

NBER WORKING PAPER SERIES

DID ECONOMICS CAUSE WORLD WAR II?

Robert J. Gordon

Working Paper 14560

<http://www.nber.org/papers/w14560>

NATIONAL BUREAU OF ECONOMIC RESEARCH

1050 Massachusetts Avenue

Cambridge, MA 02138

December 2008

This paper is a review article of Tooze (2006) and related literature on the same topic and will appear in the *Journal of Economic History* in March, 2009. I am grateful to Joel Mokyr for helpful suggestions. The views expressed herein are those of the author(s) and do not necessarily reflect the views of the National Bureau of Economic Research.

NBER working papers are circulated for discussion and comment purposes. They have not been peer-reviewed or been subject to the review by the NBER Board of Directors that accompanies official NBER publications.

© 2008 by Robert J. Gordon. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that full credit, including © notice, is given to the source.

Did Economics Cause World War II?

Robert J. Gordon

NBER Working Paper No. 14560

December 2008

JEL No. H56,N14,N24,N54,N64,N70,N74,N80,N84

ABSTRACT

Historians have long recognized the role of economic resources and organization in determining the outcome of World War II: the Nazi economy lacked the economic resources and organization to oppose the combined might of the U.S., U.K., and U.S.S.R. A minority view is that the Germans were defeated not by economics, but by Hitler's many strategic and tactical mistakes, of which the most important was the invasion of the Soviet Union. Compared to this debate about the outcome of the war, there has been less attention to economics as the cause of World War II.

This is a review article of a new economic history of the Nazi economy by Adam Tooze which cuts through the debate between economics and Hitler's mistakes as fundamental causes of the outcome. Instead, Tooze argues that the invasion of the Soviet Union was the inevitable result of Hitler's paranoia about the land-starved backwardness of German agriculture as contrasted with the raw material and land resources of America's continent and Britain's empire. The American frontier expansion that obliterated the native Indians provided Hitler with an explicit precedent, which he often cited, for pushing aside the native populations in the east to provide land for German Aryan farmers.

Germany's agricultural weakness is summarized by its low land-labor ratio, but Poland and the Ukraine had even less land per person. Thus simply acquiring the land to the east could not solve Germany's problem of low agricultural productivity without removing the native farming populations. Far better than other histories of the Third Reich, Tooze reveals the shocking details of General Plan Ost, the uber-holocaust which would have removed, largely through murder, as many as 45 million people from eastern agricultural land. Tooze, like the Nazis before him, fails to emphasize that the solution to Germany's agricultural problem was not acquiring more land for the existing German farm population, but rather by raising the land-labor ratio by making the existing German land more efficient, mechanizing agriculture and encouraging rural-to-urban migration within Germany.

Robert J. Gordon

Department of Economics

Northwestern University

Evanston, IL 60208-2600

and NBER

rjg@northwestern.edu

Introduction

Historians have long recognized the role of economic resources and organization in determining the outcome of World War II. There was never any doubt that the economic resources of the U. S. overwhelmed those of Japan, and regarding the war against Germany a powerful case assembled by Harrison (1998), Overy (1994), and many others has argued that the Nazi economy lacked the economic resources and organization to oppose the combined might of the U. S., U. K., and U. S. S. R.

A minority view disputes the primacy of economics in defeating the Germans by pointing to Hitler's many strategic and tactical mistakes, of which the most important was invading the U. S. S. R. Among the more persuasive counterfactual scenarios about the German war as a whole are those developed by Alexander (2000) and Tsouras (2006), while many other books examine alternative outcomes of particular phases of the war, e.g., a hypothetical German invasion of the U. K. or defeat of the Allies at D-Day. A strong case for the legitimacy of counterfactual history is made by Ferguson (1999).

While the role of economics and of Hitler's mistakes in determining the war's *outcome* has been examined extensively, less attention has been paid to economics as a *cause* of German aggression. This review article of Adam Tooze's (2006) ambitious economic history of the Nazi regime finds the author's most significant contribution to lie in his intricate account of the prewar weakness of the German agricultural sector as a motivation for Hitler's determination to expand to the east. Hitler was paranoid about the land-starved backwardness of German agriculture as contrasted with the raw material and land resources of America's continent and Britain's empire. "Land hunger was one, if not the most important impulse" (p. 166). The American frontier expansion that

obliterated the native Indians provided Hitler with a explicit precedent, which he often cited, for pushing aside the native populations in the east to provide land for German Aryan farmers. “It was the last great land-grab in the long and bloody history of European colonialism” (p. 462). Tooze devotes far more attention than other recent histories of the Third Reich to the ultimate logical conclusion of Hitler’s eastern land hunger, the so-called *General Plan Ost* that would have displaced and perhaps ultimately killed as many as 40 million eastern Europeans to provide the Germans with the land that Hitler coveted.

Tooze’s preface proclaims a grand ambition for the book, to bring to the understanding of Nazi economics the same major leap forward that he claims has been achieved in political history over the last two decades. But the book’s achievements accomplish only part of this ambition. Most of what we learn about the prewar years (1933-39) repeats what we already knew but now in more detail. Tooze’s treatment of the war itself, 1939-45, is more successful and contains a fascinating set of analyses that enrich our previous ideas about the conduct and outcome of the war. However, Tooze is not the first to focus on Germany’s land shortage as a basic cause of war. Barkai makes exactly the same point: “Hitler projected into the utopic distance a vast agrarian *Grossraum* that was to be conquered by the sword, a vision that could not be realized within German’s frontiers until 1939” (1990, p. 157).

The Pre-war Years, 1933-39

What we already knew about the prewar 1930s comes from Barkai (1990) and Abelshauser (1998), among others, and on the big questions, Tooze reaches the same conclusions. The German recovery from 25 percent unemployment in 1932 to less than 5 percent by 1936/7 was achieved by a money-financed fiscal

expansion. These authors ask how and when the Nazis “became Keynesians before Keynes,” when during the same period the Roosevelt New Deal was failing to bring the US unemployment rate down to single digits. All three authors trace the idea for credit-financed expansion back to the previous Weimar government and to the Nazi *Sofortprogramm* contained in a 1932 political manifesto that was “widely circulated in pamphlet form . . . during the campaign for the July 1932 Reichstag election” (Abelshauser, p. 129).

Tooze confirms previous findings that relatively little of the expansion in public expenditures took the form of public works like the autobahns, while over 80 percent consisted of spending for rearmament. Abelshauser (1998, p. 169) calls this “military Keynesianism on a large scale.” The central resource constraint in the 1930s was foreign exchange, and this shortage led to a byzantine system of export subsidies and import controls. Why did the regime refuse to devalue the Reichsmark, particularly in 1936 when most of its neighbors devalued? The answers suggested by Tooze and his predecessors make little sense. According to Tooze, the Nazi regime feared the consequences of devaluation for servicing its large foreign debt, but why could the Nazis not have devalued in 1933-34 and repudiated that foreign debt (after all, they imposed a moratorium on foreign debt repayment as early as June, 1934)? Did the refusal to devalue represent a fear of inflation? While this explanation might seem plausible after the trauma of 1922-23, it becomes less convincing with the passage of time as the German economy expanded toward full employment during 1933-36 without any significant inflation.

Did private consumption rise in the 1930s or was it squeezed by the shortage of foreign exchange and the demands of the rearmament program? The reader searches in vain among Tooze’s many figures and tables for an answer. There are only scattered comments about particular short time intervals, e.g.

there was no growth in consumer goods production between 1934 and 1936 and a flat level of textiles production between early 1934 and late 1935. But what about the post-1933 period as a whole? We must turn to Barkai (Appendix Table 1, text p. 232) to learn that per-capita real consumption expressed as an index number was 88 in 1933, 100 in 1936, 108 in 1939, and fell back to 100 in 1942. Abelshauser's (1998, Table 4.2) time series of industrial production of consumer goods is quite similar (100 in 1936, 110 in 1939, and 95 in 1942). Both these authors contradict the impression provided by Tooze that consumption stagnated in the 1930s and highlight by their example the frustrating tendency of Tooze to present data over only a fraction of the relevant number of years. Evidently the Nazi economy succeeded at least until 1939 in expanding the production of both guns and butter, or in Abelshauser's pithy phrase (1998, p. 148) "as much butter as necessary, as many guns as possible." This residual increase in consumption is hardly surprising in view of the enormous amount of initial economic slack in 1933.

The previous literature has emphasized the Nazi policy of holding down real wages as a contribution to the rapid expansion of employment, the opposite of the perverse wage-increasing policies of Roosevelt's NRA. Indeed, Barkai shows that the share of German wage income in national product declined from 64 to 59 percent between 1932 and 1936, while the increase in profits was "quite spectacular" (p. 196). Likewise, Abelshauser (p. 148) reports that the income share of the bottom half of the income distribution fell from 25 to 18 percent between 1928 and 1936. But Tooze has nothing to say about the *change* in the real wage, only about the low *level* of the German standard of living as measured by how many minutes of labor were necessary to purchase everyday items like cigarettes or coffee (pp. 141-3). These indicators of relative German poverty are used by Tooze to suggest that German workers had a standard of living only

one-fourth the level of Americans. He makes no attempt to achieve a reconciliation with Maddison's estimates that the ratio of German to US real GNP per capita, after declining from 72 percent in 1913 to 65 percent in 1928, jumped to 84 percent in 1938 (see Harrison, 1998, Tables 1.1 and 1.2). Granted that GNP includes more than consumption, particularly in view of rearmament expenditure, but the gulf between Tooze's one-fourth estimate and Maddison's much higher implicit estimate seems too large to bridge.

A major share of Tooze's prewar analysis is devoted to German agriculture, in order to support his central point that economics created the motivation for war. The Nazis' only perceived solution to inadequate food production was an eastward expansion to obtain *lebensraum* by force. The 1933 census revealed that fully 29 percent of German employment was in the agricultural sector, and that there was great inequality in land holdings. In an attempt to squeeze more production out of these resources, a set of draconian price and production controls was put in place in 1933 that ended the free market in agriculture and extended bureaucratic control "into every field, barnyard, and milking shed in the country" (p. 187).

The Nazis' focus on *lebensraum* was driven by a perceived land shortage. Germany had only 2.1 hectares per farm worker, compared to 12.8 in the US, 3.8 in the UK, and 2.8 in France (p. 176). Yet both the Nazis and Tooze look at these facts upside down. The problem was not too little land but rather too many farm workers. Germany had four times as much agricultural land as Britain that was cultivated by seven times as many farm workers. A key aspect of economic development is the movement of farm workers to industrial and service jobs in the cities. The Nazis failed to see the obvious solution, programs to encourage the movement of peasants with small land holdings to industrial jobs, which were plentiful in the full-employment economy achieved after 1936. And

Tooze's facts on land-labor ratios previewed the required brutality of *lebensraum*; prewar Polish farmers had only 1.8 hectares per farm worker, less than Germany (p. 176). Simply merging Poland into Germany would not help. Only by expelling or exterminating every one of the 10 million Polish farmers and then replacing them with landless German peasants would the combined German/Polish land-labor ratio be brought up to the British level. The low land/labor ratio and the overall level of poverty in the Ukraine compounds the Polish example.

The 1939-45 War, the Occupied Countries, and General Plan Ost

The story of the 1939-45 war is familiar, but Tooze makes significant contributions by probing deeply into the sources of Germany's resource constraints and their strategic consequences. By early 1941 the Germans had become dependent on raw materials imported from the USSR, and Tooze poses their central strategic dilemma. Should Germany continue to rely on those imports or rather invade the USSR, in effect grabbing the resources rather than paying for them? Once the USSR was conquered, Germany would be ready for a "battle of the continents," starting with the oil supplies of the Middle East. One must ask, as Tooze does not, why the drive to the Middle East for oil supplies did not take precedence over the invasion of the USSR? Rommel was starved for supplies in North Africa in 1941-42, and a diversion to him of only a few of the panzer divisions allocated to the Russian front would have allowed the Germans to push past Suez into the oil-rich Middle East by mid-1942.

The standard interpretation by Overy (1995) and others is that the Germans lacked sufficient resources to win the war, and that they bungled the management of the resources that they possessed. Why did the Americans and

Russians produce so much and the Germans produce so little? In Overy's version, the Germans failed to appreciate the American technique of mass production and produced too many variants of weapons at an unnecessarily high level of quality. Production stagnated until Albert Speer came to the rescue in his temporary 1942-44 economic miracle that achieved quantum leaps in armaments production until that miracle was cut short by Allied bombing. Indeed, Tooze confirms the conventional wisdom that the Russian production miracle was largely achieved at a safe distance behind the Urals (p. 588).

Tooze alters the emphasis from mismanagement to the many dimensions of resource shortages, and his indictment of German mismanagement shifts from domestic armaments production to the bungled treatment of the resources available in the western nations conquered in the 1940 Blitz. The Germans had great hopes that their own resource shortages would be relieved from the conquered nations, particularly France. But they forgot that incentives matter. French farmers were demoralized by German confiscation of food and by the near-disappearance of energy, both petrol and coal. The French harvest declined by half between 1938 and 1941. Without food, French coal miners reduced their work effort and at one point were in "open rebellion", and Tooze argues that in no other occupation is production so related to the food intake of workers as in the coal industry. And without coal Germany's ongoing shortage of steel was exacerbated. Stripping the conquered nations of railroad wagons made matters worse, as did the cruel and abysmal conditions in which slave laborers from France, Poland, and elsewhere were forced to work in Germany's armaments factories. In fact Tooze comes up with the stunning figure of 7 million slave workers, including USSR prisoners of war, who died from barbaric conditions who would otherwise have been available to supplement the acute labor shortages of the Reich.

Tooze's search for the sources of underproduction in the conquered territories extends to the lack of imported grains and of fertilizer due to the British blockade. Since the conventional wisdom is that Britain came close to losing the war as a result of the U-boat attacks, Tooze deserves credit for pointing out the converse, that continental agriculture suffered irreparably as the result of the British blockade, a partial repeat of the food deprivation that Germany experienced during World War I (Offer, 1989).

Tooze reinforces these points by showing how much more Britain gained from its alliance with America than Germany gained from its conquered millions. The initial Congressional Lend-Lease appropriation in March, 1941 (at a plausible exchange rate) equaled two full years of domestic German armaments production. By the end of 1941 the UK had received no less than 5000 aircraft from the US, while Germany had obtained a mere 78 aircraft from France and the Netherlands. In addition to steel, oil was the binding constraint on German military advances, and one of the most striking of Tooze's many novel comparisons is that in 1942 Britain (despite the u-boat sinkings) imported more than five times as much oil from the US as Germany imported from Romania. British planners displayed "incredulity" that Hitler would have invaded the USSR with less than a third of the petrol stocks that the British considered the minimum tolerable limit.

Tooze returns to this theme with even more startling comparisons about the year 1943, when total US armaments production was 30 times higher than the contribution of the conquered territories to the Reich, and US shipments to the UK were four times higher. A critical Lend-Lease contribution was the fleet of 400,000 Dodge trucks, which carried the Red Army to victory while the Germans were retreating with their archaic horse-drawn transport. Resource constraints also undermined the entire rationale of *lebensraum*. Yes, the Ukraine had a grain

surplus, but it could have been harvested after the Soviets scorched the earth only by a massive movement of farm machinery from Germany to the Ukraine, which was beyond the realm of feasibility due to shortages of petrol, not to mention of the machines themselves.

Tooze's most original contribution to the economics of World War II is his detailed account of Germany's planned *über-holocaust*, "General Plan Ost" (GPO), which continues Tooze's central theme that Germany was driven to war by a shortage of agricultural land. Barely mentioned in previous large-scale histories of the Third Reich, e.g. Burleigh (2000), GPO was the plan to displace most of the non-Germanic residents of Poland, Belorussia, and the Ukraine by German ethnics who would be invited (or forced) to occupy hundreds of thousands of square miles of fertile land from which the previous occupants had been removed. And how would they be removed? The plan implicitly assumed forced marches to nowhere along which most of the displaced people would die through "natural wastage" (p. 476). Tooze estimates that the total number of people forced out would have amounted to an unbelievable 45 million, more than seven times the number of recorded victims of the holocaust.

Fortunately for the future of Europe, GPO proved to be both strategically and tactically impossible. The German failure to capture Moscow in December, 1941, and the subsequent Soviet counterattack converted the German invasion from a triumphant march into a desperate struggle for survival. The tactical failure was demonstrated in an experimental project in July, 1942, to deport the entire Polish population of the Zamość region. The number of German troops per displaced inhabitant turned out to be an infeasibly large number, and tens of thousands of the inhabitants learned what was happening and fled in advance to the woods, escaping the round-up squads of "German police, troops, and auxiliaries."

The traditional debate about World War II is between economic resources and Hitler's mistakes as the ultimate source of Allied victory. For a book on economic history, Tooze admirably devotes substantial attention to military strategy and tactics and their interplay with economic resources. Perhaps his most important insight is that the German logistical system was not equipped to penetrate beyond 500 km into the USSR, and that Hitler counted on the collapse of the Red Army before that point was reached. But the Red Army, despite losing more than 3 million men to prisoner camps and ultimate death in the first two months, did not collapse.

Tooze attributes the German failure to capture Moscow not to Hitler's mistake of diverting Guderian's panzer divisions south to Kiev in August, 1941, but rather to fundamental limitations of supply. German fuel trucks consumed as much fuel in traversing a mere 500 kilometers as the amount of fuel they could deliver (similarly, for the same reason, Patton's army ran out of fuel in eastern France in the fall of 1944). Tooze rightly dismisses planning for Barbarossa as wishful thinking, and when the Germans failed to take Moscow in 1941, the entire German economic planning apparatus was thrown into a state of crisis. Part of the outcome was predetermined on the invasion date of June, 1941; Germany had mobilized all of its young men for the invasion, with virtually no one in reserve. The USSR, with double the population, had vast hordes beyond the Urals who could, and ultimately did, come to the rescue of Mother Russia, initially in the Moscow counterattack of late 1941 and in the encirclement of the German Sixth Army at Stalingrad in late 1942.

When Tooze reviews the peacetime years of the 1930s, he tells us mostly what we already know. But his book deserves high praise for what he teaches us about the wartime years 1939-45 themselves. The shortages were endemic; the harsh treatment of the occupied territories starved them while depriving the

Reich of the expected resources; the British blockade had teeth; and the logistical planning of the 1941 invasion of the USSR was based on absurdly unrealistic assumptions. Further, *lebensraum* was no solution to Germany's inefficient agricultural economy without a tactically infeasible *über-holocaust*. Germany marched into Russia with 3 million men, 2000 tanks, and 700,000 horses. All those horses remain a symbol of the economic backwardness that motivated Germany to go to war and ultimately caused its defeat.

REFERENCES

- Abelshauser, Werner (1998). "Germany: guns, butter, and economic miracles," in Harrison (1998), pp. 122-76.
- Alexander, Bevin (2000). *How Hitler Could Have Won World War II: The Fatal Errors that Led to Nazi Defeat*. New York: Three Rivers Press.
- Barkai, Avraham (1990). *Nazi Economics: Ideology, Theory, and Policy*. New Haven: Yale University Press.
- Burleigh, Michael (2000). *The Third Reich: A New History*. New York: Hill and Wang.
- Ferguson, Niall (1999). "Virtual History: Towards a Chaotic Theory of the Past," in Niall Ferguson, ed., *Virtual History*. New York: Basic Books, pp. 1-90.
- Harrison, Mark (1998). *The Economics of World War II*. Cambridge and New York: Cambridge University Press,
- Offer, Avner (1989). *The First World War: An Agrarian Interpretation*, Clarendon Press/Oxford.
- Overy, Richard (1995). *Why the Allies Won*. New York: Norton.
- Tooze, Adam (2006). *The Wages of Destruction: The Making and Breaking of the Nazi Economy*. London and New York, Allen Lane for Penguin.
- Tsouras, Peter G., ed. (2006). *Hitler Triumphant: Alternate Decisions of World War II*. London: Greenhill Books.