanding other aspects of Mexico’s recent history. One of the most important is the environmental history of the postrevolutionary period, and especially its links with Mexico’s contemporary environmental crisis. Mexico’s shift to roads had enormous consequences for the ecology of the country as well as the relationship between humans and their environment. Roads transformed notions of time and space, reconfigured the environment, and played an important role in unleashing economic growth. Yet, most policymakers did not give much thought to how building a road network would affect Mexico’s natural environment. Despite this lack of attention, the transition to roads and vehicles did have consequences, both intended and unintended. A full examination is beyond the scope of this dissertation, but it is worth considering some of these issues in order to explore this study’s larger significance.
The most obvious impact of Mexico’s transitions to roads was clearly the air pollution that smothered Mexico City beginning in the 1970s and made life unpleasant and often dangerous for the region’s inhabitants. Beginning in the 1970s and worsening in the 1980s, the air quality in Mexico City was appalling. According to the World Health Organization, Mexico City’s residents in the 1970s and 1980s were breathing air filled with dangerous levels of sulfur dioxide, lead, and carbon monoxide. Nor were these invisible dangers, as dust and soot became increasingly noticeable to capitalinos throughout the 1980s.387

Although industry contributed to the problem, the main source of air pollution were the thousands of cars, trucks, and buses whose drivers daily fought their way around the city. Much of this was intracity traffic, but since Mexico City remained the hub for the rest of the country, much of the country’s regional transportation passed through as well, compounding the problem. By 1984, transportation was the primary source of energy use and pollution; the transport sector comprised fully one-third of the country’s entire energy consumption.388 The predominance of motor vehicles contributed substantially to this problem. Nationwide, in the mid-1980s trucks accounted for approximately 70 percent of all freight transported and buses for 97 percent of all passengers. Motor vehicles used energy, and polluted, at far higher rates than other form of transportation. According to one estimate, freight moved by trucks consumed energy at a rate four times that of freight moved by rail.389 The most noticeable consequences were in Mexico City itself. Estimates


389 Ibid. Number is measured in kcal/ton-km, with road transport consuming 800 and rail 200.
about how much of Mexico’s air pollution during the 1980s and 1990s was directly attributable to motorized transport range from 76 to 85 percent.\textsuperscript{390} Although private cars contributed a great deal to this mess, truck and bus emissions did their share; in 1989 trucks and buses in Mexico City accounted for one-third of the city’s total air pollution.\textsuperscript{391}

It would be unfair to blame policymakers of the period from 1920 to 1960 for the plague of air pollution that settled over the country and its capital beginning in the 1970s. The extent to which motor vehicles would pollute the air was not on many minds during the years when Mexico embarked on its shift to road transportation. Yet, the consequences were probably exacerbated by the delayed reaction of the government, which waited until the problem was severe before taking measures to combat it in the 1980s and 1990s. Importantly, though, the disaster of severe air pollution that resulted from the shift to roads does suggest questions about how Mexicans during the postrevolutionary period viewed the natural world and the relationship between modernization, development, and the environment.

In short, this relationship was a dynamic one. The temptation to equate capitalist economic growth with environmental ruin clearly exists among historians of Mexico’s environmental history.\textsuperscript{392} Doubtless there is much to support this view. However, even a

\textsuperscript{390} For low figure see Ward, Mexico City, 148; the high figure comes from McNeill, Something New Under the Sun, 77.


\textsuperscript{392} The field of twentieth-century Mexican environmental history is new and not fully developed. Many of the foundational works offer somewhat bleak narratives in which environmental degradation and the rapaciousness of capitalism play an important part. This is not meant as a criticism; pointing this out may be the most important contribution made by pioneers of environmental history into a new region. See for example Joel Simon, Endangered Mexico: An Environment on the Edge (San Francisco: Sierra Club Books, 1997); Myrna I. Santiago, The Ecology of Oil: Environment, Labor, and the Mexican Revolution, 1900-1938 (Cambridge: Cambridge University Press, 2006); Lane Simonian, Defending the Land of the Jaguar: A History of Conservation in Mexico (Austin: University of Texas Press, 1995); Jan de Vos, Oro verde: La conquista de la Selva Lacandona por los madereros tabasqueños, 1822-1949 (Villahermosa: Gobierno del Estado de Tabasco and Fondo de Cultura Económica, 1988). Recent scholarship has attempted to move
brief examination of the intersection between Mexico’s shift to roads and environmental change suggests that this attitude misses something important. As environmental historians have long recognized, the impact of modernization on the natural world, in Mexico and elsewhere, is shaped by changes in political economy. In Mexico, a view of the postrevolutionary state that has focused on its increasing centralization and accelerating power to shape the world of its citizens has tended to reinforce a picture of steady environmental decline. Explanations of Mexico’s twentieth-century environmental history often link the two together; an increasingly powerful national state focused on economic growth begot a reckless disregard for the natural world and humans’ symbiosis with it. A more nuanced understanding is both necessary and important. A focus on the complexity of the state’s approach to development suggests a more refined way of understanding Mexico’s twentieth century environmental history, one that appreciates the limits of the state’s capacity to manage the effects of roads on Mexico’s environment.

Prevailing attitudes about the relationship between road transportation and the environment did change over time, despite never being a central concern among state or business leaders. Especially in the 1930s, this relationship gained a certain prominence as the result of a remarkable individual, Miguel Ángel de Quevedo. Quevedo was a complicated figure. During the Porfiriato he was a prominent científico, the group of close advisors to President Díaz who believed in the power of science and technology to bring beyond chronicling environmental degradation. See Emily Wakild, “Resources, Communities, and Conservation: The Creation of National Parks in Revolutionary Mexico under President Lázaro Cárdenas” (Ph.D. diss., University of Arizona, 2007); Cristopher R. Boyer, “Contested Terrain: Forestry Regimes and Community Responses in Northeastern Michoacán, 1940-2000,” in The Community Forests of Mexico: Managing for Sustainable Landscapes, ed. David Barton Bray, Leticia Merino-Pérez, and Deborah Barry (Austin: University of Texas Press, 2005); Mikael Wolfe, “Water and Revolution in Mexico: The Politics, Ecology, and Technology of Agrarian Reform in ‘La Laguna’” (Ph.D. diss., University of Chicago, 2008).
Mexico out of backwardness. Under Díaz he worked on several modernizing projects including drainage works in Mexico City and Veracruz, and also became Mexico’s most prominent advocate for forest conservation, a role he continued to play throughout the 1920s through his association with the Mexican Forestry Society. Under Cárdenas, Quevedo became the head of the newly autonomous Forestry Department, which before 1935 had been shackled to the Department of Agriculture and beset by bureaucratic conflicts and infighting. At first glance, Quevedo was a surprising choice to work in such an important capacity during the Cárdenas administration. He was, however, the nation’s most eminent authority on forestry; his appointment serves to underscore the continuities that persisted between the Porfirato and the postrevolutionary state.

As the head of the Forestry Department, Quevedo recognized the connections between roads and ecology. In a long report he sent to President Cárdenas in 1936, Quevedo wrote about the recently completed Mexico City-Laredo highway and the opportunities and threats to Mexico’s environment, especially forests, it posed. In the first place, Quevedo pointed out how roads could be showcases for Mexico’s natural beauty. Describing the Mexico City-Laredo route, Quevedo extolled the diversity of the forests and the stunning and rapid transitions in vegetation as the highway climbed in and out of different climatic zones. Between kilometers 226 and 230, for example, one saw “stands of piñón pine and junipers,” but as the road rose between kilometers 230 and 234 these were soon replaced by forests entirely of tall pine trees. As one proceeded along the road, near the town of Chapulhuacán drivers encountered semi-tropical vegetation before descending into the tropical zone of the Huasteca. Further north, the forests gave way to a desert.

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Quevedo’s report highlighted many of the ways in which ideas about the landscape intersected with the goals of the state. In the first place, he noted that preserving and advertising the natural beauty of the forests throughout the route could attract tourists. He called for the establishment of parking turnouts at scenic spots in order to better showcase the aesthetics of the highway. Quevedo also explained how the road created both threats and opportunities for Mexico’s forests. He explained to Cárdenas that at many points along the highway campesinos were chopping down trees and cultivating maize on the hills surrounding the road. Planting maize in these places was foolish, thought Quevedo, because the exposure to winds and rain meant that erosion ruined the plots within two years, forcing the campesinos to abandon them and leaving a denuded landscape in their wake. Not only did this diminish the beauty of the road, but it increased erosion that led to washouts and higher maintenance costs. Quevedo proposed that the state extend the right of way along the road to two hundred meters on both sides in heavily forested areas and convert the land into a national park where the trees would be protected. Roads were not only threats to Mexico’s forests, but opportunities as well. As Quevedo explained to President Cárdenas, the Mexico City-Laredo highway passed through some of Mexico’s most important mining regions. For centuries, these areas had been heavily deforested in the service of the mining industry. If the state acted – by expanding rights of way and protecting the land – the highway held the potential to “restore forests lost to the abusive

394 Miguel Ángel de Quevedo, “Informe Presentado por el C. Ing. Miguel Angel A. de Quevedo sobre algunas observaciones llevadas a cabo en la carretera Mexico-Laredo respecto a las condiciones forestales de los terrenos vecinos en planicies, lomerios, montanas, a la vista del propio camino,” AGN, RP, LC, Expediente 515.1/10, June 1936, 2-3.

395 Ibid., 1-4.
exploitation of mines.\footnote{Ibid., 2.}

It does not appear that Cárdenas directly implemented many of Quevedo’s suggestions, but in his role as the head of the Forestry Department Quevedo clearly gave some thought to the consequences of road building for the natural world. Quevedo’s overriding concern was protecting Mexico’s forests from rural people he seemed to regard as short-sighted. But in hewing to this goal he imagined ways in which Mexico’s shift to roads both created new pressures on Mexico’s environment but also generated opportunities to protect the landscape from human overuse. In some ways, Quevedo was a unique individual whose participation in the postrevolutionary government was the result of unique circumstances that did not arise in later years. But his elevated stature as a forestry expert combined with his service in the Cárdenas administration reveal the presence of an attitude within the state in the 1930s that recognized a link between roads, the state, and environmental change.

This mindset seemed to vanish completely in later decades. Subsequent administrations displayed little interest in the relationship between extensive road building and Mexico’s environment. Deforestation clearly continued along the nation’s highways, more in some places than others. In 1955, President Ruiz Cortines received a report from José Santamaria Garcia, who appeared to work for the state, perhaps in the Forestry Department, regarding the poor condition of forests along the federal highways in Veracruz. Santamaria explained all of the advantages that would result from reforesting along roads – more appeal to tourists, preventing erosion – in short many of the same things Quevedo had pointed out twenty years earlier. But Santamaria’s proposal was
revealing; in order to reforest the area he proposed a private initiative in which all vehicle owners in the state would pay a one-time fee that would be put towards funding an organization that would carry out the reforestation project. This was a far cry from Quevedo’s vision of a proactive, state-led approach to protecting the forests astride Mexican highways. Attempting to fund reforestation though a “private contribution” betrayed a lack of interest among those in the government in thinking about how Mexico’s shift to roads affected the natural world.397

Indeed by the 1950s the prevailing attitude towards the environment among those involved with road transportation was combative. Road building pitted man against nature in a war for supremacy. This attitude was fed by the difficulty of road engineering in a country with such varied and rugged topography, and by a cultural tendency among elite Mexicans to see regionalism as a historic cause of weakness. A common refrain that appeared in many articles written about road building in the 1950s linked Mexico’s difficult environment to the timeless isolation of its people. By insisting that road building would finally conquer that isolation, they often framed the project as having the goal of defeating the mountainous and rugged natural world confronted by Mexico. At the same time that road boosters extolled the appeal of Mexican scenery for attracting tourists, they condemned it for fragmenting Mexico and fostering political and cultural weakness. As one article described, “This isolation – that is nearly the same now as it was during pre-Columbian times and the three centuries of the viceroyalty – has the same origin and cause: the lack of communications, roads, and means of transportation.”398 It was not a leap of


logic to link that despised lack of communication to the ruggedness of Mexico’s natural
environment, and then to frame the project of developing a comprehensive road network as
a battle against nature. “The mountainous topography of our country,” the article
continued, “has been, and is, a wall that divides and isolates.” 399 This somewhat
paradoxical attitude, that Mexico’s natural environment was both an obstacle to progress
and bait for attracting tourist dollars, was common among people involved in Mexico’s
road network by the 1950s.

To some extent, these attitudes reflected a shift that took place between the
mid-1930s and the mid-1950s. During the Cárdenas sexenio, the influence and ideas of
Miguel Ángel de Quevedo suggested that the state was concerned with how the
development of motorized transportation would affect Mexico’s environment, even if the
concern was limited to a handful of individuals and a narrow conception of the interaction
between the new technology and nature. The evidence suggests that less than two decades
later the national state’s perspective on the issue had narrowed. The continuing transition
to roads proceeded without much apparent concern from state actors about the
environmental consequences. The attitude that prevailed among road boosters – that nature
was an obstacle to progress – hardened between 1930 and 1960. Not only did the
postrevolutionary state fail to develop attitudes or policies that took into account the
possible impact of the switch to motor vehicles on the environment, it even appeared to
abnegate its earlier interest in forest conservation. Voluntary contributions from the private
sector to fund reforestation along the nation’s highways were not what Quevedo had in
mind when he wrote to President Cárdenas in 1936.

399 Ibid.
Why did these attitudes change? The answer most ready at hand is that as the
twentieth century unfolded, Mexico’s continued capitalist economic development fostered
an increasingly utilitarian approach to the environment. The imperatives of economic
growth and the culture of capitalism, in other words, of which roads were an important
part, increasingly displaced any sensitivity towards how human activity affected the
environment. It is hard to dispute the correlation between economic development and
environmental degradation. However, this study suggests that there was more to the story
in the case of twentieth-century Mexico. These pages have shown how the
postrevolutionary Mexican state drew its strength from its flexibility and willingness to
decentralize and devolve key decisions to local actors. Such a state lacked the capacity to
implement national policies that took into consideration the precarious relationship
between humans and nature. Such policies may not have developed, but the figure of
Miguel Ángel de Quevedo and the important role he filled in the 1930s suggests that it was
at least a possibility. As road construction came to depend more and more on the decisions
of local powerholders, and inefficient public sector trucking led to the proliferation of
private, unregulated fleets, the potential for a national approach to the environmental
consequences of road transportation diminished.

Epilogue

The consequences of Mexico’s transformation into a nation powered by motor
vehicles and paved roads have been immense. Like air pollution, many did not become
clear until later decades though their roots reached directly back to the earlier period
examined in this study. By 1960, the trajectory of road transportation was set. The number
of vehicles and roads continued to grow, but the basic outline of Mexico’s road network remained the same. During the 1960s and 1970s much of the focus shifted to maintenance and upgrades. Many of the most important segments had been built between 1930 and 1950, and several decades of wear and tear had put them in rough shape. These roads had not been built with the heavy trucks that were in use by the 1950s in mind. While policymakers continued to push for more roads, after 1960 the focus shifted towards redesigning existing roads to accommodate larger vehicles and keeping the road network in good repair. In 1959, the Secretaría de Comunicaciones y Obras Públicas was divided into two separate ministries. The newly created Secretaría de Comunicaciones y Transportes had jurisdiction over transportation policy, while all other public works projects were lumped together under the Secretaría de Obras Públicas. This institutional reshuffling was a recognition of the importance of transportation infrastructure for Mexico and a sign that the country had entered a new stage in its transportation history. Mexico could boast a road network. The work now turned towards maintaining and improving it.400

By 1980 it was clear that improvement was needed. The creation of a road network helped make Mexico’s transition into an urban, industrial society possible. As we have seen, however, the road network also contained inefficiencies and limitations that grew worse over time. In 1980, these liabilities were the source of a full-blown transportation crisis that was part of the economic slowdown leading to the 1982 economic meltdown. As the result of a poor harvest, demand for imported grain doubled from the previous year to seven million tons. Combined with an influx of money into the economy as a result of the discovery of new oil deposits, Mexico’s transportation system struggled to keep up. When

400 Rodríguez Ruiz, Isodoro Rodríguez Ruiz, 104-106.
the neglected railroads proved unable to handle the high volume of imports, truck transportation was forced to take up the slack. Demand quickly outstripped the trucking industry’s capacity, however. As a result, in 1980 the iron and steel industry could not transport 20 percent of its production. The oil and fertilizer sectors saw 10 percent of production lost due to the lack of transportation or storage.\footnote{Isla Rivera, \textit{Estructura y desarrollo del sector transporte}, 14-15.} These difficulties became very public; a 1980 poll revealed that 47 percent of responding businesses reported that the transportation sector was the “limiting factor” holding back their success.\footnote{Ibid., 16.} These developments brought the liabilities of Mexico’s road network into full view and contributed to the economic crisis of 1982 that fed support for neoliberalism.

Motorized transport intersected with the wave of neoliberal reforms in other ways as well, most importantly its inclusion as part of NAFTA. In many ways, road transportation made the 1992 signing of NAFTA possible. Today, about two-thirds of all Mexico-U.S. trade along the border is moved by truck.\footnote{“Don’t Keep on Trucking,” \textit{Economist}, March 21, 2009.} The issue of cross-border trucking has developed into a major political issue in both countries. The NAFTA agreement contained provisions that permitted trucking companies from both countries to operate in the other by 2000. Given the importance of nationalism to Mexican trucking, this provision was a testament to how much the relationship between the U.S. and Mexico has changed in the twentieth century, for it has been U.S. truckers who have resisted. Claiming that Mexican trucks are unsafe and heavily polluting, the Teamsters union has managed to prevent the full implementation of this provision, despite continuous rulings.
against them by both U.S. and international courts. As of this writing, the issue remains a source of conflict. These developments show how truck transportation continues to interwine U.S. and Mexican politics and economics.

Finally, as the epigraph from Felipe Calderón that began this dissertation attests, roads retain their significance both as symbols and an important part of government policy. One of the centerpieces of the neoliberal reforms instituted by Carlos Salinas between 1988 and 1994 was the privatization of roads. As part of the fetish for “free markets” and the reductions in the national government’s budgets, private companies were given contracts to build and operate roads for profit. The experiment was an unmitigated disaster. Between 1987 and 1994 companies built forty-three private highways at a cost of $12 billion. These companies charged high tolls in order to recoup their investment, but many Mexicans could not pay and so avoided the use of these roads. In 1997, the government announced the re-nationalization of more than half of these routes at a cost of $7.5 billion. Many saw graft. Others merely incompetence.

Recently, the pendulum has swung back the other way. In 2007, Calderón announced a plan to once again put several major highway routes into the hands of private investors. Since the 1980s, policy towards national highways has been framed as part of the debate over the proper role of the private sector in Mexico’s economy. In what has become a somewhat sterile dialogue, ideological arguments are traded back and forth about the merits of state versus private control of critical industries like roads, oil, and electricity.

404 Ibid.


As this study has shown, however, these debates belie the complexity of Mexico’s history, including the history of road transportation. A more sophisticated appreciation of the twentieth-century Mexican state’s strengths and weaknesses hopefully has a part to play in pointing us towards a more equitable twenty-first century.
### APPENDIX A:

**REGISTERED TRUCKS IN MEXICO 1924-1956**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Percent of total</th>
<th>Total as percent of 1940 data</th>
<th>Percent of total</th>
<th>Trucks registered as part of public service sector</th>
<th>Percent of total</th>
<th>Privately-owned registered trucks</th>
<th>Percent of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1924</td>
<td>5,525</td>
<td>13.2</td>
<td>265</td>
<td>4.7</td>
<td>1,833</td>
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<td>346</td>
<td>4.3</td>
<td>2,055</td>
<td>25.6</td>
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<td>1926</td>
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<td>375</td>
<td>3.9</td>
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<td>21.7</td>
<td>7,113</td>
<td>74.2</td>
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<td>513</td>
<td>4.3</td>
<td>2,482</td>
<td>21.1</td>
<td>8,717</td>
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<td>29</td>
<td>523</td>
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<td>811</td>
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<td>59.3</td>
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<td>1055</td>
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<td>58.4</td>
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<td>12,074</td>
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<td>971</td>
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<td>42.1</td>
<td>18,484</td>
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<tr>
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<td>39,472</td>
<td>94.1</td>
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<td>2.5</td>
<td>15,283</td>
<td>38.7</td>
<td>23,170</td>
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<td>41,935</td>
<td>100</td>
<td>1,145</td>
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<td>16,279</td>
<td>38.8</td>
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<tr>
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<td>1,499</td>
<td>2.9</td>
<td>10,327</td>
<td>20.4</td>
<td>38,746</td>
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<td>53,469</td>
<td>127.5</td>
<td>2,075</td>
<td>3.8</td>
<td>9,894</td>
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<td>1943</td>
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<td>1,920</td>
<td>3.5</td>
<td>10,134</td>
<td>18.4</td>
<td>42,726</td>
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<td>1944</td>
<td>57,239</td>
<td>136.6</td>
<td>2,236</td>
<td>3.9</td>
<td>10,251</td>
<td>17.9</td>
<td>44,806</td>
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<tr>
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<td>142.6</td>
<td>2,170</td>
<td>3.6</td>
<td>9,884</td>
<td>16.5</td>
<td>7,760</td>
<td>79.8</td>
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<tr>
<td>1946</td>
<td>71,673</td>
<td>170.9</td>
<td>2,402</td>
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<td>81.2</td>
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<td>83.5</td>
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<td>3,037</td>
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<td>13.3</td>
<td>84,436</td>
<td>84.6</td>
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<td>1949</td>
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<td>3,147</td>
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<td>13,321</td>
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<td>265.2</td>
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<td>1951</td>
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<td>138,849</td>
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<td>3,219</td>
<td>1.7</td>
<td>12,881</td>
<td>7.1</td>
<td>163,464</td>
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<tr>
<td>1954</td>
<td>193,491</td>
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<td>3,909</td>
<td>2.0</td>
<td>12,801</td>
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<td>176,781</td>
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<td>1955</td>
<td>220,229</td>
<td>525.1</td>
<td>4,098</td>
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<tr>
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<td>4,797</td>
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<td>14,566</td>
<td>6.0</td>
<td>220,725</td>
<td>91.9</td>
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Source: Data compiled from the Secretaría de Economía, Dirección General de Estadística, Departamento de Estadísticas Continuas, and Oficina de Estadística Económica Comunicaciones y Transportes.
APPENDIX B:

SIZE OF TRUCKING BUSINESSES, 1965

<table>
<thead>
<tr>
<th>Size of businesses as grouped by numbers of trucks owned (1965)</th>
<th>Number of businesses</th>
<th>Number of trucks</th>
<th>Millions of tons shipped</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>3,012</td>
<td>4,885</td>
<td>13,123</td>
</tr>
<tr>
<td>With 1 truck</td>
<td>2,552</td>
<td>2,552</td>
<td>6,841</td>
</tr>
<tr>
<td>With 2 trucks</td>
<td>307</td>
<td>614</td>
<td>1,785</td>
</tr>
<tr>
<td>With 3 trucks</td>
<td>67</td>
<td>201</td>
<td>574</td>
</tr>
<tr>
<td>With 4 to 5 trucks</td>
<td>35</td>
<td>151</td>
<td>431</td>
</tr>
<tr>
<td>With 6 to 10 trucks</td>
<td>22</td>
<td>148</td>
<td>503</td>
</tr>
<tr>
<td>With 11 to 20 trucks</td>
<td>10</td>
<td>160</td>
<td>329</td>
</tr>
<tr>
<td>With 21 to 40 trucks</td>
<td>10</td>
<td>293</td>
<td>590</td>
</tr>
<tr>
<td>With 41 to 70 trucks</td>
<td>4</td>
<td>206</td>
<td>371</td>
</tr>
<tr>
<td>With 71 or more trucks</td>
<td>5</td>
<td>560</td>
<td>1,699</td>
</tr>
</tbody>
</table>

General truck shipping (1965)

<table>
<thead>
<tr>
<th>Size of businesses as grouped by numbers of trucks owned (1965)</th>
<th>Number of businesses</th>
<th>Number of trucks</th>
<th>Millions of tons shipped</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>8,691</td>
<td>19,411</td>
<td>26,982</td>
</tr>
<tr>
<td>With 1 truck</td>
<td>7,052</td>
<td>7,052</td>
<td>7,752</td>
</tr>
<tr>
<td>With 2 trucks</td>
<td>819</td>
<td>1,638</td>
<td>2,071</td>
</tr>
<tr>
<td>With 3 trucks</td>
<td>228</td>
<td>684</td>
<td>1,045</td>
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<tr>
<td>With 4 to 5 trucks</td>
<td>171</td>
<td>756</td>
<td>1,296</td>
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<tr>
<td>With 6 to 10 trucks</td>
<td>154</td>
<td>1,184</td>
<td>1,775</td>
</tr>
<tr>
<td>With 11 to 20 trucks</td>
<td>140</td>
<td>2,111</td>
<td>3,458</td>
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<tr>
<td>With 21 to 40 trucks</td>
<td>80</td>
<td>2,268</td>
<td>3,646</td>
</tr>
<tr>
<td>With 41 to 70 trucks</td>
<td>24</td>
<td>1,305</td>
<td>1,643</td>
</tr>
<tr>
<td>With 71 to 120 trucks</td>
<td>17</td>
<td>1,505</td>
<td>2,496</td>
</tr>
<tr>
<td>With 121 or more trucks</td>
<td>6</td>
<td>908</td>
<td>1,800</td>
</tr>
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Source: 1965 Census
APPENDIX C:

EXTENT OF NATIONAL HIGHWAYS, 1950
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  ARC  Adolfo Ruiz Cortines

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