Número 626

Government Intervention in Rural Insurance and Reinsurance Markets in Mexico, 1940-2000

GUSTAVO A. DEL ANGEL

ABRIL 2021

CENTRO DE INVESTIGACIÓN Y DOCENCIA ECONONÓMICAS

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ORCID: 0000-0003-3105-7838 (Gustavo A. del Angel Mobarak)

Carretera México Toluca 3655, Col. Lomas de Santa Fe, 01210,
Álvaro Obregón, Ciudad de México, México.
www.cide.edu

www.LibreriaCide.com

Oficina de Coordinación Editorial
editorial@cide.edu
Tel. 5081 400

Abstract

This paper explains the historical development of agricultural insurance and reinsurance in Mexico in the second half of the 20th century. The central argument is that the Mexican government did not fully activate the rural insurance and reinsurance markets since it continued to intervene in the crop insurance markets with political purposes. In Mexico, since its origins in 1961, and during most of the period under study, agricultural insurance was provided to farmers mainly by the government. through a state-owned insurance company, Anagsa. Although during the 1960s crop insurance in Mexico was based on technical criteria, in following decades its allocation was based on political criteria and a mechanism that fostered corrupt practices. After reform in 1990, agricultural insurance faced a promising horizon. However, always had the challenge of political intervention by the government. This is a preliminary version of a chapter prepared for the book Role of Reinsurance in the World, edited by Leonardo Caruana de las Cagigas and André Straus.

Keywords: rural insurance, rural reinsurance, history of insurance, Mexico.

Resumen

Este artículo explica el desarrollo histórico del seguro y del reaseguro agropecuario en México en la segunda mitad del siglo XX. El argumento central es que el gobierno mexicano no permitió la activación completa los mercados de seguros y reaseguros rurales, ya que tuvo una intervención continua en los mercados de seguros agrícolas, ésto con fines políticos. En México, desde sus orígenes en 1961 y durante la mayor parte del período en estudio, el seguro agrícola fue proporcionado a los agricultores principalmente por el gobierno. a través de una compañía de seguros estatal, Anagsa. Si bien durante la década de 1960 el seguro de cosechas en México se basó en criterios técnicos, en las décadas siguientes su asignación se basó en criterios políticos y en un mecanismo que fomentaba prácticas corruptas. Después de la reforma de 1990, los seguros agrícolas enfrentaron un horizonte prometedor. Sin embargo, siempre tuvo el desafío de la intervención política del gobierno. Esta es una versión preliminar de un capítulo elaborado para el libro Role of Reinsurance in the World, editado por Leonardo Caruana de las Cagigas and André Straus.

Palabras claves: seguro rural, reaseguro rural, historia de los seguros, México.

Introduction[1]

Since the first half of the 20th century, the Mexican government has sought to stimulate, later intervene in and eventually (up until 1990) monopolize insurance and reinsurance of agricultural activity. Given this is an activity characterized by correlated risks and high operating costs, its offering was lacking in a country with underdeveloped financial markets, like Mexico at that time. In most countries, the government usually intervenes in cases like these, either as offeror of insurance or by means of subsidies.

This paper explains how the Mexican government intervened in the insurance and reinsurance markets from the 1940s forward in order to provide that service to rural producers who were not covered by private insurance companies. It explains that the government's insurance offering was practically monopolized by Anagsa, a state-owned firm, from the late sixties. That prevented reinsurance, because insurance losses were absorbed by the government itself. Moreover, the government encouraged a perverse scheme whereby rural insurance was used to cover the risks of loans granted to farmers by the government's agricultural development banks. The scheme also fostered corruption between policy holders and the government's insurance company.

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[1] The author thanks Hugh Rockoff, Leonardo Caruana de las Cagigas and André Straus for comments, mostly aimed to the book chapter and participants in the panel Role of Reinsurance in the Setting of Insurance in the World, at the XVIII World Economic History Congress in Boston 2018. The author also thanks discussions with Salvador Mayoral and Jose Luis Carrillo García de la Cadena, back in 2007.

That, combined with the indiscriminate expansion of insured crops, destroyed the possibility that insurance would be affected in a technical basis with actuarial criteria. In addition, it led to big losses in the national budget.

The government sought to resolve the problem in 1989 when it liquidated Anagsa and replaced it with another State-owned insurance company, Agroasemex. The new company would specialize in reinsurance. The adoption of a practice of agricultural reinsurance by the government was aimed at avoiding large fiscal losses and stimulating private insurance markets. By implementing reinsurance, fiscal losses were reduced. However, the government did not fully stimulate rural insurance markets, as it continued to intervene in crop insurance markets.

In Mexico's financial, agricultural and rural history, agricultural insurance and reinsurance are relevant to understanding the relationship between the Mexican State and agricultural producers. Moreover, they also help to understand why it is so difficult to develop an insurance and reinsurance industry in a developing economy. Nevertheless, rural insurance and reinsurance has been "the elephant in the room". Notwithstanding its relevance, there is a lack of research into it, with the exception of the contributions by Reyes Altamirano (for instance, Altamirano 2001 and 2001b). This paper aims to contribute to a better understanding of these issues in historical perspective. It also aims to provide insights that contribute to understand the influence of politics in rural insurance markets. For this purpose, this research in based in corporate reports, press files from the Archives of the Mexican Ministry of Finance (Archivos Económicos, Secretaría de Hacienda), and contemporary literature and reports.

The paper is organized as a chronological narrative. To provide a context of insurance in Mexico, the next section, explains some of the general precedents of insurance industry in Mexico, in its origins and the twentieth century. Section "Early attempts at rural insurance in the 20th century" describes the early attempts to introduce rural insurance in the mid-twentieth century. Section "The Aseguradora Nacional Agrícola y Ganadera" explains the works of Anagsa, from its beginnings to its liquidation. Section "Financial reform, State reform and the creation of Agroasemex" is about the early years of Agroasemex and its challenges. And the last section are the concluding remarks.

PRECEDENTS OF THE INSURANCE INDUSTRY IN MEXICO

Professional insurance in Mexico became established at the start of the nineteenth century. The two major developments during that century and the first quarter of the twentieth century were the establishment of diverse insurance companies and the design of a legal and regulatory framework. For the most part, Mexico's insurance industry owes its origins to a transfer of knowledge from British firms, although the high levels of political and economic instability that the country experienced provided few opportunities for growth,[2] at least until greater stability emerged during the last third of the nineteenth century. In about 1845, *Watson Phillips y Cía*. created an insurance office in Mexico in the city of Veracruz; this company was a Mexican incorporated firm started by British entrepreneurs, and it specialized in international trade. At the start of the twentieth century, twenty-two insurance companies were operating in Mexico. There were two national and five foreign life insurance companies. There was also one national fire company and fourteen foreign firms in this line of business. More companies began to operate, including both Mexican firms and foreign representative offices (Del Angel 2012).

By 1954, the direct insurance business had been transferred entirely from foreign companies to local firms. One exception was marine insurance, where the regulatory situation remained ambiguous. However, it is thought that there was proprietary participation by American, Italian, French, and Swiss insurers in insurance companies that were operating in the country, and which, in practice, functioned as subsidiaries, although the precise details are not known (Del Angel 2012).

As regards reinsurance activities, there was significant participation by multinational firms and this remained the last bastion where companies that were not Mexican could operate in a relatively open manner. This was the case even though at

[2] Between the start of the War of Independence in 1810 (it ended in 1821) and the consolidation of the republic in 1867, Mexico experienced a lengthy period of political and economic disruption.

this time Mexico had three major reinsurers: *Alianza*,[3] *Unión*, and *Patria*, the latter established in 1953. At the end of the 1940s and in the 1950s, conditions for reinsurance in the country were regarded as good, and to some extent this view was due to the performance of the local reinsurers. Nevertheless, from the end of the 1940s onwards, it was noted that reinsurance commissions were high. The problem of over-supply of reinsurance services prompted some companies to offer commissions and improved conditions to gain market share, eventually weakening the reinsurance providers. Furthermore, the local operators regarded the regulation of reinsurance as obsolete.[4] In addition to their reinsurance products, some European companies offered training and technology for the reinsurance operators, while in some cases it was necessary to invest capital. As regards cession of risks to reinsurance, this activity developed at its own pace, dictated by a combination of domestic events in the Mexican economy and conditions on global markets. Until the 1980s, the international reinsurance markets operated with Mexico according to the principle of good faith; this worked efficiently, given that the majority of treaties were for reinsurance on a pro rata basis (Del Angel 2012).

However, private insurance and reinsurance targeted the private sector (mainly medium size and large firms), high income households and the government. Rural markets were uncovered, with the exception of large agroindustrial complex.

EARLY ATTEMPTS AT RURAL INSURANCE IN THE 20TH CENTURY

The majority of the agricultural industry operates under uncontrolled environmental conditions. It is subject to climate variations, which can produce excess moisture and dampness (tropical storms, cyclones, hurricanes, etc.) or drought. Extreme temperature conditions, such as frosts, delays or advances in the minimum chill hours, or even high temperatures, can seriously damage crops or cause damage that has direct repercussions for the level of production and product quality. Also, risks in rural areas are complex, which makes measuring them and evaluating their impact a difficult task.

[3] Among other companies, *Swiss Re* and *Munich Re* were participants in *Alianza,* Del Angel (2012).
[4] For specific sources see Swiss Re *The Review*, 26 August 1955, 817; 10 December 1948, 912; and December 1956, 1290; all cited in Del Angel (2012).

They usually exhibit correlated risks (e.g. plagues can be associated with weather events like drought). Furthermore, damage can occur across whole regions, which makes risk to production facilities in the same area correlated.

This risk profile makes insurance for agricultural activity a complicated business. Likewise, in countries with large swathes of land and rugged terrain, insurance operating costs in rural areas are increased or even unworkable in many cases. Over at least the last 70 years, governments in many countries around the world have intervened to deal with the absence of an insurance and reinsurance markets for agricultural activity.

In its early days, agricultural and farming insurance was linked to credit operations for these activities. The 1926, 1931 and 1934 *Leyes de Crédito Agrícola*, agricultural credit laws, stated that farming groups (cooperatives, for example) should create contingency funds that partially covered some of the risks to which production could be exposed. The aim was to protect production against natural risks, like hail, and thereby cover the risk of funding rural producers.

Toward the end of the 1930s, the government authorized the creation of insurance fund managers, which arose from rural production companies. However, the results were not as expected. For complex risks in underdeveloped markets, there were two important factors. On the one hand, those funds failed in part because of the country's lack of experience with agricultural insurance. On the other hand, the absence of a practice of reinsurance for this sector, as well as its small scale, did not allow those funds a satisfactory reinsurance market (Altamirano 2001; Correu Toledo 1962).

In spite of the difficulties with rural insurance in Mexico, in 1942 a mutual, the *Mutualidad Comarcal de Seguros Agrícolas "La Laguna"* was created in the region of La Laguna, in the north of the country. This mutual benefit society sought to protect members against specific risks – hail and frost, to a large extent. Its activity was regulated by the insurance law, *Ley General de Instituciones de Seguros*. One of the main objectives when creating the mutual benefit society was to unite the agricultural producers in the region that received funding from the *Banco Nacional de Crédito Ejidal*, a government development bank that financed agricultural producers on "ejidos" (collectively owned land). In this way, recovery of loans was guaranteed through insurance. In 1945, the mutual benefit society expanded its protection to include fire risks (Altamirano 2001; Escamilla and Quitzaman 1993; Correu Toledo 1962).

Subsequently, in 1953 the Mexican government created a guarantee fund for credits, the Fondo Nacional *de Garantía Agrícola* by presidential decree. The fund's main aim was to incentivize private banks to channel funding to the countryside via shared risk schemes, in which the government would guarantee loans in the event of damage due to natural phenomena usually covered by insurance. Again, despite this being modern public policy for those times and diversifying the government's tools for promoting rural insurance, the results were not as planned.

Consequently, in 1954 the government decided to establish two offices to study rural insurance, the Oficina de Estudios del Seguro Agrícola and the Comisión para el Estudio y Planeación del *Seguro Agrícola Integral* (CEPSAI). As a result of the CEPSAI's work, agricultural insurance activity was included in the insurance regulation, the *Ley sobre el Contrato de Seguro* and the *Ley General de Instituciones de Seguros*. It contributed to the creation of mutual societies and a consortium of private insurance companies for agricultural insurance.[5]

In 1954, the Ministry of Finance authorized private mutual societies to issue agricultural insurance. Taking the mutual benefit society of La Laguna as a model, farming groups from the main agricultural regions in Mexico created their own mutual benefit societies, on the whole with the government's support, and formed a federation of mutual benefit societies, the *Federación de Sociedades Mutualistas de Seguro Agrícola y Ganadero*. The new mutual benefit societies –20 of them in 1955– directed their attention toward recipients of funding from the *Banco Nacional de Crédito Ejidal* and the *Banco Nacional de Crédito Agrícola*. The latter was another government development bank that focused on small and medium-sized agricultural producers.[6] In so doing, the government encouraged these banks to include the cost of the insurance premium in their funding. The cost of the policy was estimated using actuarial methods,

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[5] In addition to Correu Toledo (1962), other contemporary studies shed light about the interest of this issue then, such as Martinez Moreno (1944); Ortega San Vicente (1958); Sandoval Cuellar (1961); Porte Petit Minivielle (1962); Portes Gil (1964); Pelayo Gómez Montiel (1968) and Velasco Oliva (1970).

[6] The most important ones were in the states of Chihuahua, Guanajuato, Jalisco, Nayarit, Tamaulipas, Puebla y Veracruz, see Escamilla and Quitzaman (1993); Correu Toledo (1962).

but since they lacked statistical information, they used geographical characteristics of the regions, analysis of the soil, extension of the crops, past crop yields, climate and temperature variations, rainfall variations, among other data (Escamilla and Quitzaman 1993; Correu Toledo 1962).

In 1954, several private insurance companies created a syndicate for agricultural insurance, the *Consorcio Mexicano del Seguro Agrícola Integral y Ganadero*, a private organization that 11 private insurance companies began to participate in. The consortium's insurance coverage was for damage to crops by hail. [7]

Mutual benefit societies managed to cover a considerably bigger area – over a million hectares on average per year – as shown in Table 1. As in the previous case, the difference between the payouts and the various operating costs was considerable, which again reveals the use of government subsidies as a means of operating. It must be stressed, however, that the mutual benefit societies registered higher expenses per hectare and per policy holder than were reported by the consortium.

Table 1. Operation of mutual benefit societies. Data in Hectares (Has) and millions of current pesos

Agricultural cycle	Land insured (Has)	Land damaged (Has)	Income (pesos)	Operational expenses (pesos)
1955/56	691,329	252,629	26	65
1956/56	468,189	160,611	16	29
1956/57	693,685	300,439	29	74
1957/57	424,681	153,429	16	36
1957/58	862,107	334,419	31	90
1958/58	511,071	162,128	18	53
1958/59	881,942	409,244	36	127
1959/59	512,054	179,290	20	56

Source: Correu Toledo (1962); Escamilla and Quitzaman (1993).

[7] These private companies were: América, El Mundo, Generales El Sol, La Atlántida, La Azteca, La Comercial, La Oceánica, La Provincial, Seguros y Reaseguros La Territorial, Aseguradora Reforma y Aseguradora Mexicana; see Escamilla and Quitzaman (1993); Correu Toledo (1962).

With regard to the period when the consortium of private insurance companies was in operation, it is worth noting from Table 2 that, first of all, the total insured area underwent substantial variations. Second, the relatively low proportion of damaged areas stands out when compared with the total insured area, given that this was around 22.8 percent for the years under scrutiny. As shown below, this figure is in contrast with the State monopoly scheme that would operate in subsequent periods. As previously mentioned, this can be explained by the fact that the individual insurance companies worked mostly with commercial producers, with a low risk profile and irrigated land.

Conversely, despite the low loss occurrence, the amount of premiums was substantially less than payouts and operating expenses. This is shown in Table 2. Private activity was made sustainable only by government subsidies.

Table 2. Operation of the private Consorcio. Spring-Summer and late summer agricultural cycles. Data in Hectares (Has) and millions of current pesos

Agricultural cycle	Land insured (Has)	Land damaged (Has)	Amount Insured (pesos)	Net policy (pesos)	Indemnity (pesos)	Operating expenses (pesos)	Risk Expenses (Gastos de Ajuste, pesos)
1955/56	85,857	27,819	71.58	3.38	9.23	0.18	0.21
1956/56	39,562	28,320	48.58	2.90	3.83	0.18	0.11
1956/57	119,399	11,942	113.10	5.73	5.50	0.36	0.19
1957/57	77,177	9,483	103.43	4.91	3.43	0.30	0.14
1957/58	52,838	1,519	60.69	3.07	0.42	0.21	0.14
1958/58	65,058	9,968	62.66	3.25	3.18	0.23	0.26
1958/59	67,901	14,985	65.87	3.51	4.49	0.25	0.33
1959/59	65,994	9,586	56.72	3.23	2.30	0.23	0.23
1959/60	69,630	21,516	82.32	3.93	6.61	0.28	0.21
1960/60	106,155	44,660	119.23	6.95	12.70	0.47	0.43

Source: Correu Toledo (1962), Escamilla and Quitzaman (1993).

The government's participation did not stop at creation of the consortium and mutual societies. In fact, the government increased its participation in the incipient national rural insurance scheme by creating a new guarantee fund, the *Fondo de Garantía y Fomento a la Agricultura* (which absorbed the *Fondo Nacional de Garantía Agrícola*), with the aim of continuing to promote private sector participation. In addition to fund guarantees, members of the consortium would benefit from subsidies when their results showed an operating deficit. With regard to mutual societies, a compensation fund was created and managed by the *Banco de México*, the central bank, which would absorb the differences observed between the premiums and the payouts issued to producers. In this way, a mixed public-private insurance system was formed in which both offerings ended up being semi-public, in light of the financial responsibilities assumed by the government over insurance activity. This led to cases of corruption within mutual benefit societies, which motivated the government to eventually take over the insurance sector in a monopolistic manner (Altamirano 2001; Escamilla and Quitzaman 1993; Correu Toledo 1962).

In 1956, an amendment to the agricultural credit law, the *Ley de Crédito Agrícola*,[8] provided that recipients of agricultural loans could apply for insurance with the support of the banks that financed them. However, market penetration remained low and there was no adequate reinsurance mechanism. In addition, the mutual benefit societies and the consortium had operational deficiencies that required larger subsidies (Altamirano 2001; Escamilla and Quitzaman 1993; Correu Toledo 1962).

THE ASEGURADORA NACIONAL AGRÍCOLA Y GANADERA (ANAGSA)

The government then sought a way of solving the rural insurance problem. It did so by establishing a virtual state monopoly. In 1961, a law for rural insurance, the *Ley del Seguro Agrícola Integral y Ganadero,* was enacted. One of the main features of that law was the creation of the state-owned company *Aseguradora Nacional Agrícola y Ganadera, S.A.* (Anagsa) in 1961. The company's main objective was to offer comprehensive agricultural insurance, because until that point the previous insurance

[8] Article 123 of the Ley de Crédito Agrícola.

schemes had only partially covered risks. Besides that, Anagsa offered reinsurance services to mutual societies (Altamirano 2001; Escamilla and Quitzaman 1993; Correu Toledo 1962).

With the new law and the creation of Anagsa in 1961, the government made the purchase of agricultural insurance a requirement to obtain funding from its agricultural development banks. It thereby created a link between insurance and agricultural credit. Years later, that would become the means of sustaining the agricultural development banks' non-performing loan portfolio. This feature was present for nearly 30 years in the form of the country's agricultural and rural insurance activity. Initially, the main objective of this practice was to avoid decapitalization of borrowers who suffered damage due to climate and other natural phenomena. However, as land selection criteria became laxer –particularly during the 1980s when the government launched measures geared toward food self-sufficiency– insurance became an instrument to support the State banks rather than the producers themselves.

The creation of Anagsa was a milestone in Mexico's history of agricultural insurance because it ended a more than 30-year cycle of attempts to define an insurance system that never became established. The CEPSAI's work had been fruitful in the sense that it had helped form a consortium of private insurance companies, as well as found a federation of mutual benefit societies arising from rural production organizations. However, its scope was limited. The required supply to address the rural sector's insurance problems in Mexico continued to be very limited. Both private and mutual companies operated with agricultural companies in agricultural areas that were developed in terms of infrastructure, yield and market viability. This meant that a significant proportion of the cultivated area of the country was neglected. In other words, the most developed producers had access to agricultural insurance, while the majority of producers did not. On average, around 1.6 million hectares was insured during the 1950s. That is just 15 percent of the 11 million hectares of agricultural land available in Mexico at that time (Escamilla and Quitzaman 1993; Correu Toledo 1962).[9]

[9] At the start of the Anagsa operations, the study by Correu Toledo (1962), points out that this firm would allow a considerable increase in land covered, not only among the creditors of the government banks, but also between producers lacking a credit history. This because although the performance of previous years showed

In addition to low coverage, the insured area was highly concentrated in certain regions. More than 40 percent of the insured land was concentrated in the states of Chiapas, Durango, Jalisco, Michoacán and Sinaloa. The government believed that the only way of achieving significant coverage against the risks affecting the bulk of Mexican agricultural activity was through greater participation by the State, whether by complementing the existing support for private and mutual companies or by providing the service directly.[10]

With Anagsa, agricultural insurance in Mexico would go through a phase of government monopoly. In light of the high administrative costs that the mutual benefit societies registered from the offset, and that caused growing outlays for the treasury due to government subsidies issued to help them operate, Anagsa decided to liquidate them in 1976. The State-owned company opened regional offices to replace them, located in the country's main agricultural production regions.

We have not found evidence of Anagsa's reinsurance activity with mutual benefit societies. According to studies from the time, Anagsa followed technical actuarial criteria for direct provision of insurance during its early years – something that was lost in subsequent decades. Indeed, there were high expectations for its operations and performance.[11] Table 3 shows the company's activity during its early years.

Table 3. Operation of Anangsa. 1964-1969. Data in Hectares (Has)

	Land insured (Has)	**Land damaged (Has)**	**Ratio**
1964	1,502,000	481,000	0.320
1965	1,522,000	581,000	0.382
1966	1,484,000	568,000	0.383
1967	1,351,000	496,000	0.367
1968	1,600,000	656,000	0.410

high operational costs, they expected that the learning and experience accumulated could lead to improvements in the operating insurance costs.

10 *Ley del Seguro Agrícola Integral y Ganadero*, Law Proposal to the Mexican Congress, 1961.

11 Files F04357 Archivos Económicos, Secretaría de Hacienda.

1969	1,500,000	660,000	0.440

Source: Escamilla and Quitzaman (1993), Pelayo Gómez Montiel (1968) and Herrera Vizcarra (1989).

Anagsa's activity led to a considerable increase in the insured area. As Table 4 shows, 5.3 million hectares were covered by agricultural insurance in 1980. That said, part of the increase in coverage can be explained by the legal link between insurance and credit from the government development bank. Even though this legal framework was designed to shield funded producers financially in the face of potential damage, it included the implicit risk that insurance would be used for other purposes. Notably, incentives were geared toward insurance helping maintain "good" levels of recovery for funding bodies in the agricultural sector.

Anagsa's expansion in the 1970s and 1980s occurred in an environment where the State's participation in the economy was growing rapidly. The Mexican government increased its influence over economic activity through State-owned companies, subsidies and other types of intervention (Del Angel and Perez 2014).

At the peak of this intervention process, a new piece of legislation (the *Ley del Seguro Agropecuario y de Vida Campesino*) was issued in 1981, bringing another change in rural insurance. From 1962 to 1981, Anagsa reinforced the State's role in the provision of rural insurance. In subsequent years, and particularly from 1981 to 1989, there was a gradual and severe deterioration in the State-owned company's operating results. The decline was firstly a consequence of the sustained increase in government financing for agricultural activity and therefore, an increasing demand for insurance coverage. That increase stemmed from a public policy of expansion of the agricultural frontier (which indeed was contained in the 1981 Law (Altamirano 2001; Escamilla and Quitzaman 1993).

In this regard, the so-called *Sistema Alimentario Mexicano* (SAM) –a government program established in 1980 that targeted agricultural self-sufficiency for the country– strengthened the government's intervention in agricultural markets (Tellez 1994;

Vélez 1995; Warman 2001). For Anagsa, the SAM was an additional factor for increasing coverage.[12]

In fact, the objective of food self-sufficiency would result in more government loans for agriculture as well as a vast, complex structure of government support instruments, including mainly subsidies on consumables and guarantee prices. That incentivized moral risk and adverse selection in insurance implementation. More plots of land entered into funding and insurance under that scheme, but those plots were less productive as many were seasonal. Credit and insurance risk was therefore ever increasing. This also made reinsurance impossible, at least actuarially.

The proportion of seasonal crop land insured by the company increased in the 1980s. This figure was 64 percent of the insured total in 1979, increasing to 75 percent by 1989. Insurance covered nearly 8 million hectares by 1982, which is the highest level of agricultural insurance in Mexico's history. During the 1980s, an average of 6.5 and 7 million hectares were insured (Altamirano 2001; Escamilla and Quitzaman 1993).

It must be noted too that, in light of monitoring problems affecting a large part of the newly-insured land, there were increasing information asymmetries between Anagsa and policy holders. This was mainly because this land was in areas where the terrain was inaccessible during certain seasons. This enabled an adverse selection problem, whereby insured projects had less productive value than the insured amount. It is estimated that 50 percent of Anagsa's operating deficit at the end of the 1980s was owed to the growing discrepancies between the real value of insured projects and the insured amount.[13]

In terms of crop type, the company's coverage was not very diverse. Corn represented more than 40 percent of the total insured area in 1983. Taken together, corn, sorghum and beans made up around 70 percent of the total insured area, while all basic grains constituted almost 95 percent, all of them were products with decreasing market prices at that time.

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[12] In 1981, the director of Anagsa declared in a press conference that, independently of the regular insurance by the company; the coverage of the crops contemplated in the *SAM* would be expanded to support this program. El Nacional, 4 July 1981, Files F04357 Archivos Económicos, Secretaría de Hacienda.

[13] Files F04357 Archivos Económicos, Secretaría de Hacienda: 21 mayo 1984, 22 noviembre 1984, 5 febrero 1985, 12 noviembre 1987, 18 noviembre 1987, 22 diciembre 1987.

Changes in operational guidelines for insurance offered by the company as a result of the 1981 Law would significantly increase its exposure to risk and, in the long run, its financial health. The 1981 Law changed the previous framework and allowed an increase in the limit applied to the insured amount: up to 100 percent of the cultivated area, where originally this limit was 70 percent. This meant that, at best, producers were indifferent to achieving a successful harvest during the farming cycle, because their whole yield was backed up by insurance (and therefore the value of the loan that financed the crops). In fact, the anticipated compensation was more attractive for producers, considering the discrepancies between the land's actual yield and the insured amount. Another relevant aspect is that the insurance term began at the point of application. There were even cases of insurance for nonexistent land, due to the monitoring problems implicit in insurance activity.[14]

The aforementioned aspects were the source of a corrupt scheme that came to be known as the "damage industry" in the 1980s. Under this scheme, both policy holders and employees of the company responsible for supervising the land saw opportunities to seek rents through collusion between producers and insurance adjusters. Likewise, employees of the government's agricultural development banks saw an opportunity to extend credit between farmers with guaranteed recovery of the loans, financed by Anagsa from the government's budget, ultimately coming from taxpayers.[15]

Consequently, the considerable growth of the damaged area as a percentage of the total insured area is not surprising. By the end of the 1980s, more than 75 percent of the insured area was declared damaged (see Table 4). By the end of the 1950s, before the creation of Anagsa, less than 40 percent of the total insured area was damaged.

[14] *Ibid.*

[15] Interview to Salvador Mayoral, september 1st 2007.

Table 4. Operation of Anagsa. 1970-1989.
Data in Hectares (Has) and millions of current pesos

	Land insured (Has)	**Land damaged (Has)**	**Ratio**	**Net policy (pesos)**	**Indemnity (pesos)**	**Loss Ration (Índice de siniestralidad)**
1970	1,778,724	714,772	0.402	240.21	274.63	114.33
1971	2,028,320	871,515	0.430	309.19	224.79	72.7
1972	1,917,339	982,581	0.512	327.22	350.7	107.18
1973	2,238,198	833,506	0.372	430.17	254.94	59.27
1974	2,514,189	1,094,884	0.435	783.13	562.9	71.88
1975	3,854,974	1,997,724	0.518	1,318.93	1,220.84	92.56
1976	3,450,164	1,915,692	0.555	1,421.26	1,368.50	96.29
1977	3,539,026	2,169,089	0.613	1,894.21	1,577.64	83.29
1978	3,203,054	1,714,014	0.535	1,992.96	1,351.48	67.81
1979	2,979,480	1,990,558	0.668	2,350.63	2,604.38	110.79
1980	5,263,325	3,464,491	0.658	6,715.66	5,404.37	80.47
1981	7,444,047	4,497,807	0.604	17,563.75	11,570.44	65.88
1982	8,197,720	5,873,102	0.716	28,677.94	20,820.21	72.6
1983	6,755,927	3,955,124	0.585	45,156.94	27,538.06	60.98
1984	6,135,974	3,625,698	0.591	77,884.48	56,151.14	72.1
1985	7,011,308	4,406,978	0.629	124,304.77	126,883.50	102.07
1986	7,063,717	5,373,885	0.761	227,886.93	275,297.74	120.8
1987	7,328,069	5,461,992	0.745	569,478.34	637,530.16	111.95
1988	6,584,686	4,989,405	0.758	1,105,791.44	1,346,371.65	121.76
1989	4,913,537	3,467,437	0.706	990,941.15	977,246.41	98.62

Source: Escamilla and Quitzaman (1993); Pelayo Gómez Montiel (1968); Herrera Vizcarra (1989).

The link established by the legal framework between development bank loans and agricultural insurance not only derives from the latter operating as collateral for funding more than as an instrument for risk coverage, but it condemned insurance and

Anagsa's financial health to depend on government development banks' allocation criteria for rural credit. The political, rather than technical, nature of rural funding allocation led to many of the plots of land in Anagsa's portfolio lacking the minimum essential characteristics to be insured from a healthy risk perspective. In this sense, the evolution of rural credit recovery through insurance company payouts is surprising. Between 1983 and 1988, 32 percent of the bank's agricultural portfolio was recovered through Anagsa. In some farming cycles, such as Spring/Summer 1988, 51 percent of portfolio recovery came from insurance company payouts (Altamirano 2001; Escamilla and Quitzaman 1993).[16]

By virtue of this, Anagsa suffered increasing losses caused by the rising disparity between the total received in premiums and the compensation paid. The latter was covered by the government, which made transfers to fund the state-owned company's operating costs.[17]

In 1989, complaining about Anagsa's 1.5 trillion peso deficit, the then Agriculture Secretary declared that rural insurance only served to "[...] encourage corruption, lose crops and discourage farmers".[18]

Table 5 shows the federal government's contributions to the financial bodies responsible for dealing with the countryside – government development banks that dealt with rural areas, government financial resources for agriculture and Anagsa. It shows an upward trend in the resources allotted to Anagsa. By 1989, government support allotted to Anagsa reached nearly 25 percent of the value of transfers to the government's rural financial bodies.

Table 5. Transfers of the ederal government to the state-owned rural financial institutions. Millions of pesos, inflation adjusted 1992=100

	1983	1984	1985	1986	1987	1988	1989
Banrural	5,454.00	3,920.00	3,989.00	4,275.00	1,429.00	4,502.00	3,251.00
(%)	43.8%	41.8%	33.1%	31.3%	14.1%	46.9%	44.4%

[16] See also Files F04357 Archivos Económicos, Secretaría de Hacienda: 21 mayo 1984, 22 noviembre 1984, 5 febrero 1985, 12 noviembre 1987, 18 noviembre 1987, 22 diciembre 1987.
[17] Interview to Salvador Mayoral, september 1st 2007.
[18] Files F04357 Archivos Económicos, Secretaría de Hacienda y Crédito Público, Excélsior, 15 july 1989.

FIRA	4,952.00	3,396.00	5,403.00	6,618.00	6,175.00	2,001.00	2,068.00
(%)	39.79%	36.19%	44.83%	48.41%	60.72%	20.86%	28.26%
Anagsa	1,253.00	1,393.00	1,930.00	2,302.00	2,195.00	2,476.00	1,778.00
(%)	10.07%	14.84%	16.01%	16.84%	21.58%	25.82%	24.30%
Otros	785.00	676.00	731.00	475.00	371.00	612.00	221.00
(%)	6.31%	7.20%	6.06%	3.47%	3.65%	6.38%	3.02%
Total	12,444.00	9,385.00	12,053.00	13,670.00	10,170.00	9,591.00	7,318.00

Source: Altamirano (2001).

The government accepted this as a direct transfer of resources to poor farmers, but this income was captured by more organized stakeholders and those who formed part of corporativist groups that supported the government in return. Anagsa had managed to achieve the highest levels of agricultural insurance in the country's history, but it was clear that its subsidy basis had distanced it from its nature as a protective mechanism against risks. Rural insurance became a tool of political patronage in the rural setting and Anagsa the flagship of corruption in the sector. Reform became necessary to re-establish the country's agricultural insurance apparatus. Given the general context of State reform in Mexico by the end of the 1980s, this would need to be done in a way that allowed adjustment of insurance and its alignment with a more efficient operative structure.[19] In 1989, the government decided to liquidate Anagsa. A year later it was replaced by Agroasemex, a new state-owned company (Agroasemex 1991, 1992, 2000 and nd; Tellez 1994).

At the time of its liquidation, Anagsa not only faced a financial crisis but it also underwent a "moral crisis" that implicated both the insurance company and policy holders and had become a reputation problem (Agroasemex 1991, 1992, 2000 and nd).[20] The company's problems had also permeated the culture of agricultural insurance. For example, Warman (2001, 160) points out that "it had got to the extreme of actuarially allocating claims before planting, without taking plagues or natural

[19] Vélez (1995); Téllez (1995).
[20] Also interview with Salvador Mayoral, September 1st 2007.

disasters into consideration. Many prospered, and corruption spread [...]".[21] But in addition to corruption, the mechanism had inhibited participation by the private sector, except in rare cases, and destroyed an insurance culture among Mexican farmers.[22]

The government began the liquidation on February 9, 1990. The technical reasons given for liquidation were having lost all capital, not having constituted technical reserves and operating with a growing deficit, fundamentally due to a technical-economic imbalance that made it unsustainable as an insurance institution. Some of the grounds that were officially recognized in the documents were: a technical and operational structure of insurance coverage and benefits that resulted in adverse selection, overinsurance and relaxing of standards; administrative and operational organization that was highly vulnerable to moral risk, with both Anagsa and adjusters showing signs of corruption; and excess staff, so that the organization had problems with bureaucracy and inefficiency while lacking an adequate system of supervision and control (Agroasemex 1991, 1992, 2000 and nd).

Téllez (1994, 164-165) summarizes some aspects of this transformation: "Anagsa was liquidated, which resulted in policy holders no longer reporting false damages to pay [Banrural debt payments] with the compensation, as well as ending a growing outlay of public financial resources to the government's insurance company. Agroasemex was created in its place under actuarial criteria, insuring investments made by the producer [...]. Agroasemex's services were realigned to cover the risks to which producers' people, property and activities were exposed [...]".[23]

FINANCIAL REFORM, STATE REFORM AND THE CREATION OF AGROASEMEX

Agroasemex was formed on June 7, 1990. This state-owned firm would operate as an insurance and reinsurance company for the rural economy. In addition, it was intended to be a development agency to meet the insurance needs of Mexican agriculture. Its creation was part of a series of reforms and it was called "the technical reform of

[21] Warman (2001), p. 160.
[22] Interview to Salvador Mayoral, September 1st 2007.
[23] Tellez was then Deputy Minister at the Ministry of Agriculture, his 1994 book summarizes the liberal reform in the rural economy.

agricultural insurance". Its aims were: to consolidate an agricultural insurance system with technical bases for its activity and the participation of private actors; to optimize the allocation of tax revenue to development of this activity; and to maintain an impactful development framework that caused the least market distortion possible. Agroasemex's reinsurance role was indispensable for this objective (Agroasemex 1991, 1992, 2000 and nd). This was a revolution compared to the previous rural insurance scheme in Mexico. However, less than ten years after its creation, Agroasemex would find itself with financial and operational problems, causing market distortion.

The liquidation of Anagsa and foundation of Agroasemex were part of a series of reforms carried out by the Mexican government at that time. Through the so-called "State Reform", which was a liberal reform, the government sought to reduce the size of the public sector, organize public finances and control the national deficit. It also involved redesigning rural support programs. At the same time, the government carried out a financial liberalization process, which significantly affected the insurance industry. It was hoped that the above-mentioned reforms and financial liberalization would lead to greater private participation in the agricultural insurance sector.

In that context, the agreement that authorized the formation and organization of Agroasemex was published in the government gazette, *Diario Oficial de la Federación*, on June 7, 1990. The initial share capital would be 304 million pesos.[24] The company would be authorized to carry out duties relating to "life insurance operations and damages in the areas of civil liability and occupational, maritime and transportation risks, fire, earthquake and other catastrophic, agricultural, animal- and car-related and other risks".[25]

The government had an interest in organizing the administration of public funds and making it transparent but, at the same time, it knew it did not want to abolish subsidies nor instruments of development. In the documents that gave rise to Agroasemex, insurance was intended to generate added value for producers and

[24] At the time of the establishment, of the 304 million of capital, 204 would be paid, and 100 million would remain to be paid. Agroasemex (nd).

[25] The shareholders were financial organizations of the federal government: FIRA, Nafin, Banobras, Bancomext, and the federal government itself. At the beginning also a State-owned insurer, Asemex, was a shareholder, when Asemex whas privatized in 1992, sold its stock to the federal government.

contribute to their competitiveness. The aims were to shape a competition-friendly market and continually attract capital to this activity. It was hoped that, with time, the market would be extensive in size, diverse in its product range and profitable, and would allow for a broad conglomerate of insurance companies that would compete among themselves.[26] While Anagsa was in operation, producers stayed away from sharing responsibility for risk. Insurance cover was set at a maximum of 90 percent with Agroasemex, and a policy of deductibles was launched that ranged from 5 to 30 percent. Both of these aspects meant producers had joint responsibility for risk.

The Sistema Nacional de Aseguramiento al Medio Rural, a national strategy to provide rural insurance, would be made up of Agroasemex, private insurance companies that participated in rural markets and rural insurance funds. The rural insurance funds were mutual benefit societies to which Agroasemex would offer reinsurance and technical advice. They were largely made up of producers with a high organizational capacity, a high yield and a low loss occurrence (Agroasemex 2000b; Altamirano 2001b; for a larger description, see Appendix on Rural Insurance Funds).

In light of the circumstances surrounding the agricultural market and the low participation by private insurance companies during the first half of the 1990s, Agroasemex focused its activity on the objective of developing markets. It did so by offering insurance directly, as well as promoting the rural insurance funds (via reinsurance and technical assistance). However, the company had created unrealistically high expectations given its actual potential. It had been expected to start with 2 million hectares insured, reaching at least 7 million –the amount that Anagsa had insured (Agroasemex 1991, 1992, 2000 and nd).[27] This would impose a very high cost structure for the institution's activity.

In this sense, the company had been conceived with original sin. By designing it to insure between 4 and 7 million hectares, two errors had been committed. The first

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[26] Interview to Salvador Mayoral, September 1st 2007.

[27] A relevant fact was that at the start of operations there was a problem of inertia: Banrural's portfolio was expected to be insured, as the old Anagsa used to do. This would have guaranteed the expansion of the land coverage as in other times. However, since the firm aimed to follow actuarial criteria for insurance, the technical filters only allowed insuring 400 thousand hectares in that first operation. Cleaning the Banrural portfolio for insurance led to both institutions ceasing operational relations, and hence breaking the old scheme in a definitive manner. Interview to Salvador Mayoral, September 1st 2007.

was to consider penetration of insurance as a target for the company's direct operation, which would be detrimental to its viability. The second was to compare coverage levels with those of its predecessor Anagsa, when dealing with two different things: one had been a transfer arrangement framed as an insurance contract; the other was insurance with technical criteria and a development policy. The company's financial viability and ability to promote the market would be affected.[28]

The operations and financial situation of Agroasemex are shown in Tables 6, 7 and 8. As shown, it was able to activate the rural insurance funds, but at the same time it expanded its direct offering of insurance becoming a competitor to the private market. Table 7 is also shows that it was far from financial sustainability.

Table 6. Crop coverage Agroasemex, rural insurance funds and private insurance companies. 1990-2000. Data in millions pesos (current and inflation adjusted 1990=100)

	Total current pesos	**Total. 1990=100**	**Agroasemex current pesos**	**Agroasemex 1990=100**	**Fondos current pesos**	**Fondos 1990=100**	**Private insurers current pesos s**	**Private insurers 1990=100**
1990	871.68	871.68	762.92	762.92	108.76	108.76	-	
1991	1,035.87	856.71	468.11	387.15	567.76	469.56	-	
1992	2,000.69	1,412.08	899.66	634.97	1,101.04	777.10	-	
1993	2,064.07	1,327.37	951.39	611.82	1,112.68	715.55	-	
1994	2,493.55	1,499.13	1,212.76	729.12	1,270.88	764.06	9.91	5.96
1995	2,768.38	1,232.87	1,261.93	561.99	1,418.93	631.91	87.52	38.98
1996	5,260.39	1,743.33	2,316.11	767.57	2,602.68	862.55	341.60	113.21
1997	7,536.60	2,070.60	2,633.60	723.55	2,977.61	818.07	1,925.40	528.98
1998	8,526.67	2,020.74	2,675.60	634.09	3,078.00	729.46	2,773.07	657.19
1999	9,295.12	1,889.48	2,352.75	478.26	3,466.82	704.72	3,475.56	706.50
2000	8,841.77	1,641.52	2,762.36	512.84	3,107.31	576.89	2,972.11	551.79

Source: data from Agroasemex.

[28] Interview to Salvador Mayoral, September 1st 2007.

Table 7. Cattle coverage Agroasemex, rural insurance funds and private insurance companies. 1990-2000. Data in millions pesos (current and inflation adjusted 1990=100)

	Total current pesos	Total. 1990=100	Agroasemex current pesos	Agroasemex 1990=100	Fondos current pesos	Fondos 1990=100	Private insurers current pesos s	Private insurers 1990=100
1990								
1991	638.59	528.14	516.45	427.13	122.14	101.01		
1992	1,034.41	730.08	900.15	635.32	134.26	94.76		
1993	991.62	637.70	954.13	613.59	37.49	24.11		
1994	1,145.71	688.81	1,134.39	682.00	11.32	6.81		
1995	1,296.46	577.36	1,291.73	575.26	4.73	2.11		
1996	3,255.17	1,078.78	3,250.00	1,077.07	5.17	1.71		
1997	5,000.22	1,373.76	4,801.56	1,319.18	8.52	2.34	190.15	52.24
1998	6,879.84	1,630.46	6,485.50	1,537.00	8.86	2.10	385.47	91.35
1999	8,855.75	1,800.16	7,112.23	1,445.75	11.37	2.31	1,732.15	352.11
2000	18,195.44	3,378.07	10,024.66	1,861.12	1,255.43	233.08	6,915.34	1,283.87

Source: data from Agroasemex.

Table 8. Profit & Losses of Agroasemex. 1990-2000.

Millions of current pesos

1990	37.8
1991	1.8
1992	-49.3
1993	1.1
1994	-32.5
1995	-0.8
1996	-11.9
1997	-29.4

1998	-185.0
1999	-106.3
2000	-168.2

Source: data from Agroasemex.

By March 2000, the company had again registered shortfalls in its regulatory coverage of capital and was at the point of bankruptcy, even potentially losing its license to operate.[29] After a large injection of capital by the government, the *Agroasemex* Board held an extraordinary meeting at the offices of the Ministry of Finance on March 20, 2001. There it was decided that Agroasemex would suspend direct sales of agricultural, life and damage insurance from April 1, 2001, and would later abandon its livestock insurance sales program. The body would be an agency specializing in reinsurance and development (Agroasemex 2005; 2000 and nd).

That specialization as a reinsurer and development agency never fully happened. Agroasemex supplied reinsurance and strengthened its capacity in that market, but it would also continue to operate as a subsidized direct insurer (competing against private insurance companies). However, subsequently, the company developed an innovative catastrophic insurance scheme through indexed insurance methods. In many ways, the company became an innovative as well as highly technically proficient insurer for the rural economy in Mexico.

However, Agroasemex faced pressure from the government to be financially sustainable, meaning that it had to diversify its supply on the market. Furthermore, it suffered the same fate as its predecessor Anagsa, albeit in a different way: it was an attractive political instrument to benefit agricultural and livestock producers. Hence, it also suffered pressure to subsidize insurance to constituencies that were in the political interest of the government. Such contradictory incentives, as well as the dilemma between providing only reinsurance to the market or also subsidized insurance to producers, would mark its performance in the future.

[29] The financial situation was published in the government gazette, Diario Oficial, 17 august 1999.

Concluding remarks

Rural insurance and reinsurance, when provided by government insurers, might be an activity influenced by politics. Anagsa is a historical case that show the distortions of the interweaving of political interests and financial activity that occurs in these cases. But the interaction between politics, risk, financial decisions and public policy is still a contemporary problem. Duru (2016) shows how government incentives to provide farmers with disaster relief impedes insurance market formation. First, farmers knowing they get relief from the government, have no incentive to purchase an insurance product. Then, the government might target specific groups, allocating insurance according to political objectives. The problem is yet to be resolved for developing economies. This research aims to provide a story that helps to gain insights to this question

Appendix on Rural Insurance Funds

Rural insurance funds are organizations of agricultural and livestock producers that operate under the principle of a mutual benefit society. Without issuing policies or contracts, they assume responsibility for providing agricultural insurance for themselves.[30] The majority of rural insurance funds originated from agricultural producer organizations linked to credit.[31] These mutual benefit societies began to appear in the 1970s. Agroasemex took them as a model for development in several regions around the country and served them as a reinsurance agency and technical advisor.

The organization that gave rise to the first insurance fund was the Coalición de Ejidos Colectivos del Valle del Yaqui y Mayo, which appeared after the distribution of land in 1976. By 1988, there were four bodies that were insuring their members as insurance funds in the south of Sonora: the *Fondo Común de los Ejidos Colectivos de los Valles del Yaqui y Mayo*, created in 1978; the *Nuevo Fondo Común de Aseguramiento de los Ejidos Colectivos de los Valle del Yaqui y Mayo* (1980); the *Fondo de Aseguramiento de la Unión de Sociedades de Producción Rurales del Sur de Sonora* (1979); and the *Fondo de Aseguramiento de la Unión de Crédito Agrícola Cajeme (*1986).32

One of the most significant features of the funds is that they are created of the producers' own accord. As such, it is the groups of producers themselves who decide to set up a fund, while the State's role is simply to support them. In principle, this feature should be reflected in the depoliticization of the funds or at least in their reduced potential to be used for political ends. Other features of the funds are that they only insure their own members, their activity is restricted to the geographical region where their members carry out their productive activity, and they do not require initial capital.

In spite of their growth, rural insurance funds are highly concentrated in certain regions, both in terms of number of funds and activity levels. The north of the country

[30] Art. 13 *Ley General de Instituciones y Sociedades Mutualistas de Seguros*; *Ley de Fondos de Aseguramiento Agropecuario y Rural*; government gazette, *Diario Oficial de la Federación*, el 13 may 2005.
[31] Agroasemex, (2003).
[32] Agroasemex (2003); Altamirano (2001).

has the highest number of funds and highest activity levels (both by number of hectares and by insured amount). This concentration also reflects a concentration of commercial agricultural activity. Likewise, this shows that the ability to create sustainable groups is linked to other institutional and economic factors, which in turn are linked to the regions with high agricultural yield.

Table 9. Rural insurance funds. Total amount of coverage. 1990-2005.

Data in millions of pesos inflation adjusted 2002=100

	Crop insurance	**(%)**	**Cattle Insurance**	**(%)**
1990	653.02	12.5%	606.49	19.1%
1991	2,819.30	54.8%	568.96	13.0%
1992	4,665.79	55.0%	144.76	3.8%
1993	4,296.21	53.9%	40.88	1.0%
1994	4,587.46	51.0%	12.65	0.4%
1995	3,794.01	51.3%	10.28	0.2%
1996	5,178.80	49.5%	14.05	0.2%
1997	4,911.75	39.5%	12.61	0.1%
1998	4,379.73	36.1%	13.88	0.1%
1999	4,231.21	37.3%	1,399.41	6.9%
2000	3,463.67	35.1%	94.24	0.5%
2001	2,981.87	37.5%	3,418.45	13.7%
2002	4,163.31	48.6%	4,152.78	8.8%
2003	3,151.92	42.3%	3,940.65	8.8%
2004	3,883.10	47.2%	3,567.96	16.2%
2005	6,067.56	46.8%	4,020.80	34.8%

Source: data from Agroasemex.

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