

This is a repository copy of *Crop Insurance and the New Deal Roots of Agricultural Financialization in the United States*.

White Rose Research Online URL for this paper:

<https://eprints.whiterose.ac.uk/id/eprint/148826/>

Version: Accepted Version

Article:

Hamilton, Shane Lee orcid.org/0000-0003-2960-5946 (2020) Crop Insurance and the New Deal Roots of Agricultural Financialization in the United States. *Enterprise & society*. pp. 648-680. ISSN: 1467-2227

<https://doi.org/10.1017/eso.2019.43>

Reuse

Items deposited in White Rose Research Online are protected by copyright, with all rights reserved unless indicated otherwise. They may be downloaded and/or printed for private study, or other acts as permitted by national copyright laws. The publisher or other rights holders may allow further reproduction and re-use of the full text version. This is indicated by the licence information on the White Rose Research Online record for the item.

Takedown

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.

ENTERPRISE & SOCIETY



CAMBRIDGE
UNIVERSITY PRESS

Crop Insurance and the New Deal Roots of Agricultural Financialization in the United States

Journal:	<i>Enterprise and Society</i>
Manuscript ID	EandS-2018-AR-0156.R2
Manuscript Type:	Article
Keywords:	agriculture, political economy, finance, insurance

SCHOLARONE™
Manuscripts



Figure 1: A 1938 USDA pamphlet, *Wheat in Your Bin Every Year*, attempted to convince wheat farmers that crop insurance offered valuable protection from uncertainty. Courtesy National Archives, Box 18, Folder 3, RG258, Entry 1, National Archives II, College Park, Md.

137x140mm (72 x 72 DPI)



Figure 2: Transferring farm-level crop yield data gathered in the field by county supervisors of the Agricultural Adjustment Administration into useable actuarial tables was a labor-intensive process. Courtesy National Archives, Photograph S-23852-C, 1938, Box 150, RG 16-G.

835x592mm (72 x 72 DPI)



Figure 3: Field-level crop yield data arrived at state-level auditing offices in the form of “summaries-of-performance,” where (mostly female) computers audited the data for inaccuracies. Courtesy National Archives, Photograph S-23890-C, 1938, Box 150, RG 16-G.

825x596mm (72 x 72 DPI)

Crop Insurance and the New Deal Roots of Agricultural Financialization in the United States

The farm bill passed by Congress in 2014 was among the most hotly and lengthily contested pieces of major agricultural legislation since the New Deal. The fate of federally funded food benefits for low-income Americans—SNAP, the Supplemental Nutrition Assistance Program—was the most ideologically divisive and hard-fought partisan issue in the debates. Also on the table for consideration, however, was the historic core of America’s farm programs, a decades-old system of guaranteed direct payments to farmers. Though intended to bolster farm incomes to prevent the collapse of rural economies, non-farm observers had increasingly condemned the payments as disproportionately benefiting wealthy commercial farmers and non-farming landowners, not family farmers, at taxpayer expense. Fiscal conservatives in Congress, buoyed by Tea Party activism, demanded severe cuts to both SNAP and farm payments. Urban Democrats stood fast in support of SNAP, while rural representatives in both parties scrambled to justify farm support. For several years prior to the 2014 farm bill deliberations, major farm organizations, aware of the unpopularity of guaranteed farm payments, began publicly arguing that crop insurance could serve as a more palatable, lower-cost means of supporting farmers. One consequence of the bitter fights over the 2014 farm bill was a bipartisan decision to eliminate the most controversial forms of direct payments to farmers. Seemingly out of nowhere, at least

for outside observers, crop insurance was suddenly elevated to the forefront of farm policy. Publicly subsidized crop insurance, according to a Senate agriculture committee press release, was “a commonsense risk management approach” that was intended to save taxpayers money while still shielding American farmers from disaster. Four years later, despite evidence that crop insurance did not save taxpayers nearly as much money as promised, ~~the~~ 2018 farm-legislation bill preserved the core features of the previous farm bill with only slight changes.¹

It is tempting to read the 2014 turn to crop insurance as a product of neoliberalism, an example of a “market solution” displacing the state in an era of increasing hostility to government spending and regulation. But crop insurance predates neoliberalism, as it has been a significant component of U.S. farm policy from the late New Deal onwards.² The U.S. crop insurance program was the first of its kind in a global context, and to this day remains unique in the world in its structure and implementation. It was also, in its early years, envisioned not as a means for replacing public policies with private solutions, but as a government-subsidized, government-run system of stabilizing the nation’s rural economy. Crop insurance, in other words, was firmly embedded in the New Deal’s insistence on the importance of using state power to address failures in the marketplace.³

The system of “all-risk” crop insurance that began in 1938 in the United States was in fact explicitly designed *not* to work like an efficient market. This was in large

part because it was assumed that a private market for crop insurance was neither desirable nor possible to construct. Program administrators originally understood the system as a social insurance policy, a means of helping farmers navigate the uncertainties of agricultural production. The program faced significant challenges in operation, however, so that from the mid-1940s onward the crop insurance program increasingly became a state-led means for transforming the ways in which farmers conceived of risk in agriculture. In part, this shift was due to the changing dynamics of American agriculture, as farmers became increasingly reliant on debt to finance technology-intensive agriculture. Debt-leveraged expansion produced greater exposure to financial risks. Given the possibility of losing everything in the wake of a drought or flood, the market logic of crop insurance surely made sense to most if not all farmers by mid-century. And yet, for reasons I elucidate below, crop insurance repeatedly proved more appealing to policymakers than to farmers, forcing program administrators to develop mechanisms for convincing producers to change the way they thought about managing uncertainty and risk.

Thus an unintended consequence of the U.S. crop insurance program by mid-century was that it contributed to an emergent process of financialization in American agriculture.⁴ Farmers repeatedly proved resistant to the market logic of crop insurance, failing to sign up in large enough numbers to make the program's risk-pooling mechanisms self-sustaining. To make the program work, public insurance managers,

1
2
3 farm policymakers, and private bankers promoted crop insurance after the New Deal as
4
5
6 a means for pushing farming further from its roots in the production and trade of
7
8
9 physical commodities into an economic activity increasingly defined by the exchange of
10
11 financial instruments. In doing so, crop insurance advocates cultivated among
12
13
14 American farmers the mentalities of risk management embedded in and promoted by
15
16
17 financial institutions. Indeed, as explored below, bankers in the farm credit industry
18
19
20 were key beneficiaries of the expansion of crop insurance at mid-century. Yet in contrast
21
22
23 to much recent scholarship on the theme, my exploration of U.S. crop insurance reveals
24
25
26 a situation in which financialization emerged not as a last-resort post-1970s neoliberal
27
28
29 adoption of market-think as a solution to intractable political-economic problems, but as
30
31
32 a system predicated from the start on the open embrace of government action as a
33
34
35 means to address endemic problems of agricultural markets.⁵

36 Financialization was not the original intent of the American crop insurance
37
38
39 program, nor was it the explicit intent of the 2014 farm bill. From the beginning of the
40
41
42 program to the present day, the crop insurance program has been a government
43
44
45 solution to a market problem, not the other way around. Yet as the policy has evolved
46
47
48 in response to changing agricultural markets and shifting conceptualizations of risk
49
50
51 among farmers, bankers, insurers, and policymakers, it has played an increasingly
52
53
54 important role in the financialization of American agriculture.
55
56
57
58
59
60

Crop insurance was a New Deal program, a statist intervention in the agricultural economy, repeatedly justified by its promoters as an effective means of reducing uncertainty for farmers. As I demonstrate, this aspect of crop insurance was, as of the late 1930s when the program was initiated, very much in keeping with existing public and private approaches to the distinctive problems of the agricultural economy, in which the costs of uncertainty led to a variety of institutional experiments in coordinating markets. Yet over the course of the twentieth century, the effort to transform crop insurance from a New Deal experiment into a permanent policy tool pushed American farmers to increasingly understand the processes of farming in abstract financial terms. Whether or not farmers decided to participate in the crop insurance program, by the 1960s they were increasingly encouraged by agricultural policymakers to precisely and individually calculate both the upside and downside risks of their enterprise. “Risk management” was not a phrase that would have made intuitive sense to most farmers in the 1930s, but within three decades it was a foundational concept for American agricultural enterprise and farm policymaking, a conceptualization that was fully formalized in the 2014 farm bill. But financialization in agriculture did not necessarily reflect a triumph of laissez-faire free markets. Rather than simply replacing government action with market-based solutions, publicly subsidized crop insurance became a mechanism for ensuring continued government intervention into the inherently risky business of agriculture.

Uncertainty in American Agriculture and the Rise of New Deal Farm Policy

Pests, hail, too much rain, too little rain, scorching heat, freezes, disease outbreaks ... any farmer could produce a nearly infinite list of forms of crop devastation. Farmers cannot know at planting time whether any given crop will produce a boom or bust harvest, or indeed any harvest at all—a significant difference from manufacturing or service industries, in which there is a predictable relationship between labor invested and outputs produced. Beyond the farm gate, markets for farm inputs and outputs are also rife with uncertainties produced by fraud, speculation, wild price swings, and difficulty assessing the quality of farm produce. Uncertainty and risk permeate every aspect of agriculture.⁶

In 1921 economist Frank Knight introduced a distinction between risk and uncertainty, arguing that risks are measurable (and thus suitable for management through insurance or similar mechanisms) while uncertainties involve probabilities that may not be easily quantified.⁷ Today many economists dismiss Knight’s distinction, arguing that modern technologies and techniques are available to quantify essentially any hazard. Historians, however, tend to accept Knight’s distinction as valid empirically if not theoretically; that is, given certain social and technological conditions there might be a perceived, socially valid distinction between a measurable risk and an unquantifiable uncertainty, a boundary line that can nonetheless shift over time.⁸

Certainly for American farmers in the years leading up to the Great Depression, the

problem of endemic uncertainty permeated every facet of the agricultural marketplace, from pre-production planning to consumer marketing. Indeed, understanding this aspect of agricultural history helps to explain not only the emergence of the federal crop insurance program in the 1930s, but also offers a coherent explanation for much of the national farm policy instituted during the New Deal.⁹

As the scale and scope of American commercial agriculture increased over the course of the nineteenth century, several important off-farm, extra-local institutions emerged to help farmers address the uncertainties of agricultural production and marketing. Markets for commodities and livestock became increasingly rationalized. Institutions including the Chicago Board of Trade and centralized markets coordinated the flow of price information on a national scale. The creation of futures markets for agricultural commodities enabled large-scale buyers such as grain-trading firms to minimize their exposure to price volatility.¹⁰ Farmer-owned cooperatives grew in scale and scope in the nineteenth century, enabling farmers to confront some of the uncertainties embedded in markets for farm inputs such as fertilizers and seeds. By pooling capital to produce their own scientifically mixed fertilizer, for instance, farmers in a cooperative no longer had to navigate a marketplace populated by merchants who sought to defraud farmers with adulterated ~~or useless~~ products. Cooperatives also enabled individual farmers to collectively confront uncertainties in markets for their outputs. Grades, standards, and brands for produce and dairy products helped farmers

1
2
3 stabilize prices, gain wider market access, and cultivate consumer trust ~~in the quality of~~
4 ~~produce being sold~~.¹¹ Large-scale corporations also emerged in the late nineteenth
5
6
7
8
9 century as an important coordinating mechanism in the farm economy. Industrial
10
11 meatpackers, grain-trading firms, fruit and vegetable canners, breakfast cereal
12
13 manufacturers, and chain grocery stores were among the large-scale firms that used
14
15 vertical and horizontal integration to confront the vicissitudes of markets for farm and
16
17 food products.¹²
18
19
20
21

22 Alongside cooperatives and corporations, state and federal departments of
23
24 agriculture also expanded their economic coordinating capacity in the late nineteenth
25
26 century. The problem of uncertain quality was high on the agenda at multiple levels of
27
28 government, as policymakers worked to develop and enforce standards and grades for
29
30 farm inputs and outputs. To address uncertainties in shipping costs—a crucial matter as
31
32 farmers increasingly expanded the scale of their marketing in the late nineteenth
33
34 century—state and federal policymakers implemented regulation of transportation. To
35
36 mitigate uncertainties in farming itself, government scientists provided farmers with
37
38 new forms of knowledge about seed selection, livestock breeding and health, pest
39
40 management, and even the weather.¹³
41
42
43
44
45
46
47
48

49 Yet all these institutional efforts to confront uncertainty in the agricultural
50
51 economy proved insufficient to meeting the challenges of the systemic farm crisis that
52
53 gripped American agriculture from the end of World War I through the Great
54
55
56
57
58
59
60

Depression. Prices collapsed for corn and cotton after the war, as did farm land values. Boll weevils devastated southern cotton fields, repeated droughts crippled livestock production in the West, and flooding in the Mississippi River valley destroyed livelihoods. Rural banks failed at extraordinary rates. Millions of black and white rural southerners and Midwesterners left farming altogether, migrating to urban industrial centers. Centralized markets, farm cooperatives, large-scale corporations, and state and federal governments, despite their expansion in the previous decades, lacked the capacity to respond effectively to the nationwide farm problems of the 1920s.¹⁴

The stock market crash of 1929 and the ensuing Great Depression raised the stakes of agricultural policy debates, as the ongoing farm problem became intertwined with the national collapse of industrial, housing, and financial markets. The need to boost rural purchasing power to reinvigorate the nation's industrial economy and forestall further collapse in financial institutions led economists to consider ideas for dramatically expanding the federal government's role in confronting the farm problem. Proposals for centralized planning and production controls gained currency among a select group of farm experts and economists—particularly John D. Black, M. L. Wilson, Mordecai Ezekiel, Rexford Tugwell, and Henry A. Wallace. When Franklin D. Roosevelt was elected president in 1932, these individuals successfully pressed their vision for an extraordinary expansion of the federal government's role in the agricultural economy.

1
2
3 Their proposals anchored one of the first major pieces of legislation passed in
4
5
6 Roosevelt’s famed first 100 days, the Agricultural Adjustment Act.¹⁵
7

8
9 ~~New Deal farm policy was complicated and controversial from the outset.~~
10
11 ~~Administering a national supply management scheme to stabilize farm prices was~~
12
13 ~~originally justified not only as a response to the collapse of the rural economy, but also~~
14
15 ~~as a means of bolstering rural purchasing power to reignite demand for industrial~~
16
17 ~~goods and spur overall economic recovery. Doing so required unprecedented federal~~
18
19 ~~involvement in on-farm decision-making. In addition to controversial production~~
20
21 ~~controls, New Deal farm policy included a bevy of mechanisms for stabilizing farm~~
22
23 ~~prices and markets by reducing uncertainty, including marketing orders, rural credit~~
24
25 ~~provisions, and beginning in 1935 an ambitious plan to resettle impoverished farmers~~
26
27 ~~on more productive lands.¹⁶~~
28
29
30
31
32
33
34
35

36 Confronting uncertainty through supply management lay at the heart of the
37
38 original New Deal farm program. Once overproduction was tamed, it was assumed,
39
40 farm and food prices would stabilize. Important shifts in policy thinking nonetheless
41
42 emerged in the wake of the combined effect of the Dust Bowl droughts of 1934 and 1936
43
44 and the Supreme Court’s invalidation of the original Agricultural Adjustment Act in
45
46 1936. The epic droughts of 1934 and 1936 and consequent collapse of wheat production
47
48 throughout the southern Plains made clear that surplus production was not the only
49
50 problem faced by farmers. The Supreme Court’s 1936 decision in *U.S. v. Butler*,
51
52
53
54
55
56
57
58
59
60

1
2
3 furthermore, invalidated the first Agricultural Adjustment Act's reliance on a tax on
4
5
6 food processors to fund payments to farmers ~~to reduce their production, criticizing the~~
7
8
9 ~~tax as an unconstitutional penalty on consumers that would increase food prices~~. Thus,
10
11 farm policymakers had to approach the uncertainty of agricultural production and
12
13
14 marketing on a more systemic basis than simply paying farmers to reduce their outputs.
15
16
17 Stability of rural economies, measured not only in terms of farm prices but also in terms
18
19
20 of conservation of soils and permanence of rural communities, would increasingly
21
22 inform the farm policy agenda of New Dealers.¹⁷
23

24
25 This was perhaps best expressed by secretary of agriculture Henry A. Wallace
26
27 when he revived an idea for the "ever-normal granary" he had repeatedly proposed in
28
29
30 the 1920s as publisher of the popular farm periodical *Wallace's Farmer and Homestead*.
31
32
33 His revival of the concept came partly in response to Alf Landon's challenge to Franklin
34
35
36 Roosevelt in the 1936 presidential election, as Landon sought to garner rural votes with
37
38
39 promises of a generous crop insurance scheme. Although Roosevelt easily defeated
40
41
42 Landon, the possibility of Republicans retaking rural America pushed Roosevelt's farm
43
44
45 advisors to speak in grander terms about the nature and purpose of New Deal farm
46
47
48 policy. In a 1937 summary of his ever-normal granary concept, Wallace noted that for
49
50
51 seven years, American farmers and consumers had experienced violent price swings,
52
53
54 extreme weather, and fluctuating supplies of basic commodities. An ever-normal
55
56
57 granary, according to Wallace, would bring stability and certainty to the agricultural
58
59
60

economy, providing “a definite system whereby supplies following years of drought or other great calamity would be large enough to take care of the consumer, but under which the farmer would not be unduly penalized in years of favorable weather.” The system would require an expansion of federal powers to acquire farm surpluses in times of plenty and release them in times of dearth. When Congress passed the Agricultural Adjustment Act of 1938 to permanently resuscitate the farm programs previously invalidated by the Supreme Court, increased funding and power was granted to the Commodity Credit Corporation to institute the ever-normal granary concept. The explicit aim was to simultaneously stabilize farm prices ~~while minimizing impacts on~~ and consumer food prices.¹⁸

Throughout the complicated and controversial twists and turns in New Deal farm policy, then, a consensus emerged that government power could and should address the endemic uncertainties of the farm economy, including the possibility of catastrophic crop devastation. This context, as well the specific political push from Alf Landon’s calculated bid for rural votes, makes clear why President Franklin D. Roosevelt appointed a team of experts in 1936 to consider government-subsidized crop insurance as an experimental response to the disastrous collapse of wheat production in the Dust Bowl droughts. Members of the president’s *ad hoc* committee on crop insurance included Henry A. Wallace ~~(who in 1922 had tentatively proposed a crop insurance scheme)~~ and influential New Deal agricultural economists H. R. Tolley and

1
2
3 A. G. Black. Two broad assumptions informed the committee's work. First, the group
4
5
6 was tasked with developing "all-risk" crop insurance, covering more than just one
7
8
9 "named peril" such as hail damage. In other words, the goal of the program was from
10
11
12 the start intended to gird farmers against unpredictable threats to crops, rather than
13
14
15 more readily quantifiable hazards such as hail damage. Second, crop insurance was
16
17
18 meant to serve as a boost to the ever-normal granary by complementing existing
19
20
21 commodity futures markets, which since the late nineteenth century had provided tools
22
23
24 for managing off-farm price volatility through hedging. Crop insurance was to address
25
26
27 uncertainty of yields on the farm itself, promising safe harbor in seasons when a farmer
28
29
30 had little or nothing to sell due to disaster. Hedging on the future price of a bushel of
31
32
33 wheat meant little to a farmer whose entire crop had been obliterated by drought, flood,
34
35
36 fire, or grasshoppers.¹⁹ Furthermore, New Dealers including Wallace were often
37
38
39 skeptical that futures markets could serve farmers' interests beyond individual
40
41
42 speculative risk-taking; indeed, in the 1936 Commodity Exchange Act, Congress opened
43
44
45 up commodity futures markets in ways that encouraged speculation by individual
46
47
48 investors, rather than shoring up the futures market's potential capacity to stabilize
49
50
51 farm incomes.²⁰

52
53
54 New Deal crop insurance, then, was meant to be an all-purpose safety net for
55
56
57 ordinary farmers. Reporting back to Roosevelt in December 1936, Wallace, Tolley, and
58
59
60 Black offered a compact history of previous attempts to develop all-risk crop insurance.

This included an 1888 foray in Japan and several disastrous efforts by private insurance firms in the U.S. in 1917 and 1920. There were three main lessons the committee drew from their historical research.²¹

First, the committee recognized that the law of large numbers—the key concept behind modern insurance, enabling the profitable pooling and spreading of risk—required the population of insured farmers to be widely geographically distributed. Previous crop insurance schemes had often failed to consider the systemic nature of agricultural hazards. When drought hit, as it did during the Dust Bowl, the devastation punished a wide swath of farmers simultaneously. If an insurance firm provided coverage to farmers in just one region, the enormity of claims resulting from one large-scale disaster would wipe out the firm’s capital reserves.²²

Second, the committee recognized that previous approaches to crop insurance did not fully appreciate asymmetric information problems. What insurers call adverse selection was particularly worrisome. If farmers signed up for crop insurance knowing more about the risks they faced than did the insurer, market failure was sure to result, as farmers would be more exposed to risks than the insurers had accounted for in their premiums. In fact, failure did occur in 1917 when private firms in the Midwest wrote all-risk insurance policies for farmers who had reason to suspect substantial crop losses. When their crops indeed failed, the farmers filed indemnity claims which immediately bankrupted the insurers. Along with adverse selection, moral hazard presented an

outsized problem for would-be crop insurers. If a farmer signed up for insurance at the time of planting and then neglected to weed, water, or otherwise take care of the crop, how was an insurer to know, absent costly systems of surveillance, whether resulting losses were due to the farmer's negligence or to factors beyond the farmer's control? The president's committee thus thought carefully about how to solve these problems in 1936, and determined that substantial historical data on crop production on "small areas" (ideally individual farms) could minimize adverse selection and moral hazard.²³

Prior to the creation of the Agricultural Adjustment Administration in 1933, robust crop yield data simply did not exist. A handful of farmers might have reliable records, but most did not. Government statistics at their best provided only county-level data, not farm-level, prior to the New Deal. The president's 1936 committee on crop insurance decided, however, that the records gathered in the process of running the programs of the Agricultural Adjustment Administration would, over time, provide the necessary knowledge to craft actuarially sound premium structures. In other words, a successful all-risk crop insurer had to "see like a state" to make the logic of insurance work in a setting where experienced farmers were well-equipped with tacit knowledge about difficult-to-measure uncertainties.²⁴

Third, the committee saw a lack of strategic vision in previous attempts to develop crop insurance. Private firms attempting to implement all-risk crop insurance had modeled themselves on companies insuring against hail damage. Crop-hail

insurance proved a profitable business model in the late nineteenth century, in part because hail damage tends to be randomly distributed geographically, thus obviating the systemic risk problem. Hail insurers, furthermore, had access to meteorological studies on the frequency of hailstorms and thus had less reason to be concerned about adverse selection. But firms that sought to profit from selling farmers insurance against *all* unforeseeable perils were venturing into unknown (and perhaps unknowable) territory. Thus the president’s committee determined that all-risk crop insurance, rather than seek profitability, had to serve the public interest.

That public interest, as laid out for a mass audience by A. G. Black in a 1937 article in *Nation’s Business*, had three aspects. First, consumers and producers of food both benefited from stable farm prices. Second, the nation’s economic health depended on the purchasing power of its rural residents. Third, taxpayers were already footing hefty bills for emergency relief in the Dust Bowl region. Crop insurance, argued Black, provided a powerful tool for addressing all these concerns, but it was not a silver bullet; its logics would only benefit the public when combined with other public farm programs intended to maintain an ever-normal granary, conserve soils, and provide credit to struggling farmers. Effective crop insurance thus was understood by Black, Tolley, and Wallace as a form social insurance, akin to bank deposit insurance or old-age insurance. Although the program would incorporate market mechanisms—farmers would have to pay into the program to receive benefits—it was at core a state-run safety

net. The New Deal economists who devised the system saw clear benefits to the public interest but no obvious means for private firms to profitably overcome the challenges of adverse selection, moral hazard, and the expense of administering an unprecedented insurance scheme.²⁵

Rather than replacing the farm supply-management policies enacted by Congress between 1933 and 1938, the crop insurance system was intended to bolster those very programs. Henry A. Wallace explained to a farm group in Kansas City in July 1936 that crop insurance was a logical addition to New Deal farm stabilization programs, in effect an “automatic regulator” of the ever-normal granary, supporting farmers’ incomes during times of unforeseen disaster without compounding the surplus problem that drove farm prices down. The “automatic regulator” would not be costless, of course. As a 1938 memo explicitly noted, the price of establishing a nationwide crop insurance program was inherently steep, not least because it would be “necessary to explain the operation of an entirely new system” to many thousands of skeptical farmers.²⁶

From Confronting Uncertainty to Managing Risk

The first order of business was to construct the largest possible pool of insured farmers to spread risks. One potential method would have been a mandate, a requirement that all farmers participating in government farm programs also sign up

for crop insurance. This approach was ruled out beforehand as too intrusive and potentially unfair to “efficient and far-sighted” farmers unwilling to bear “the burden of the greater risk of those who are less efficient and far-sighted.”²⁷ The challenge, then, was for government agents to *sell* crop insurance: to market not only specific policies providing coverage, but in fact to sell the very idea of all-risk crop insurance as a useful way to mitigate uncertainty, and in particular to sell the idea to “efficient and far-sighted farmers” so as not to adversely select the riskiest farmers for coverage. Thus began an unsteady process of financialization, disciplining—but not mandating—any farmer who would listen to think of crop hazards in the quantified language of insurance. For the program to work, many farmers had to be convinced that risk was not simply a natural feature of farming, but was something that could be abstracted, measured, priced, and thus managed.

The program targeted wheat farmers first. Wheat covered a large geographical area, and the severity of the Dust Bowl droughts made wheat growers relatively receptive to the insurance concept. Extensive marketing campaigns were unrolled throughout the late 1930s and into the 1940s. Farmers in 1938, for instance, might have opened their mailbox to discover a pamphlet titled *Wheat In Your Bin Every Year*, which included a photograph of a farm family resting comfortably with the knowledge that “OUR crop is insured” (**Figure 1**). The pamphlet asked farmers to name their price for certainty: “How much does freedom from the worries of crop failure mean to you?” The

price of certainty, in the early years of the program, was payable in kind—a farmer could sign up for insurance simply by committing a given amount of wheat at planting time.²⁸

Farmers did not, however, name their own prices. The Federal Crop Insurance Corporation set premium rates, and in an attempt to prevent adverse selection, did so by carefully examining and modeling the crop yield data gathered by the Agricultural Adjustment Administration. Those data were not ideal, as a Department of Agriculture financial officer noted in 1936; several years' worth of crop history might seem "a long period when related to crop statistics [but] it is not a long period for an actuarial base."²⁹ The system devised to overcome the data's inadequacies was complex and labor-intensive. First, economists and statisticians at the Department of Agriculture established statistical models intended to smooth out the wrinkles and gaps in the available data. Here statisticians had the advantage of several decades' worth of increasingly sophisticated techniques developed by life insurance companies—pioneers in combating adverse selection and moral hazard through actuarial science.³⁰ Entering data into the actuarial model was a labor-intensive process. Farm-level yield data gathered by county supervisors of the AAA program were hand-transcribed into "summaries-of-performance" tables that were then transmitted to state-level offices for careful auditing (**Figures 2 and 3**). In addition to the complicated statistical apparatus bolstering these thin historical yield data, agents of the state were deployed into the

field to gather more subjective information to combat moral hazard. Enumerators visiting the farms of applicants were instructed to rate not only potential crop yields, soil types, moisture levels and so forth, but also to rank the farmer on a scale from 1 to 5. That numerical ranking was intended to sum up “the farmer’s ability as well as his physical equipment, labor, supply, etc. for doing a good job.”³¹ Such analyses were clearly subjective, but crop insurance administrators insisted that at least some of the information required for workable insurance had to emerge from the field itself, not solely from the desks of government actuaries.³²

There was a crucial problem with this entire approach. What the Federal Crop Insurance Company was selling to farmers was a means for mitigating uncertainty, but what its actuarial tables were trying to price was risk. From the start, the managers of the Federal Crop Insurance Corporation made clear they had no intention of profiting from risk, as a private insurance firm would seek to do. Instead, sales campaigns sought to convince farmers that there was value in security. As a USDA circular noted in early 1938, the “need for crop insurance ... has always existed, since farming is one of the most uncertain of all occupations.”³³ Farmers did not need to experience the severe droughts of the Dust Bowl to know that they were engaged in risky business, but what the Federal Crop Insurance Corporation had to convince them of was that insurance could provide them with security, a form of positive freedom. The 1940 *Yearbook* of the U.S. Department of Agriculture suggested crop insurance was the farmer’s equivalent

of “the unemployment insurance for industrial populations provided for in the Social Security Act.” Crop insurance, the *Yearbook* declared, “produces certainty in place of uncertainty.”³⁴ Propaganda campaigns touted the liberating potential of crop insurance. The 1938 slogan “Wheat In Your Bin Every Year” was transformed in 1942 by a wartime poster declaring “Worry Won’t Win the War,” urging farmers to “Be free ... Be sure... Insure!”³⁵ Freedom from uncertainty, such propaganda suggested, could be purchased, for a price established by government actuaries.

But what if the price could not be clearly determined? Private insurance companies had already decided that the price of agricultural uncertainty was impossible to determine precisely enough to make the business profitable. Even farmers who bought the government sales pitch and signed up for the crop insurance system, such as Montana wheat farmer H. J. Nichol, recognized that premiums as of 1943 were not yet “reasonably accurately determined from the actual experience on the individual farm.”³⁶ New Dealers, spurred by the Dust Bowl disaster, had decided that government data could help address if not eliminate the problems of adverse selection and moral hazard that had plagued private crop insurers. But even so, the first managers of the Federal Crop Insurance Corporation did not expect the program to operate as a truly efficient market.

Information asymmetries plagued the program at every level. One problem was that farmers repeatedly demonstrated that their willingness to pay for insurance

dissipated when they expected a good crop. A 1939 survey of farms in southwest Kansas, for instance, discovered farmers who were angry that they could not cancel their policies in the wake of rainfall that improved soil conditions after planting.³⁷ Such cancelations would obviously violate the principles of insurance, but their anger illustrates how many farmers at the time thought of the program not in terms of risk management but instead as a social insurance program meant to limit uncertainty and provide a barrier against calamity. Some farmers rejected the very premise of an “automatic regulator” of the ever-normal granary by applying for coverage only in years when they planted crops on flood-prone lowlands.³⁸

In 1942, the Federal Crop Insurance Corporation performed an in-depth 15-county survey of the program’s operations. Among its findings were many examples of farmers refusing to accept insurers’ statistical approach to risk. Farmers who rejected insurance because they thought the premiums too high did so because they believed that historical production records “were not representative of the loss to be expected in the future.” This optimism flew in the face of historic experience — akin to the gambler’s fallacy, whereby a bettor is convinced that losing 20 hands of blackjack is proof the 21st hand will turn out to her advantage. Of the 15 counties surveyed, 13 had in the past ten years experienced drought, 12 suffered hailstorms, 7 had wheat rust, 6 were subject to grasshopper invasions, not to mention losses due to wind, winterkill, fire, excess moisture, flood, smut, weeds, hot winds, jackrabbits, root rot, Hessian fly, and freeze.³⁹

Adverse selection was inevitable when risk-prone, rather than risk-averse, farmers were the primary purchasers of coverage.

By 1944 Congress was ready to pull the plug. For every year of its existence from 1938 to 1944, the federal crop insurance program paid out more in indemnities than it collected in premiums. The Federal Crop Insurance Corporation was hemorrhaging money, experiencing loss ratios that would make any private insurer blanch. Farmers were not enrolling at the expected rates, and those who were signing up were the riskiest candidates for coverage. Representative Malcolm Tarver (D-GA) bemoaned to the House Appropriations Committee in 1944 the expenditure of \$40 million that he believed had “not been of very great benefit to the farmers of the country.” Quite a few in Congress were prepared to agree with Tarver’s assessment.⁴⁰

The threat of canceled funding pushed farm-district representatives to promote crop insurance as something other than subsidized social insurance. As Representative Clarence Cannon (D-MO) declared in an agriculture committee hearing in 1944, crop insurance should no longer be seen as a New Deal relief program, but instead as “a business proposition on its merits.” That “business” still had to be run by government, however, not private enterprises. As Senator Carl Hayden (D-AZ) explained, no “company organized in the United States ... is ready to step in and give the farmers this kind of insurance.”⁴¹ J. Carl Wright, chief manager of the Federal Crop Insurance Corporation, further appealed to conservatives’ instincts, noting that with crop

insurance, rather than receiving a direct handout, farmers had to pay money into the system, unlike “other farm programs in which the farmers are paid for doing certain things.” Wright insisted that, with the proper data and actuarial fine-tuning, crop insurance could be made to run more like a standard insurance business, to the benefit of both farmers and taxpayers.⁴²

Partially convinced, Congress amended the program’s enabling legislation in 1944, allowing it to continue but dramatically reducing its scale and scope. Restricting its operation to a handful of counties, Congress urged the Federal Crop Insurance Corporation to develop better data modeling. In 1945 and 1946 Congress added additional tweaks, such as allowing the Corporation to make adjustments for especially high-risk farms. And in 1947, with Public Law 320, Congress formally restricted crop insurance coverage to just 324 designated counties (down from 2400 before the cuts) and announced that the program would henceforth be only “experimental.”⁴³

The thrust of this “experiment” from 1944 onward was to abandon the New Deal premise behind crop insurance. New Dealers had pitched crop insurance as a component of the ever-normal granary, intended to mitigate agricultural uncertainty; a worthwhile, if inherently expensive, project in service to a broad public interest. After 1944, Congress instead demanded that crop insurance operate like an efficient market, albeit subsidized and state-run. Farmers had to be disciplined to accept the law of large numbers, paying sufficient premiums to enable an actuarially sound government-

owned business in which success would be measured by a more balanced ratio between premiums and indemnities. Under such a scheme, individual farmers, not farmers or consumers or the nation as a whole, were expected to pay for and receive the benefits of risk management. In a nation becoming increasingly accustomed to the insurance principle, adopting the logic of insurance everywhere from highways to homes to hospitals, even the most conservative Congresses could support such a project, at least as long as it remained “experimental.”⁴⁴

~~The problem of pricing uncertainty bedeviled the New Deal crop insurance project. Yet e~~Even after Congress reframed the program in more individualistic, market-based terms in 1944, however, its administrators continued to wrestle with the persistent challenge of adverse selection.

The case of Roy Stanberry, a wheat farmer in north Montana, neatly encapsulates the doubly damning problem of asymmetrical information. Stanberry applied for federal crop insurance in spring 1949 but was denied coverage. According to county committeemen Stanberry was exceptionally risk-prone. Without reliable data on individual farms, the Federal Crop Insurance Corporation had turned after 1945 to county committees to reject individual farmers’ applications, hoping the riskiest farmers could be barred locally from the risk pool. “Experience reveals,” explained undersecretary of agriculture A. J. Loveland to Montana Senator James Murray in defense of Stanberry’s rejection, “that indemnities have been paid to some producers

under certain circumstances much more frequently than would be expected in view of prevailing crop conditions.” In other words, the Federal Crop Insurance Corporation was aware that certain farmers were systematically cashing in on their insurance policies. But because data were so shaky, Washington bureaucrats could not effectively determine precisely *which* farmers were responsible for gaming the system, and so they turned to local committeemen to cull those deemed most risky. When Murray informed Stanberry of this reasoning, Stanberry angrily retorted that he had been denied coverage not because of his risk exposure but because the members of the county committee were Republicans and he voted Democratic.⁴⁵

But in a telling slip, Stanberry further noted that the farm had been held in his wife’s family since the passage of the Homestead Act, “so we do not have to go to the U.S.D.A. to find what has been produced on this farm.” Stanberry knew more about the farm’s yield history, in other words, than the Republican county committee or any other agent of the state, and he fully expected that knowledge to provide him a means of deciding when insurance was worth the price. In 1949 Stanberry wanted insurance because he had “not raised a profitable crop since 1943.”⁴⁶ Such thinking reflected the New Deal origins of the program; it was, after all, originally framed and sold to the public as a social insurance program that would stabilize rural incomes. But Stanberry’s understanding was a fundamental problem for program administrators seeking to make crop insurance actuarially sound, not just because it obviously promoted adverse

selection, but also because Stanberry had reason to feel discriminated against. Private insurers had spent decades trying to develop methods for convincing customers that any discrimination they faced in taking on insurance was due to “natural laws” of statistics, not to their race, gender, class, religion, ethnicity, or in Stanberry’s case political affiliation.⁴⁷ If crop insurers ~~had to rely~~relied on naked discrimination to create sound actuarial tables, how would skeptical farmers be convinced to join the program?

In 1949 economist Harold G. Halcrow formally declared the U.S. all-risk crop insurance program an unacceptable example of market failure. Writing in the *Journal of Farm Economics*, Halcrow ~~highlighted the problem of adverse selection and~~ declared that all-risk crop insurance based on individual farm yield histories could “work in a satisfactory manner only under a system of conditions so exacting in their specifications that they will be found to rather limited extent in American agriculture.” Insurers could never know as much as individual farmers about farm-level yield risks, and so should instead turn to “area-yield” insurance in which premium structures were calculated based on an area’s “normal” production over time. All farmers in that area (generally a county) would pay the same premiums. The problem of adverse selection persisted even under this formula, Halcrow acknowledged, as some farmers might be able to “estimate area yields a year or two in advance with greater accuracy than would be inherent in a formula used by the insurer.” Armed with that foresight farmers might avidly buy insurance when they expected losses out of line with the formula’s

1
2
3 predictions, and shun insurance when they expected better outcomes than the formula
4
5
6 predicted. To prevent such behavior, Halcrow recommended farmers be compelled to
7
8 sign up for three- to five-year contracts. Doing so, Halcrow admitted, was
9
10
11 “economically coercive” but that coercion could “be justified” if the formula were
12
13
14 constantly refined to more accurately predict yields two to three years in advance.
15
16
17 Halcrow thus suggested a technical fix to the Federal Crop Insurance Corporation’s
18
19
20 endemic information asymmetries, trying to define a workable middle ground that
21
22 encouraged many farmers to sign up for insurance while using coercion to prevent the
23
24
25 system from being gamed. This was far from a market in perfect equilibrium, but
26
27
28 Halcrow’s research informed the approach of the Federal Crop Insurance Corporation
29
30 for the next three decades.⁴⁸
31

32
33 Having once again accepted the imperfection of its market logics, the
34
35
36 “experimental” crop insurance program stabilized and quietly expanded through the
37
38
39 1950s. From 1948 to 1961, the Corporation’s income from premiums exceeded its
40
41
42 indemnity payments overall, a significant reversal of the embarrassing loss ratios
43
44 (ranging from 1.49 to 2.48) of the early 1940s. As the experiment continued, more and
45
46
47 more farmers began to demand access to crop insurance and were thus declared eligible
48
49
50 by Congress for coverage. By 1961, oats, rice, and raisins had been added to the
51
52
53 program, alongside wheat, cotton, corn, tobacco, flax, dry beans, citrus, soybeans,
54
55
56 barley, and peaches.⁴⁹ In 1961, the Federal Crop Insurance Corporation announced that
57
58
59
60

“the experimental stage has passed,” noting coverage was available in 885 counties in 38 states. Throughout the presidential administrations of John F. Kennedy and Lyndon B. Johnson, crop insurance witnessed rapid expansion, so that by 1967 approximately 18 million acres of U.S. farmland were insured.⁵⁰

A powerful combination of factors helped the program expand in the 1950s and 1960s. First was what farm economist Willard Cochrane influentially labeled the “technological treadmill.” In the face of falling commodity prices, farmers responded not by reducing production (as classical economics might expect) but instead by investing ever more heavily in new technologies ~~for producing even more crops~~. Early adopters of new technologies reaped rewards, which encouraged their neighbors to buy the latest machines and chemicals, too. Soon everyone was overproducing themselves into a situation where they needed to up the technological ante.⁵¹ A farmer with a brand-new combine harvester and the latest anhydrous ammonia sprayer had much more to lose from a drought year than did one muddling along with outdated but paid-off machinery. Insurance thus became increasingly appealing to farmers who were, season by season, putting themselves at greater and greater exposure to devastating crop failure. Risk—an abstract notion, but increasingly made real in the literal machinery of agribusiness—thus became something needing to be managed and accounted for, alongside the visibly concrete aspects of farming such as plowing, seeding, weeding, harvesting, and transporting crops. Many “efficient farmers ... who

1
2
3 strive for higher than average yields” consequently made clear that they were willing to
4
5
6 pay for even higher levels of insurance coverage than the Federal Crop Insurance
7
8 Corporation was offering by the late 1960s. Farmers were, in other words, becoming
9
10 increasingly disciplined to think of yield risk in financial terms, something that not only
11
12
13
14 could be, but should be, managed with the tools of actuarial science.⁵²
15
16

17 Most crucially, rural bankers stepped into the scene in the mid-1960s. The
18
19 technological treadmill depended upon banks to offer farmers loans to purchase the
20
21
22 implements and inputs of industrialized agriculture. Yet bankers, especially smaller
23
24
25 firms in rural areas with limited capital reserves, faced intense scrutiny from examining
26
27
28 authorities who demanded the banks reduce their exposure to substandard loans. The
29
30
31 expanding federal crop insurance program of the 1960s provided rural bankers with a
32
33
34 convenient means for securing potentially risky loans. As a banking journal noted in
35
36
37 1965, a farmer’s crop was one of the “most speculative” collaterals available for a loan,
38
39
40 but a federally insured crop came with “additional security.”⁵³
41
42

43 Forging a direct link between farm credit and crop insurance hastened the
44
45
46 process of financialization, and here the federal government took the lead. Government
47
48
49 efforts to expand farmers’ access to credit first became formalized in the 1916 Federal
50
51
52 Farm Loan Act, legislation passed in response to perceived failures of the banking
53
54
55 system to adequately meet farmers’ needs for loans. As the nation’s first government-
56
57
58 owned enterprise, the Farm Credit System set a precedent that was substantially
59
60

1
2
3 expanded during and after the New Deal. Federal underwriting of rural finance
4
5
6 infrastructure was significantly strengthened in 1933, while new government-owned
7
8
9 enterprises including Fannie Mae and Freddie Mac were established during Franklin
10
11
12 Roosevelt's presidency to shore up the financial structures of urban housing markets.
13
14 The government-backed farm credit system has received astoundingly little attention
15
16
17 from historians, despite servicing 42 percent of contemporary farm debt in the U.S. Yet
18
19
20 what we do know of its history, as well as the broader history of financialization,
21
22
23 suggests that government support for rural banking institutions surely played a key
24
25
26 role in embedding the processes and institutions of financialization into the daily life of
27
28 American farmers.⁵⁴

29
30 From the onset of the federal crop insurance program, policymakers had
31
32
33 intended surer access to credit to be a result of farmers signing insurance contracts.
34
35
36 Only in the 1960s, however, did bankers come to recognize the depth of this untapped
37
38
39 market. They did so because the Federal Crop Insurance Corporation, seeking to
40
41
42 expand coverage as rapidly as possible in the 1960s, began paying bankers a
43
44
45 commission to sell federal crop insurance policies. While signing up a farmer for a loan,
46
47
48 a banker could "strongly recommend" the farmer sign an insurance policy. If the farmer
49
50
51 signed up, the banker received a ten to fifteen percent sales commission from the
52
53
54 federal government.⁵⁵ Just as farm mortgage debt had lured farmers in the post-Civil
55
56
57 War period into the life insurance market, the loans required by the post-World War II
58
59
60

1
2
3 technological treadmill appear to have lured many U.S. farmers deeper into an
4
5
6 increasingly financialized world of on-farm risk management.⁵⁶
7

8
9 In this vein, the 1960 USDA *Yearbook of Agriculture* offers a telling contrast to the
10
11 1940 *Yearbook*. In the 1940 *Yearbook*, the problem of uncertainty is foregrounded, not
12
13 only in discussions of the purpose of crop insurance, but in the entire document.
14
15 Indeed, the word “uncertainty” appears multiple times on the first page and then again
16
17 on 21 additional pages, highlighting the central theme of “Farmers in a Changing
18
19 World,” a world defined by an “unknown future.” “Risk” is also repeatedly mentioned
20
21 in the 1940 *Yearbook*, appearing on 26 pages (with at least six of those references tied
22
23 directly to crop insurance). But in the 1960 *Yearbook*, “uncertainty” appears only twice in
24
25 relation to agriculture (specifically on weather and the availability of farm laborers),
26
27 whereas “risk” appears 22 times, primarily in respect to capital investments in
28
29 machinery and land, befitting the 1960 theme of “Power to Produce.” Perhaps even
30
31 more significant, many of the references to “risk” in the 1940 document dwell
32
33 sympathetically on the aversion of many farmers to incur debt in order to invest in
34
35 machinery or land. The 1960 text, by contrast, emphasizes upside risk, suggesting for
36
37 instance that “the manager of the modern commercial family farm ... takes greater
38
39 risks” but consequently has “more opportunity for reward.”⁵⁷ Farmers had of course
40
41 always had to think about finances and risk when making decisions on the farm. But by
42
43 the 1960s, the transformation of crop insurance from a New Deal experiment in social
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

insurance into an increasingly necessary component of the day-to-day business of farming signaled a deep penetration of financial concepts of risk management into American agriculture. The abstract notion of risk, commodified and priced in a state-run market for insurance, increasingly became something farmers had to plan for and integrate into their business routines, rather than depend upon the government to compensate them for losses after the fact.

Conclusion

The phrase “risk management” only began to permeate general business discourse in the 1950s, so in some respects it is not surprising that the concept would have meant little to an average American farmer in the 1930s.⁵⁸ It is significant, however, that in the 1996 farm bill the Federal Crop Insurance Corporation was put under the purview of a new federal institution, the Risk Management Agency of the U.S. Department of Agriculture. The 1996 farm bill, touted by congressional conservatives as the “Freedom to Farm Act,” was initially pitched as a dramatic rollback of New Deal farm policy. In reality, the 1996 act was far from a complete break with existing policy. Although farmers were provided with greater flexibility in making cropping decisions, the congressional farm bloc managed to secure continuation of direct payments and commodity loans, including the addition of new direct payments in response to falling farm prices in the late 1990s.⁵⁹ In 2014, however, sustained attacks

on the expense of direct payments led Congress to push risk management—particularly the crop insurance programs that had steadily expanded since the 2000 Agricultural Risk Protection Act—to the forefront of farm support programs. In this regard it is telling that what became the 2014 farm bill was initially known as the “Agricultural Reform and Risk Management Act.” Risk management had become the *raison-d-etre* of American national farm policy.

Much like the 1996 Freedom to Farm Act, however, in many ways the 2014 farm bill demonstrates continuity more than change in the political economy of American agriculture.⁶⁰ The premise behind prioritizing crop insurance over direct payments is that the need to pay premiums requires farmers to put “skin in the game” (as a 2014 Senate press release touting the legislation put it).⁶¹ In the original New Deal version of crop insurance, lawmakers widely accepted that general taxpayers and not just farmers needed to put significant “skin in the game,” helping the ever-normal granary to confront the pernicious uncertainty in the agricultural marketplace that had contributed to the collapse of the farm economy in the 1920s and 1930s. What changed from 1944 onwards is that the U.S. crop insurance increasingly aimed to discipline farmers to account for the risks of agriculture on individualistic terms, using internalized market logic, insurance principles, and financial models to manage risk rather than call upon the state to devise structural responses to mitigate uncertainty. This discipline would be firmly established in the 1960s as the “technological treadmill” and pressure from rural

bankers, encouraged by government commissions on insurance policy sales, made financialized risk management a necessary component of American farming operations. By 2012, many farmers had so effectively internalized the insurance model that they were able to navigate (and demand) an increasingly complex landscape of insurance offerings. Currently the Risk Management Agency's crop insurance programs include: Actual Revenue History Insurance, Area Risk Protection Insurance, Catastrophic Risk Protection, Common Crop Insurance, High-Risk Alternate Coverage, Margin Protection for certain commodities, rainfall and vegetation index insurance, and Whole-Farm Revenue Protection. Growers of wheat, soy, cotton, and corn can procure coverage, but also eligible are almonds, grass seed, mint, popcorn, safflower, and tomatoes (along with dozens of others). And for growers of crops not already covered, there is the Non-Insured Crop Assistance Program, which provides insurance-like coverage for yield losses.

The quiet expansion of crop insurance over the twentieth century can be understood as just one of many institutionalized responses to the endemic problem of uncertainty in agricultural production and marketing. Since the late nineteenth century there have been multiple institutions developed in American agriculture to confront uncertainty, including centrally coordinated markets, cooperatives, corporations, and government regulations and supply management schemes. Yet crop insurance stands out for its cognitive dissonance, its simultaneous reliance on highly individualized

market logics *and* on an expansive and expensive role for the federal government to make that “commonsense” market logic work. With contemporary farmers confronting the risks and uncertainties posed by global climate change, potential disruptions to international trade, and the rise of unprecedented hazards such as insecticide-resistant superbugs and herbicide-resistant superweeds, it seems increasingly necessary to consider very carefully whether insurance-based modes of agricultural risk management are adequate to the task.⁶²

Captions to Figures

Figure 1: A 1938 USDA pamphlet, *Wheat in Your Bin Every Year*, attempted to convince wheat farmers that crop insurance offered valuable protection from uncertainty. Courtesy National Archives, Box 18, Folder 3, RG258, Entry 1, National Archives II, College Park, Md.

Figure 2: Transferring farm-level crop yield data gathered in the field by county supervisors of the Agricultural Adjustment Administration into useable actuarial tables was a labor-intensive process. Courtesy National Archives, *Photograph S-23852-C*, 1938, Box 150, RG 16-G.

Figure 3: Field-level crop yield data arrived at state-level auditing offices in the form of “summaries-of-performance,” where (mostly female) computers audited the data for inaccuracies. Courtesy National Archives, *Photograph S-23890-C*, 1938, Box 150, RG 16-G.

Bibliography

Books

Baker, Bruce E., and Barbara Hahn. *The Cotton Kings: Capitalism and Corruption in Turn-of-the-Century New York and New Orleans*. Oxford: Oxford University Press, 2016.

Balleisen, Edward J. *Fraud: An American History from Barnum to Madoff*. Princeton: Princeton University Press, 2017.

Barron, Hal S. *Mixed Harvest: The Second Great Transformation in the Rural North, 1870-1930*. Chapel Hill: University of North Carolina Press, 1997.

Bosso, Christopher J. *Framing the Farm Bill: Interests, Ideology, and Agricultural Act of 2014*. Lawrence: University Press of Kansas, 2017.

Bouk, Dan. *How Our Days Became Numbered: Risk and the Rise of the Statistical Individual*. Chicago: University of Chicago Press, 2015.

Broehl, Jr., Wayne G. *Cargill: Trading the World's Grain*. Hanover: University Press of New England, 1992.

Chapin, Christy Ford. *Ensuring America's Health: The Public Creation of the Corporate Health Care System*. New York: Cambridge University Press, 2015.

Cochrane, Willard. *Farm Prices: Myth and Reality*. Minneapolis: University of Minnesota Press, 1958.

Cronon, William. *Nature's Metropolis: Chicago and the Great West*. New York: W. W. Norton, 1991.

Daniel, Pete. *Deep'n as It Come: The 1927 Mississippi River Flood*. Fayetteville: University of Arkansas Press, 1977.

Donahue, Brian. *The Great Meadow: Farmers and the Land in Colonial Concord*. New Haven: Yale University Press, 2004.

Duncan, Marvin, and Jerome M. Stam., eds. *Financing Agriculture into the Twenty-First Century*. Boulder: Westview Press, 1998.

Elmore, Bartow J. *Citizen Coke: The Making of Coca-Cola Capitalism*. New York: W. W. Norton, 2014.

- 1
2
3 Finegold, Kenneth, and Theda Skocpol. *State and Party in America's New Deal*. Madison:
4 University of Wisconsin Press, 1995.
5
6
7 Fitzgerald, Deborah K. *Every Farm a Factory: The Industrial Ideal in American Agriculture*. New
8 Haven: Yale University Press, 2003.
9
10
11 Fullilove, Courtney. *The Profit of the Earth: The Global Seeds of American Agriculture*. Chicago:
12 University of Chicago Press, 2017.
13
14 Giesen, James C. *Boll Weevil Blues: Cotton, Myth, and Power in the American South*. Chicago:
15 University of Chicago Press, 2011.
16
17
18 Gilbert, Jess. *Planning Democracy: Agrarian Intellectuals and the Intended New Deal*. New Haven:
19 Yale University Press, 2015.
20
21 Goodwin, Barry K., and Vincent H. Smith. *The Economics of Crop Insurance and Disaster Aid*.
22 Washington: AEI Press, 1995.
23
24
25 Gregory, James N. *The Southern Diaspora: How the Great Migrations of Black and White Southerners*
26 *Transformed America*. Chapel Hill: University of North Carolina Press, 2005.
27
28
29 Hahn, Barbara. *Making Tobacco Bright: Creating an American Commodity, 1617-1937*. Baltimore:
30 Johns Hopkins University Press, 2011.
31
32
33 Hamilton, David E. *From New Day to New Deal: American Farm Policy from Hoover to Roosevelt,*
34 *1928-1933*. Chapel Hill: University of North Carolina Press, 1991.
35
36 Hamilton, Shane. *Trucking Country: The Road to America's Wal-Mart Economy*. Princeton:
37 Princeton University Press, 2008.
38
39
40 Hardaker, J. Brian, Ruud B. M. Huirne, Jock R. Anderson, and Gudbrand Lien., eds. *Coping with*
41 *Risk in Agriculture*, 2d ed. Cambridge, MA: CABI, 2004.
42
43 ~~Hawley, Ellis W. "Herbert Hoover, the Commerce Secretariat, and the Vision of an 'Associative~~
44 ~~State'." *Journal of American History* 61 (Jun. 1974): 116-40.~~
45
46
47 Ho, Karen. *Liquidated: An Ethnography of Wall Street*. Durham: Duke University Press, 2009.
48
49 Hyman, Louis. *Debtor Nation: The History of America in Red Ink*. Princeton: Princeton University
50 Press, 2011.
51
52
53 Jacobs, Meg. *Pocketbook Politics: Economic Citizenship in Twentieth-Century America*. Princeton:
54 Princeton University Press, 2005.
55
56
57
58
59
60

Kirkendall, Richard S. *Social Scientists and Farm Politics in the Age of Roosevelt*. Columbia: University of Missouri Press, 1966.

Knight, Frank H. *Risk, Uncertainty and Profit*. Mineola, NY: Dover, 2006 [1921].

Krippner, Greta R. *Capitalizing on Crisis: The Political Origins of the Rise of Finance*. Cambridge: Harvard University Press, 2011.

Levinson, Marc. *The Great A&P and the Struggle for Small Business in America*. New York: Hill and Wang, 2011.

Levy, Jonathan. *Freaks of Fortune: The Emerging World of Capitalism and Risk in America*. Cambridge, MA: Harvard University Press, 2012.

Lupton, Deborah. *Risk*, 2d ed. London: Routledge, 2013.

Martin, Randy. *Financialization of Daily Life*. Philadelphia: Temple University Press, 2002.

Moss, David A. *When All Else Fails: Government as the Ultimate Risk Manager*. Cambridge, MA: Harvard University Press, 2002.

Murphy, Sharon Ann. *Investing in Life: Insurance in Antebellum America*. Baltimore: Johns Hopkins University Press, 2010.

Olmstead, Alan L., and Paul W. Rhode. *Arresting Contagion: Science, Policy, and Conflicts over Animal Disease Control*. Cambridge, MA: Harvard University Press, 2015.

Olmstead, Alan L., and Paul W. Rhode. *Creating Abundance: Biological Innovation and American Agricultural Development*. New York: Cambridge University Press, 2008.

Ostrom, Elinor. *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press, 1990.

Phillips, Sarah T. *This Land, This Nation: Conservation, Rural America, and the New Deal*. Cambridge: Cambridge University Press, 2007.

Pietruska, Jamie L. *Looking Forward: Prediction and Uncertainty in Modern America*. Chicago: University of Chicago Press, 2017.

Rodgers, Daniel T. *Atlantic Crossings: Social Politics in a Progressive Age*. Cambridge, MA: Harvard University Press, 1998.

Saleuddin, Rasheed. *The Government of Markets: How Interwar Collaborations between the CBOT and the State Created Modern Futures Trading*. Basingstoke, UK: Palgrave Macmillan, 2018.

Schertz, Lyle P., and Otto C. Doering III. *The Making of the 1996 Farm Act*. Ames: Iowa State University Press, 1999.

Schlebecker, John T. *Cattle Raising on the Plains, 1900-1961*. Lincoln: University of Nebraska Press, 1963.

Scott, James C. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven: Yale University Press, 1998.

Shideler, James. *Farm Crisis, 1919-1923*. Berkeley: University of California Press, 1957.

Smith-Howard, Kendra. *Pure and Modern Milk: An Environmental History since 1900*. New York: Oxford University Press, 2013.

Stoll, Steven. *The Fruits of Natural Advantage: Making the Industrial Countryside in California*. Berkeley: University of California Press, 1998.

Sutter, Paul S. *Let Us Now Praise Famous Gullies: Providence Canyon and the Soils of the South*. Athens: University of Georgia Press, 2015.

Walker, Richard. *The Conquest of Bread: 150 Years of Agribusiness in California*. New York: New Press, 2004.

White, Richard. *Railroaded: The Transcontinentals and the Making of Modern America*. New York: W. W. Norton, 2011.

Winders, Bill. *The Politics of Food Supply: U.S. Agricultural Policy in the World Economy*. New Haven: Yale University Press, 2009.

Woeste, Victoria Saker. *The Farmer's Benevolent Trust: Law and Agricultural Cooperation in Industrial America, 1865-1945*. Chapel Hill: University of North Carolina Press, 1998.

Yeager, Mary. *Competition and Regulation: The Development of Oligopoly in the Meat Packing Industry*. Greenwich, CT: Greenwood Press, 1981.

Articles, Chapters in Books, Papers, Reports, and Websites

Aglietta, Michel, and Régis Breton. "Financial Systems, Corporate Control and Capital Accumulation." *Economy and Society* 30, no. 4 (2001): 433-466.

Alston, Lee J., Wayne A. Grove, and David C. Wheelock. "Why Do Banks Fail? Evidence from the 1920s." *Explorations in Economic History* 31, no. 4 (1994): 409-431.

Annan, Francis, and Wolfram Schlenker. "Federal Crop Insurance and the Disincentive to Adapt to Extreme Heat." *American Economic Review* 105 (May 2015): 262-266.

~~Arrow, Kenneth J. "Uncertainty and the Welfare Economics of Medical Care." *American Economic Review* 53 (Dec. 1963): 941-973.~~

Arrow, Kenneth J., and Robert C. Lind. "Uncertainty and the Evaluation of Public Investment Decisions." *American Economic Review* 60 (Jun. 1970): 364-378.

Bailey, Jr., Fred. "Banks Offer Crop Insurance to Farm Customers." *Banking* (Feb. 1967): 92.

Bailey, Jr., Fred. "Crop Insurance Proves Help to Both Bankers and Farmers." *Banking* (Apr. 1965): 76.

Baranoff, Dalit. "Shaped by Risk: The American Fire Insurance Industry, 1790-1920." *Enterprise & Society* 6 (Dec. 2005): 561-70.

Barnett, Barry J. "The Federal Crop Insurance Program: Past, Present, and Future." *Journal of Insurance Issues* 18 (Mar. 1995): 75-100.

~~Beiner, Guy. "Disremembering 1798? An Archaeology of Social Forgetting and Remembrance in Ulster." *History and Memory* 25 (Spring 2013): 9-50.~~

Black, A. G. "The Goal of Crop Insurance." *Nation's Business*. Jun. 1937.

~~Botts, Ralph R., and Robert C. Otte. "Insurance against Losses on Farms," in *USDA, Yearbook of Agriculture, 1958, 230-239*. Washington: GPO, 1959.~~

Christophers, Brett. "The Allusive Market: Insurance of Flood Risk in Neoliberal Britain." *Economy and Society* 48, no. 1 (2019): 1-29.

Clapp, Jennifer, S. Ryan Isakson, and Oane Visser. "The Complex Dynamics of Agriculture as a Financial Asset: Introduction to Symposium." *Agriculture and Human Values* 34, no. 1 (2017): 179-183.

~~Cowie, Jefferson, and Nick Salvatore. "The Long Exception: Rethinking the Place of the New Deal in American History." *International Labor and Working-Class History* 74 (Fall 2008): 3-32.~~

Dionne, Georges. "Risk Management: History, Definition and Critique." *Risk Management and Insurance Review* 16, no. 2 (2013): 147-166.

Ezekiel, Mordecai. "The Cobweb Theorem." *Quarterly Journal of Economics* 52 (Feb. 1938): 255-80.

- Glauber, Joseph W. "The Growth Of The Federal Crop Insurance Program, 1990–2011." *American Journal of Agricultural Economics* 95 (Feb. 2013): 482-88.
- Godley, Andrew. "The Emergence of Agribusiness in Europe and the Development of the Western European Broiler Chicken Industry, 1945 to 1973." *Agricultural History Review* 62, no. 2 (2014): 315-36.
- Hagstrom, Jerry. "Sharing the Risk." *Government Executive* (Aug. 1997): 36-40.
- Halcrow, Harold G. "Actuarial Structures for Crop Insurance." *Journal of Farm Economics* 31 (Aug. 1949): 418-43.
- Hansen, Per H. "From Finance Capital to Financialization: A Cultural and Narrative Perspective on 150 Years of Financial History." *Enterprise & Society* 15 (Dec. 2014): 605-42.
- Harvey, David. "Neoliberalism as Creative Destruction." *Annals of the American Academy of Political and Social Science* (Mar. 2007): 22-44.
- Hoffman, G. Wright. "Crop Hazards and Their Insurance." *Journal of American Insurance* (Dec. 1927).
- Isakson, S. Ryan. "Food and Finance: The Financial Transformation of Agro-Food Supply Chains." *Journal of Peasant Studies* 41, no. 2 (2014): 1-27.
- Jensen, Farrell E. "The Farm Credit System as a Government-Sponsored Enterprise." *Applied Economic Perspectives and Policy* 22, no. 2 (2000): 326-335.
- Koehn, Nancy F. "Henry Heinz and Brand Creation in the Late Nineteenth Century: Making Markets for Processed Food." *Business History Review* 73 (Autumn 1999): 349-93.
- Kramer, Randall A. "Federal Crop Insurance, 1938-1982." *Agricultural History* 57 (Apr. 1983): 181-200.
- Krippner, Greta R. "The Financialization of the American Economy." *Socio-Economic Review* 3 (May 2005): 173-208.
- Lamoreaux, Naomi, Daniel M. G. Raff, and Peter Temin. "Beyond Markets and Hierarchies: Toward a New Synthesis of American Business History." *American Historical Review* 108, no. 2 (2003): 404-33.
- Lapavistas, Costas. "Theorizing Financialization." *Work, Employment & Society* 25 (Dec. 2011): 611-26.

- Lapavitsas, Costas. ~~Lapavitsas, Costas.~~ "The Financialization of Capitalism: 'Profiting without Producing'." *City* 17, no. 6 (2013): 792-805.
- Lipartito, Kenneth. "Reassembling the Economic: New Departures in Historical Materialism." *American Historical Review* 121 (Feb. 2016): 101-139.
- Millberg, William. "Shifting Sources and Uses of Profits: Sustaining US Financialization with Global Value Chains." *Economy and Society* 37 (Aug. 2008): 420-451.
- Miranda, Mario J., and Joseph W. Glauber. "Systematic Risk, Reinsurance, and the Failure of Crop Insurance Markets." *American Journal of Agricultural Economics* 79 (Feb. 1997): 206-15.
- Mollan, Simon, and Ranald Michie. "The City of London as an International Commercial and Financial Center since 1900." *Enterprise & Society* 13 (Sep. 2012): 538-587.
- ~~Myers, Robert J. "The First United States Government Actuary and His Successors." *Transactions of the Society of Actuaries* 8 (Oct. 1956): 488-505.~~
- Patel, Raj. "The Long Green Revolution." *Journal of Peasant Studies* 40, no. 1 (2013): 1-63
- Pearson, Robin. "Moral Hazard and the Assessment of Insurance Risk in Eighteenth- and Early Nineteenth-Century Britain." *Business History Review* 76 (May 2002): 1-35.
- Pike, Andy, and Jane Pollard. "Economic Geographies of Financialization." *Economic Geography* 86 (Jan. 2010): 29-51.
- Richert, Catherine. "Fall Agenda: Farm Program Reauthorization." *CQ Weekly*. Sep. 3, 2007. P. 42.
- Roosevelt, Franklin D. "Letter on the Administration's Proposed Farm Legislation," Jul. 12, 1937. *The American Presidency Project*. Accessed June 7, 2018. <http://www.presidency.ucsb.edu/ws/?pid=15437>.
- Rowe, William H., and Leroy K. Smith. "Crop Insurance," in *USDA, Yearbook of Agriculture, 1940*. Washington: GPO, 1941.
- Salerno, Tania. "Cargill's Corporate Growth in Times of Crises: How Agro-Commodity Traders Are Increasing Profits in the Midst of Volatility." *Agriculture and Human Values* 34, no. 1 (2017): 211-222.
- ~~Schertz, Lyle P., and Otto C. Doering III. *The Making of the 1996 Farm Act*. Ames: Iowa State University Press, 1999.~~

~~Skoepol, Theda, and Kenneth Finegold. "State Capacity and Economic Intervention in the Early New Deal." *Political Science Quarterly* 97 (Summer 1982): 255-78.~~

Smith, Vincent H., and Joseph W. Glauber. "Agricultural Insurance in Developed Countries: Where Have We Been and Where Are We Going?" *Applied Economic Perspectives and Policy* 34, no. 3 (2012): 363-390.

Summers, Mary. "The New Deal Farm Programs: Looking for Reconstruction in American Agriculture." *Agricultural History* 74 (Spring 2000): 241-57.

Thomasson, Melissa A. "From Sickness to Health: The Twentieth-Century Development of U.S. Health Insurance." *Explorations in Economic History* 39 (Jul. 2002): 233-53.

Valgren, V. N. "Insurance of Crops Against Severe Loss Thought Practicable," in *USDA, Yearbook of Agriculture, 1927*. Washington: GPO, 1928.

Wallace, Henry A. "Definition of the Ever-Normal Granary." *Agricultural Situation* (Mar. 1937): 9.

Wallace, Henry A. "A Method of Insuring Crops." *Wallace's Farmer and Iowa Homestead*. Mar. 3, 1922.

Waltman, Franklyn. "Politics and People: New Dealers' Defensive Actions Indicate Effectiveness of Landon's Farm Declaration." *Washington Post*. Sep. 23, 1936. P. 2.

Zachmann, Karin. "Risk in Historical Perspective: Concepts, Contexts, and Conjunctions." In *Risk: A Multidisciplinary Introduction*, edited by Claudia Klüppelberg, Daniel Straub, and Isabell M. Welp, 3-35. New York: Springer, 2014.

Zelizer, Viviana A. "Human Values and the Market: The Case of Life Insurance and Death in 19th-Century America." *American Journal of Sociology* 84 (Nov. 1973): 591-610.

Government Documents

House Committee on Agriculture. *To Amend the Federal Crop Insurance Act, Hearings*, 78th Cong., 2d sess., Mar. 2, 1944.

~~House Committee on Appropriations. *Agriculture Department Appropriation Bill for 1944, Hearings*, 78th Cong., 1st sess., Feb. 10, 1943.~~

Johnson, Renée. *Food Fraud and "Economically Motivated Adulteration" of Food and Food Ingredients*, Congressional Research Service Report 7-5700, R43358. Washington: Congressional Research Service, Library of Congress, 2014.

Johnson, Renée, and Jim Monke. *What Is the Farm Bill?: Congressional Research Service Report 7-5700*. Washington: Congressional Research Service, Library of Congress, 2018.

McMinimy, Mark A. *The House and Senate 2018 Farm Bills (H.R. 2): A Side-by-Side Comparison with Current Law, Congressional Research Service Report R45275*. Washington: Congressional Research Service, Library of Congress, 2018.

Monke, Jim. *Farm Credit System, Congressional Research Service Report 7-5700, RS21278*. Washington: Congressional Research Service, Library of Congress, 2016.

Senate Committee on Agriculture, Nutrition, and Forestry. "Farm Bill Ends Direct Payment Subsidies," *Minority News*, Jan. 28, 2014. Accessed April 26, 2018.
<https://www.agriculture.senate.gov/newsroom/press/release/farm-bill-ends-direct-payment-subsidies>.

Senate Committee on Appropriations. *Agricultural Appropriation Bill for 1944, Hearings, 78th. Cong., 1st sess., May 10, 1943*.

Senate Select Committee on Investigation of Crop Insurance. *Investigation of Crop Insurance, Part I, Hearings, 67th Cong., 4th sess., Apr. 24-27, 1923*.

Stephenson, John B. "Climate Change: Financial Risks to Federal and Private Insurers in Coming Decades Are Potentially Significant." *GAO Reports*. Apr. 19, 2007. Pp. 1-23.

U.S. Department of Agriculture. *Yearbook of Agriculture, 1940: Farmers in a Changing World*. Washington, GPO: 1940.

U.S. Department of Agriculture. *Yearbook of Agriculture, 1960: Power to Produce*. Washington, GPO: 1960.

Archives

Records of the Federal Crop Insurance Corporation (RG258), General Correspondence (Entry 1), National Archives II, College Park, MD.

Records of the Secretary of Agriculture (RG16), General Correspondence (Entry 17), National Archives II, College Park, MD.

Records of the Secretary of Agriculture, RG 16-G, Photographs of the U.S. Department of Agriculture, National Archives II, College Park, MD.

Dissertations

Crop Insurance and the New Deal Roots of Agricultural Financialization in the United States

Bunker, Rachel A. "Industry Warriors: Actuaries, Activists, and the Quest to Define Insurance in Twentieth-Century America." M.A. thesis, University of Georgia, 2014.

Johnson, Timothy. "Growth Industry: The Political Economy of Fertilizer in America, 1865-1947." Ph.d. Dissertation, University of Georgia, 2016.

Saleuddin, Rasheed. "The United States Federal Government and the Making of Modern Futures Markets, 1920-1936." Ph.D. diss., University of Cambridge, 2017.

For Peer Review

¹ Bosso, *Framing the Farm Bill*; Senate Committee on Agriculture, Nutrition, and Forestry, “Farm Bill Ends Direct Payment Subsidies”; McMinimy, *House and Senate 2018 Farm Bills*.

² Crop insurance has not figured prominently in histories of 20th-century American agriculture. Partly this is because for several decades the percentage of U.S. farmers enrolled in the system was substantially lower than for other farm programs including price supports, conservation set-asides, and credit provisions. The handful of existing histories of U.S. crop insurance rely primarily on published sources and quantitative data and focus almost exclusively on policy questions, rather than broadly contextualized political economy: Kramer, “Federal Crop Insurance, 1938-1982”; Barnett, “Federal Crop Insurance Program”; Glauber, “Growth of the Federal Crop Insurance Program”; Goodwin and Smith, *Economics of Crop Insurance and Disaster Aid*.

³ This parallels what Brett Christophers labels the contemporary “allusive market” for U.K. flood insurance—that is, a “market solution” that cannot exist, even with substantial state funding and organizational support—though with the significant difference that U.S. crop insurance was devised decades before “neoliberalism” carried any valence. Christophers, “Allusive Market.”

⁴ The financialization of agriculture has only recently attracted attention from scholars, primarily critical food studies scholars. See Clapp et al., “Complex Dynamics of Agriculture as a Financial Asset”; Salerno, “Cargill’s Corporate Growth in Times of Crises”; Isakson, “Food and Finance”; Patel, “Long Green Revolution.”

⁵ Aglietta and Breton, “Financial Systems, Corporate Control and Capital Accumulation”; Krippner, *Capitalizing on Crisis*; Harvey, “Neoliberalism as Creative Destruction.” The term *financialization* remains subject to much debate. Many scholars define financialization primarily in terms of what might be called the “weight” of finance within the overall economy, that is, in proportional terms of profits or productivity in relation to manufacturing, retailing, or trade: Krippner, “Financialization of the American Economy”; Mollan and Michie, “City of London as an International Commercial and Financial Center since 1900”; Hyman, *Debtor Nation*. Other scholars by contrast stress the power of financial institutions and instruments to act as economic as well as cultural levers over individuals, organizations, and institutions: Millberg, “Shifting Sources and Uses of Profits”; Ho, *Liquidated*; Hansen, “From Finance Capital to Financialization”; Lipartito, “Reassembling the Economic”; Martin, *Financialization of Daily Life*. Works exploring contrasting theories of financialization that have guided me towards adopting the latter definition include: Pike and Pollard, “Economic Geographies of Financialization”; Lapavistas, “Theorizing Financialization.”

⁶ Ezekiel, “Cobweb Theorem”; Donahue, *Great Meadow*; Hardaker et al., *Coping with Risk in Agriculture*; Godley, “Emergence of Agribusiness in Europe”; Ostrom, *Governing the Commons*; Balleisen, *Fraud*; Smith-Howard, *Pure and Modern Milk*; Johnson, *Food Fraud and “Economically Motivated Adulteration” of Food and Food Ingredients*.

⁷ Knight, *Risk, Uncertainty and Profit*. Knight formalized the distinction, but the concept was also clearly present in the 18th-century scientization of probability; see Lupton, *Risk*, 8.

⁸ Several excellent historical works that explore precisely this issue of managing uncertainty as opposed to risk include Pearson, "Moral Hazard"; Baranoff, "Shaped by Risk"; ~~Horan, "Actuarial Age";~~ Zachmann, "Risk in Historical Perspective." On the general point that historians recognize the importance of social, economic, technological, and institutional conditions in framing information asymmetries and the possibility of change over time, see Lamoreaux et al., "Beyond Markets and Hierarchies."

⁹ I do not mean here to offer a monocausal explanation for the rise of New Deal farm policy, but instead to suggest a way of broadly understanding the coherence of the era's policy experiments that must be read alongside more traditional studies of the deeply politicized, often messy, sometimes deeply irrational behavior of farm policymakers, politicians, and interest groups.

¹⁰ Cronon, *Nature's Metropolis*; Levy, *Freaks of Fortune*; Saleuddin, "United States Federal Government and the Making of Modern Futures Markets."

¹¹ Barron, *Mixed Harvest*; Stoll, *Fruits of Natural Advantage*; Woeste, *Farmer's Benevolent Trust*; Rodgers, *Atlantic Crossings*; Hahn, *Making Tobacco Bright*; Johnson, "Growth Industry"; Smith-Howard, *Pure and Modern Milk*.

¹² Yeager, *Competition and Regulation*; Broehl, *Cargill*; Koehn, "Henry Heinz and Brand Creation in the Late Nineteenth Century"; Walker, *Conquest of Bread*; Levinson, *Great A&P*.

¹³ White, *Railroaded*; Olmstead and Rhode, *Creating Abundance*; ~~Olmstead and Rhode, *Arresting Contagion*;~~ Fullilove, *Profit of the Earth*; Pietruska, *Looking Forward*.

¹⁴ Shideler, *Farm Crisis*; Giesen, *Boll Weevil Blues*; Schlebecker, *Cattle Raising on the Plains*; Alston et al., "Why Do Banks Fail?"; Daniel, *Deep'n as It Come*; Gregory, *Southern Diaspora*; Finegold and Skocpol, *State and Party in America's New Deal*; Hamilton, *From New Day to New Deal*; ~~Hawley, "Herbert Hoover, the Commerce Secretariat, and the Vision of an 'Associative State'."~~

¹⁵ Finegold and Skocpol, *State and Party*; Kirkendall, *Social Scientists and Farm Politics*; Jacobs, *Pocketbook Politics*; Gilbert, *Planning Democracy*; ~~Winders, *Politics of Food Supply*;~~ Summers, "New Deal Farm Programs"; Hamilton, *Trucking Country*:-

¹⁶ ~~Winders, *Politics of Food Supply*;~~ Summers, "New Deal Farm Programs"; Phillips, *This Land, This Nation*; Hamilton, *Trucking Country*.

¹⁷ Phillips, *This Land, This Nation*; Sutter, *Let Us Now Praise Famous Gullies*.

¹⁸ Waltman, "Politics and People"; Goodwin and Smith, *Economics of Crop Insurance and Disaster Aid*, 36; Wallace, "Definition of the Ever-Normal Granary," 9; Roosevelt, "Letter on the Administration's Proposed Farm Legislation"; Gilbert, *Planning Democracy*, 85-88; Phillips, *This Land*, 201-204.

¹⁹ On the history of futures markets, see Levy, *Freaks of Fortune*, 231-263; Cronon, *Nature's Metropolis*, 97-147; Baker and Hahn, *Cotton Kings*.

²⁰ Saleuddin, *Government of Markets*, 221-278.

²¹ *Report and Recommendations of the President's Committee on Crop Insurance*, Dec. 1936, Box 11, Folder 7, RG258, Entry 1, National Archives II, College Park, Md. (hereafter RG258 E1). Wallace's 1922 plan was not well-received when it was briefly discussed by legislators in 1923; see Senate Select Committee on Investigation of Crop Insurance, *Investigation of Crop Insurance*. Among the documents that clearly shaped the committee's report: Henry A. Wallace, "A

Method of Insuring Crops," *Wallace's Farmer and Iowa Homestead*, Mar. 3, 1922, Box 12, Folder 7, RG258 E1; G. Wright Hoffman, "Crop Hazards and Their Insurance," *Journal of American Insurance* (Dec. 1927), Box 12, Folder 6, *ibid*; V. N. Valgren, "A Suggested Plan for Real Crop Insurance as a Part of the A.A.A. Program," Aug. 14, 1934, Box 19, Folder 1, *ibid*.

²² Agricultural economist V. N. Valgren explained the problem of systemic risk in *Crop Insurance: Risks, Losses, and Principles of Protection*, USDA Bulletin No. 1043 (1922), transcribed in U.S. Department of Agriculture, Bureau of Agricultural Economics, "Crop Insurance: Selections and Excerpts," Oct. 1936, Box 9, Folder 7, RG258 E1. On the law of large numbers, see Moss, *When All Else Fails*, 26-32. Subsequent economic research has shown that even if individual companies are willing to tolerate systemic risk, the premiums they would have to charge would be well above what farmers would consider a reasonable price; see Smith and Glauber, "Agricultural Insurance in Developed Countries" and Miranda and Glauber, "Systematic Risk."

²³ G. Wright Hoffman, "Crop Hazards and Their Insurance," *Journal of American Insurance* (Dec. 1927), 5, Box 12, Folder 6, RG258 E1; Report and Recommendations of the President's Committee on Crop Insurance, Dec. 1936, Box 11, Folder 7, RG258 E1.

²⁴ *Report and Recommendations of the President's Committee on Crop Insurance*, 12. The problem of adverse selection, and of information asymmetries in general, was formally identified in an influential 1970 article by Kenneth Arrow and Robert Lind as an explanation for why some insurance schemes might never be suited to privatization: Arrow and Lind, "Uncertainty and the Evaluation of Public Investment Decisions." James C. Scott explores state desires for data on rural populations in *Seeing Like a State*. On the USDA's contested quest for reliable farm-level data, see Fitzgerald, *Every Farm a Factory*, ch. 2.

²⁵ A. G. Black, "The Goal of Crop Insurance," *Nation's Business*, Jun. 1937, 120, Box 12, Folder 2, RG258 E1.

²⁶ Henry A. Wallace, Address before the International Baby Chick Association, Kansas City, 22 July 1936, transcribed in U.S. Department of Agriculture, Bureau of Agricultural Economics, Crop Insurance: Selections and Excerpts, Oct. 1936, Box 9, Folder 7, RG258, E1; Preliminary Statement of Costs of Crop Insurance, n.d. (1938), Box 11, Folder 7, RG258 E1.

²⁷ V. N. Valgren, "A Suggested Plan for Real Crop Insurance as a Part of the A.A.A. Program," Aug. 14, 1934, Box 19, Folder 1, RG258 E1.

²⁸ U.S. Department of Agriculture, Federal Crop Insurance Corporation, *Wheat In Your Bin Every Year*, 1938, Box 18, Folder 3, RG258 E1, 12.

²⁹ Cecil A. Johnson to Mr. Cady, Jul. 13, 1936, Box 11, Folder 7, RG258 E1.

³⁰ Bouk, *How Our Days Became Numbered*; Murphy, *Investing in Life*; Pearson, "Moral Hazard."

³¹ "Tentative Draft of Instructions for Enumerators for Corn Yield History Survey," n.d. (Nov. 1938), Box 14, Folder 2, RG258 E1.

³² Cecil A. Johnson to Paul H. Appleby, Jul. 15, 1941, Box 2, Folder 5, RG258, Entry 1, National Archives II, College Park, MD.

³³ U.S. Department of Agriculture, Agricultural Adjustment Administration, Dairy Section, "Crop Insurance for Wheat Growers," Mar. 1938, 1, Box 11, Folder 8, RG258 E1.

³⁴ Rowe and Smith, "Crop Insurance," 756.

- ³⁵ U.S. Department of Agriculture, Federal Crop Insurance Corporation, *Worry Won't Win the War*, poster, 1942, Box 72, Folder 3, RG258.
- ³⁶ H. J. Nicol to Leroy K. Smith, May 19, 1943, Box 2, Folder 1, RG258, Entry 1, National Archives II, College Park, MD.
- ³⁷ E. H. Leker to C. C. Farrington, Oct. 27, 1939, Box 9, Folder 2, RG258 E1.
- ³⁸ George D. Bradley to Leroy K. Smith, Nov. 4, 1939, Box 9, Folder 2, RG258 E1.
- ³⁹ U.S. Department of Agriculture, Federal Crop Insurance Corporation, "Summary Report on Field Survey of Wheat Crop Insurance Program," Feb. 1942, Box 31, Folder 8, RG258 E1.
- ⁴⁰ Memorandum on Appropriations for Federal Crop Insurance Corporation, n.d. (1944), Box 2, Folder 2, RG258 E1, 7-8.
- ⁴¹ House Committee on Agriculture, *To Amend the Federal Crop Insurance Act*, 6-7; Senate Committee on Appropriations, *Agricultural Appropriation Bill for 1944*, 496.
- ⁴² J. Carl Wright to George Oliver, Feb. 17, 1944, Box 15, Folder 6, RG258 E1; J. Carl Wright to W. A. Jump, Mar. 28, 1944, Box 2, Folder 1, *ibid*.
- ⁴³ Kramer, "Federal Crop Insurance," 191-193; A. J. Loveland to James E. Murray, Mar. 15, 1949, Box 1707, Folder 3, RG16, Records of the Secretary of Agriculture, Entry 17, General Correspondence, National Archives II, College Park, Md. (hereafter RG16 E17); Staff Report, "Federal Crop Insurance: Present Status and Problems," Oct. 1968, 6, Box 5001, Folder 1, *ibid*.
- ⁴⁴ Moss, *When All Else Fails*; Zelizer, "Human Values and the Market"; Chapin, *Ensuring America's Health*; Thomasson, "From Sickness to Health"; Bouk, *How Our Days Became Numbered*.
- ⁴⁵ Roy O. Stanberry to James Murray, Jul. 14, 1949, Box 1783, Folder 5, RG16 E17.
- ⁴⁶ *Ibid*.
- ⁴⁷ Pearson, "Moral Hazard"; Murphy, *Investing in Life*; Bouk, *How Our Days Became Numbered*; Bunker, "Industry Warriors."
- ⁴⁸ Halcrow, "Actuarial Structures for Crop Insurance," 426, 428, 429-30.
- ⁴⁹ Marvin L. McLain to John C. Lynn, Aug. 19, 1960, Box 3426, Folder 2, RG16 E17; Staff Report, "Federal Crop Insurance: Present Status and Problems," Oct. 1968, 8.
- ⁵⁰ Staff Report, "Federal Crop Insurance: Present Status and Problems," Oct. 1968, 8.
- ⁵¹ Cochrane, *Farm Prices*, 94-97.
- ⁵² Staff Report, "Federal Crop Insurance: Present Status and Problems," Oct. 1968, ii.
- ⁵³ Bailey, "Crop Insurance Proves Help to Both Bankers and Farmers," 76.
- ⁵⁴ As with crop insurance, existing histories of farm credit have so far been monopolized by economists. Especially useful analyses include Jensen, "Farm Credit System as a Government-Sponsored Enterprise"; Duncan and Stam, *Financing Agriculture*. Figures on contemporary farm debt are from Monke, *Farm Credit System*. On the broader point of government support for banks undergirding the process of financialization, see Lapavistas, "Financialization of Capitalism."
- ⁵⁵ Bailey, "Banks Offer Crop Insurance to Farm Customers," 92.
- ⁵⁶ Levy, *Freaks of Fortune*, 150-190.
- ⁵⁷ USDA, *Yearbook of Agriculture*, 1940, 1 ("unknown future"), 10, 41, 43, 58, 64, 65, 77, 107, 161, 282, 298, 307, 313, 323, 393, 406, 407, 412, 443, 444, 470, 482, 491, 495, 496, 497, 501, 505, 519, 561, 674, 679, 742, 752, 754, 755, 756, 760, 764, 765, 770, 901, 912, 926, 1027, 1060, 1173 ; USDA,

Yearbook of Agriculture, 1960, 269, 276, 277, 279, 305, 344, 346, 367, 374, 374, 375, 377, 379, 382 (“opportunity for reward”), 393, 394, 449, 450, 455.

⁵⁸ Dionne, “Risk Management.”

⁵⁹ Hagstrom, “Sharing the Risk”; Richert, “Fall Agenda,” 42; Schertz and Doering, *Making of the 1996 Farm Act*.

⁶⁰ For one, the 2014 act repealed direct payments and countercyclical payments, but instituted two new “decoupled” payment programs based on farmers’ historical yields—the Agriculture Risk Coverage and the Price Loss Coverage programs. Johnson and Monke, *What Is the Farm Bill?*

⁶¹ Senate Committee on Agriculture, Nutrition, and Forestry, *Farm Bill Ends Direct Payment Subsidies*.

⁶² Stephenson, “Climate Change”; Annan and Schlenker, “Federal Crop Insurance and the Disincentive to Adapt to Extreme Heat.”