Stalinism in Post-Communist Perspective: New Evidence on Killings, Forced Labour and Economic Growth in the 1930s

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ENHANCED ACCESS to Soviet and Russian archives under Gorbachev and El'tsin has shed fresh light on the scale of repression in the USSR during the 1930s. New evidence has been unearthed on NKVD sentences, prisoners in jails, Gulag camps and colonies; exiles, executions, custodial deaths, the 1937 and 1939 census populations, the suppressed mortality rate in the famine year 1933, and other missing vital statistics. At the same time, the collapse of the Soviet Union has illuminated the economic, social and political folly of administrative command planning, collectivisation and forced industrialisation, which until recently were often said to demonstrate the economic superiority of socialism.

These revelations have resulted in scattered admissions of error and claims of vindication, together with appeals cautioning against conflating the demise of communism with a net assessment of its accomplishments.[1] An attempt has been made to salvage as much as possible in this regard by drawing a false distinction between conceptualisations of Stalinist oppression based on literary and documentary sources,[2] claiming that the high estimates of killings and forced labour alleged by the former cannot be sustained in the face of the authoritative statistics of the NKVD. This assertion has been parried by calling the NKVD data into question and rehearsing the documentary evidence corroborating eyewitness sources, but an integrated assessment of the new evidence with all its contradictions has not been attempted.[3]

This article seeks to fill this void by compiling an inventory of the new evidence, comparing it with prior information, highlighting strengths and weaknesses, and elucidating interdependencies which demonstrate that the scale of killings and forced labour was many times greater than the NKVD data indicate, attaining Orwellian magnitudes approaching Conquest's descriptions in his *Harvest of Sorrow* and *The Great Terror*. A parallel analysis of Stalin's economic legacy reveals, moreover, that the human costs of Soviet despotism provided no compensating social benefit. Stalinist oppression was neither economically necessary nor socially justified, so that the new evidence, contrary assertions notwithstanding, provides no grounds for Stalin's future partial rehabilitation.

Paradigms of Stalinism

Assessments of Stalinism among Western scholars during the Cold War were polarised.[4] Although most agreed that the repression associated with collectivisation, industrialisation and the consolidation of Soviet power was excessive, one group

contended this did not negate the regime's socialist economic achievements while the other maintained it did. These opposing appraisals turned partly on evidence of oppression and material deprivation, and partly on judgments regarding the political, social and economic accomplishments. Although a positive verdict could be reached on the latter grounds even if it were granted that the Soviet people were grievously oppressed, all but a few rendering favourable verdicts argued that high estimates of arrests, executions, killings, terror and forced labour were grossly exaggerated. Yes the kulaks were liquidated as a class; yes Soviet authorities concealed the famine of 1932/33; and of course tens, even hundreds of thousands were purged, but this did not mean that millions of kulaks, other peasants, and countless victims of the Great Terror were actually interned in Gulag or killed.

   The fall of communism has brought about a subtle but profound change of attitude. Few are willing to argue now that the long-term consequences of Stalinism were beneficial, but many contend instead that things were not nearly as bad as Conquest's estimates of mass killing, forced labour, terror and oppression make them seem, nor as futile as later economic developments suggest. Can a position of this sort be justified?

   The answer turns on two distinct classes of evidence, one on repression, the other on economic performance. With regard to the first, prior but dubious official documents purporting to prove that no one was inhumanely treated, exploited in Gulag or killed without just cause must be confirmed or adjusted for their obvious exaggeration with genuine, detailed, internally consistent official records. Authenticity is an issue because comprehensive and consistent records can be faked to conceal the truth recorded elsewhere in memoirs. Antonov-Ovseenko makes this point when divulging arrest figures for 1935 to 1940 from internal records by placing quotation marks around the word 'internal', indicating that they are based on the authentic records of the inner circle, not the run of the mill 'secrets' used to disinform those who did not need to know.[5] Volkogonov does the same thing by asserting that his data came from Stalin's personal archives.[6]

   The authenticity of Soviet economic statistics poses less of a problem. Although the literature shows that these data leave much to be desired, there is little reason to believe that the authorities maintained two sets of books, with the probable exception of the military industrial sector. As a consequence, the assertion that administrative command planning, collectivisation and forced industrialisation were successful in the 1930s and for decades thereafter, corroborated in the official record, depends on issues of valuation and other well known technical matters.

New evidence

A complete inventory of key statistics uncovered since the start of *glasnost'* and the estimates they support is provided in Table 1, together with older figures that highlight their significance. Entries in bold type either have been proven erroneous or have been strongly disconfirmed by the composite body of information. Before considering specific estimates in detail, it can be seen at a glance that the new evidence has brought about a convergence of perceptions that bodes well for the ultimate adjudication of past controversies. Broadly speaking, it seems that extreme

estimates, both high and low, of killings and forced labour have been disconfirmed, greatly truncating the ranges of legitimate dispute.

Criminological evidence

The data and estimates displayed in Table 1 are divisible into two categories: criminal and demographic. The former include statistics on arrests, sentences, executions and incarceration, which have the virtue of providing a map of the judicial component of the terror process. Setting aside pre-arrest harassment and extrajudicial punishments, arrest statistics indicate the scope of suspicion. Sentencing data inform us who was convicted, the nature of alleged crimes, and the punishments imposed. Incarceration statistics describe the victims' fate by providing information on the length of sentences served, convict populations, escapes and custodial deaths.

Until recently, auditable data on these phenomena had been sparse, especially regarding political prisoners and Gulag. Statistics on ordinary crimes and the criminal justice process were available, but shed little light on the core issues of terror and despotism. The highest arrest figures were reported by Antonov-Ovseenko. He contended that 'internal' NKVD statistics showed that 18 840 000 people were apprehended in 1935–39. Conquest estimated that 7 million people were arrested during the Ezhovshchina of 1937–38. Precise sentencing statistics were seldom given, but can easily be inferred from execution and Gulag prisoner estimates which range respectively from 0.02 to 7 million, and 0.5 to 16 million.

The new NKVD documents are provocative and important because they provide nearly complete serial coverage of the judicial process and appear to decisively confirm past estimates in the lower tails of the distributions. The sentencing figures are 15% of Antonov-Ovseenko's; executions and custodial deaths, and the Gulag camp and colony populations are respectively 37% and 28% of Conquest's.[7] These disparities hold throughout the 1930s, implying that custodial populations under Stalin were about the same per capita as they are today,[8] and that the primary aberration was the high execution rates in 1937–38.[9] This picture is bleaker than some had previously described, but conveys the impression which Nove approved, that abuses did not get far out of bounds in the context of the times, except momentarily during the Ezhovshchina.[10]

The case made by advocates for the NKVD data is simple. The documents in question appear to have been written and compiled during Stalin's reign, they pertain explicitly to Gulag and were found in appropriate files amid other period materials. They correspond with some official statements made by the KGB, and are internally consistent. Other evidence by comparison is testimonial, or merely hearsay and as such has only limited credibility. The counterargument over the authenticity of the NKVD documents has been elaborated by Laqueur. He and others point out that the KGB and military archives remain completely closed, together with most of the NKVD records, except those suspiciously available in the Central State Archive of the October Revolution of the USSR (TsGAOR), now part of the State Archive of the Russian Federation (GARF), and he infers that they are disinformative, being either fabrications or incomplete.[11] This allegation is supported by statements of various senior officials that the scale of mass killings by the NKVD was many times

TABLE 1

THE EFFECT OF THE NEW EVIDENCE ON RIVAL ESTIMATES OF STALINIST OPPRESSION DURING THE 1930S (MILLIONS OF PEOPLE)

	Estimates				
	Low	Low/medium	Medium	Medium/high	High
Homicides					
A. Collectivisation and famine	**1**	**3.7–4.7**	**6.6–8.8**	15	**22.5–23.3**
1. Getty, Rittersporn & Zemskov	0.7				
2. Wheatcroft		3–4	4–5		
3. Ellman				8	
4. Nove				8.1	
5. Conquest					11–11.8
B. NKVD executions					
1. Hough	**0.02**				
2. Getty, Rittersporn & Zemskov		0.7			
3. Conquest 1937–38			1		
4. Volkogonov 1937–39			1.75		
5. Volkogonov 1929–53				7	
6. Grashoven 1935–45				7	
7. Antonov-Ovseenko 1935–39					7
C. Deaths in prisons and colonies					
1. Getty, Rittersporn & Zemskov 1935–39	0.07				
D. Deaths in Gulag camps, colonies, exile 1937–39					
1. Getty, Rittersporn & Zemskov	0.2				
2. Conquest			1.6–2.6		
3. Rosefielde			2.8		
4. Antonov-Ovseenko					4.5
Excess mortality					
A. 1930–36	**0**		8.6	11.5	**16.4**
1. Rosefielde (*Izvestiya*)	**0**				
2. Wheatcroft & Davies (1927–36)			8.5		
3. Rosefielde (Census Board)			8.7		
4. Rosefielde (Tolts)				11.5	
5. Rosefielde (Antonov-Ovseenko)					**16.4**

B. 1930–38	**0.5**			
1. Anderson & Silver		5.5		
2. Anderson & Silver		5.5		
3. Lorimer				
4. Rosefielde (Urlanis)				9
5. Rosefielde (Tolts)				9.7
6. Wheatcroft & Davies (1927–38)				9.8
Prisoners in Gulag camps and colonies				16
1. Negretov (1938–39)	0.6	0.7	2.7–5.6	
2. Getty, Rittersporn & Zemskov (1930–39)	0.6			
3. Scherer & Jakobson (1933)		0.7	2.7–5.3	
4. Conquest (end 1938)			5.6	
5. Rosefielde (1930–39)			5.6	
6. Antonov-Ovseenko (1938)				16
Key statistics				
A. 1937 Census	**156**	162	**164**	**170**
1. Antonov-Ovseenko	**156**	162	**164**	
2. Census Board (Tolts)		161.2–162		
3. Census Board		162.7		
4. Ellman				
5. Conquest				
6. *Izvestiya*				169
7. *Izvestiya*				170
B. 1939 Census	**167.7**		**170.5**	
1. Conquest	167.2		170.3	
2. Tolts	167.6		170.5	
3. Census Board	167.7			
4. Lorimer				
5. Original Official				

TABLE 1
(continued)

	Estimates				
	Low	Low/medium	Medium	Medium/high	High
C. Natality rate 1933–34 (per thousand)					
1. Wheatcroft	25.3				
2. Urlanis			**32.6**		
3. 1926 Census					**45.0**
D. Mortality rate 1933 (per thousand)					
1. Intercensus Interpolation	**19.8**				
2. Wheatcroft					37.7
E. Arrests, sentences					
1. Wheatcroft 1930–39	2.8				
2. Volkogonov 1937–39			5–5.5		
3. Conquest 1937–38				7	
4. Antonov-Ovseenko 1935–39					18.8

Estimates in **bold type** have been disconfirmed by the new evidence.
Sources: J. Arch Getty, Gabor Rittersporn & Viktor Zemskov, 'Victims of the Soviet Penal System in the Pre-War Years: A First Approach on the basis of Archival Evidence', American Historical Review, October 1993, pp. 1017–1049; Stephen Wheatcroft, 'Assessing the Victims of Repression 1930–1945: Their Condition With Particular References to the Soviet Victims in the Famine of 1932/33', 1995, Table 3, Table 8; Stephen Wheatcroft, 'More Light on the Scale of Repression and Excess Mortality in the Soviet Union in the 1930s', Soviet Studies, 42, 2, April 1990, pp. 355–367; Steven Rosefielde, 'Incriminating Evidence: Excess Deaths and Forced Labour Under Stalin', Soviet Studies, XXXIX, 2, April 1987b, pp. 292–313; Stephen Wheatcroft, 'A Note on Steven Rosefielde's Calculations of Excess Mortality in the USSR 1929–49', Soviet Studies, XXXVI, 2, April 1984, pp. 277–281; Robert Conquest, 'Excess Camp Deaths and Camp Numbers: Some Comments', Soviet Studies, 43, 5, 1991, pp. 949–952; Steven Rosefielde, 'Excess Mortality in the Soviet Union: A Reconsideration of the Demographic Consequences of Forced Industrialisation 1929–1949', Soviet Studies, XXXV, 3, July 1983, pp. 385–409; Steven Rosefielde, 'An Assessment of the Sources and Uses of Gulag Forced Labour 1929–56', Soviet Studies, XXXIII, 1, January 1981, pp. 51–87; Steven Rosefielde, 'Excess Collectivization Deaths 1929–1933: The Demographic Evidence', Slavic Review, 42, 1, May 1984, pp. 83–88; Mark Tolts, 'The Soviet Census of 1937 and 1939: Some Problems of Data Evaluation', paper presented at the Conference on Soviet Population in the 1920s and 1930s, Toronto, 27–29 January 1995; Boris Urlanis, 'Dinamika urovnya rozhdaemosti v SSSR', in A. G. Vishnevsky (ed.), Brachnost', rozhdaemost', smertnost' v Rossii v SSSR (Moscow, 1977); Alec Nove, 'Victims of Stalinism: How Many?', in J. Arch Getty & Roberta Manning (eds), Stalinist Terror: New Perspectives (New York, Cambridge University Press, 1993c), pp. 261–174; Michael Ellman, 'A Note on the Number of 1933 Famine Victims', Soviet Studies, 43, 2, 1991, pp. 375–379; Michael Ellman, 'On Sources: A Note', Soviet Studies,

44, 5, 1992, pp. 913–915; John Scherer & Michael Jakobson, 'The Collectivisation of Agriculture and The Soviet Prison Camp System', *Europe-Asia Studies*, 45, 3, 1993, pp. 533–546; Merle Fainsod, *Smolensk under Soviet Rule* (Cambridge, MA, Harvard University Press, 1958), p. 185.

Definitions: Excess Deaths: The unexplained discrepancy between the expected number of deaths based on official annual mortality statistics and the actual number computed *ex post facto* from the census data. The unexplained body count calculated in this manner is inexact for the usual statistical reasons and official concealment. *Homicides:* Deaths directly attributable to Stalinist oppression, whether or not judicially sanctioned through execution, brutalisation, forced labour and starvation. Killings of other kinds are included in the official mortality rates. Not all excess deaths are homicides. Some may be attributable to natural causes and merely reflect the failures of the demographic accounting system.

Homicides:

A. Collectivisation and Famine: Estimates cover the years 1930–36. There is considerable disagreement about the duration of the famine and the distribution of victims between these categories, and whether deaths caused by the famine were a natural catastrophe, or the result of Stalin's policies. Broadly, those who interpret Stalinism benignly blame these deaths on natural causes or peasant counterrevolution, while the others hold the Soviet regime responsible.

1. Getty, Rittersporn & Zemskov: They report incomplete NKVD enumerations of peasant deaths in exile of 437 835. This figure is computed by subtracting their execution, Gulag camp (from their appendix) and prison and labour colony deaths from total deaths provided on p. 1024 as follows: 1 473 424 (total) − 724 381 (executions) − 241 642 (Gulag camp deaths 1934–39) − 69 566 (prison and colonies 1935–39) = 437 835. They also state that there could have been several hundreds of thousands more deaths among peasants, and other categories later in the 1930s. The arithmetic puts the figure at 526 576. This figure is the difference between the 2 million maximum estimated for the 1930s and the 1 473 424 deaths explicitly itemised. It is assumed in the table that half this residual should be imputed to peasant deaths and half to other categories. The cumulative peasant death total including these 263 238 souls is 701 123.

2. Wheatcroft: Having located the mortality rate for 1933 in Soviet archives, which indicated to him that there were 2.8 million famine deaths, he revised his prior range of collectivisation and famine fatalities upwards by 1 million.

3. Ellman: Most of these deaths are attributed to the famine which he argues began earlier and ended later than usually supposed. His calculations depend on data developed by Andreev, Darsky and Khar'kova in 'Opyt otsenki chislennosti naseleniya SSSR 1926–41 gg', *Vestnik statistiki*, 1990, 7, which show the population in 1933 falling 5.9 million. Their highly adjusted data assume that official mortality and natality rates were severely underestimated, and do not allow for other victims of Stalin's oppression.

4. Nove: Nove adjusts archive director Tsaplin's estimates by adding Maksudov's Kazakh death figure of 1.5 million to Tsaplin's 3.8 million famine deaths, and 2.8 million killed in places of detention, 1.3 million of whom died from hunger.

5. Conquest: The 11 million listed represent deaths which occurred up to the end of 1936. An additional 8 million in Gulag prisons, camps, colonies and exile are asserted to have died thereafter through the first half of the 1940s, although 0.75 million more perhaps should be transferred to the sub-period 1930–36 because the Gulag population indicated by the NKVD contingent in the 1937 census was less than he previously estimated. Seven of the 11 million peasant victims 1930–36 are imputed to the famine; 4 million to collectivisation. A figure of 10 million is given in the same article as the minimum pre-1937 death count (Conquest, 1991a).

B. Executions:
   1. Hough: Hough, 1973.
   2. Getty, Rittersporn & Zemskov: Their figure is based on NKVD enumerations and shows 721 829 prison executions.
   3. Conquest: Great Terror estimate only (Conquest, 1991).
   4. Grashoven: Colonel Nikolai Grashoven was head of the Russian Security Ministry's own rehabilitation team (Conquest, 1994), p. 1038.
   5. Volkogonov: Dmitrii Volkogonov was head of Moscow's governmental commission on rehabilitation. His estimates are based on NKVD documents and Stalin's own archive. They are confirmed by Olga Shatunovskaya, a member of the Party Control Commission, and in that capacity of Khrushchev's Rehabilitation Commission (Conquest, 1994, pp. 1038–1039).

C. Prisons and Colonies:
   1. Getty, Rittersporn & Zemskov: Incomplete enumerations covering the period January 1935 to early 1940.

D. Gulag Camps, Colonies, Exiles:
   1. Getty, Rittersporn & Zemskov: Direct enumeration from NKVD archives indicates 166 424 people died in Gulag camps. The figures probably exclude those who perished while being transported throughout the archipelago.
   2. Conquest: Estimates that 1–2 million died in camps during the Ezhov period, and that there were 5.5 to 6.5 million in the camps at the end of 1938. Assuming a 10% mortality rate (Getty, Rittersporn & Zemskov, 1993, report a 3.8% death rate), excluding new interments adds roughly 600 000 to the total (Conquest, 1991a, 1994).
   3. Rosefielde: Assuming a 10% mortality rate, and the Gulag population reported in Rosefielde, 1981a, yields 2.75 million deaths.
   4. Antonov-Ovseenko: It is asserted that there were 16 million zeks in Gulag in 1938. Assuming a 10% mortality rate, and somewhat lower interments in 1937 and 1939 crudely implies something like 4.5 million deaths.

Excess mortality:

A. 1930–37 (Computed using Lorimer's mid-point method):
   1. Rosefielde (*Izvestiya*): According to van den Berg, 1985, *Izvestiya* reported that the Soviet census population was 170 million on 9 January 1937, revised downward to 169 million on 15 December 1937. If either number is used there are no excess deaths 1930–37
   2. Wheatcroft & Davies: The figure comprises 3.4 million registered deaths 1932–33 derived from the crude birth rate 1930–33, and 5.1 million unregistered excess deaths suggested by Tsaplin (Wheatcroft & Davies, 1994, pp. 75–76).
   3. Rosefielde (Census Board): The suppressed 1937 population reported in 1987 by Tolts (Wheatcroft, 1990; Nove, 1993), is 162 million. This figure together with Wheatcroft vital statistics produces 5 857 000 excess deaths, plus 2 825 000 famine deaths in 1933 computed as the difference between observed mortality and normal deaths using the 1932 mortality rates as the norm.
   4. Rosefielde (Tolts): Tolts found that the 1939 census was approximately 3 million too high due to various technical errors. He has not yet completed his revision of the 1937 census. However, assuming proportionality using the method described in (3) yields 11 493 000 excess deaths: see Table 8. Nove, 1993.
   5. Rosefielde (Antonov-Ovseenko): Antonov-Ovseenko, 1980, p. 256, reported that the suppressed 1937 census population was 156 million. Ellman, 1992, has shown that this figure pertained to the civilian population, excluding various special categories. The figure reported is the original calculation based on Urlanis's vital statistics.

6. Wheatcroft & Davies: Computed as the sum of their 1927–36 estimate, and Tsaplin's figure of 1.3 million, which falls at the upper end of the range of their computed excess deaths 1937–38 of 0.6 to 1.5 million (Wheatcroft & Davies, 1994, pp. 76–77).

B. 1930–38:

1. Anderson & Silver: Using sensitivity and life expectancy methods Anderson & Silver computed a range of possible adult excess deaths and child deficits. Their low adult estimate which they assert reflects Lorimer's assessment of the mortality rate in 1926/27 is 0.5 million; their low child deficit is zero based on low fertility and high mortality rate assumptions. Anderson & Silver use the discredited 1939 census population.

2. Anderson & Silver: Using the same method, their best adult excess death estimate is 4.8 million. This is the mean of their estimates reflecting 1926/27 and 1938/39 mortality rates, both adjusted for 'age heaping'. This figure corresponds with Lorimer's without 'age heaping'. Anderson & Silver compute a wide range of child deficits, without committing themselves to best child excess death estimates. For the purpose of this table only, I have added 0.7 million child excess deaths to their adult figure in accordance with the new natality rate uncovered by Wheatcroft, 1990, for 1932. This coincidentally equilibrates their (constructed) estimate with Lorimer's.

3. Lorimer: Computed with his mid-point method from incomplete data, vital statistics subsequently revised, and the discredited 1939 census population.

4. Rosefielde: (Rosefielde, 1983) computed, using Lorimer's mid-point method, with Urlanis's interpolated vital statistics and the discredited 1939 census population.

5. Rosefielde (Tolts): Same as (4) but substituting Wheatcroft, 1990, vital statistics, and Tolts's 1939 revised census population.

Prisoners in Gulag camps and colonies:

1. Negretov: Negretov, 1977, provides estimates for Vorkutpechlag from the Annual Accounts for Basic Activity of Vorkutstroi found in the Vortkuta Regional Museum. The figure in the table is an estimate for Gulag as a whole in the late 1930s (Rosefielde, 1987, note 68, p. 313).

2. Getty, Rittersporn & Zemskov: The figure in the table is the average Gulag and colony prisoner population 1930–39. Getty, Rittersporn & Zemskov, 1993, Appendix (a) and Wheatcroft, 1995.

3. Scherer & Jakobson: Scherer & Jakobson, 1993. According to Fainsod there were 800,000 inmates in prisons alone in May 1933. Prisoners were variously estimated at 15–30% of all inmates. Volkogonov does not believe the figure exceeded 20%. This implies a range between 2.7 and 5.3 million for 1933.

4. Conquest: Conquest, 1994, p. 1039.

5. Rosefielde: Rosefielde, 1981. The figure in the table is the average population during the 1930s.

6. Antonov-Ovseenko: Antonov-Ovseenko, 1980, p. 256.

Key statistics:

A. 1937 Census:

1. Antonov-Ovseenko: He was told by demographers who had participated in the 1937 census and served time with him in Gulag that the 1937 census population was 156.

2. Census Board (Tolts): The 1939 census was adjusted by Tolts for technical errors. He has not corrected the 1937 census yet for the same problems. An adjustment proportional to the 1939 census yields a figure of (167 557 000/170 467 168) (162) = 159 234 000.

3. Census Board (Wheatcroft, 1990, p. 355). The original source is Mark Tolts, 'Skol'ko zhe nas togda byli?', *Ogonek*, 1987, 51. Nove, 1993, reports that in addition to the 156 million civilian component of the 1937 census there were 2 653 035 'specially counted' including prisoners, plus 2 million others on Kraval's estimate, for a total of 161.2 million which he rounds up to 162 million.

4. Ellman reports the 1937 census statistics from Seriya, 'Istoriya Statistiki', vypusk 3–5 (chast' 1) *Istoriya naseleniya SSSR 1920–1959 gg.* (Moscow Goskomstat, mimeo, 1990), pp. 31–34.

1. Total normally enumerated population (final data)	156.996
2. Enumerated by NKVD (officials, guards, prisoners, deportees)	2.660
3. Armed forces	1.687
4. Civilians enumerated by the NKO	0.427
5. Frontier troops enumerated by NKVD	0.269
6. Total census population (1 + 2 + 3 + 4 + 5)	162.039
7. Estimate population allowing for errors in census	162.739

This figure differs from the Census Board's by the error term.

5. Conquest: Conquest, 1986, p. 302. A figure of 163.7 is obtained by extrapolating backwards from the old official population (used by Lorimer, 170 315 000). Rosefielde, 1983, Table 3, p. 388.

6. *Izvestiya:* Rosefielde, 1983, note 19, p. 306.
7. *Izvestiya:* Rosefielde, 1983, note 19, p. 306.

B. 1939 Census:
1. Conquest: Conquest, 1991a, p. 949.
2. Tolts: Tolts, 1995, p. 8.
3. Census Board: Conquest, 1991a, p. 949.
4. Lorimer: Lorimer, 1946, Table 53, p. 134.
5. Original Official: Conquest, 1991a, p. 949.

C. Natality Rate 1933–34:
1. Wheatcroft: Wheatcroft, 1990, Table 1, p. 358, reports the natality rate in 1933 as 25.3, and in 1934 alternatively as 25.6 or 26.4. The data are from TsGANKh (SSSR), f. 1562, op. 20, d. 42, 1.85, and TsGANKh (SSSR), f. 1562, op. 20, d. 42, 1. 76.
2. Urlanis: Urlanis, 1962, pp. 11–12. The figure entered is for 1932. Lorimer's estimates are 34.4 in 1932, 32.4 in 1933, and 30.1 in 1934. Lorimer, 1946, p. 134.
3. 1926 Census: Lorimer, 1946, p. 134.

D. Mortality Rate 1933:
1. Intercensus Interpolation: Table 8.
2. Wheatcroft: Wheatcroft, 1990, Table 1, p. 358. His source is TsGANKh (SSSR), f. 1562, op. 20, d. 108, 1, 40.

E. Arrests, Sentences 1930–39:
1. Wheatcroft: Wheatcroft, 1995, Table 3. The data are from the NKVD archive.
2. Volkogonov: Conquest, 1994, p. 1039.
3. Conquest: Conquest, 1994, p. 1039.
4. Antonov-Ovseenko: Antonov-Ovseenko, 1980, p. 261.

TABLE 2
INCONSISTENCIES IN THE NKVD GULAG CAMP DEATH STATIS-
TICS, 1929–45

	Reported (1)	Estimated from sentencing data (2)	Disparity (3)
1929	11 993	5 334	
1930	14 204	23 616	
1931	18 003	21 808	
1932	22 398	15 260	
1933	64 190	65 029	
1934	26 295	10 987	
1935	28 328	37 318	
1936	20 595	27 708	
1937	25 376	47 603	
1938	90 546	62 663	
1939	50 502	6 398	
1940	46 665	11 541	
1941	100 997	17 618	
1942	248 877	57 440	
1943	166 967	46 677	
1944	60 948	22 672	
1945	43 848	34 861	
Total	1 040 732	514 533	2 to 1

Sources:
Column 1: Table A1, column 3.
Column 2: Table A1, column 5 (Gulag prison and camp
sentences), multiplied by Table 3, column 4 (years served),
multiplied by Table A2 (Gulag camp mortality rates).
Column 3: column 1 sum divided by column 2 sum.

greater than the documents purport, and by suggestions as to where the missing millions may be concealed.[12] An inconclusive debate has followed, in which both sides have given some ground without making any fundamental concessions.

Although no summary judgment on this important matter is yet possible, it can be conclusively shown, contrary to the claims of Getty, Rittersporn & Zemskov and of Wheatcroft, that the documents are seriously internally inconsistent.[13] This is accomplished by comparing the number of deaths reported by the NKVD in Gulag camps in 1930–39 with the number computed using the NKVD Gulag camp mortality and population statistics. The result shown in Table 2 demonstrates that reported Gulag camp deaths are twice the figure computed independently with the NKVD Gulag camp death rates. Likewise, using similar techniques, it is demonstrated in Table 3 that the reported NKVD prison population was approximately quintuple the level derived from the NKVD data on cumulative sentencing and terms served. If the sentencing statistics 1929–45 are adjusted proportionally, for the sake of example, aggregate sentences rise to 14.6 million, in line with Antonov-Ovseenko's arrest statistics.[14] These inconsistencies of course do not discredit the entire corpus of NKVD evidence, but they clearly impugn their integrity on vital matters concerning homicides and Gulag camp populations.[15]

TABLE 3
Contradictory Gulag Camp Population Statistics 1929–45: Reported Figures and Those Implied by NKVD Sentencing Data: Average Annual Figures

Sentences (1)	Deaths (2)	Net new inmates (3)	Years served (4)	Implied Gulag population (5)	Documented Gulag population (6)	Coefficient of underreported sentences (7)	Implied sentences 1929–45 (8)
123 044	61 220	61 824	3.08	190 418	993 653	5.2	14 610 617

Sources: Stephen Wheatcroft, 'Assessing the Victims of Repression 1930–1945: Their Condition with Particular Reference to the Soviet Victims in the Famine of 1932/33', 1995, Table 3, Table 8; J. Arch Getty, Gabor Rittersporn & Viktor Zemskov, 'Victims of the Soviet Penal System in the Pre-War Years: A First Approach on the Basis of Archival Evidence', *American Historical Review*, October 1993, Appendix (a), p. 1043.

Sentences 1929–45: Table A1, column 5 (obtained from Wheatcroft, 1995, Table 3).

Deaths 1929–45: Table A1, column 3. This figure includes both natural and excess deaths. The excess death component is 54 948 (934 115 ÷ 17 years). See Rosefielde, 1996a, Table A2, column 4, available on request.

Documented Gulag population 1934–45: Getty, Rittersporn & Zemskov, 1993, Appendix (a), pp. 1048–1049. The cumulative Gulag (end year) population was 11 923 831, 1934–45.

Explained disparity: The percentage of the average documented Gulag population consigned to the camps without sentencing is 19% ((column 5 divided by column 6) × 100).

Coefficient of underreported sentences: The coefficient by which reported sentences used to compute the implied Gulag camp population would have to be increased to yield the documented population. The coefficient is 1/the explained disparity.

Implied sentences 1929–45: The coefficient of underreported sentences multiplied by reported sentences.

Method:

Column 1: Summation of Table A1, column 5 (2 091 743), divided by 17 years.
Column 2: Summation of Table A1, column 3 (1 040 732 deaths computed by multiplying the Gulag mortality rate for the end-year population by the preceding end-year population), divided by 17 years.
Column 3: Column 1 minus column 2.
Column 4: According to the Getty, Rittersporn & Zemskov data 1934–45 the average Gulag population was 993 653 and the average number released 322 629. This implies on average that roughly one third of Gulag inmates were released annually, serving 993 653 ÷ 322 629 = 3.08 years.
Column 5: Column 3 multiplied by column 4.
Column 6: Getty, Rittersporn & Zemskov, Appendix (a).
Column 7: (1 divided by (column 5 divided by column 6)).
Column 8: Column 7 multiplied by 2 799 905 NKVD documented sentences.

NB: There were 131 454 people sentenced on average 1929–44, or 8410 higher than the full period average. Differences in the coverage of the sentencing data and the documented Gulag population therefore cannot explain the disparities shown in columns 7 and 8.

Demographic evidence

The second major body of new evidence displayed in Table 1 comes from an entirely different source, the demographic records of the Census Board and affiliated institutions compiling vital statistics. These data are important because they provide alternative, independent information on mortality. This can be seen most clearly in the mortality statistic for 1933 uncovered by Wheatcroft, which is nearly double the rate of preceding and succeeding years. It permits a direct and simple computation of famine victims merely by subtracting deaths which would have occurred if the mortality rate had been the same as 1932 from deaths actually reported. Wheatcroft correctly calculates this figure at 2.8 million. It is substantially less than Conquest's famine victim estimate of 7 million, supported by Nove,[16] but is interesting because the order of magnitude is high compared with the maximum 2.1 million aggregate death toll from all sources including peasant fatalities derived by Getty, Rittersporn & Zemskov from the NKVD enumerations during the 1930s.[17]

The other data are more oblique. They indicate, as Anderson & Silver conjectured, that far fewer children were born during the 1930s than interpolated projections suggested,[18] and that there were fewer people alive in 1937 and 1939 than prior semi-official and official census authorities claimed. It is now accepted on the basis of the Census Board's internal records, confirmed by Mark Tolts's recalculations, that the published 1939 census population was overcounted by about 3 million people,[19] while the 1937 census was 161.2–162.0 million; two or more million less than Conquest estimated,[20] and 6–7 million less than variously reported in *Izvestiya* in 1937.

The most dramatic consequence of these data is the disconfirmation of Antonov-Ovseenko's well known contention that the suppressed 1937 census population was 156 million; which is 5.2–6.0 million below the actual figure. Ellman has shown that the discrepancy may be explained by Antonov-Ovseenko's misunderstanding of the scope of the statistic disclosed by zek demographers sitting with him in Gulag.[21] The civilian population exclusive of military and NKVD contingents was 156.996 million (156 million according to Nove), but the total population including these components was higher. Be this as it may, as Rosefielde originally cautioned, Antonov-Ovseenko's datum, and therefore the set of excess death estimates derived from it are wrong. The maximum number of Stalin's homicides consistent with the census data must be pared by approximately 6 million, subject to some partial correction should adjustments of the sort made by Tolts to the 1939 census be required.

These data are also interesting because they suggest that millions of children, previously classified among the excess dead in Rosefielde's estimates based on the old official 1939 population, had not been killed by Stalin's policies; they were simply never born.[22] A reduction in this and other high homicide rates with large child components may be in order.[23]

The impact of the new mortality statistics other than the figure for 1933 is relatively small because they closely approximate past interpolated values. Their principal merit is filling gaps in published series, eliminating the possibility that some portion of those classified among the excess dead is explained by missing observations.

The aggregate effect of all these factors—reduced census populations, lower

TABLE 4
EXCESS DEATHS 1927–38
(ADJUSTED OFFICIAL CENSUS DATA; WHEATCROFT'S VITAL STATISTICS)

Year	Population 1 January ('000) (1)	Births per '000 population (2)	Deaths per '000 population (3)	Births ('000) (4)	Deaths ('000) (5)
1927	147 135	43.6	21.3	6415	3134
1928	150 416	42.5	18.5	6393	2783
1929	154 026	40.1	20.6	6176	3173
1930	157 030	37.9	19.7	5951	3093
1931	159 088	35.4	19.6	5660	3114
1932	162 434	31.9	20.5	5181	3329
1933	164 286	25.3	37.7	4156	6193
1934	162 248				
Discrepancy	− 6 915				
1934	155 333	25.6	19.8	3977	3076
1935	156 234	33.0	17.6	5156	2750
1936	158 640	32.6	18.2	5172	2887
1937	160 925	38.7	17.9	6228	2881
1938	164 272	37.5	17.5	6160	2875
1939	167 557				
Actual increase	20 422				
Expected births	66 625				
Expected deaths	39 288				
Births minus deaths	27 337				
Discrepancy	− 6 915				

Sources: Steven Rosefielde, 'Excess Mortality in the Soviet Union: A Reconsideration of the Demographic Consequences of Forced Industrialisation 1929–1949', *Soviet Studies*, XXXV, 3, July 1983, p. 393; Mark Tolts, 'The Soviet Census of 1937 and 1939: Some Problems of Data Evaluation', paper presented at the Conference on Soviet Population in the 1920s and 1930s, Toronto, 27–29 January 1995, p. 8; Stephen Wheatcroft, 'More Light on the Scale of Repression and Excess Mortality in the Soviet Union in the 1930s', *Soviet Studies*, 42, 2, April 1990, Table 1, p. 358.
Data: The population statistics for 1927 and 1939 are taken respectively from the 1926 census and Tolts, 1995. The vital statistics are a mix of previously published and newly published data uncovered by Wheatcroft. Some of the new data pertained to the European part of the USSR and have been further adjusted without explanation to the union boundaries by Wheatcroft. The statistics used here are from the first entries in columns 4 and 8.
Method: Estimates 1934–38 are extrapolated backward according to the formula $P^{t-1} = P^t/(1 + \alpha - \beta)$ where α is the birth rate and β is the death rate in year $t - 1$.

natality rates especially in 1933 and 1934, and the acquisition of complete vital statistical series—is presented in Table 4. It shows that there were 9.7 million excess deaths between 1930 and 17 January 1939, computed in accordance with Lorimer's mid-point method, including 2.8 million famine victims estimated directly from Wheatcroft's 1933 mortality statistic. Nine million of these excess deaths are imputable to adults and 0.7 million to children, in line with Lorimer's earlier estimate of childhood fatalities. The total is 6.7 million less than Rosefielde's prior estimate based on Antonov-Ovseenko's misreported 1937 census population statistic, but 0.75 million more than Rosefielde's estimate predicated on the old official 1939 census. Obviously, with regard to the latter, the favourable effects of the new natality statistics were countervailed by the corrected official 1939 census population.

Tables 5 and 6, using the same data, illuminate the distribution of these excess

TABLE 5
EXCESS DEATHS 1927–36
(OFFICIAL CENSUS DATA; WHEATCROFT'S VITAL STATISTICS)

Year	Population 1 January ('000) (1)	Births per '000 population (2)	Deaths per '000 population (3)	Births ('000) (4)	Deaths ('000) (5)
1927	147 135	43.6	21.3	6415	3134
1928	150 416	42.5	18.5	6393	2783
1929	154 026	40.1	20.6	6176	3173
1930	157 030	37.9	19.7	5951	3093
1931	159 887	35.4	19.6	5660	3134
1932	162 414	31.9	20.5	5181	3329
1933	164 265	25.3	37.7	4156	6193
1934	162 248				
Discrepancy	− 5857				
1934	156 371	25.6	19.8	4003	3096
1935	157 278	33.0	17.6	5190	2768
1936	159 700	32.6	18.2	5206	2906
1937	162 000				
Actual increase	14 865				
Expected births	54 331				
Expected deaths	33 609				
Births minus deaths	20 722				
Discrepancy	− 5 857				

Sources: Steven Rosefielde, 'Excess Mortality in the Soviet Union: A Reconsideration of the Demographic Consequences of Forced Industrialisation 1929–1949', *Soviet Studies*, XXXV, 3, July 1983, p. 393; Robert Conquest, 'Excess Deaths and Camp Numbers: Some Comments', *Soviet Studies*, 43, 5, 1991, p. 950; Stephen Wheatcroft, 'More Light on the Scale of Repression and Excess Mortality in the Soviet Union in the 1930s', *Soviet Studies*, 42, 2, April 1990, Table 1, p. 358.
Data: The 1937 census population is from the Census Board. See Table 1 (key statistics). Wheatcroft's vital statistics are from his Table 1, columns 4 and 8.
Method: Estimates 1934–38 are extrapolated backward according to the formula $P^{t-1} = P^t / (1 + \alpha - \beta)$ where α is the birth rate and β is the death rate in year $t - 1$.

deaths between the relevant sub-periods. They reveal that there were 8.6 million unexplained deaths in 1930–36,[24] attributable to collectivisation, famine and forced industrialisation, and 1.1 million imputable to the Great Terror of 1937–38. A glance at Tables 1 and 7 shows that the first sub-period total is virtually identical with Wheatcroft & Davies and is compatible with the estimates of Wheatcroft, Nove and Ellman, but not the NKVD data compiled by Getty, Rittersporn & Zemskov at the low end of the spectrum (1.4 million) or Conquest's minimum figure of 10 million at the other.[25] The Great Terror figure precludes Antonov-Ovseenko's and calls Conquest's composite estimate for 1937–38 of 2–3 million homicides, including 1 million executions, into question, while supporting Wheatcroft & Davies and the NKVD enumerations. Some further refinement obviously is required to fully reconcile the criminal with the demographic evidence.

This can be accomplished for the NKVD enumerations either by conceding that many millions died prematurely during the early 1930s outside NKVD jurisdiction, a possibility Getty, Rittersporn & Zemskov seem to resist, or by asserting that the excess deaths, perhaps including the 2.8 million apparent famine victims, are the phantom consequence of statistical errors. Conquest's cumulative minimum estimate

TABLE 6
EXCESS DEATHS 1937–38
(ADJUSTED OFFICIAL CENSUS DATA; WHEATCROFT'S VITAL STATISTICS)

Year	Population 1 January ('000) (1)	Births per '000 population (2)	Deaths per '000 population (3)	Births ('000) (4)	Deaths ('000) (5)
1937	162 000				
Discrepancy	− 1 075				
1937	160 925	38.7	17.9	6228	2881
1938	164 272	37.5	17.5	6160	2875
1939	167 557				
Actual increase	5 557				
Expected births	12 388				
Expected deaths	5 756				
Births minus deaths	6 632				
Discrepancy	− 1075				

Sources: Steven Rosefielde, 'Excess Mortality in the Soviet Union: A Reconsideration of the Demographic Consequences of Forced Industrialization 1929–1949', *Soviet Studies*, XXXV, 3, July 1983, p. 393, Mark Tolts, 'The Soviet Census of 1937 and 1939: Some Problems of Data Evaluation', paper presented at the Conference on Soviet Population in the 1920s and 1930s, Toronto, 27–29 January 1995, p. 8; Stephen Wheatcroft, 'More Light on the Scale of Repression and Excess Mortality in the Soviet Union in the 1930s', *Soviet Studies*, 42, 2, April 1990, Table 1, p. 358.
Data: Population figures are the new official census for 1937 and Tolts's estimate for 1939. The vital statistics are Wheatcroft's.
Method: Estimates 1934–38 are extrapolated backward according to the formula $P^{t-1} = P^t/(1 + \alpha - \beta)$ where α is the birth rate and β is the death rate in year $t - 1$.

for 1929–38 of 12 million can be defended by invoking the suggestion of Andreev, Darsky & Khar'kova that registered deaths during the famine were understated by as much as 5.5 million.[26] Table 8 employing Urlanis's alternative vital statistics, which exhibit higher natality rates than Wheatcroft's, yields 11.5 million excess deaths. The 1930–36 sub-period estimate is 10.6 million,[27] 400 000 below Conquest's preferred figure of 11 million, but the Great Terror residual then becomes more than a million too low. This complication can be resolved by adjusting the 1939 census figure downward as Conquest insists is required.[28] A 2.1 million correction, less than half the amount indicated by the partial evidence he cites, raises excess deaths ascribable to the Great Terror to 3 million in 1937–38. Aggregate killings in excess of 13.5 million, consistent with the 7 million famine, 4 million collectivisation and 2–3 million Great Terror deaths in 1937–38 Conquest thinks most probable, thus cannot be rejected, but obviously any final resolution of this matter, and the status of the Getty, Rittersporn & Zemskov evidence must await the acquisition of better criminal and demographic information.

The scale of dying

Fresh information however is not needed to determine whether the NKVD criminal statistics or the demographic data provide the better indicator of the aggregate scale of killing during the 1930s, and derivatively the dimensions of the pathology. The

TABLE 7
DOCUMENTED STALINIST HOMICIDES AND EXCESS DEATHS
(BASED ON THE NEW EVIDENCE)
(1930–38, '000s)

	Homicides	Excess deaths
Demographically supportable excess deaths		9743
Homicides attributable to Stalinist oppression	4878	
1. Famine 1933	2825	
2. Collectivisation	527	
3. Prison executions	722	
4. Gulag camp killings	310	
5. Prison and colony premature deaths	56	
6. Exiles	438	
Collectivisation		
Excess deaths 1930–36		8632
Homicides 1930–36	4052	
1. Famine 1933	2825	
2. Collectivisation	527	
3. Prison executions	40	
4. Gulag camp killings	194	
5. Prison and colony premature deaths	28	
6. Exiles	438	
Great Terror		
Excess deaths 1937–38		1075
Homicides 1937–38	826	
1. Prison executions	682	
2. Gulag camp killings	116	
3. Prison and colony premature deaths	28	

Sources: J. Arch Getty, Gabor Rittersporn & Viktor Zemskov, 'Victims of the Soviet Penal System in the prewar Years: A First Approach Based on Archival Evidence', *American Historical Review*, October 1993, pp. 1017–1049; Stephen Wheatcroft, 'More Light on the Scale of Repression and Excess Mortality in the Soviet Union in the 1930s', *Soviet Studies*, 42, 2, April 1990, pp. 355–367; Table 5, Table 6 and Table A1.
Definitions:
Excess deaths: The unexplained discrepancy between the expected number of deaths based on official annual mortality statistics and the actual number computed *ex post facto* from the census data. The unexplained body count calculated in this manner is inexact for the usual statistical reasons and official concealment.
Homicides: Deaths directly attributable to Stalinist oppression, whether or not judicially sanctioned through execution, brutalization, forced labour and starvation. Killings of other kinds are included in official mortality rates. Not all excess deaths are homicides. Some may be attributable to natural causes and merely reflect the failures of the demographic accounting system.
Method: Totals:
Demographically supportable excess deaths: Sub-total sums for the collectivisation and Great Terror sub-periods. NB. The excess death estimate runs through the beginning of 1939.
Homicides attributable to Stalinist oppression: Sub-total sums for the collectivisation and Great Terror sub-periods. NB. The homicide data run through 1938 excluding 1939 for consistency with the excess death estimate.
Collectivisation:
Excess deaths 1930–36: Table 5 (5.857 million people), plus 2.825 million famine deaths.
Homicides 1930–36:
  1. Famine: computed by multiplying the estimated 1933 population shown in Table 4 by the documented mortality rate for 1932, and subtracting this product from the deaths estimated in Table 4 for 1933 based on the documented mortality rate for 1933.

TABLE 7
(continued)

2. Collectivisation: Getty, Rittersporn & Zemskov, 1993, p. 1024; see explanation in Tables 1 and A1 for the derivation.

3. Prison executions: Getty, Rittersporn & Zemskov, 1993; see Table A1. The total is 40 137.

4. Gulag camp killings: Getty, Rittersporn & Zemskov, 1993; Wheatcroft, 1995. Figures for 1930–33 are derived from Wheatcroft. Those for 1934–36 are from Getty, Rittersporn & Zemskov; see Table A1. The total is 194 013.

5. Prison and colony homicides: Getty, Rittersporn & Zemskov, 1993, p. 1024.

6. Exile deaths: Getty, Rittersporn & Zemskov, 1993, p. 1024, and the explanation in Tables 1 and A1. The total is 437 835.

Great Terror:

Excess deaths 1937–38: Table 6.

Homicides 1937–38:

1. Prison executions: Getty, Rittersporn & Zemskov, 1993; see Table A1.

2. Gulag camp killings: Getty, Rittersporn & Zemskov, 1993; see Table A1.

3. Prison and colony homicides: Getty, Rittersporn & Zemskov, 1993.

TABLE 8
EXCESS DEATHS 1927–38
(ADJUSTED OFFICIAL CENSUS DATA; PUBLISHED VITAL STATISTICS)

Year	Population 1 January ('000) (1)	Births per '000 population (2)	Deaths per '000 population (3)	Births ('000) (4)	Deaths ('000) (5)
1927	147 135	43.7	20.3	6430	2987
1928	150 578	44.3	23.3	6671	3508
1929	153 740	41.8	(21.4)	6426	3290
1930	156 786	41.2	(21.0)	6463	3294
1931	160 045	(32.6)	(20.6)	5217	3297
1932	161 965	32.6	(20.2)	5280	3272
1933	163 973	(32.6)	(19.8)	5346	3248
1934	166 072				
Discrepancy	− 11 493				
1934	154 579	(32.6)	(19.4)	5039	2999
1935	156 619	31.6	(19.0)	4949	2976
1936	158 593	34.3	(18.6)	5440	2950
1937	161 083	38.7	18.9	6234	3044
1938	164 272	37.5	17.5	6160	2875
1939	167 557				
Actual increase	20 422				
Expected births	69 655				
Expected deaths	37 748				
Births minus deaths	31 915				
Discrepancy	− 11 493				

Sources: Steven Rosefielde, 'Excess Mortality in the Soviet Union: A Reconsideration of the Demographic Consequences of Forced Industrialization 1929–1949', *Soviet Studies* XXXV, 3, July 1983, p. 393; Mark Tolts, 'The Soviet Census of 1937 and 1939: Some Problems of Data Evaluation', paper presented at the Conference on Soviet Population in the 1920s and 1930s, Toronto, 27–29 January 1995, p. 8.

Data: Bracketed natality rates are Urlanis's estimates. Bracketed mortality rates have been interpolated.

Method: Estimates 1934–38 are extrapolated backward according to the formula $P^{t-1} = P^t / (1 + \alpha - \beta)$ where α is the birth rate and β is the death rate in year $t - 1$.

demographic evidence is superior, contrary to much prior argumentation, because it accurately identifies all homicides explicitly reported in the criminal statistics, and other killings documented in non-NKVD sources, especially famine victims. The NKVD criminal evidence adduced by Getty, Rittersporn & Zemskov, by contrast, is not only admittedly jurisdictionally incomplete but excludes millions of victims outside the NKVD purview.

Advocates of the view that life during collectivisation, industrialisation and the Great Terror was not Orwellian previously defended their position by insisting that the demographic data were not reliable; that Lorimer's mid-point estimates should only be construed as statistical consistency checks, and that 'so-called' excess death calculations were bogus because they merely measured population deficits whenever missing observations had to be interpolated.[29] Their judgment reflected doubts that apply routinely to all statistical computations, uncertainties surrounding the 17 December 1926 census, the disorder accompanying the great leap forward, and the inaccessibility (suppression) of the 1937 census population figure and vital statistics for 1928–36.[30]

The new evidence demonstrates that these concerns should be largely set aside for two important reasons. First, the acquisition of all missing vital statistics and the census disclosures disprove the hypothesis that excess death estimates were significantly overstated on these grounds. It can no longer be asserted, as Lorimer and Anderson & Silver previously did, that 4.8 million excess deaths do not imply that many millions were killed.[31] The NKVD data themselves show that there are at least 1.4 million documented homicides in 1930–39 which, together with famine victims directly inferable from the official mortality statistic, provides a minimum body count of 4.2 million, shown in Table 7. Wheatcroft, relying on other documentary evidence, estimates another 0.8 to 1.8 million collectivisation casualties,[32] and has uncovered incriminating evidence that points to 0.5 million more documented homicides.[33] Ellman and Wheatcroft & Davies seem prepared to add another 2–3 million to the total on other hard evidence.[34]

Whichever aggregate homicide figure one might prefer from among these alternatives, the second essential point to grasp is that the credibility of excess death measures as homicide indicators is a positive, monotonic function of verified killings. The higher the confirmed body count, the more reasonable it becomes to suppose that the excess death methodology in the Stalinist case is a reliable homicide indicator, and that remaining unverified excess deaths probably reflect other still undisclosed victims, rather than phantom killings attributable to statistical error, especially when the primary concerns over natality and famine mortality have been resolved. Similarly, as verified homicides approach the upper excess death bound, given evidence of prior census over-enumeration, the likelihood that homicide and excess death estimates may have to be revised upward in accordance with Conquest's calculations mounts.[35]

The new evidence taken as a whole thus is not moot regarding the comparative merit of NKVD enumerations and excess deaths as alternative indicators of the human consequences of Stalinism. It demonstrates conclusively that the death toll was Orwellian, on a scale far greater than can be explained by the mundane brutality of troubled times.[36]

Stalin's economic miracle

The enduring dispute over the human consequences of Stalin's despotism, as already observed, is integrally connected with parallel controversies regarding real Soviet economic performance in the 1930s and beyond where perceptions range from stellar to immiserising. The pairing of alternative human states with various economic outcomes provides strikingly different impressions of the aggregate experience. If the NKVD enumerations are combined with official Soviet growth statistics endorsed by Dobb,[37] or even the Bergson & Kuznets estimates using 1928 prices,[38] Stalinism can be interpreted as a triumph of socialist administrative command planning, collectivisation and forced industrialisation which modernised the nation in an extraordinarily short time, at comparatively modest social cost. If the same NKVD statistics are combined with Nutter's growth estimates, or Rosefielde's showing that forced industrialisation was immiserising,[39] then Stalin becomes the architect of a failed socialist development strategy which killed at least 1.4 million people without any compensating economic benefit. Terror plays a role in both these paradigms according to the NKVD data since 680 000 people were executed during the Ezhovshchina, but its economic role is restricted because sentences, executions, deaths, and Gulag camp, colony and exile populations are relatively small.[40]

The validation of high excess death estimates for 1930–36 and 1937–38 by the new evidence discredits both these paradigms. Terror becomes an intrinsic part of the process of administrative command planning and forced industrialisation during the 1930s, which may be mitigated by economic success, or exacerbated by economic failure. In the past those who focused on industrialisation and the growth of physical output valued in adjusted ruble factor cost prices concluded that Soviet economic performance was good or even remarkable, excluding World War II, from 1929 to 1960. To the extent that they are right, the new evidence necessarily implies that terror, reprehensible as it is on moral grounds and whatever its scale, was not macroeconomically detrimental, especially since post-Stalinist economic performance systematically deteriorated as coercion declined.

The counterview stresses real per capita consumption, setting aside the rapid growth of capital durables and weapons. Here Western calculations have long shown that Stalin's economic programmes immiserised the people, with the standard of living achieved in 1929 not being reattained until after Stalin's demise.[41] Stalinism from this perspective was a double anathema, killing tens of millions between 1929 and 1953 and impoverishing most except those in the inner circle.

The implosion of communism provides the evidence required to settle this debate. First, it indisputably demonstrates that if administrative command planning did serve Bolshevik purposes better than market capitalism, its advantages judged by its own leaders were transitory.[42] Gorbachev and El'tsin did not reject the Soviet economic system on philosophical grounds or even because it could not muddle through, but because they concluded that it could no longer pass the competitive test. The Soviet standard of living was perceived to be languishing while Western affluence increased, and the military industrial sector was falling distressingly behind the high technology frontier. The argument that Stalin's crimes were countervailed by the achievement of a durable, superior socialist economy thus has been falsified by the protracted

stagnation which brought about the Soviet Union's demise. The best that can be claimed is that Stalin's despotic policies temporarily deferred Bolshevism's day of reckoning.

Second, Russia's inability to export its manufactures in the post-communist period despite the near valuelessness of its currency provides the clue needed to understand the contradiction between high Western estimates of aggregate Soviet economic growth and perceived immiseration during the 1930s. The unsaleability of Russian manufactures in the open global market is a reflection of their inutility. Their characteristics and qualities are such that often they cannot be given away. The aggregate value of the transactions which do occur, and derivatively of exportables and other manufactured goods, in Western perspective therefore should be correspondingly small. This indeed is now the case where international dollar market prices are used to compute Russia's gross domestic product via the exchange rate, but was not so in the past when the Soviet gross national product was calculated at imputed quality-adjusted dollar production cost on the erroneous assumption that everything manufactured or manufacturable could be sold in the West at these cost prices. CIA estimates on this basis put the dollar value of the Soviet GNP at 67% of America's in 1989, which has now fallen to a small fraction of this figure, 5.4%.[43]

Estimates of Soviet growth computed in dollar cost prices showed the same bias. CIA figures imply that the dollar price weighted rate of Soviet growth in the postwar period surpassed America's in 1955–75, when qualitative improvement in Western products suggests that the saleability of Soviet manufactures in the competitive global economy was diminishing.[44]

It follows directly from this experience that dollar cost price estimates of aggregate growth in controlled economies greatly overstate value growth.[45] Therefore there is no real contradiction between statistical evidence verifying that the volume of physical inputs and outputs weighted with dollar cost prices grew rapidly during the first two five-year plans, and the counter-perception that the value of these gains was slight, and its impact on living standards adverse.

The same argument holds for 'real' growth estimates computed at ruble factor or adjusted ruble factor cost since dollar and ruble cost statistics display similar trends. Nor can it be legitimately claimed that adjusted ruble factor cost estimates constitute an independent standard validated by neoclassical theory because, as has been shown elsewhere, these prices can only be reliably approximately proportional to the marginal rate of transformation under conditions so stringent that they cannot be plausibly satisfied.[46]

The international worthlessness of Russian manufactured exportables also has profound implications for the valuation of Stalin's capital stock. Theory teaches that the value of assets equals the present discounted value of their future net earnings streams. Since the goods designed under administrative command planning have scant international value, the value of the capital stock supporting them is correspondingly small. This critical point was concealed as long as the Soviet state was prepared to buy everything its enterprises produced, but, as Russia's hyperdepression makes plain, this is no longer the case.[47] It is now crystal clear that Stalin's forced draft development strategy riveted the Soviet economy to a path of false industrialisation, where the goods and the capital needed to produce them could not compete in the

international market, and were valuable only to the extent that the state was prepared to serve as buyer of last resort.

Stalin's economic programme thus must be judged a colossal failure. Administrative command planning proved inferior to market capitalism, growth was illusory, the nation's material welfare deteriorated during the 1930s and after some improvement lapsed into protracted stagnation. This woeful result, which is attributable in some significant part to coercion and terror, compounds the human costs of Stalinism rather than mitigating them, leading inexorably to the conclusion that Stalin's policies had no redeeming value.[48]

Conclusion

A partial reading of new evidence regarding the human and economic consequences of collectivisation, forced industrialisation and terror has lead some scholars to assert that we now know, with the exception of 680 000 executions in 1937–38, that the scale of repression in the Soviet Union during the 1930s was mild compared with Conquest's and Rosefielde's Orwellian estimates. Taken in conjunction with the familiar claims about Stalin's industrial successes, shaded to reflect subsequent realities, this judgment forms the basis for a relatively benign partial reinterpretation of Stalinism that cannot withstand a balanced reading of the evidence.

This article has shown that the NKVD data supporting the optimistic view, doubts about their provenance aside, merely provide a lower bound for one class of Stalinist homicides, which when combined with new documentary evidence on other killings verifies excess death calculations that reliably point to an Orwellian scale of democide 0.75 million higher than Rosefielde's original computations based on the 1939 census. Although uncertainties remain, the evidence suggests that approximately 8.7 million perished in 1930–36 from collectivisation and famine, with 1.1 million more following shortly thereafter during the great terror. These figures, corroborated independently by Wheatcroft & Davies, are roughly five times greater than those of Getty, Rittersporn & Zemskov and a few million below Conquest's estimates, but do not rule these higher numbers out because infant deaths during the famine may well have been under-registered and census populations may still be over-enumerated.

The new evidence shows that administrative command planning and Stalin's forced industrialisation strategies failed in the 1930s and beyond. The economic miracle chronicled in official hagiographies and until recently faithfully recounted in Western textbooks has no basis in fact. It is the statistical artefact not of index number relativity (the Gerschenkron effect) but of misapplying to the calculation of growth cost prices that do not accurately measure competitive value. The standard of living declined during the 1930s in response to Stalin's despotism, and after a brief improvement following his death, lapsed into stagnation.

Glasnost' and post-communist revelations interpreted as a whole thus provide no basis for Getty, Rittersporn & Zemskov's relatively favourable characterisation of the methods, economic achievements and human costs of Stalinism. The evidence demonstrates that the suppression of markets and the oppression of vast segments of the population were economically counterproductive and humanly calamitous, just as anyone conversant with classical economic theory should have expected.

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[1] Joravsky, 1994.

[2] Getty, Rittersporn & Zemskov, 1993; Ellman, 1992 and Wheatcroft, 1995.

[3] Conquest, 1991a, 1994; Laqueur, 1994; Nove, 1993c. A good review of the strengths and weaknesses of specific estimates is provided in Bacon, 1994, together with a helpful discussion of Gulag's administrative arrangements.

[4] Dobb, 1966; Carr, 1980; Davies, 1989; Nove, 1993a, 1993b, 1990, 1989, 1982, 1964; Wiles, 1964; Hough, 1979; Getty & Manning, 1993; Bergson, 1953; Ortona, 1990; Tucker, 1988, 1990; Conquest, 1991b, 1992, 1989, 1978, 1968; Rosefielde, 1987, 1983, 1980, 1981a, 1981b, 1985, 1984a, 1984b, 1988 and Pipes, 1994a, 1994b, 1984.

[5] Antonov-Ovseenko, 1980, p. 261.

[6] Conquest, 1994.

[7] These percentages refer to the Gulag camp population at the end of 1938, and executions and camp deaths 1937–38. The pertinent NKVD data are provided in Getty, Rittersporn & Zemskov, 1993, Appendix (a), p. 1048.

[8] 600 per 100 000.

[9] Custodial mortality was many times higher than age-consistent civilian rates, but the disparities were not as striking as the execution statistics for 1937–38. See Wheatcroft, 1995.

[10] Nove, 1993c.

[11] Cf. Laqueur, 1994.

[12] Bacon, 1992. Cf. Ellman, 1992 and see notes. Ellman mentions specialists at the USSR Goskomstat scientific research institute who believe the enumerated 1937 census population was 163 million.

[13] Getty, Rittersporn & Zemskov, 1993; Getty & Rittersporn, 1994.

[14] 2 799 667 (NKVD documented sentences) $\times$ 5.2183 (coefficient of underreported sentences) = 14 610 667. Cf. Laqueur, 1994, who makes a similar point about the inconsistency of the NKVD data.

[15] The NKVD custodial contingent in the 1937 census was 2.75 million (Conquest, 1991a), which is 56.5% greater than the combined Gulag camp and colony populations, respectively 820 881 and 375 488 for 1 January 1937 reported in Getty, Rittersporn & Zemskov, 1993, p. 1048. Additionally, Kurman in a letter to Kraval states explicitly that the NKVD failed to report a million living prisoners in the Ukraine and elsewhere to the 1937 census bureau. The minimum NKVD custodial count thus is 3.75 million in 1937, treble the NKVD figure reported by Getty, Rittersporn & Zemskov (Conquest, 1991). Cf. Bacon, 1994 and Wheatcroft & Davies, 1994.

[16] Nove, 1993a, p. 266. He bases his judgment on the Soviet archive director Tsaplin's calculation of 3.8 million victims of the 1933 famine, 1.5 million deaths in places of detention, 1.3 million others dying of hunger in places of detention, plus a portion of 1.5 million Kazakh deaths.

[17] 437 835 peasants in exile + 724 381 executions + 241 642 Gulag camp deaths 1934–39 + 118 795 Gulag camp deaths 1930–33 + 69 566 prison and colony deaths 1935–39 + 526 576 peasants and other categories later in the 1930s = 2 118 795. See Table 1, Homicides A1. Gulag camp deaths 1930–33 computed by Rosefielde from data in Wheatcroft, 1995. See Rosefielde, 1995, Table A1.

[18] Anderson & Silver, 1985. Ellman, 1991, relying on Andreev, Darsky & Khar'kova, argues that Wheatcroft's natality rates are too low, contending that more children were born, but almost immediately died thereafter. Cf. Antonov-Ovseenko, 1980, p. 260. This is possible, but the evidence offered is hard to evaluate.

[19] Tolts, 1995; cf Nove, 1993a.

[20] Conquest, 1991a.

[21] Ellman, 1992. See Table 1, 1937 Census A4. Nove, 1993a, states alternatively that the demographers briefing Antonov-Ovseenko provided him with the first preliminary estimate before the special sections were compiled.

[22] But see note 18.

[23] This means that most of those who perished were adults, and that fertility issues associated with the population deficit concept raised in Anderson & Silver, 1985 do not debase Rosefielde's excess death estimates as erroneously alleged.

[24] Table 5 shows that there were 5 857 000 excess dead, plus 2 828 567 other deaths in 1933 calculated as the difference between reported deaths and the number implied by the mortality rate for 1932. Tsaplin discovered that registered net births in 1927–36 were 21.3 million, implying a population of 168.3 million and 6.3 million excess deaths before accounting for unregistered deaths. Nove, 1993a, p. 264.

[25] Maksudov estimates 9.8 million victims in 1926–37, but does not rule out 11 million (Nove, 1993a). Despite the agreement between Rosefielde and Wheatcroft & Davies, 1994, for both

sub-periods, Wheatcroft, 1995, favours a lower excess death figure, between 5.0 and 6.5 million for 1930–36.

[26] For further discussion see Wheatcroft & Davies, 1994, p. 76.

[27] Rosefielde, 1996a, Table A10 (available on request).

[28] Conquest presents evidence from one *krai* indicating that the 1939 census was overstated by 3% to 5%, implying a true figure of 162 million. He also reports that the Census Board complained that the NKVD had omitted to report 1 to 1.5 million dead in custody for the 1937 census, this when the cumulative Gulag camp death figure for 1934–36 reported by Getty, Rittersporn & Zemskov, 1993, was 72 218 and for the full period 1930–36 shown in Table A1 was 194 013. See Conquest, 1994, p. 1038. Remember that the Census Board's 1937 estimate includes a 2 million estimate for the military and NKVD guards, plus a rounding-up correction for errors and omissions. Also see note 12.

[29] Anderson & Silver, 1985, 1986.

[30] Rosefielde, 1986; Nove, 1993a.

[31] Anderson & Silver, 1985; Lorimer, 1946. Cf. Wheatcroft & Davies, 1994, where excess deaths are now tacitly accepted as homicides.

[32] Wheatcroft, 1990.

[33] Wheatcroft, 1995. Cf. Wheatcroft & Davies, 1994.

[34] Ellman, 1991, 1992; Wheatcroft & Davies, 1994, p. 76–77.

[35] See note 15.

[36] This issue is especially vital for 1939–52 because NKVD data attribute nearly all the 34 million excess deaths to the war. See Rosefielde, 1995. Cf. Bacon, 1994.

[37] Dobb, 1967.

[38] Bergson & Kuznets, 1963.

[39] Rosefielde, 1981a, b.

[40] Manning interprets the terror partially as a response to Soviet growth retardation after 1936 (Manning, 1993). Cf. Thurston, 1993.

[41] Chapman, 1963.

[42] Gregory, 1995, argues that NEP was relatively successful.

[43] Rosefielde, 1996a. Russian per capita income in 1989 was 68% of America's, close to the European Economic Community average and in the top tier of developed nations. The agency does not currently report a dollar figure for Russia's per capita GDP, but using the exchange rate it is 5.4% of the American level, 1327/24 549 dollars, valued in 1991 prices. See Rosefielde, 1996a, note 5 and CIA, 1992, Tables 7 and 21, pp. 24 and 38.

[44] Edwards, 1979, Figure 2, p. 383. The diagrams use geometric mean pseudo dollars. The underlying pure dollars statistics show the same trend.

[45] Bergson, 1994; Åslund, 1988.

[46] Rosefielde & Pfouts, 1995.

[47] Danilin, Kleiner & Rosefielde, 1994.

[48] Any sound development strategy would have put the Soviet Union in a better material position to deter Nazi aggression, to say nothing of professional military morale. Cf. Harrison, 1994, where the great leap forward in 1928–37 is deemed too small to explain the Soviet victory in World War II.

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Appendix

TABLE A1

NKVD EXECUTIONS, PRISON AND GULAG SENTENCES, AND GULAG CAMP DEATHS

| | Judicial repression | Homicide | | | Gulag sentences | | | |
| | | | | | Prison and camps | Exile | Other | Total |
	Sentences (1)	Prison executions (2)	Gulag deaths (3)	Total (4)	(5)	(6)	(7)	(8)
1929	56 220	2 109	(11 993)	(14 102)	25 853	24 517	3 741	54 111
1930	208 069	20 201	(14 204)	(34 405)	114 443	58 816	14 609	187 868
1931	180 696	10 651	(18 003)	(28 654)	105 683	63 269	1 093	170 045
1932	141 919	2 728	(22 398)	(25 126)	73 946	36 017	29 228	139 191
1933	239 664	2 154	64 190	66 344	138 903	54 262	44 345	237 510
1934	78 999	2 056	26 295	28 351	59 451	5 994	11 498	76 943
1935	267 076	1 229	28 328	29 557	185 846	33 601	46 400	265 847
1936	274 670	1 118	20 595	21 713	219 418	23 719	30 415	273 552
1937	790 665	353 074	25 376	378 450	429 311	1 366	6 914	437 591
1938	554 258	328 618	90 546	419 164	205 509	16 842	3 289	225 640
1939	63 889	2 552	50 502	53 054	54 666	3 783	2 888	61 337
1940	71 806	1 649	46 665	48 314	65 727	2 142	2 288	70 157
1941	75 411	8 011	100 997	109 008	65 000	1 200	1 210	67 410
1942	124 406	23 278	248 877	272 155	88 809	7 070	5 249	101 128
1943	78 441	3 579	166 967	170 546	68 887	4 787	1 188	74 862
1944	123 248	3 029	60 948	63 977	73 610	649	821	75 080
1945	123 294	4 252	43 848	48 100	116 681	1 647	668	118 996
	3 452 731	770 288	1 040 732	1 811 317	2 091 743	339 681	205 844	2 637 268

Sources: Stephen Wheatcroft, 'Assessing the Victims of Repression 1930–1945: Their Condition with Particular Reference to the Soviet Victims in the Famine of 1932/33', 1995, Table 3; J. Arch Getty, Gabor Rittersporn & Victor Zemskov, 'Victims of the Soviet Penal System in the Prewar Years: A First Approach on the Basis of Archival Evidence', *American Historical Review*, October 1993, Appendix (a), pp. 1048–1049.

Sentences: Rendered by the Soviet Secret Police (CHK, GPU, OGPU, NKVD, MVD).

Executions: Death sentences (VMN: supreme method of punishment). Excludes executions in Gulag camps and colonies.

Gulag deaths: Reported Gulag camp deaths excluding deaths in labour colonies and exiles. The data are not corrected for normal mortality. Excess deaths are calculated in Table A2.

Composition: 1921–1938: 30% criminals.

Method: Entries for 1929–32 column 3 estimated by multiplying the mean Gulag camp mortality rate for 1933–39 by the end-year population, Table A2. These data are derived from Wheatcroft's Table 8. The figure for 1933 is computed in the same way, but Wheatcroft's Gulag camp mortality rate of 152 per thousand in that year is used instead of the mean value of 67 per thousand 1933–39.

TABLE A2
NKVD GULAG CAMP MORTALITY RATES AND POPU-
LATION

	Mortality rates (per '000) Camps (1)	Gulag population (2)
1929	(67)	179 000
1930	(67)	212 000
1931	(67)	268 700
1932	(67)	334 300
1933	152	510 307
1934	60	725 483
1935	46	839 406
1936	40	820 881
1937	36	996 367
1938	97	1 317 195
1939	38	1 344 408
1940	57	1 500 524
1941	88	1 415 596
1942	210	999 738
1943	220	663 594
1944	100	715 506
1945	97	583 899

Sources: S. Wheatcroft, 'Assessing the Victims of
Repression 1930–1945: Their Condition With Par-
ticular Reference to the Soviet Victims in the
Famine of 1923/33', 1995, Table 8; Table A1.
Wheatcroft cites V. N. Zemskov, 'Gulag. Istoriko-
sotsiologicheskii aspekt', *Sotsiologicheskie issle-
dovaniya*, 1991, 6, pp. 14–15.
Mortality rates: Average of Wheatcroft's mini-
mum and maximum estimates apparently derived
from Zemskov.