

Map 3 shows the distribution of wheat growing areas in 1937, and it can be used as an approximation of grain growing areas in 1932–34. Major grain growing areas are located in Odesa, Dnipropetrovsk, and Donetsk oblasts and Moldavia, while only 10 per cent of Chernihiv oblast is dedicated to grain crops. The agriculture of Kyiv, Kharkiv, and Vinnytsia oblasts is more diversified, with sugar beet, potatoes, and legumes besides grains. Thus, the policy of favouring the southern oblasts makes economic sense.

In a situation of generalized agricultural crisis like the one in 1932 (see discussion below), decisions had to be made about the priorities of resources, and Moscow's more favourable treatment of the grain-producing oblasts was expected to result in lower relative direct losses in these oblasts than in the rest of the Ukrainian SSR. Comparing Maps 1 and 3, we see that this is only partially true. Although in general the southern oblasts have lower relative losses than the northern oblasts, there are exceptions. In the steppe zone, Donetsk oblast has significantly lower relative direct losses than Dnipropetrovsk, Odesa, and Moldavia. In the forest-steppe zone, Vinnytsia oblast has much lower losses than Kyiv and Kharkiv oblasts, and the level of its losses is similar to that of most oblasts in the steppe zone. Chernihiv oblast also does not conform to the economic hypothesis, as its relative direct loss is as low as in Donetsk oblast.

1932: Early manifestations of the Famine

To better understand the reasons for the differences in relative direct losses among the different oblasts, it is necessary to examine separately what happened in 1932 and 1933, as the dynamics of the Holodomor changed drastically between 1932 and 1933.

Regional differences in rural direct losses were already present in 1932. Kyiv oblast had the highest number of excess deaths per 1,000 population, with 14.2, followed by Moldavia with 9.6 and Kharkiv with 8.6; losses in the other oblasts vary between 5.5 and 6.6 excess deaths per 1,000 population (Table 3). Some of the reasons for this situation are described in detail in a letter to Stalin from the head of the Council of People's Commissars of the Ukrainian SSR, Vlas Chubar, in June 1932, which is quoted by Plokhly (2016: 382):

The failure of legume and spring crops in those raions, above all, was not taken into account, and the insufficiency of those crops was made up with foodstuffs to fulfill the grain requisition plans. Given the overall impossibility of fulfilling the grain requisition plan, the basic reason for which was the lesser harvest in Ukraine as a whole and the colossal losses incurred during the harvest (a result of weak economic organization of the collective farms and their utterly inadequate management from the raions and from the center), a system was put in place of confiscating all grain produced by individual farmers, including seed stocks, and almost complete confiscation of all produce from the collective farms... In addition to grain procurements, the same methods were applied to potato and, especially, meat procurements.

The situation in Kharkiv oblast was no better. After his tour of Kharkiv oblast, Hryhorii Petrovsky, head of the Communist Party's Central Executive Committee for the UkrSSR, wrote to Stalin in June 1932 that 'famine has engulfed a good part of the countryside... It will take a month or a month and a half for new grain to appear... This means that famine will intensify' (Plokhly 2016: 383). In a list of raions most affected by the famine, compiled by Party officials in Kharkiv in June 1932, Kyiv and Vinnytsia oblasts had 10 and 11 raions, respectively, while the number of affected raions in the southern oblasts was much smaller. The critical situation in Kyiv and Kharkiv in 1932 is confirmed by the high relative direct losses in these two oblasts;⁵ the lower level in Vinnytsia oblast (an international border oblast) was likely due to the lower mortality in the border areas (border oblast).

A key factor at the beginning of the famine was the grain procurement plan for 1932 (Table 4). It documents the expectations of the Soviet government regarding Ukraine's contribution to Stalin's overall procurement plan, and provides a fairly good understanding of the conditions in the different oblasts. The total 1932 quota for the Ukrainian SSR was 5,831,000 tons of grain. This target seems reasonable, as it constituted 90 per cent of the amount collected from the 1931 crop. The relative allocation of this quota among the different

5. Although we were not able to find official documents about the situation in Moldavia, the high losses estimated are consistent with the fact that repeated allotments of food were provided for this autonomous republic starting as early as March 1932 (RSASH 17/167/35, List 4: #44, #72).

Table 4. Grain procurement quotas for Ukrainian SSR in 1932, by region

Region	1932 grain procurement quotas, % of 1931 quota	1932 grain procurement quotas		
		tons	% of other crops (non-grain and forage)	% of quota for independent farmers
Ukraine total	90.0	5,831,000	9.7	17.1
Vinnitsia	88.0	639,000	22.4	40.2
Kyiv	65.5	511,000	26.0	41.1
Kharkiv	74.5	1,212,000	11.9	23.8
Dnipropetrovsk	90.0	1,441,000	5.3	6.8
Odesa	140.0	1,376,000	1.7	6.7
Donetsk	95.0	583,000	7.4	5.1
Moldavian ASSR	46.0	69,000	2.9	30.4

Note: Chernihiv oblast was created later in 1932.

Source: Pyrih 2007: 242.

oblasts favoured the forest-steppe oblasts of Kyiv, Kharkiv, and Vinnitsia, at the expense of the steppe oblasts. Compared to what was collected in 1931, the amounts allocated to the steppe oblasts are higher than to the forest-steppe oblasts. The plan also takes into account the mixed-crop composition of the forest-steppe zone, with much higher allocations to these crops for the oblasts in this zone than for the oblasts in the steppe zone. It also acknowledges the fact that the proportion of independent farmers was much higher in the forest-steppe than in the steppe zone, and their grain quotas are much higher in the former than the latter.

The official procurement plan corroborates, at a more general level, Chubar's impressions about the situation in Kyiv and Vinnitsia oblasts. It provides credence to Chubar's statement that the unexpected failure of the non-grain crops and the heavy reliance of the official grain procurement plan on these crops had dire consequences. The crop failure led to widespread famine in the forest-steppe zone, forcing the government to confiscate most of the grain at kolkhozes and impose even harsher confiscation measures on individual farmers.

The extreme famine conditions in many areas of the forest-steppe zone, and to a lesser degree in the steppe zone, forced the Ukrainian SSR government in Kharkiv⁶ to petition repeatedly for some relief from the grain procurement quotas. After strong resistance, Stalin had to accept reality, and grain procurement quotas were reduced three times during 1932: two significant reductions in August and October, and a more modest reduction at the end of the year.

Table 5. Successive reductions of 1932 grain quotas for Ukrainian SSR, by region

Region	Original quota		% reduction			January 1933 quota		
	million poods	% distr.	August 1932	October 1932	January 1933	million poods	% overall reduction	% distr.
Ukraine total	356	100	11	25	29	210	41	100
Vinnitsia	39	11	23	12	0	26.5	32	13
Kyiv	31	9	35	30	0	14	54	7
Kharkiv	74	21	11	41	3.4	35.5	52	17
Dnipropetrovsk	88	25	4.5	20	12	55.5	37	26
Odesa	84	24	2.3	17	12	56	33	27
Donetsk	36	10	14	33	2	19	47	9
Moldavian ASSR	4	1	12	22	0	3	29	1

Note: Chernihiv oblast was created later in 1932.

Source: Pyrih 2007: 242, 298, 303–04, 355–56, 601–02.

The first round of reductions favoured heavily the forest-steppe zone at the expense of the steppe zone. Kyiv oblast received the largest reduction, with 35 per cent, followed by Vinnitsia oblast with 23 per cent and

6. Kharkiv was the capital of the Ukrainian SSR until 1934.

Kharkiv with 11 per cent, while reductions for Odesa and Dnipropetrovsk oblasts were in the 2.3–4.5 per cent range. Donetsk oblast received a reduction of 14 per cent, significantly higher compared to the other two steppe oblasts; this was repeated also during the next round of reductions. (The special status of Donetsk oblast will be further discussed below.) During the second round of reductions, Kharkiv and Kyiv again received large reductions, which prompted the steppe oblasts to demand significant reductions as well.

Overall, the grain procurement quota for the Ukrainian SSR was reduced by 41 per cent. Kyiv and Kharkiv oblasts had their original quotas reduced by more than half, and Vinnytsia oblast by one-third. The reduction for Odesa and Dnipropetrovsk oblasts was about one-third, and for Donetsk oblast it was close to half.

Table 6. Percent fulfillment of grain quotas by region in Ukrainian SSR, as of 1 Jan. 1933

Region	Kolkhozes	Sovkhozes	Independent farmers	Total	% collectivized as of 1 Oct. 1932
Ukraine total	78	86	72	77	69
Chernihiv	92	96	68	78	47
Vinnytsia	100	95	100	100	59
Kyiv	100	101	90	100	67
Kharkiv	85.5	92	44	77	72
Dnipropetrovsk	70	82	54	69.5	85
Odesa	73	70	57	72	84
Donetsk	76	77	85	76	84
Moldavian ASSR	89	40.5	108	93	68

Sources: Pyrih 2007: 571–72; ANER 1935: 205.

The grain quota fulfillment results and collectivization levels shown in Table 6 are surprising, if not puzzling. By October 1932 the steppe oblasts had reached very high levels of collectivization, while levels of collectivization in the forest-steppe and Chernihiv oblasts were significantly lower. In contrast, by the end of 1932 Kyiv and Vinnytsia had fulfilled 100 per cent of the grain procurement quotas, and Kharkiv close to 80 per cent, while the average for the forest oblasts was around 75 per cent. The collectivization levels are consistent with the official objective of faster collectivization of the grain-producing steppe region. The grain quota fulfillment data merit a more detailed analysis.

Fulfillment data is available for three groups: *kolkhozes*, *sovkhozes*,⁷ and *independent farmers*. For the kolhozes and sovkhozes, per cent fulfillment is similar for all oblasts within each zone; per cent fulfillment is higher among the forest-steppe zone oblasts than among the steppe zone oblasts. The differences between the forest-steppe and steppe oblasts are mainly due to the performance of the independent farmers. Although independent farmers fulfilled over half of their quotas in Dnipropetrovsk and Odesa, and 85 per cent in Donetsk, this had little impact on the overall quota, due to the small proportion of independent farmers in these oblasts. The low performance of Kharkiv oblast, on the other hand, is due exclusively to the very low output fulfillment per cent from the independent farmers.

Resistance and repressions in 1932

Why is it that in spite of their relatively lower level of collectivization, the forest-steppe oblasts of Soviet Ukraine, except the independent farmers in Kharkiv oblast, show such extraordinary levels of compliance with the grain requisition plan? One possible answer is that these oblasts had been granted substantial reductions in their grain quotas (Table 5). Another possibility is the ‘ruthless efficiency of the local Party machine in requisitioning grain from the peasantry’ in Kyiv and Kharkiv oblasts, as a reaction to active and passive resistance (Plokhy 2016: 389).

7. The Russian terms *kolkhoz* (collective farm) and *sovkhoz* (state farm or plantation) have entered English usage and are therefore used here in roman type and pluralized accordingly. The equivalent Ukrainian terms are *kolbosp* and *radbosp*.

Table 7. Selected indicators of resistance and repression in Soviet Ukraine during the Holodomor, by region

Region	number of petitions to leave kolkhozes			registered 'terror' acts	fines in kind		# brigades requisitioning grain from indep. farmers
	individ-uals	farms	raions		number	% fines of indep. farmers	
	(1)	(2)	(3)	(4)*	(5)*	(6)	(7)
Ukraine total	14,095	475	111	73	1,791	n/a	n/a
Vinnitsia	5,800	219	42	75	150	90	51
Kyiv	3,320	75	21	79	70	99	65
Kharkiv	3,892	137	36	81	658	123**	84
Dnipropetrovsk	269	17	5	49	263	90	19
Odesa	191	7	4	94	344	97	24
Donetsk	–	n.d.	–	38	14	59	26
Moldavian ASSR	623	20	3	126	291	7	0

Notes: Chernihiv oblast is not listed as it was created in 1932 and some indicators are missing;

* indicators standardized by size of oblast's rural population; (1)...(3) June 1932;

(4) 1 Jan. 1932–31 Jan. 1933; (5)–(6) 5 Dec. 1932;

(7) 5 Dec. 1932; ** error in original data

Source: Pyrih 2007: 250, 445, 456, 631.

The following factors of resistance and repression are quantified in Table 7: exodus from the kolkhozes, acts of 'terror,' total fines, including in kind and percentage of independent farmers fined, and number of Communist Party grain-search 'brigades.' The flight from kolkhozes was quite extensive in the forest-steppe oblasts, but negligible in the steppe oblasts. While the relative number (standardized by the rural population of each oblast) of registered acts of 'terror' was very high in Odesa oblast, on average this indicator was higher in the forest-steppe than in the steppe oblasts.

The picture regarding number of fines in kind, also standardized by the rural population in each oblast, is less clear-cut. This indicator was extremely high in Kharkiv oblast, quite low in Vinnitsia and Kyiv, and very low in Donetsk oblast. In all oblasts except Donetsk, the great majority of fines in kind were applied to independent farmers.

On 11 November 1932, the Central Committee of the Communist Party of the Ukrainian SSR ordered the creation by December 1 of at least 1,000 brigades to search for hidden grain among the independent farmers. The proposed number of brigades was much higher for the forest-steppe oblasts than for the steppe oblasts: 200, 300, and 350 for Vinnitsia, Kharkiv, and Kyiv oblasts, respectively, and 50 each for the three steppe oblasts; these proportions are maintained when the numbers are standardized by the rural population of each oblast. The higher number of brigades for the forest-steppe oblasts was due, in part, to the fact that these oblasts had more independent farmers. The very high percentage of grain procurement quotas for independent farmers in Vinnitsia and Kyiv oblasts (Table 4), and the fact that independent farmers in these oblasts had the highest percent fulfillment of these quotas (Table 6), tend to support the 'ruthless efficiency' argument.

Further evidence about the more aggressive grain requisition practices in Kyiv and Kharkiv oblasts during 1932 is provided in a report on the fulfillment of seed grain quotas for the 1933 harvest. As of 10 December 1932, only 20.5 per cent and 16.5 per cent of the quotas were filled in Kyiv and Kharkiv oblasts, respectively, while 40 per cent of the quota was filled in Dnipropetrovsk, 28 per cent in Donetsk, and 22 per cent in Odesa oblasts. These numbers support the hypothesis that most of the grain was already taken away in Kyiv and Kharkiv oblasts due to more aggressive requisition, while there was still a fair amount of grain left in the steppe oblasts. More updated data for Kharkiv oblast tends to confirm this hypothesis. Namely, it was reported that by 15 February 1933, only 35.6 per cent of the seed grain quota was fulfilled, and that the campaign was facing strong resistance (Pyrih 2007: 697).

The data tend to support the hypothesis that there was higher resistance to collectivization and grain procurements in the forest-steppe oblasts, especially in Kyiv and Kharkiv, than in the steppe oblasts, and that these

oblasts were consequently subject to harsher repressions. The evidence may not be conclusive, as there is no certainty that the documents found so far are representative of the total picture in each oblast. Nevertheless, they show a correlation that is quite suggestive.

1933: Famine as terror

The number of relative rural losses presented in Map 1 is for the whole 1932–34 period. As 90 per cent of all losses occurred in 1933, the level of these losses is determined to a great extent by what happened in that year. In rural areas, two processes were happening in 1933: (1) extraordinary increase in monthly registered deaths during the first 6–7 months (Wolowyna 2013); and (2) implementation of a food aid program by Moscow as a reaction to this critical situation.

Between January and June 1933, the number of *registered rural deaths* increased by 11 times in Kyiv and Kharkiv oblasts, and eightfold in Vinnytsia oblast; in Odesa, Dnipropetrovsk, and Donetsk oblasts the increases ranged from fourfold to sevenfold, and in Moldavia rural registered deaths increased by half. These extraordinary increases were the result of several measures implemented by the Soviet government in late 1932 and early 1933.

First, two of these measures prevented peasants from travelling in search of food: (1) the introduction in December 1932 of domestic identity documents (“passports”) only for city residents, limiting the peasants’ ability to travel to cities in search of food; and (2) the closing of borders between Ukraine (as well as the Northern Caucasus) and Russia in January 1933, stopping the flow of Ukrainian peasants to Russia in search of food. Thousands of Ukrainian peasants were arrested in Russia and returned to their villages (CC ACP 2001).

Second, Stalin’s directive dated 1 January 1933 reiterated the penalties outlined in the decree dated 7 August 1932, for ‘stealing’ stalks from the fields or hiding grain from the State, and harsh penalties in kind (meat and potatoes) introduced on 18 and 20 November 1932 for independent farmers and kolkhozes that did not fulfill their grain quotas.

Third, numerous brigades of Communist Party activists descended towards the end of 1932 and beginning of 1933 on villages to confiscate hidden grain, although most of it had been already seized, especially in Kyiv and Kharkiv oblasts. According to thousands of testimonies, even if no grain was found, in many instances every last scrap of food was confiscated (see also Chubar’s letter to Stalin above).

Fourth, a system of blacklists was instituted in November 1932 against kolkhozes, entire villages, and in some cases raions that failed to fulfill their grain quotas, and was gradually expanded to the whole country. ‘For a village to be blacklisted meant that: (1) all stores would be closed and supplies removed from the village; (2) all trade was prohibited, including trade in food or grain; (3) all loans and advances were called in, including grain advances; (4) the local Party and collective farm organizations were purged, and usually subject to arrest; (5) food and livestock would be confiscated as a ‘penalty’; and (6) the territory would be sealed off by OGPU (secret police) detachments’ (Andriewsky 2015). In other words, a death sentence was imposed on the population of the given kolkhoz, village, or raion.

Once Moscow realized the catastrophic nature of the famine, a program of food aid was implemented during the first half of 1933. The program entailed loans that the oblasts were required to pay back from the next harvest with 10 per cent interest, and had other strong restrictions. Boriak (2012) documents in detail the characteristics of this program: (1) the food was to be given mainly to members of kolkhozes who were willing and able to work, and to independent farmers willing to join the kolkhozes and work; (2) instructions for the administration of the program show clearly that its main objective was not to prevent starvation but to provide badly needed aid in order to save the next sowing season; (3) a good part of the food provided came from internal reserves (in Ukraine), that had been requisitioned from Ukrainian farmers in 1932 and were now being given back to them as ‘assistance’, with selective distribution.

A total of 176,000 tons of food, mainly grain, was distributed to the eight regions of Ukraine between February and July 1933 (169,800 tons allocated to specific regions, plus 6,200 unallocated tons for selective distribution):

	Dnipropetrovsk	Odesa	Kharkiv	Kyiv	Vinnytsia	Donetsk	Chernihiv	Moldavia
tons food aid	56,200	49,400	29,900	19,900	9,600	3,300	1,200	300
kg per person	20.5	22.3	6.4	3.9	2.3	1.6	0.5	0.6

The data illustrate the importance of using relative indicators when making comparisons. In absolute numbers, the bulk of the food aid went to Dnipropetrovsk and Odesa oblasts, with sizeable contributions also to Kharkiv and Kyiv oblasts. However, standardizing by the size of the respective rural populations introduces significant changes in the distribution. For example, the ranking between Dnipropetrovsk and Odesa oblasts is reversed, and more importantly, the difference in food aid amounts between Dnipropetrovsk and Odesa and the forest-steppe oblasts becomes much more pronounced. Thus, the actual amount to Dnipropetrovsk oblast is three times that given to Kharkiv oblast, instead of just under double as per the unadjusted figures.

To illustrate the devastating effect of Stalin’s measures in late 1932 and early 1933 on the level and distribution of monthly losses in these oblasts in 1933, we selected two oblasts from the forest-steppe region, Kyiv and Kharkiv, and two from the steppe region, Odesa and Dnipropetrovsk. We show the relationship between the volume and timing of this food aid, and the number and monthly pattern of excess deaths in each of these oblasts.

The oblasts in the forest-steppe and those in the steppe region have very different patterns of monthly excess deaths in 1933 (Figure 1). Kyiv and Kharkiv experienced a sharp increase in monthly excess deaths between January and June, and then a sharp decrease. The rate of increase for Odesa and Dnipropetrovsk was somewhat smaller than for Kyiv and Kharkiv oblasts, with the peak in June being much lower and the decrease during the second half of 1933 being much less pronounced. The ratio of direct losses between the peak month of June and January of 1933 is even higher than the ratio of registered deaths. During the first half of 1933, the number of excess deaths increased by 14–15 times in Kharkiv and Kyiv, and by 7–8 times in Dnipropetrovsk and Odesa oblasts.

Figure 2 shows the timing and volume of food distributed to the different oblasts, in tons per 1,000 rural population. The graph shows very clearly that Odesa and Dnipropetrovsk oblasts received much more food aid than Kyiv and Kharkiv oblasts, and that this assistance started to arrive much earlier.

Comparing the two figures, we see a strong relationship between the food aid dynamics and the patterns of monthly excess deaths. The volume and timing of food distributed are clearly reflected in the two distinct patterns of monthly direct losses. The large amounts of food sent to Dnipropetrovsk and Odesa oblasts in February and March had two effects: it slowed down the monthly increase of direct losses and resulted in much lower peaks in June. The absence of practically any food aid to Kyiv oblast before March, or to Kharkiv oblast before April, resulted in faster rates of increase and much higher peaks in direct losses for these two oblasts.

One can also detect specific effects of the food assistance on the distribution of excess deaths in certain oblasts. For example, the rate of increase in monthly excess deaths slowed down between March and April in Kyiv oblast compared to Kharkiv oblast, and in Dnipropetrovsk oblast compared to Odesa oblast. This is likely related to the large amount of food aid sent to Kyiv oblast in mid-March, and larger amounts of food aid provided to Dnipropetrovsk oblast than to Odesa oblast in February and March.

It is clear that the food aid program saved many lives in Odesa and Dnipropetrovsk oblasts. However, the main goal of the program was to save the 1933 harvest, and thus the assistance was targeted at specific oblasts and groups. As a result, many more peasants were condemned to death by starvation in Kyiv and Kharkiv oblasts than in the strategically more important oblasts of Odesa and Dnipropetrovsk. Although the number of excess deaths was significantly lower in the steppe than in the forest-steppe oblasts, the rate of monthly increase and maximum levels of death in Odesa and Dnipropetrovsk were still extremely high.

Historical legacy of peasant uprisings

For the sake of completeness, we shall also examine a hypothesis that suggests links between high regional direct losses and past events in those regions. It posits that the degree of resistance and resulting persecutions in certain regions, described in the section ‘Resistance and repressions in 1932,’ is related to different types of peasant revolts having occurred in those places during the preceding period (1918–31). Thus, regions with strong resistance to collectivization and grain procurement in 1932 had a history of rebellions in the past, of which the Soviet regime was keenly aware—especially in relation to the great social and national uprising of the spring

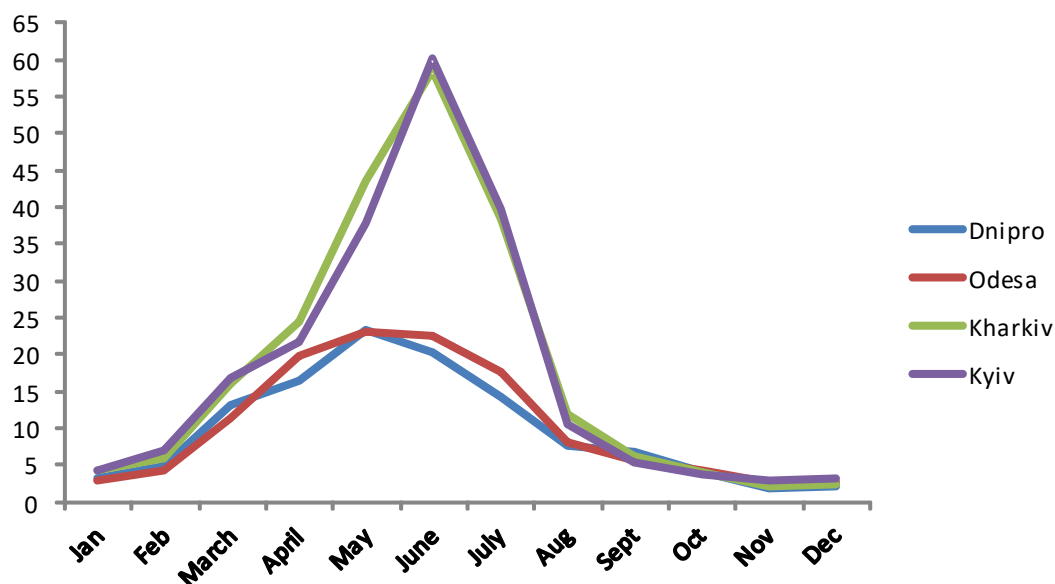


Figure 1. Monthly direct losses (per 1,000 rural population) for four oblasts of the Ukrainian SSR, 1933.

Source: Authors' calculations.

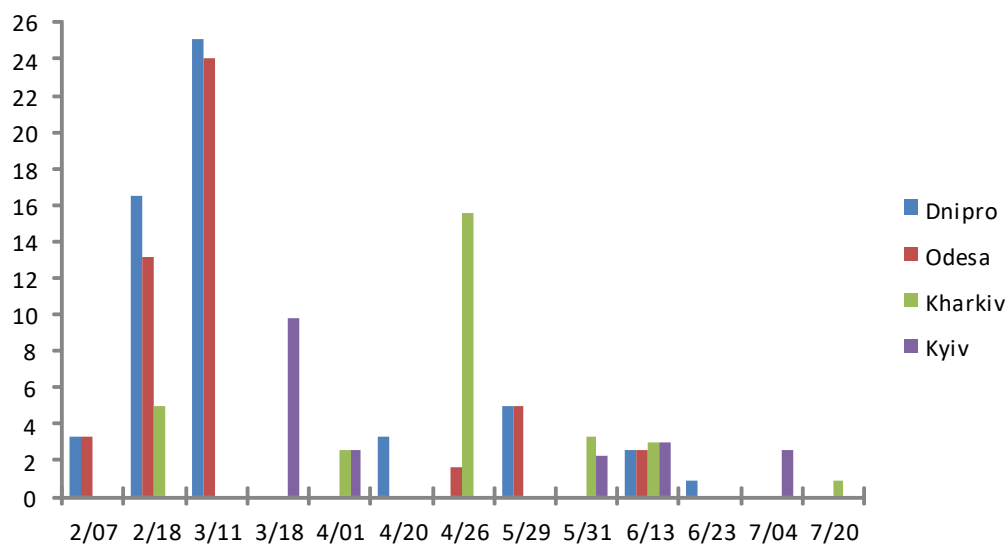


Figure 2. Food aid to four oblasts of the Ukrainian SSR (tons/1,000 rural population), 1933.

Source: Davies and Wheatcroft 2009, pp. 481–4.

and summer of 1919, which had forced them out of Ukraine, and in particular out of its two capitals (Kyiv and Kharkiv).⁸ This historical memory resulted, first, in stronger repressions and thus higher excess deaths in 1932, and then in a decision, taken in late 1932 and applied during the following months, to use hunger as a tool to eradicate the possibility of a new general uprising, and to deprive the Ukrainian national movement of its social base, which Stalin had identified as being the villages (Graziosi 2015).

If this hypothesis is correct, the effects of the food aid program on 1933 direct losses, as described in the section ‘1933: Famine as terror,’ need to be compared to the effects of the punitive policy in the different regions. Testing this hypothesis requires two elements: a map depicting the historical revolts at the raion level, and

8. This may have been a factor in the decision, taken in 1929, not to discontinue the extant state indigenization program (*korenizatsiia*, or, in the case of the Ukrainian SSR, *ukrainizatsiia*) during collectivization—precisely because of the awareness of the need to prevent a repetition of social and national elements combining to engender peasant revolts, as had occurred in Ukraine in 1919.

1933 estimates of rural direct losses at the raion level. We have calculated the estimates and hope that a map will be found to allow us to test this hypothesis.

We do have, however, some elements that permit testing the first part of this hypothesis, i.e., that uprisings during the 1918–31 period are linked to areas where stronger repressions were applied in 1932. Viola (1996) and Graziosi (1996) documented widespread peasant rebellions in different Soviet republics, starting in 1918, but their data is at the republic and large-region levels. On the other hand, recently discovered documents in Ukraine’s archives provide more information about these movements in specific regions of Ukraine (Krutysk 2011).

First, however, we have to deal with a technical problem. The data on the historical peasant rebellions are for nine gubernias, while our estimates of direct losses are for seven oblasts. Due to problems with vital statistics for this period, it is impossible to make estimates of excess deaths for the nine gubernias. However, we can approximate the nine gubernias with the 17-oblast structure in 1939 (15 oblasts plus Cherkasy and Kherson, which were created in 1944 and 1954, respectively). We estimated direct losses for these 17 oblasts, and then calculated direct losses for the nine gubernias based on the losses for the 17 oblasts. Table 8 shows the equivalence between the nine gubernias and 17 oblasts, and the 1933 rural relative direct losses for the nine gubernias, as well as the 1933 losses.

The following indicators are presented in absolute and relative numbers (per one million rural population): number of peasant uprisings, number of clandestine organizations, and number of rebel groups; all indicators are for the period 1918–32, and the rural population is given as of 1 January 1927. We see that neither absolute numbers nor indicators standardized by the rural populations of respective gubernias show a relationship between the intensity of rebellion indicators and relative numbers of direct losses in 1932. The highest 1932 rural relative losses are in Kyiv gubernia, while the highest absolute and relative values for the three indicators are found mostly in other gubernias. The same applies to 1933 losses, with Poltava gubernia having the highest losses.

There are several problems with this test: (1) the data are for different periods, and it is difficult to establish common standards with the gubernias and their raion structures, as the administrative structures changed repeatedly during this period; (2) as witnessed by differing numbers on the different types of peasant resistance presented by Viola (1996) and Graziosi (1996) under different labels, there seems to be a lack of established definitions for concepts describing these events; and (3) the reliability of official statistics has not been evaluated. A key problem is that only macro-level data (for gubernias) is available, while a more valid test would require data at the raion level, especially of the uprisings in 1919. The fact that currently available data does not support this hypothesis does not mean that the hypothesis is incorrect; further research is needed before a more definite judgment can be made.

Table 8. Indicators of peasant resistance movements in Soviet Ukraine, by gubernia, 1917–32

9 gubernias	17 oblasts (equivalent)	Absolute numbers			Per one million peasants*			% of 1932 rural direct losses	% of 1933 rural direct losses
		Number of peasant uprisings, 1918–32	Number of clan- destine organi- zations	Number of rebel groups	Number of peasant uprisings, 1918–32	Number of clan- destine organi- zations	Number of rebel groups		
Volyn + Podillia	Zhytomyr + Vinnytsia + Khmelnytskyi	32	120	300	8	27	68	9	12
Kyiv	Kyiv + Cherkasy	40	107	296	9	25	69	11.5	22
Poltava	Poltava	29	103	165	9	32.5	52	6	24
Katerynoslav	Dnipropetrovsk + Zaporizhia + Kherson	21	57	104	8	21.5	39	5	10
Odesa	Odesa + Mykolaiv + Kirovohrad	57	72	188	22	28	73	8	11
Chernihiv	Chernihiv	32	64	137	16	33	70	6	8
Kharkiv	Kharkiv + Sumy	34	65	133	14	26	54	6.5	12
Donetsk	Donetsk + Luhansk	23	54	112	11.5	27	56	10	9

* As of 1 January 1927.

Sources: Krutysk 2011 and authors’ calculations.

Summary and conclusions

Our analysis has shown significant variation in Holodomor-caused direct losses at the oblast level in Soviet Ukraine. Several hypotheses about these differences have been evaluated, but no single hypothesis provides a comprehensive explanation. As pointed out by Plokhly (2016), the solution probably lies in a composite of several hypotheses. The direct loss levels in three oblasts—Chernihiv, Vinnytsia, and Donetsk—can be explained as specific cases.

Firstly, Chernihiv oblast is part of the Polissia region, and the only oblast that satisfies the ecological hypothesis. Besides the ecological advantage of having food available in the forests and wetlands, Chernihiv did not fall under the close scrutiny of the Soviet government, as it had the smallest land area dedicated to grain production. Thus, Chernihiv oblast was probably least affected by the searches for hidden grain in late 1932 and early 1933, which likely explains its low level of rural direct losses in 1933, and thus for the whole 1932–34 period (Table 3).

Next, the lower level of direct losses in Vinnytsia oblast, compared to Kyiv and Kharkiv oblasts, can be explained to some degree by the border hypothesis, as the lower levels of direct losses in border raions bring down the oblast average. Thirdly, the low level of direct losses in Donetsk oblast is due to several unique characteristics. This oblast had the lowest percentage rural population, and moreover it received special assistance from Moscow due to the strategic importance of its industrial infrastructure; workers in these enterprises belonged to a privileged group that received adequate food rations, and this probably allowed them to help their families in the countryside. If we exclude Moldavia, three indicators support Donetsk oblast’s privileged position: (1) the overall reduction of its grain quota was the largest among the steppe oblasts (Table 5); (2) it had the lowest number of registered ‘terror’ acts; and (3) it had the lowest number of in-kind fines, including among independent farmers (Table 7).⁹

Table 9. Comparison of oblasts with high (Kyiv and Kharkiv) and low (Odesa and Dnipropetrovsk) rural relative excess deaths during Holodomor

#	Indicator	High losses	Low losses
	1932–34 rural excess deaths/100 population	23	13
	A – Background indicators		
1	1932 grain quotas: % other crops	16%	4%
2	1932 grain quotas: % independent farmers	29%	7%
3	% overall reduction of 1932 grain quotas	53%	35%
4	% fulfillment 1932 grain quotas, 1/1933	81%	70%
	B – Resistance and repressions indicators		
5	% grains collected of 1933 sowing quota	18%	32.5%
6	# of petitions to leave kolkhozes, 1932:		
	- individuals	7,212	460
	- farms	212	24
	- raions	57	9
7	# of fines in kind, 1932*	350	299
8	% independent farmers among all fined, 1932	99**	93
9	% of registered ‘terror’ acts, 1932*	80	69
	C – Situation in 1933		
10	1933 excess deaths: June/January	14	8
11	1933 food assistance (kg per rural inhabitant)	5.1	21.3

* per 1,000,000 rural population

** for Kyiv only; there is an error in the original data for Kharkiv

Source: Authors’ calculations.

9. Moldavia does not seem to fit a pattern and we excluded it from our analysis. Given its small size and the fact that it was part of Ukraine only during a limited period (1924 to 1940), this exclusion has little effect on understanding the regional dynamics of Holodomor losses.

We are left with having to explain the levels of excess deaths differences between Kyiv and Kharkiv oblasts and Odesa and Dnipropetrovsk oblasts.¹⁰ The evidence summarized in Table 9 shows that the much higher levels of direct losses in Kyiv and Kharkiv oblasts than in Odesa and Dnipropetrovsk oblasts can be explained by a combination of the economic hypothesis, significantly higher levels of resistance and repressions in the first two oblasts and selective implementation of the food assistance program in 1933.

A second result is the elaboration and quantification of the already known fact that the dynamic of the Holodomor was very different in 1932 than in 1933. The onset of the famine is characterized by regional differences in collectivization, grain quota fulfillment, opposition to collectivization and grain procurement, and levels of repressions against this opposition. The sudden explosion of deaths, and thus direct losses, during the first half of 1933 can only be explained as the result of the actions implemented towards the end of 1932 and beginning of 1933, as listed above in the section ‘1933: Famine as Terror.’ Although no document has been found with a general directive to confiscate not only all grain but also other foodstuffs during the searches for ‘hidden’ or ‘stolen’ grain, the demographic evidence does not leave room for any other explanation. The regional differences in direct losses found in 1933 are to a great extent a function of selective implementation of the food aid program, and it remains to be seen whether a set of politically-motivated actions rooted in the 1919 Soviet experience in Ukraine, and the active resistance in the 1920s and early 1930s, constituted additional factors.

Our analysis documents the complex dynamics of the Holodomor and shows that there are still quite a few unanswered questions. Examples of areas that require systematic research are: (1) the possible link between peasant uprisings during the 1918–31 period and the level of excess losses in 1932, and the more specific link between the 1919 uprisings and direct losses in 1933; (2) more systematic research on the searches carried out for hidden food in late 1932 and early 1933; and (3) the role of the nationality factor in chances of survival.

Finally, we observe that research on the 1932–34 famine in Soviet Ukraine has been pursued independently along two disciplines: demography and history. Our approach of addressing both demographic analysis and historical research illustrates the importance of such a combined strategy. Often historical evidence is needed to explain demographic results, and demographic techniques can be used to test hypotheses suggested by historical analysis, or hypotheses derived from historical analysis can suggest specific demographic analyses. The complementarity of the two disciplines provides a more fruitful strategy for researching the Holodomor.

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10. Wheatcroft suggests that the high levels of mortality in Kyiv oblast are due to the fact that, unlike the industrial centers in the east and south, the cities of Kyiv oblast received little or no food from central depositories, and that Kyiv oblast authorities were forced to take away food from the oblast’s rural areas in order to feed the cities (Wheatcroft and Garnaut 2013). There are several problems with Wheatcroft’s hypothesis. First, as shown in Map 2, 1933 relative rural excess deaths at the raion level are not uniformly distributed in Kyiv oblast; they vary from the highest to the lowest levels for the whole country. Thus, if Wheatcroft’s hypothesis is correct, the requisition of food in rural areas was very selective and his hypothesis would require further elaboration. Second, it would make sense to collect the extra grain from areas with the highest potential grain production. Comparing Map 2 with Map 3, areas with the highest levels of excess deaths are quite different from areas with the highest percent of potential grain production. Third, losses in Kharkiv oblast were as high as in Kyiv oblast, with the distribution of losses in rural areas by raion being similar to that in Kyiv oblast; Wheatcroft does not comment on this.

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