Organized Crime in Michoacán: Rent-Seeking Activities in the Avocado Export Market

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The aim of this article is to contribute to the existing measurements on extortions by organized crime and assess the impact of this predatory activity on economic growth. Extortions should be evaluated beyond the number of reported crimes to understand how much money is drained away from the legal economy. To set the stage I first analyze the illegal activities carried out by organized crime groups in the Mexican state of Michoacán during 2001-14. Within this context this article presents a case study of extortions in the avocado legal export market. Specifically, this article shows how the criminal organization, the Knights Templar (KT), extracted rents from this legal market, what was the estimated magnitude of that rent, how tangential was this source of revenue to organized crime, and what was the adverse impact of these extortions of the KT on the economy of Michoacán by looking at the performance of the main macroeconomic variables.

Keywords: Organized Crime, Extortion, Economic Growth, Mexico, Knights Templar, KT, Rent-Seeking, Economics of Crime, Crime Costs, Avocado Exports, Legal Export Market, Rent Extraction, Trade, Illegal Activities, Michoacán, 2001-14, Macroeconomic Variables, Comparative Political Economy, La Familia Michoacana.

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El fenómeno de la delincuencia organizada suele analizarse desde una perspectiva predominantemente de estudios de seguridad, pero muy rara vez desde la perspectiva económica. Este ensayo analiza con un enfoque económico las actividades ilegales llevadas a cabo en Michoacán por el crimen organizado durante el periodo 2001-14, específicamente, en el mercado de exportación del aguacate. El artículo toma el concepto de delincuencia organizada de Schelling como definición de una estructura de gobierno comprometida a lograr el control monopólico de la oferta de violencia y corrupción dentro de una región geográfica determinada con el objetivo de extraer rentas y ganancias de los mercados legales e ilegales. Este artículo muestra cómo los Caballeros Templarios extrajeron rentas del mercado de exportación de aguacate, cuál era la magnitud estimada de esa renta y cuán tangencial era esta fuente de ingresos para su organización criminal, así como cuál fue el impacto adverso de estas actividades de explotación en la economía de Michoacán.

Palabras clave: crimen organizado, extorsión, crecimiento económico, México, Caballeros Templarios, CT, búsqueda de rentas, exportación de aguacate, política comercial, actividades ilegales, Michoacán, 2001-14, La Familia Michoacana.

本文目的是在现有衡量方式的基础上，进一步衡量由有组织犯罪造成的掠夺行为，同时评估这种掠夺性行为对经济增长的影响。对掠夺行为的衡量应在被报道的犯罪数量之上进行，进而理解合法经济的损失有多少。为设置衡量过程，笔者首先分析了2001-14年间墨西哥米却肯州有组织犯罪团体实施的非法活动。以此为背景，本文提出了针对牛油果合法出口市场遭受掠夺性行为的案例研究。具体而言，本文展示了犯罪组织，即圣殿骑士团（Knights Templar, KT）如何从合法市场中榨取经济租金；之后展示了此租金的预计数额，以及这部分利益与有组织犯
It was Gary Becker’s (1968) paper on *Crime and Punishment: An Economic Approach* that put in the spotlight the economic analysis of crime in 1968. However, as Paolo Pinotti (2011, 1) highlights “most of this work has been concerned with individual offenders while organized crime has been largely neglected, especially from an empirical point of view.” Moreover, the literature on the economics of crime has not centered explicitly on the economic costs that are imposed by the presence of large organized crime groups and their illegal activities in the legal economy. Until recently there have been efforts at estimating and surveying crime costs to society such as: stolen and damaged property, lost wages, security spending from the private sector, lives lost, reduced trade activity, etc. Detotto and Otranto (2010) and Detotto and Pulina (2012) acknowledge that the identification and the estimation of the above-mentioned crime costs have received wide attention in the economic literature; nevertheless the harmful effect of organized crime to the legal economy is still neglected. More specifically, the literature on the estimation of rent-seeking activities such as extortion is very limited despite being the typical depredatory activity of criminal organizations with an impact on economic growth. Maurizio Lisciandra (2014, 94) states emphatically that, “[v]ery few studies have attempted to estimate the proceeds of extortion accruing to criminal organisations, despite extortion being a common as well as serious crime.”

There are many ways by which organized crime conditions the legal economy and one of the most common is the extortion of money from businesses. Extortion not only guarantees a fixed income to criminal organizations. It also assures them an income that is used to finance other illicit activities. Extortions allow organized crime to have control on their territory and the local economy, too. However, the most pernicious effect of this illegal activity of organized crime is on economic growth. Detotto and Otranto (2010) assert that extortions act like a tax on the economy because this crime discourages domestic and foreign direct investments, reduces the competitiveness of businesses, and reallocates resources unproductively, creating uncertainty and inefficiency. Furthermore, Vittorio Daniele and Ugo Marani (2008) show in their working paper that criminal organizations increase the risks and costs of productive investments leading to a negative effect on economic growth. In this same paper, Daniele and Marani (2008, 12) take a wider perspective to the detrimental effects of criminal organizations in the economy by saying that “organized crime is only one aspect—certainly the most evident—of a social and institutional context with other forms of illegality. Such forms of illegality include corruption and, more commonly, violation of non-penal but important laws for the good functioning...
of the economy.” It is evident that misgovernment prevails, and the rule of law is absent.

The aim of this article is to contribute to the existing measurements of extortion by organized crime and the impact of this depredatory activity on economic growth. Extortions should be valuated beyond the number of reported crimes in order to understand how much money is drained away from the legal economy. An estimation also gives an idea of the magnitude of financial resources that organized crime groups have at their disposal, either to channel them to other illicit activities or for money-laundering by investing in the legal economy of the region. To set the stage, this article analyzes first the illegal activities carried out by organized crime groups in the Mexican state of Michoacán during 2001-14. It is important to underline that these criminal organizations did not coexist together in the same territory; one crime group replaced the other in the region. Within this context, this article presents a case study of extortions in a legal export market: the avocado market. Specifically, I attempt to show how the criminal organization named the Knights Templar (KT) extracted rents from the avocado export market in Mexico. I then turn to what the estimated magnitude of that rent was, and how tangential this source of revenue to their criminal organization was. Finally, I examine the extent of the adverse impact of these extortionary activities of the KT on the economy of Michoacán. I do so in each case by looking at the performance of the main macroeconomic variables.

The relevance of this article for comparative studies of political economy and public policies is that it is based on solid theories and empirical work, capable of being compared with future articles using (or not) the same theoretical framework and that can lend themselves to comparative studies of other Mexican regions or other countries with a similar problem in any region of the world. However, before delving more deeply into the theoretical framework of this study, it is pertinent to ask a central question at the outset: why would organized crime carry out extortion activities in the agricultural sector (i.e., to the avocado producers of Michoacán)? In his classic paper on *What is the Business of Organized Crime?*, Schelling (1971, 643) outlines a general typology of the common traits that make legal businesses more likely to become victims of extortions. Drawing from insights described by Schelling for the case of the Italian mafia, Andrea Mario Lavezzi (2014) lists four main traits that seem to attract criminal organizations to such businesses:

1. Businesses in traditional sectors of the economy with a high degree of territorial specificity;
2. A relative small size of firms;
3. A relatively low technological level; and
4. A region where the public sector is relatively large and legal institutions are weak.

Except for the second trait, the rest of them apply to avocado producers in Michoacán.
This article takes the above general typology and main traits that seem to attract criminal organizations to businesses in traditional sectors of the economy, like agriculture, as a starting point. I now turn to a more detailed discussion of the theoretical underpinnings of this research.

A Theoretical Framework

It is important to clarify at the outset what is meant by the concept of extortion, besides being a rent-seeking activity that adds no value to the productive sectors of the economy. The economic literature on the subject makes an important distinction. Maurizio Lisciandra (2014) explains that, by means of intimidations or threats to legal businesses, the criminal organization extorts businesses to achieve its main objective: to receive cash or other utilities by the imposition of regular or *ad hoc* cash payments.

Drawing from the work of Rocco Sciarrone (2009), Maurizio Lisciandra (2014) makes a clear distinction when he addresses the three extortion mechanisms used by the Italian mafia. The first is intimidation through threats, leading businesses to comply with the illegal request. The second mechanism is one of cooperation that implies an active involvement of the extorted business, which sees an advantage in complying with this request. The third refers only to infiltrated businesses which, as part of the organized crime group, must channel profits to the criminal organization. For our purposes, it is the second mechanism that needs clarification regarding the supposed mutual advantage “similar to a market exchange between demand and supply” (Lisciandra 2014, 93).

In fact, Lisciandra (2014) claims correctly that any market exchange implies voluntariness and it is this one element that is absent when the supplier of the service is an organized crime group. Lisciandra continues elaborating his arguments within the Italian context—very similar to the case of Michoacán—in the sense that it is hard to believe that in those circumstances there is voluntariness in the demand of protection from legal businesses. On the contrary, it is more likely that there is the imposition of extortion fees to legal businesses. There is a subtlety to this concept. The crucial conceptual difference lies in the definition used by Gambetta (1993) and Gambetta and Reuter (1995). Both authors observe extortion in Sicily in the form of the demand of legal businesses for protection rackets by organized crime against ordinary criminals, incompetent racketeers and other gangs or clans.

It is Schelling (1971) who asserts that in the vast majority of the cases, the demand for protection is not of a voluntary nature because the refusal of a protection service implies future threats, intimidations, risks, and damage to person and property. As noted by Schelling, criminal organizations operate as tax authorities, providing no benefits to their victims. Moreover, Lisciandra (2014, 104) argues remarkably that, “an extortion racket hardly identifies a conventional market
with demand, supply and prices. The ‘protection service’ appears as an accessory to extortionary activity, and it serves more criminal organizations rather than businesses because it deters incursions by other clans and small-scale criminals.” Therefore Lisciandra, in line with Schelling’s concept, supports the idea that criminal organizations tend to create monopolies in their illegal activities regardless of whether they are acting in the legal or illegal economy. This monopolistic power underlined by Schelling manifests itself above all in a municipality, at state, or at regional levels where the organized criminal group gains exclusive territorial control. Unless a criminal organization in this geographical area enters into a dispute with another organized crime group seeking control of the territory and triggering an escalation of violence, the evidence in Mexico shows that, at the municipal, state, or regional level, it is possible to exercise monopolistic control of illegal activities and hence aim to extract rents in legal businesses.

To organized crime, monopolizing illegal activities means more effectiveness at extracting rents. Here corruption plays an important role. The corruption of local politicians and authorities that make local decisions allows these criminal organizations to operate and prevail with impunity. It also permits them to expand their power, especially when it brings them large amounts of money with which to repay local authorities and politicians.

Hence, according to the economic theory of organized crime, there are illegal activities such as extortion, intimidation, and threats which are generally monopolized due to well-defined property rights (territorial control of a criminal organization). By gaining such monopolistic control, the criminal organization undermines the government’s effective control over the local or regional economy in its role as rule maker and law enforcer, as tax collector, in its public-spending function, in its redistributive role through social programs and public infrastructure projects, impacting adversely the macroeconomic variables of the state. Although it might seem senseless for organized crime to engage in extortion activities in legal markets, Schelling (1971) argues that it is precisely their territorial control that allows them to get hold of the entire economic structure of criminal activities, regardless of the magnitude of the profits to be earned either in the illegal or legal economy.

There is also another aspect brought up when dealing with extortions by criminal organizations to legal businesses. The presence of organized crime in a specific territory influences the allocation of resources in that region. For a better understanding of the nature of this influence on resource allocation and its impact on economic growth, I take from Hirshleifer’s (1988) and Baumol’s (1996) rent-seeking approach. This approach suggests that producers distribute their resources among both productive activities and appropriative/destructive activities—defensive measures designed to protect their resources1—depending on the relative returns of the two activities. Other authors (see e.g., Skaperdas

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1 The National Survey of Business Victimization of Mexico estimated the total burden of crime on businesses to be 1 percent of Mexican gross domestic product (GDP) in 2013: two-thirds of the cost are from criminal acts and one-third of the cost is because businesses have to take protective measures (Institute for Economics and Peace 2016).
developing on the work of Hirshleifer and Baumol, point out that if the legitimate government does not effectively ensure property rights, there will be a greater incentive to invest in appropriative activities—destructive measures or resource protection—against criminal organizations. These investment decisions will compromise future sustained economic growth and formal employment in the given region.

Given the above and following Hirshleifer’s (1988) and Baumol’s (1996) concept of rent-seeking, it is plausible to predict that the economic agents of Michoacán have been allocating their resources not only to productive activities, but also to appropriative/destructive activities depending on the relative returns of these two activities. In this way, taking from Hirshleifer’s and Baumol’s approach, in a situation characterized by weakly enforced rule of law by the government authority and the breakdown of the property rights system, it is very likely that the economic agents of the region will have greater incentives to invest more in destructive activities at the expense of productive activities in order to protect their property, resources and families. As such, and based on the concepts of Detotto and Otranto, Daniele and Marani, Schelling, Lisciandra, Hirshleifer, and Baumol, this article also postulates that the more control organized crime exerts over legal businesses in Michoacán, the more economic agents will invest in destructive activities at the expense of productive activities. The outcome is that this eventually causes greater distortions in the economy of the controlled territory with negative distributional impacts in the regional economy, leading to a suboptimal economic growth and to a greater rate of unemployment in the formal sector of the economy, as will be shown in this case study with the macroeconomic performance of Michoacán.

Evolution of Organized Crime Groups in Michoacán

The case of Michoacán, with its gradual deterioration over so many years of the economic, political, social, and legal conditions in several municipalities in the state, sheds light on how organized crime has undergone a transformation in Mexico. The following case study highlights it has done so, in particular, through the spread of illegal activities and the incursion of criminal organizations in both illicit and legal markets (Ornelas 2013). Since the 1960s and 1970s, before the dominance of the Valencia group (the Milenio Cartel) in the 1980s, and on through the Zetas (1999-2000), La Familia Michoacana (LFM; 2006), and later the KT (2011), organized criminal organizations in the state had evolved, extending illegal activities ever more widely and also affecting legal markets,² with the aim of exerting firmer control of their territories.

² The critical turning point began with the arrival in Michoacán of the Zetas (2000-01), who broke the Valencias’ monopoly and introduced predatory techniques mainly in the tertiary and agricultural sectors; the avocado producers, their favorite target. LFM and the KT perfected the Zetas’ know-how and extended this knowledge to several legal markets of the primary sector.
and local authorities, and increasing their already substantial profits and rents. The Valencias (1980s), with their know-how and their contacts among street-level dealers in the United States, made the most of transnational markets: they increased production, incorporated cocaine trafficking into their business, and exported methamphetamines produced in the state. This regional criminal organization expanded and diversified its business: marijuana, opium poppy, cocaine, and methamphetamines—the last two substances through alliances established with other Mexican and Colombian criminal organizations.3

With the arrival of the Zetas in Michoacán (1999-2000), violence detonated in Michoacán for the first time and the range of illicit activities grew to include others that were apparently less profitable but directed against the general population and the state’s productive sectors: protection rackets, plain extortions, intimidations, and kidnappings by the Zetas.4 The Zetas also created a domestic market of methamphetamines in Michoacán and neighboring states. They opened routes for drug trafficking and undertook to bribe, control, co-opt and/or impose upon local and state authorities. The general population became their “loot.”

It was in this context that LFM emerged in 2006, with the main objective of expelling the Zetas from the region and gaining preeminence from a social and religious perspective. It was no easy task, and it set off a spiral of violence that affected people all over the state. Figure 1 demonstrates how in 2006 the intentional homicide rate per 100,000 inhabitants was 50 percent higher in Michoacán than in the rest of the country. It was not until 2010 that the rate dipped below the national level again, but it turned upward and above the national level once more in 2013—the year of the rise of self-defense groups—hitting 16.67 percent in the first nine months of 2014, 68 percent above the national intentional homicide rate.

A grassroots organization, LFM used a wide-ranging network of connections with municipal and state law enforcement authorities to extend its influence into areas of social development and infrastructure. One of their greatest achievements concerned the use this organized crime group made of the social structure of Michoacán for their own purposes. Communities that cooperated with LFM were repaid with public works: the construction of a hospital, the paving of a road or a stretch of highway, access to drinking water, etc. In this way, by addressing their social needs, LFM rewarded the communities that cooperated with them. Public resources for this state were not negligible, they ranked in tenth place in 2012 at the national level in a country that has a total of 31 states

3 Among their alliances with Mexican criminal organizations were: the Arellano Félix brothers, of Tijuana; the Amezcua brothers, of Colima; Amado Carrillo Fuentes, of Juárez; and later Joaquín “El Chapo” Guzmán Loera, of Sinaloa. Colombian alliances included the Valle del Norte and Medellín cartels. See Eduardo Guerrero Gutiérrez (2014) and Valdés Castellanos (2013).

4 See Eduardo Guerrero Gutiérrez (2014) who explains in detail the development throughout the years of these organized crime groups in Michoacán: the Valencia family, the Zetas, LFM, and the KT.
and a Federal District (Mexico City). It could possibly be the case that state authorities secured a good level of public resources from the Federation in order to create profit opportunities for organized crime through public procurement. Figure 2 provides startling evidence of these facts.

Like the Zetas, LFM implemented a policy of “silver or lead” (i.e., accept a bribe or risk being killed). It created an ample network of allegiances or collusive relations among members of both the municipal and state police forces, with the threat of violence for those unwilling to cooperate. In this way, it was able to take control of entire town councils and budgets. Following the supposed elimination of their leader Nazario Moreno González, “El Chayo,” in December of 2010, LFM reorganized, taking advantage of the situation to mobilize its broad social base in favor of a new criminal organization, the KT, who appeared on the scene in March of 2011. The KT continued the social welfare endeavors LFM had engaged in. Its visible leaders—Servando Gómez Martínez, “La Tuta” (a former schoolteacher), and Enrique “El Kike” Plancarte—maintained almost the entire organizational structure of the former group in place, while taking control of its criminal activities, its social base, and its network of political connections. In February 2013, self-defense groups began to form in the

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**Figure 1.**

Intentional Homicide Rate per 100,000 Inhabitants

![Graph showing intentional homicide rate per 100,000 inhabitants from 2000 to 2014 for National and Michoacán.](Source: Secretariado Ejecutivo del Sistema Nacional de Seguridad Pública, Secretaría de Gobernación (2014), available at https://secretariadoejecutivo.gob.mx/docs/pdfs/tasas%20por%20cada%20mil%20habitantes/Tasas072017.pdf

Note: *Author’s estimate based on preliminary data for the period January-September, 2014.*)
Figure 2.
State Public Spending in 2012 as a % of Mexico’s GDP
(In % Percentage)


Note: For the year 2013 the INEGI had data on only 20 states.
The Tierra Caliente region of Michoacán, expelling the KT from the municipalities of Buenavista, Tomatlán, and Tepalcatepec. The emergence of these self-defense forces highlighted the Mexican state’s abandonment of the inhabitants of the region and the desperate situation of the local population in the face of widespread abuses by the KT, especially regarding extortions and kidnappings.

The increasingly widespread criminal activity in Tierra Caliente led to the emergence of these new self-defense groups and although it is beyond the scope of this study to detail their origins and endeavors, their appearance in the region illustrates the fact that the productive resources of avocado producers were diverted to defend themselves against organized crime groups. In accordance with the economic literature on crime, the agricultural producers in the region diverted productive resources, channeling them toward safeguarding their properties, other productive resources, and their families since they could not rely on municipal and/or state law enforcement authorities. This decision meant that producers had to invest more and more resources in destructive activities at the expense of productive activities for the avocado export market. These investment decisions underpinned important distortions in the economic structure of Michoacán with an adverse impact on the economic performance.

Dr. José Manuel Mireles, a physician at the local public health clinic in Tepalcatepec and spokesman for the self-defense groups, explained openly how extortions by organized criminal groups began to increase in 2010 (Guerrero Gutiérrez 2014). His hypothesis was that the Mexican government’s decision to wage war on criminal organizations complicated the business of drug trafficking, leading the criminal organization to turn against a defenseless and relatively well-off population to extract resources and compensate for the loss of drug trade income. A complementary issue concerns the undefined property rights in this region which allowed the territorial control of organized crime to impose fees and payments in the productive sector and to reap the economic benefits. The KT also succeeded in subordinating entire local governments, controlling and regulating legitimate economic activity in several municipalities of Michoacán: lime farmers in La Ruana; avocado producers in Tancítaro and other municipalities; sawmills in Coalcomán; mines in Aguililla and Lázaro Cárdenas; and meat and cheese businesses in Tepalcatepec. Its modus operandi was to steal or “purchase” properties and products, at a discounted price, and/or to extort producers by levying contributions on each ton of metal extracted.

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5 Michoacán is a state that has succeeded in making the most out of the comparative advantages offered by the North American Free Trade Agreement in the agricultural sector (products such as avocados, limes, and other fruits), in the mining sector (iron exports), in the timber business, etc.

6 Either by imposing their own candidates, in collusion with local authorities, or by threats and the intimidation of elected officials.

7 Both legitimate economic activity and legal markets or enterprises in which organized crime operates. For further information see Mexican open sources such as Nexos, Milenio and Reforma in 2013 and 2014.
or in each hectare of avocado crop; that is, to exercise control over legitimate economic activity through coercion.

In 2007 the rate of kidnappings per 100,000 inhabitants of Michoacán began to rise alarmingly, reaching a level three times higher than in Mexico overall by mid-2009. In the first nine months of 2014, the rate of 2.10 percent per 100,000 inhabitants in Michoacán was more than double the national rate of 0.94, as shown in Figure 3.

Figure 3.
Rate of Kidnappings per 100,000 Inhabitants

Note: The municipalities with the highest incidence of kidnappings as of February 2014 were: Morelia, Zitácuaro, Uruapan, Lázaro Cárdenas, Zamora, and Los Reyes.

As a result of the inability of municipal and state authorities to maintain the rule of law, and given the obvious ineffectiveness of the criminal justice system and law enforcement authorities, in 2013 self-defense groups8 began to form in these municipalities, demanding the state to fight against the criminal organizations and assume its proper role in providing security in the region. The arrest of four mayors in 2014 brought to public attention the existence of collusion and collaboration between municipal authorities and organized crime. More serious still, the video of Rodrigo Vallejo, son of former governor Fausto Vallejo, in animated conversation with the leader Servando Gómez Martínez, “La Tuta,”

8 At the time it was still unknown to what extent self-defense groups were infiltrated by some elements linked to a rival organized crime group (the KT or members of the Cartel of Jalisco Nueva Generación [New Generation], to cite two examples). Nor was it known how they had been armed.
revealed the extent of institutional decomposition at both the municipal and state level.

It is now known that the greater part of the population of the Tierra Caliente region had dealings with the KT. Specifically, these were with the bosses in command in various municipalities, who for years had been engaged in illegal activities—mostly drug production and trafficking—and rent-seeking actions against legitimate productive activities, particularly in the primary and tertiary sectors. Almost the entire population of Michoacán participated in one way or another: some reaped benefits, others did not. Social acceptance of these conditions had spread across a wide spectrum of society in the state: there was no doubt that the KT possessed a solid social capital. This social and political base, consisting of a network of allegiances built up over several years, allowed the organized crime group to impose its rules and dictate the law. Elected municipal and state authorities had been fully voided: those not working in collusion with the KT or not belonging to the criminal organization lived under the threat of being murdered. The state’s ineffectiveness at enforcing the rule of law and its complacency with extensive corruption made this gradual evolutionary process of organized crime possible, generating a chaotic environment in the legal economic activity of this region (Garoupa 2007; Tanzi 1995).

Case Study: The Avocado Export Market and Rent-Seeking Activities

Most estimates indicate that there are between 17,000 and 22,000 avocado producers in Michoacán, cultivating approximately 125,000 hectares. Although the fruit is cultivated in as many as 30 municipalities, the main avocado-producing municipalities are Uruapan, Tancítarro, Zitácuaro, Tacámbaro, Peribán, Tingambato, Los Reyes, and Paracho.

Some of the basic characteristics of the production of Hass avocados include:

- 1 hectare contains between 80 and 160 avocado trees.
- Each avocado tree produces between 300 and 800 kilos of fruit per year. The crop is handpicked twice a year.
- The first harvest can be reaped in the fifth year of a tree’s life.

Figure 4, shows the behavior of production volume and real prices of avocados in the period 2006-14. This graph reports the economic performance of Hass avocados in Michoacán; that is, production and real prices in an eight-year period. Since local authorities had been coopted by the KT, organized crime was able to intervene, for the purposes of rent-seeking activities, in the

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9 The main function of the legitimate governmental structure is to provide public goods to the population of the state, such as the protection of property rights, effective assurances that contracts will be duly honored, public spending in social programs and physical infrastructure, etc. The monopoly of violence allows the legitimate authorities to enforce compliance with the law and, if necessary, exercise its exclusive use of force to protect the population.
primary phase of the avocado harvest and in the marketing phase—that is, in the packing of the fruit by the regional packing plants. Due to corruption and collusion, the criminal organization also had a complete “x-ray” of the avocado orchards, having gained direct access to the municipal permits granted by the Local Plant Health Council, which operated under the auspices of the SAGARPA (the Federal Department of Agriculture) and the State Plant Health Committees.

The avocado producers testified at one point that members of the Council were in collusion with the KT. What is more, each inspector at the Local Council also charged 3,000 pesos to grant the seal of certification for the fields and avocados themselves. It is important to highlight that this certification is a crucial requirement to meet the high standards for avocado exportation to the United States, Europe, and Asia (mainly Japan).

Organized crime extorted both the avocado producers and the packing plants. Amounts were not negotiable, so a small producer or someone just starting in the business might be forced to shut down operations. In 2013 the KT charged nonexporting producers 1,500 pesos per year for every hectare of avocado trees they cultivated, and 3,000 pesos per year per hectare to exporters, whether the

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**Figure 4.**

Real Prices and Production of Hass Avocados in Michoacán 2006-14*

(source: Data obtained from Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación; Servicio de Información Agroalimentaria y Pesquera (2014), available at https://sagarpa.gob.mx/siap/datos-2014. **Note:** *In 2014, through April only.

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10 Different electronic news media during the year 2013 in the months of October, November, and December reported this situation that I describe in the section of this article entitled “Case Study: The Avocado Export Market and Rent-Seeking Activities.” One of those electronic investigative reports can be found in Martinez and Padgett (2013).
fields yielded any fruit during the year of reference. Later, the KT also began to charge producers 10 cents for every kilo of avocado produced, equivalent to 100 pesos per ton. To give an idea of the approximate size of this mandatory contribution for every kilo of avocado, in 2013 the criminal organization extorted the total amount of 119,400,000 pesos, which represents 0.5 percent of the total value of the avocado production of that year.

Recapitulating, the KT escalated further in their predatory methods. Besides using the imposition of fees and payments for every hectare cultivated or for every kilo of avocados produced, this criminal organization was effective at establishing regulations and gaining direct control over the production, distribution, and exports of certain highly profitable products in the legal markets. In the absence of the rule of law, this was achieved through bribes, intimidation and threats, corruption, cooptation, and/or through the imposition of local and state authorities. Other businesses affected in the primary sector besides avocado included lime production, iron mining, sawmills, and meat and cheese production.

During the period 2007-10, avocado yield (ton/hectare) decreased—as displayed in Figure 5—and though it climbed back up in the following two years,

**Figure 5.**
**Avocado Yields: 2002-12**

![Avocado Yields Chart](image)

Source: Data obtained from Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación; Servicio de Información Agroalimentaria y Pesquera (2014).

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11 The amounts charged by the KT come from testimonies published in open sources. Two of those sources are www.sinembargo.mx (October, 2013) and Vanguardia.mx (November, 2013).
it did not reach 2006 levels again. One factor that might explain this behavior is that the KT engaged in illegal logging and burning of woodlands to expand the surface area for avocado cultivation. In some areas this criminal organization was able to change the use of land to avocado cultivation under precarious conditions. Therefore they were unproductive in avocado cultivation.

Figure 6 shows the relation, in real terms, between the total fees paid annually by the avocado producers to the KT and the value of total annual avocado production. This relation gives an idea of the proportion of payments that organized crime extracted from avocado producers with respect to the total value of avocado production.

**Figure 6.**

Proportion of Total Annual Extortion Payments of Avocado Producers to KT in Relation to the Total Value of Their Annual Production, and Annual Extortion Rate in Michoacán per 100,000 Inhabitants: 2001-13 (In Real Terms)

Sources: Author’s calculations using data from Secretariado Ejecutivo del Sistema Nacional de Seguridad Pública, Secretaría de Gobernación (2014) and Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación, available at https://www.gob.mx/sagarpa

Figure 6 shows the relation, in real terms, between the total fees paid annually by the avocado producers to the KT and the value of total annual avocado production. This relation gives an idea of the proportion of payments that organized crime extracted from avocado producers with respect to the total value of

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12 This total annual amount is what the KT extracted from each hectare of avocado trees. For calculation purposes in Figure 6, the total cultivated area has been considered. This calculation does not take into account the extortion fees paid to the KT by these producers on every kilo of avocado produced.
yearly production. It is interesting to note that this proportion, which acts as a tax, shows a clear downward trend as of 2003 and that the percentage fluctuated between 1 and 4 percent in the period 2001-13.

One explanation of this downward trend is that the KT were expanding their scope. This organized criminal group was diversifying the productive sectors to which it imposed contributions, that is, the KT were expanding extortionary activities to a wider segment of the legal productive sectors in Michoacán. This interpretation is consistent with the fact that Figure 6 shows an upward trend after 2006 in the extortion rate per 100,000 inhabitants—which is well above the national extortion rate as can be seen in Figure 7 in the next section.

The KT also regulated the activities of the packing plants in the region. Starting in 2012, they set a price in the range of four to six pesos per kilo of avocado for the more than 250 packing plants in the region. All of them had to comply with the imposed rules. Table 1 shows the average prices for a kilo of quality Hass avocados in the food supplies local market in Morelia, Michoacán:

<table>
<thead>
<tr>
<th>Year</th>
<th>Maximum Price</th>
<th>Minimum Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>25.26</td>
<td>14.21</td>
</tr>
<tr>
<td>2013</td>
<td>33.16</td>
<td>12.11</td>
</tr>
<tr>
<td>2014 (January–May)</td>
<td>31.05</td>
<td>16.84</td>
</tr>
</tbody>
</table>


In real terms, the total amount extorted by the KT for the number of total hectares cultivated during the period 2001-13 was in the range of 210-264 million pesos per year. This amount, extracted from a specific productive activity and paid in Mexican currency, seems insignificant in comparison to the estimated dollar value of sales of synthetic drugs alone, as evidence shows. For example, the estimated value of one shipment of 8.5 tons of synthetic drugs was 187 million U.S. dollars in 2009.13

If we were to convert those 187 million U.S. dollars into Mexican pesos at the average 2009 exchange rate of 13.51 pesos/U.S. dollar, the total value of the shipment would be over 2.5 billion pesos. In that same year, the total amount in real terms extracted by the KT from the avocado producers for the totality of hectares cultivated was 264.5 million pesos—equivalent to approximately 19.6 million U.S. dollars—or to 10.5 percent of the total estimated value of the shipment of synthetic drugs. Although this evidence is consistent with the

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economic theory on organized crime (namely, that the profitable business is the illegal narcotics market—black markets—and that other income from illicit activities in legal markets is tangential), the fact is that the 19.6 million U.S. dollars extorted by the KT from the avocado export market represented only one of the various predatory activities involved in the overall avocado business. Although not considered in this study, the KT was also extracting rents from every kilo of avocado produced. And there were other legitimate primary sector activities from which the KT extracted high rents as well. The nature of these payments extorted by the KT represented a regular fixed income which became important thanks to the diversification of their rent-seeking activities in *Tierra Caliente* and the coastal region. Moreover, this rent extraction from primary sector producers did not entail the risks and costs that are associated with the transshipment of synthetic drugs and the possibility of seizures.

### Economic Overview of Michoacán

Initially, with the Valencia family during the late 1980s, it was only a matter of drug-trafficking, which apparently did not intersect with the lives of the majority of the population in Michoacán. The Valencia was a regional drug trafficking cartel operating with a low profile. But then the Zetas arrived in 1999-2000 and introduced rent-seeking activities into the legal markets so the

Figure 7.
\[ \text{Extortion Rate per 100,000 Inhabitants} \]

![Extortion Rate per 100,000 Inhabitants](source)

Note: *Author’s estimate based on preliminary data for the period Jan-Sept 2014.*

\[ A \text{ phenomenon identified by the economist Gordon Tullock in the late 1960s. It was Anne Krueger, however, who coined the term } rent-seeking \text{ in 1974. Hirshleifer (1988) and Baumol (1996) developed their own respective analyses on the basis of a rent-seeking approach.} \]
extortion rate per 100,000 inhabitants in Michoacán more than tripled compared to the national extortion rate. Such a feat was possible because the Zetas introduced predatory practices in the service sector: in bars, nightclubs, restaurants, medical clinics, transportation, etc.—reaching its peak in 2009 before being fully expelled from Michoacán later that year. As the deterioration spread throughout the region, extortion affected other productive sectors, such as agriculture and mining.

LFM and later the KT were able to extend these predatory activities throughout the region’s economy, including the agriculture and mining sectors. Organized crime groups had diversified their portfolio to include not only drug trafficking and drug production but also predatory activities such as extortion, intimidation, threats, and violence. In fact, these rent-extraction activities—specifically extortions—are the type of crimes that occur at a local level where there is territorial control by an organized crime group. According to Asmundo and Lisciandra (2011), the majority of the cases studied for their research involved the typical form of extortion consisting in a regular fee or payment demanded or imposed by the criminal organization to legal businesses through intimidation and threats of violence—that is, damage in property or in person. Some studies on the economic literature of crime (see e.g., Calderoni 2011; Lavezzi 2011, 2014; Lisciandra 2014) explain that, in order to extract such contributions, organized crime demands the payment of various fees, depending on the productive sectors’ profitability. But one of the most relevant traits by which businesses in the legal productive sectors are selected by organized crime is because, according to Asmundo and Lisciandra (2011), they represent the most prosperous businesses in the region and because their revenues are easily monitored so the criminal organization can demand a suitable extortion sum. The modus operandi in the case of avocado producers differs from the one used by the KT in the case of lime producers, and it is also different from the one implemented in the case of iron production exports. Moreover, extortion payments in the agricultural sector were made in Mexican pesos, whereas in the mining sector they were made in U.S. dollars.

With the Zetas, the practice of extortion was introduced in Michoacán and became systematic, but LFM, as a regional organization, extended this practice because it had access to local information from the government and social networks to impose fees and payments on legal productive activities. The KT carried this practice inherited from LFM even further, and took the extended plundering to the extreme, causing the emergence of self-defense groups in the state.

I present a macroeconomic overview of the most important variables showing the economic performance of Michoacán versus the national Mexican level. This comparison gives an idea of what was transpiring during those years at the state level and how these extended extortions drained away resources from the legal productive sector with an impact on the economic performance of
Michoacán. This is especially so if one considers that 41 percent of the quarters during the period 2003-13 registered a negative growth rate as can be seen in Figure 8.

Figure 8 compares economic activity in Mexico as a whole with the economic performance of Michoacán in 2003-13, showing how the state’s economic activity is apparently synchronized with the national economy, though the fluctuations in the economic cycles—the steep upturns or downturns—of Michoacán tended to be more pronounced, it is very likely that they were reflecting the fact that organized crime discourages productive investments by the private sector.

Figure 9 contrasts the overall economic activity of Michoacán with the performance of the state’s primary sector. Because it is the primary sector, variability in the fluctuations can be observed over the entire period from 2003 through 2013. The sharp downturn in the period from 2006 to 2009 is mostly attributed to the increasing level of violence in the state, which was higher than the national level. And although, in 2012, Michoacán accounted for almost 10 percent of Mexico’s total agricultural production, these oscillations in the economic performance of the state and the primary sector are a consequence of

Figure 8.
Economic Activity in Michoacán and in Mexico: 2003-13
(% Change)
the ongoing violence and rent-seeking activities faced by the legal productive sector of Michoacán. In fact, the extortion activity of organized crime acted as a tax on the economy because, as highlighted by Detotto and Otranto (2010), this type of crime discourages domestic and foreign direct investments and reallocates resources unproductively, creating uncertainty and inefficiency in the regional economy.

Regarding investment in the state, available statistics as displayed in Figure 10 (domestic) and Figure 11 (foreign) show sharp falls in both types of investment during the period 2004-13. These steep decreases coincide with the most difficult times in the state, especially from 2006 to 2008-09, when war broke out between the Zetas and LFM, with the latter group finally expelling the Zetas from the state. The steep upturns in domestic investment in 0 and foreign investment in 2010-11 were the result of public spending in infrastructure works in the port of Lázaro Cárdenas, and private investment in the mining sector—specifically, in one of the world’s largest iron and steel producing companies (ArcelorMittal). Investment performance in this period is consistent with Daniele and Marani’s (2008) findings in the sense that the poor performance of these two macroeconomic variables are due to the presence of organized crime, notably extortions, and therefore account for the negative impact on economic growth. To these authors the presence of organized crime is taken as a structural barrier to creating favorable
Figure 10.
Gross Fixed Capital Formation in Mexico and Michoacán: 2004-12
2008=100
(Annual % Change)

Source: Banco de Información Económica (INEGI 2014).

Figure 11.
Direct Foreign Investment in Mexico and Michoacán: 2004-13
(Annual % Change)

Source: Banco de Información Económica (INEGI 2014).
conditions for investors such as economies of agglomeration in the region which can detonate cumulative processes leading to sustained economic growth.

The most alarming variable, however, is the informal economy rate. This rate is well above the national level for the period from January 2005 to the first quarter of 2014. The segmentation of the labor market made it easier for organized crime to seek out and recruit young hit men (*sicarios*) and informants (*halcones*). Worse still, LFM and the KT represented a source of jobs in the region: idle young people were employed as hit men, *campesinos* were paid to grow marijuana and opium poppy—even being financed until harvest time—chemistry professionals were hired in methamphetamine production, and workers in the informal economy\textsuperscript{15} to act as *halcones* (street hawkers), etc. Labor informality allowed these criminal organizations to have a pool of labor at their disposal with people who were better paid than if they held a job in the formal economy. This sustained high rate of labor informality well above the one at the national level tells us that organized crime became an important employer in this region leading, in fact, to the reallocation of labor and other productive resources away from legal businesses (Figure 12).

\textbf{Figure 12.}
\textit{Rate of Labor Informality: 2005-14 (Percentage)}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure12.png}
\end{figure}

\textit{Source:} Banco de Información Económica (INEGI 2014).

\textsuperscript{15} Gas station attendants, shoe shiners, newspapers vendors, taxi drivers, etc.
Maps 1 and 2 of Michoacán illustrate the social structure of the state in 2010. The first map shows the Gini coefficient by municipality, highlighting the fact that the areas with the greatest social inequality are on the coast and in *Tierra Caliente*. The second map shows the income ratio\(^{16}\) by municipality, again revealing that the worst income conditions are to be found in municipalities in *Tierra Caliente* and coastal regions.

**Map 1.**
**Michoacán: Municipal Gini Coefficient, 2010**

<table>
<thead>
<tr>
<th>Rango (%)</th>
<th>No. de municipios</th>
</tr>
</thead>
<tbody>
<tr>
<td>[0.3534 – 0.3954]</td>
<td>47</td>
</tr>
<tr>
<td>[0.3954 – 0.4454]</td>
<td>43</td>
</tr>
<tr>
<td>[0.4454 – 0.4914]</td>
<td>20</td>
</tr>
<tr>
<td>[0.4914 – 0.6374]</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>113</td>
</tr>
</tbody>
</table>

*Source: Coneval (2010).*

\(^{16}\) Determined as the quotient of the total current average per capita income of people living in extreme poverty against the total current average per capita income of people neither living in poverty nor are vulnerable.
Conclusions

The aim of this article was to measure extortions by organized crime in the avocado export market of the Tierra Caliente and coastal regions and the impact of these predatory activities on the economic growth of Michoacán. The estimations presented in this article give an idea of the financial resources available to organized crime from extortions to key legal businesses of this region during the period 2001-14. It also gives an idea of the illicit activities that can be carried out with such resources and the money laundering that can take place within the legal economy of the state.

In this article I presented the theoretical framework on the economic literature of crime, specifically on extortion and predatory activities and the detrimental

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*Source: Coneval (2010)*

*Note: Income ratio is determined as the quotient of the total current average per capita income of people living in extreme poverty against the total current average per capita income of people neither living in poverty nor are vulnerable.*
effects on economic growth. I also described the evolution of criminal organizations in Michoacán and their criminal activity during these years. Here I highlighted the fact that these criminal organizations did not coexist together in the same territory at the same time; one organized crime group replaced the prior one in the region after episodes of escalating brutal violence. This fact should be highlighted because it was Schelling (1971) who underlined the monopolistic power that, if gained by organized crime through its exclusive territorial control, it will be able to engage in illegal activities in legal or illegal markets. And Lisciandra (2014), in line with Schelling’s concept, supports the idea that criminal organizations tend to create monopolies in their illegal activities regardless of whether they are acting in the legal or illegal economy. This monopolistic power showed itself at the regional level in Tierra Caliente and the coastal regions, where the organized criminal group, in turn, had gained exclusive territorial control in order to extort legal businesses. The evidence in Mexico shows that, at the municipal, state, or regional level, it is possible to exercise monopolistic control of illegal activities and hence aim at extracting rents in legal businesses.

This article presented the case study of extortions in one legal export market: the avocado market. I examined how the KT extracted rents from the avocado export market, then estimated the magnitude of such rents and how tangential this source of revenue to organized crime really was. The final section highlighted the adverse impact of these KT extortion activities on the economy of Michoacán by looking at the performance of the main macroeconomic variables: economic growth at the national level, economic growth of Michoacán and of its primary sector; then domestic and foreign investments at the national and state level; and then the rate of labor informality, both, nationally and of the state.

Returning to the monopolistic power of the criminal organization, once organized crime achieved the control of the territory, it became the rule maker and law enforcer in the region where it had territorial control, the monopoly of violence and corruption, and engaged in various predatory activities. Organized crime also became the provider of public goods in the municipalities of the region. LFM and the KT were grassroots criminal organizations that had social and political networks of corruption at the local and state level. This permitted access to restricted information on avocado producers, so they could carry out their predatory activities effectively. Corruption and increasing violence played an important role in eroding the rule of law; specifically, organized crime-imposed regulations which undermined trust in government functions and government effectiveness. The case study also shed light on how the rent-seeking activities of organized crime in the avocado export market had an adverse impact on resource allocation and investment decisions, leading to a suboptimal economic performance in Michoacán as shown by the macroeconomic variables.

I also illustrated the rationale behind how the KT extracted rents from the avocado export market. The evidence showed the relationship, in real terms,
between the total amount paid yearly by the avocado producers to the KT and the value of total annual avocado production. This percentage fluctuated between 1 and 4 percent during 2001-13—an outcome consistent with the work of Detotto and Otranto (2010) which sustains that the extortion activity of organized crime acts as a tax on the economy because it discourages domestic and foreign direct investments, reallocates resources unproductively, creating uncertainty and inefficiency in the regional economy.

To illustrate also how tangential was this source of revenue to organized crime, I took the estimated value of 187 million U.S. dollars of one shipment of 8.5 tons of synthetic drugs seized by Sedena in Apatizingán, Michoacán in the year 2009. When converting these 187 million U.S. dollars to Mexican pesos at the average 2009 exchange rate of 13.51 pesos/U.S. dollar, the total value of the synthetic drugs shipment represented over 2.5 billion pesos. In that same 2009, the total amount in real terms extracted by the KT from the avocado producers for the totality of the cultivated hectares was 264.5 million pesos, an amount equivalent to 10.5 percent of the total estimated value of this shipment of synthetic drugs. This result seems consistent with the economic theory of organized crime: that the profitable business is in fact the illegal drugs market (black markets) and that other revenues coming from illicit activities in legal markets are tangential. But what level of revenues should be considered tangential? This remains a question that needs further research, since in the case of the KT in Michoacán this amount of revenues came only from one source of predatory activity in the avocado export market. And although not considered in this article for an estimation of the magnitude, this organized crime group was also extracting rents from every kilo of avocado produced, which was another source of income coming from the avocado producers. Moreover, there were other primary sector legal activities from which the KT extracted high rents, too. Here one has to acknowledge that these payments extorted by the KT represented regular fixed income which was important due to the diversification of their rent-seeking activities in Tierra Caliente and the coastal region. These extortion payments were not really negligible, so at this point they cannot be considered absolutely tangential. Furthermore, this rent extraction to businesses in the primary sector of the region did not involve the risks and costs associated with the transshipment of synthetic drugs and the probability of seizures.

The economic activity of Michoacán during the period 2003-13 was characterized by a synchronized behavior with the national economic activity, although with more pronounced cyclical fluctuations in 59 percent of the total quarters during those years. One can assert that organized crime engages in rent-seeking activities in states where economic activity is higher than the national average rate and in profitable sectors—as was the case of the avocado export market. However, the most interesting variable is investment performance in this state. The available statistics for Michoacán showed severe falls in domestic and foreign direct investments during 2003-12. These sharp decreases coincide with the
most difficult times in the state, especially from 2006 to 2008-09, when war broke out between the Zetas and LFM. However, the steep upturns in domestic investment in 2009 and foreign direct investment in 2010-11 were the result of public spending in infrastructure works in the port of Lázaro Cárdenas, and private investment by ArcelorMittal in the mining sector. This oscillating behavior of domestic and foreign investments in the state is a consequence of the prevailing anarchic situation—the ongoing violence and rent-seeking activities faced by the productive sector of Michoacán. It is evident that the economic agents were spending resources in destructive activities at the expense of productive investments.

Another disturbing macroeconomic variable is the labor informality rate, which during the period 2005-14 was well above the national level. The fact that there was a visible labor market segmentation allowed organized crime to recruit young hit men and informants. This high rate of labor informality gave organized crime easy access to a vast pool of labor from which to recruit youngsters. This sustained high rate of labor informality well above the rate at the national level shows that organized crime became an important employer leading to a reallocation of labor and other productive resources away from legal businesses. Finally, if organized crime is engaged in rent-seeking activities in the productive sector of Michoacán, it is reasonable to sustain that the main macroeconomic variables of the state had a suboptimal macroeconomic performance during this period.

This case study offers an understanding of a complex situation where theory and concepts in the field of economics are very useful to gain further insight in what has happened in Michoacán. One can raise many questions based on this case study. One such question could be related to what makes a productive activity more likely to become victim of extortions. The answer lies in the traits underscored by Schelling (1971) and other authors like Lavezzi (2014) which are small-size firms, traditional sectors with high territorial specificity, low technological level, and a large public sector and weak legal institutions. However, gaining more specific insights from Michoacán, one important finding of the present study is that another relevant trait concerns the profitability of the business whose economic performance should be above the average national economic activity. Another trait involves the type of business whose profits can be easily monitored by organized crime. In the case of the avocado producers, thanks to corruption and collusion, organized crime had access to a complete “x-ray” of the avocado orchards through the municipal permits granted by the Local Plant Health Council, which operated under the auspices of the SAGARPA and the State Plant Health Committees. All these elements add important information and knowledge when designing public policies and/or deterrence policies.
About the Author

Ruth G. Ornelas is an economist specializing in international relations, economic development, regulatory, and security issues. She earned a BA in International Relations from the Universidad Nacional Autónoma de México (UNAM, Summa Cum Laude), an MA in International Affairs (specializing in Economic Development) from Columbia University, and MA studies in Economics from Georgetown University. She is a senior independent consultant on security, economic development, regulation, and international affairs. She worked for five years in the Ministry of the Interior at the Centro de Investigación y Seguridad Nacional (CISEN), the National Intelligence Agency. Previous professional experience has included positions in the Federal ministries of the Interior, Labor, Commerce, and Industry, and Planning and Budgeting, as well as at the Mexican Embassy in the United States, and in the private sector at the Centro de Estudios Económicos del Sector Privado of the Consejo Coordinador Empresarial (CCE), among others. She has also worked in the Mexican academic sector (ITAM, UP, UNAM) and in international institutions: Center of Transnational Corporations of the United Nations (UN) in New York City and the Panamerican Health Organization (PAHO) in Washington, DC. She is an associate member of COMEXI, the Mexican Council on Foreign Affairs.

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