

8. World War II: Economic Mobilization

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Phases of Mobilization

World War II fell into two phases, with a **turning point** in between.

Phase 1. 1939 to 1942 (first half):

- The Axis powers held the initiative.
- And were winning everywhere.
- Based surprise, shock, and superior military organization.
- Not economic mobilization.
- The Allied powers held off defeat.
- And rapidly mobilized their economies.
- The Soviet economy became excessively mobilized and nearly collapsed.

The **turning point** was marked by three battles of 1942 (second half):

- Midway (Pacific), June 1942.
- Alamein (North Africa), July and October-November 1942.
- Stalingrad (Russia), August 1942 to February 1943.

Phases of Mobilization

World War II fell into two phases, with a **turning point** in between.

Phase 2. 1943 to 1945:

- The Allied powers took the initiative back.
- Began to win everywhere.
- Based on a growing, eventually overwhelming advantage of economic mobilization.
- The Italian army collapsed in 1943.
- The German and Japanese armies did not collapse, but were slowly ground down.
- The German and Japanese economies became excessively mobilized and collapsed in 1945.

Lessons of the Great War: Germany

Blitzkrieg (“lightning war”):

- Independently operating penetration groups of **shock troops**, able to fire and move, supported by air and armoured forces.

Qualitative superiority:

- **Evolutionary improvement** of military technology through continuous feedback from the battlefield to the equipment suppliers.

Autarky and the Hungerplan:

- Self-sufficiency in food through **conquest**, (Japanese version: “providing for the war by war,” from Paine 2012, p. 134) at the expense of hunger in the regions occupied by Germany.

Time horizons:

- The time horizon for any particular campaign was **expected to be short**, but the overall struggle for world domination would continue for years.

Lessons of the Great War: USSR

Dictatorship:

- In World War I the old regime was overthrown when **external threats** interacted with **domestic discontent**.
- External threats: Stalin built and equipped a strong mass army.
- Domestic discontent: He also built a secret police to monitor discontent and destroy internal enemies preemptively.

Modernization:

- In World War I the army and the **weak industrial economy** were undermined by **peasants' withdrawal** from urban-rural trade.
- A weak industrial economy: Stalin poured capital resources into industry and built up modern defence industries based on mass production
- Peasants' withdrawal from the market: Stalin abolished private trade in grain and meat and took direct control of peasant food surpluses by “collectivizing” their farms.

Lessons of the Great War: USSR

Rearmament:

- Lenin and Stalin built a warlike command economy intended to prepare for **future war**.
- Believing that war was inevitable, Stalin began Soviet rearmament **before** Hitler came to power.
- **Accelerated** it in secret during the Geneva disarmament talks (1932-1934).
- Given poverty and size of Soviet industry, rearmament remained modest **until mid-1930s**.

Accelerated as **perceptions of Hitler changed** in 1935:

- Stalin saw Spanish Civil War as fascism's trial run.
- Shift to mass production: by late 1930s the Soviet Union was world's biggest arms producer.
- Great Terror (1937/38) and Red Army purge.
- Expansion of forced labour and militarization of civilian employment.
- The Molotov-Ribbentrop Pact (1939): Stalin joined Hitler in launching World War II.
- Each side thought they had bought more time than the other.
- Only **one of them** was right.

Lessons of the Great War: Britain

Three layers of policy:

- Appeasement: negotiate differences with the adversary if at all possible.
- Deterrence: rearm within limits.
- Insurance: in case appeasement and deterrence fail, study the Great War (Hancock and Gowing 1949), which showed lack of preparation and too much voluntarism led to wartime difficulties with both **labour** and **food**.

Food:

- Control of food (60% of working class spending), food prices, and rents identified (1932) as central to control of inflation. Rationing (Beveridge, 1936):
 - Food controller with full powers.
 - Control plan for each foodstuff.
 - Feeding policy for total supply at all stages of war.
 - Plan for effects of likely air attack.
 - All in place by outbreak of war, except the “feeding policy.”

Lessons of the Great War: Britain

Labour: “Three pillars” identified (1922):

- **Universal liability to military service** enacted May 1939
- **Schedule of protected occupations**, but not (yet) conscription at work.
- **Ministry of Labour AND National Service** (August 1939) to arbitrate competing claims
- Anxiety about labour resistance to war mobilization, so no wage controls yet (identified in 1929 as essential to control wartime inflation).

Rearmament:

- Naval and air rearmament from 1931 within strict financial limits (so at expense of ground forces).
- Long-range air power for deterrence.
- Shadow factories for insurance.

Lessons of the Great War: USA

Isolationism:

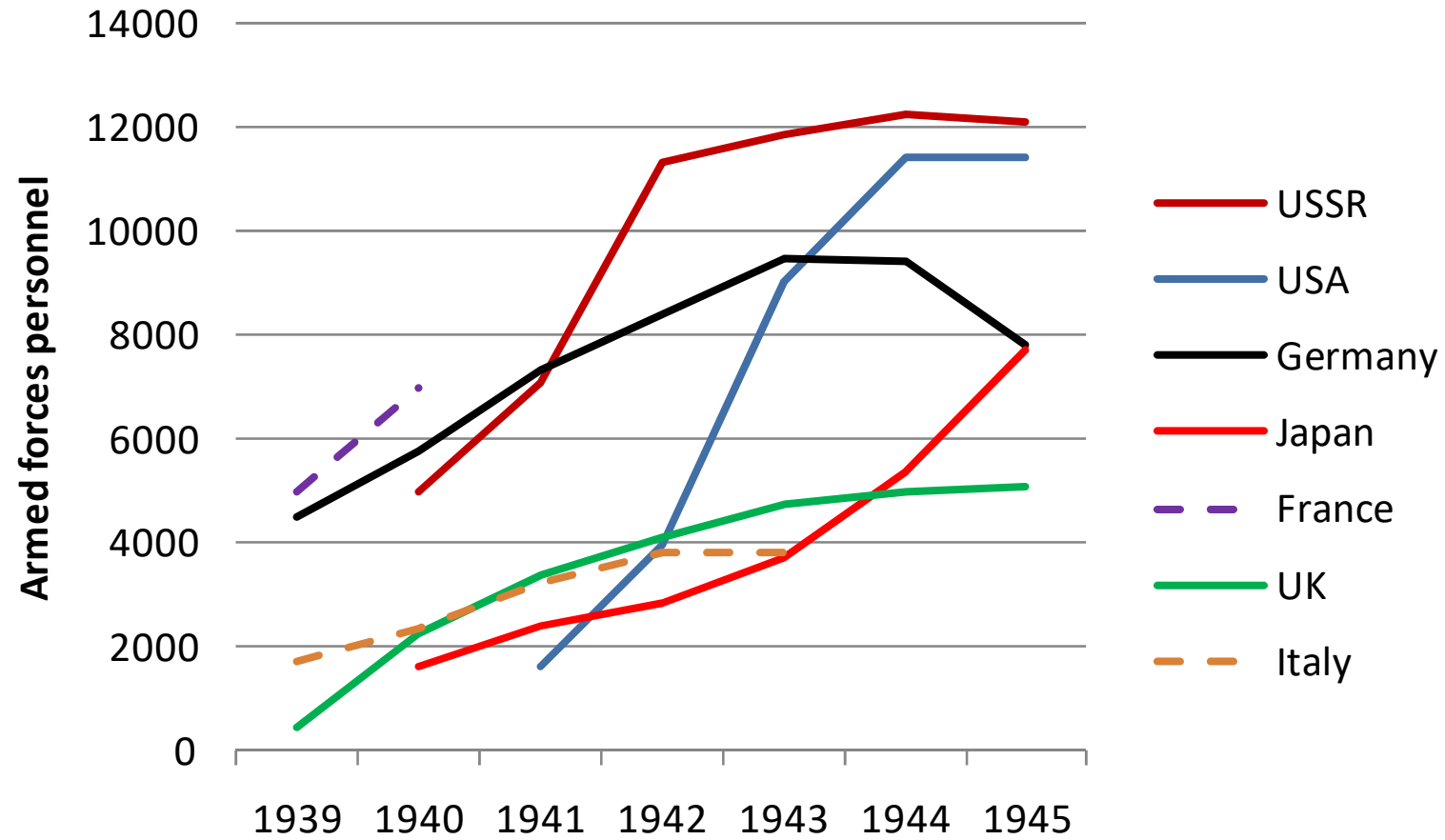
- Stay out of Europe; don't export or ship weapons to Europe.
- Rearm, but only for deterrence; after Munich, U.S. ambassador to France William Bullitt wrote to Roosevelt: "If you have enough airplanes, you don't have to go to Berchtesgaden."

Shift towards **benevolent neutrality** as the European war began.

- US neutrality laws barred trade with belligerents except in nonwar goods and for cash, buyer responsible for shipping.
- Neutrality Act (November 1939) removed arms embargo → "Cash and Carry."
- Carry: UK ships could carry, Germans could not.
- Cash: still a problem, requiring UK to export as well as rearm.
- Lack of US production facilities, so UK dollars went first to investment.
- Lend-Lease Act (March 1941) removed the dollar constraint.

The Scale of Mobilization

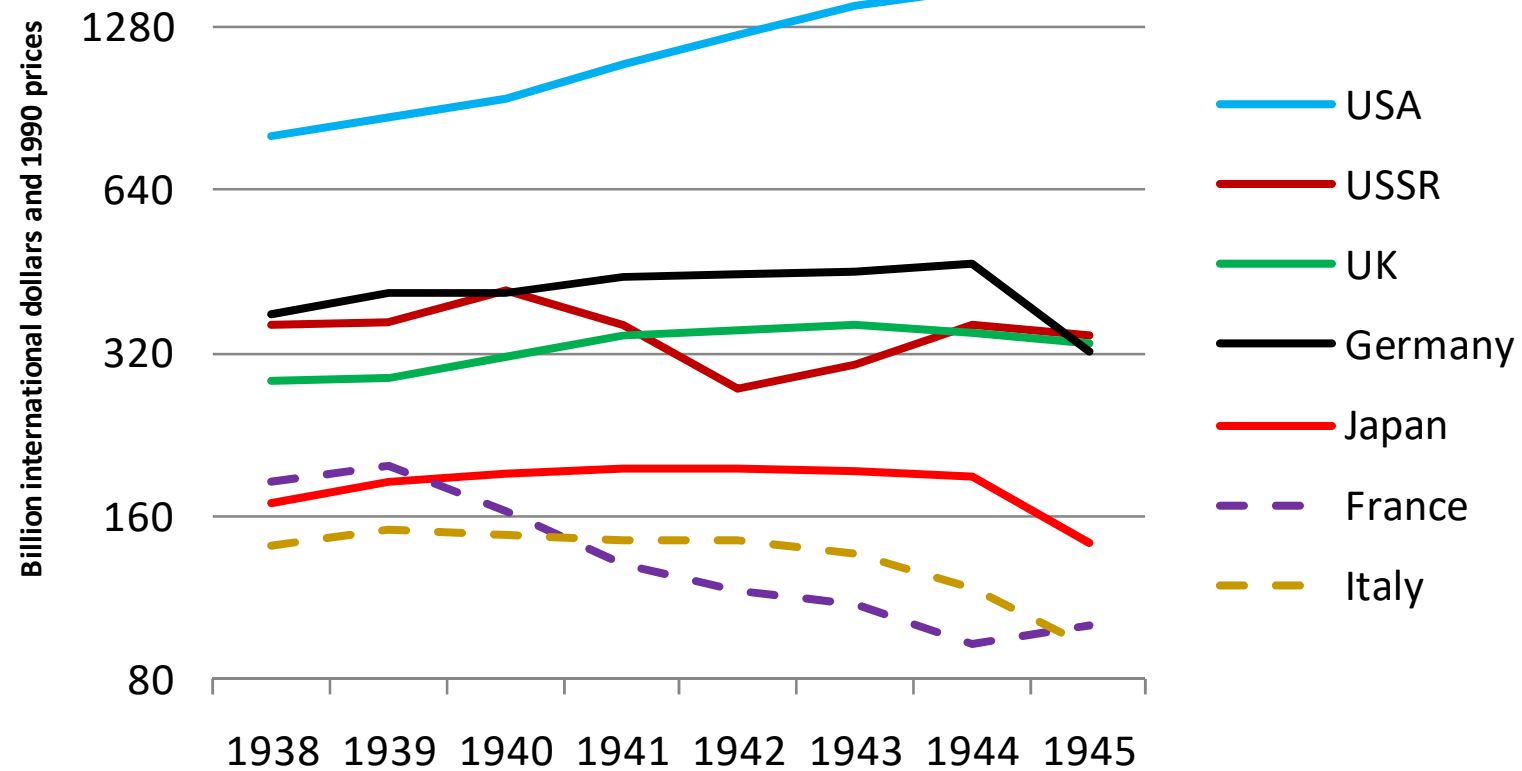
Size of armed forces (thousands):



Source: Harrison (1998, p. 14).

The Scale of Mobilization

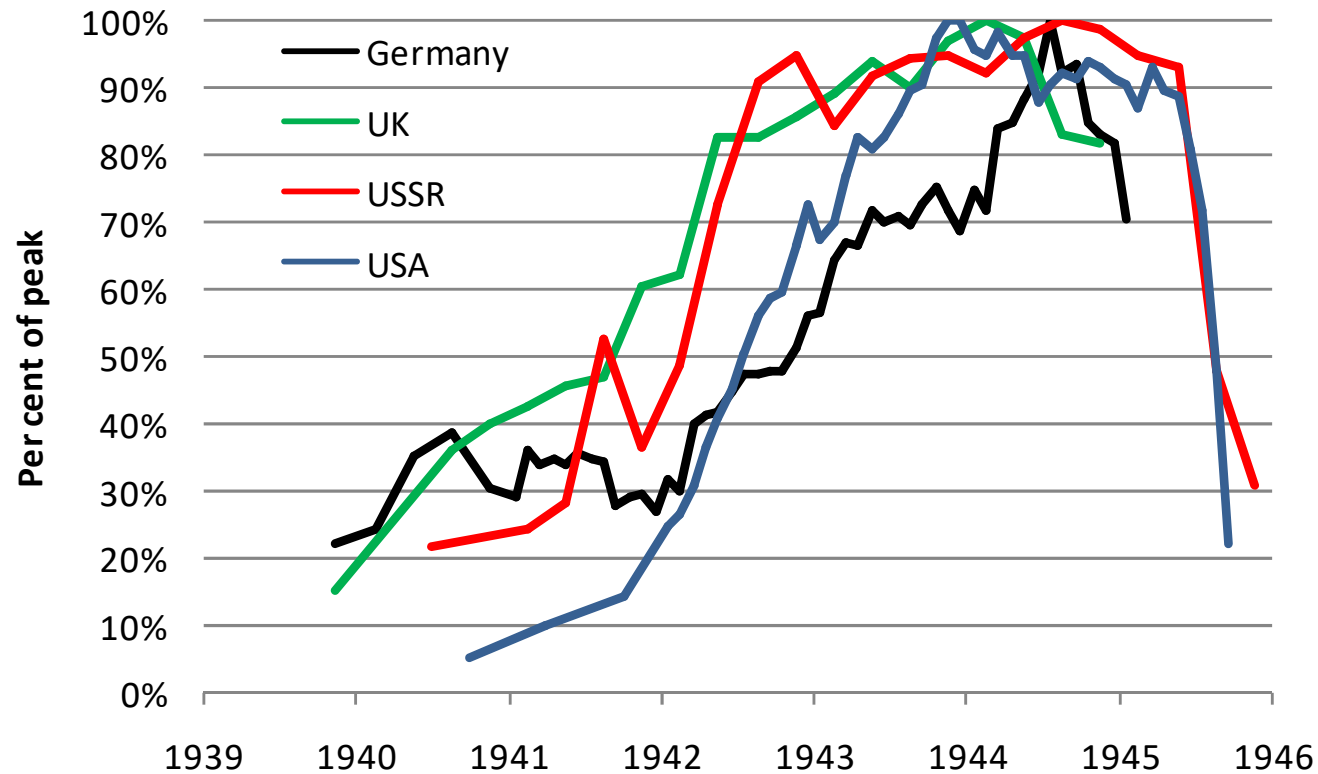
GDPs:



Source: Harrison (2005).

Factors in Mobilization: Time

The build-up of war production:



Sources: Germany from Milward (1965, pp. 192-194); UK from Harrison (1990, p. 665); USSR from Harrison (1996, p. 190); USA: *Survey of Current Business*, February 1945, 24 (July 1940-December 1943), and table S-2 in subsequent issues; thanks to Hugh Rockoff for these data.

Factors in Mobilization: Time

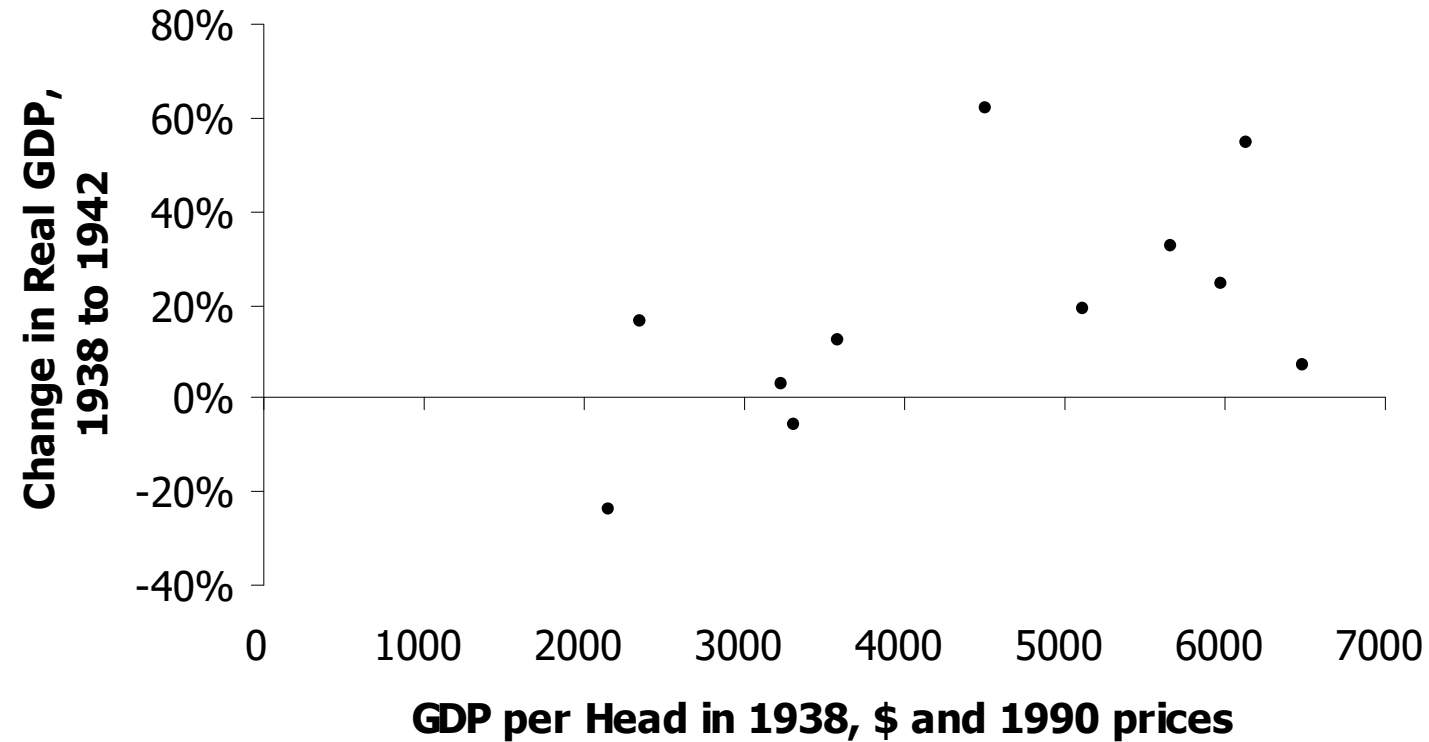
The economic burden of the war (military spending, % of GDP):

	1939	1940	1941	1942	1943	1944
At current prices:						
• USA	1	2	11	31	42	42
• UK	15	44	53	52	55	53
• Germany	23	40	52	64	70	...
• Italy	8	12	23	22	21	...
• Japan	22	22	27	33	43	76
At constant prices:						
• USA	1	2	11	32	43	45
• USSR	..	17	28	61	61	53
• Germany	23	40	52	63	70	...

Source: Harrison (1998, p. 21). Current prices measure willingness to sacrifice other uses of resources. Constant prices measure changes in relative volumes of different uses. Peak figures are highlighted.

Factors in Mobilization: the Level of Development

Production mobilization: eleven countries:

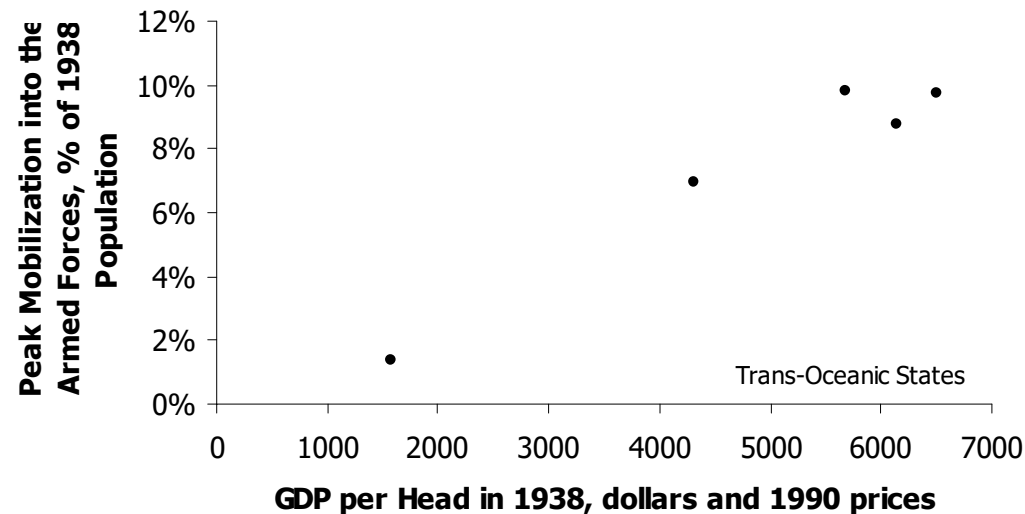
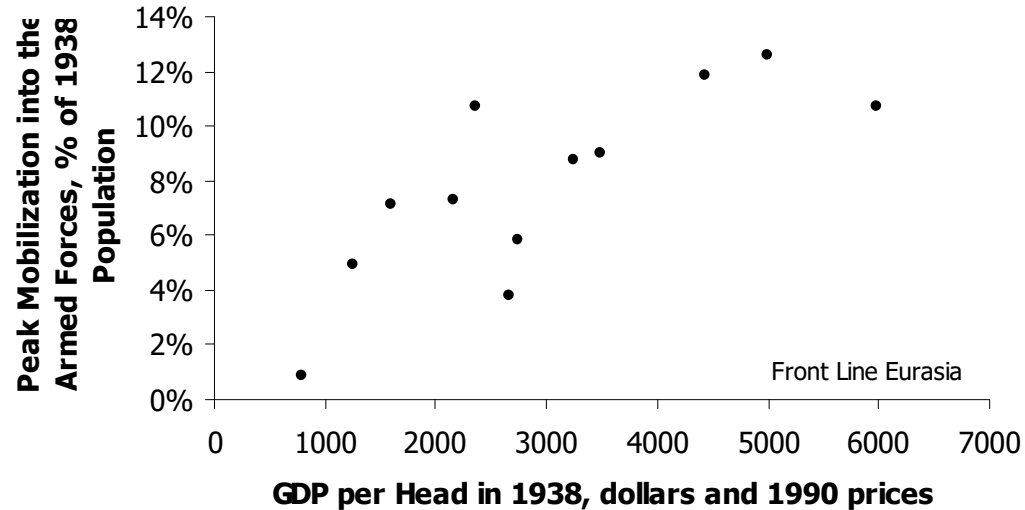


Source: Harrison (2015). Observations from left to right: Soviet Union, Japan, Italy, Finland, Austria, Canada, Germany (exc. Austria), Australia, UK, USA, and New Zealand.

- Factors in mobilization: the level of **prewar development level** is clearly positive.

Factors in Mobilization: Distance

Military mobilization: seventeen countries:



Source: Harrison (2015). Observations from left to right:

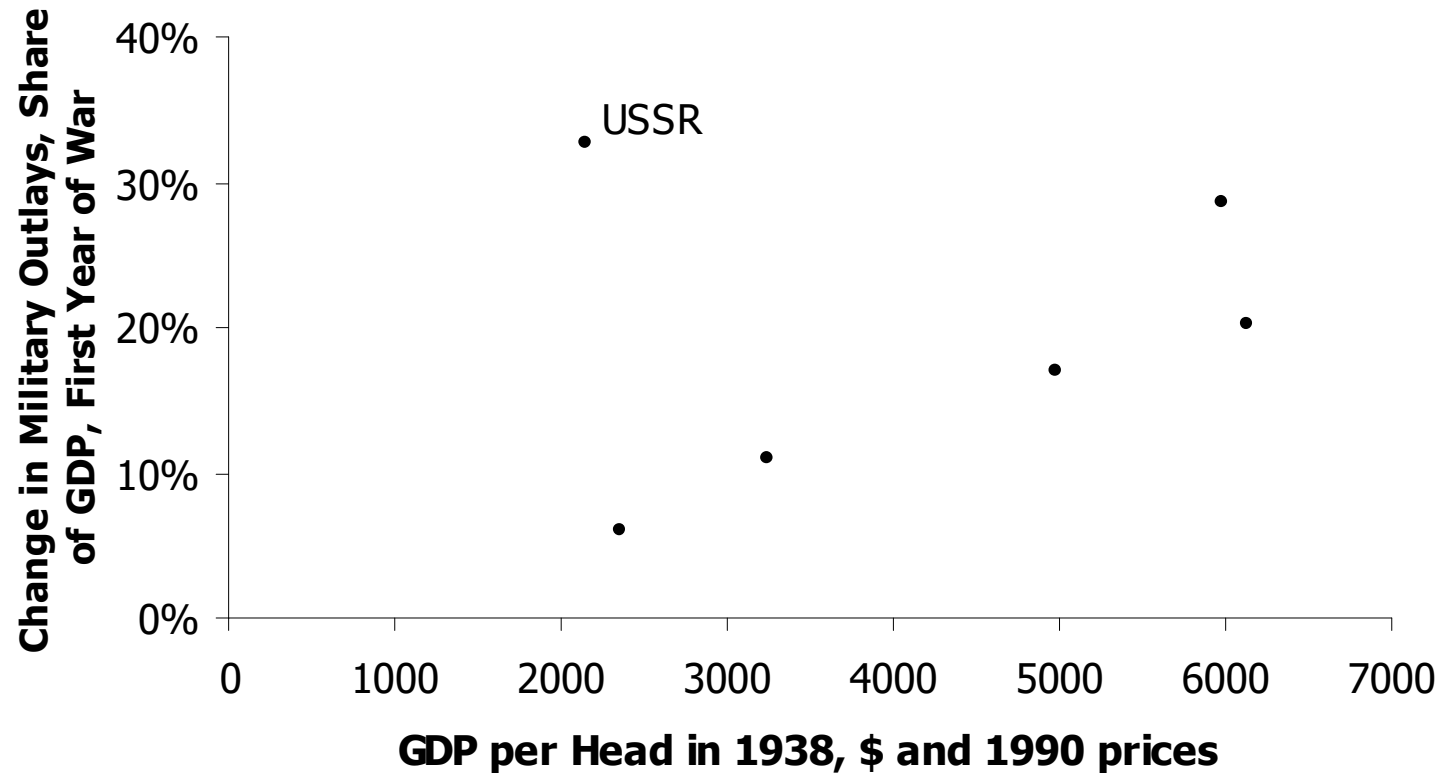
Front line Eurasia (upper panel): China, Roumania, Bulgaria, USSR, Japan, Hungary, Greece, Italy, Finland, France, Germany, and UK.

Trans-Oceanic States (lower panel): South Africa, Canada, Australia, USA, and New Zealand.

- Factors in mobilization: the level of **prewar development level** is again clearly positive.
- Factors in mobilization: **proximity to the front line** raised military mobilization.

Factors in Mobilization: Communist Dictatorship

Fiscal mobilization: six countries:

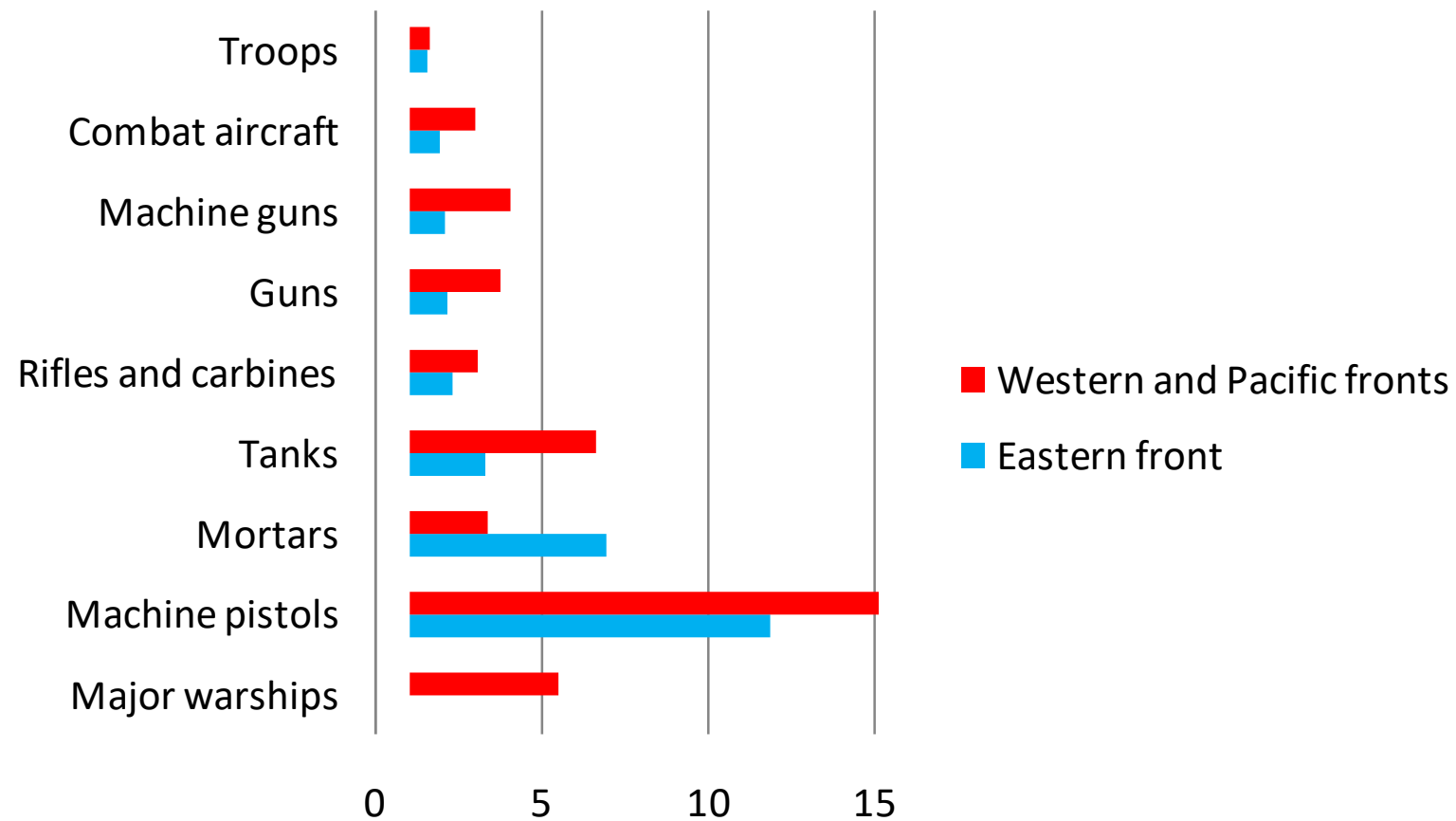


Source: Harrison (2015). Observations from left to right: the Soviet Union, Japan, Italy, Germany, the UK, and the USA.

- Factors in mobilization: the Soviet Union shows a **large positive residual**.

Mobilization Around the World

Allied superiority:



Source: Harrison (2005). The bars show the ratio of Allied to Axis force levels (so 1 in the horizontal dimension would indicate equality) in the different theatres of the war.

Mobilization Around the World

As in World War I, the war could have been lost on the Eastern front.

Overall resources on the eastern front were **evenly balanced**:

- The Soviet and German armies were of similar size
- Their industrial economies were of similar size
- As in 1917, peasant agriculture should have brought the Soviet war effort down.
- As in 1917, the German attack almost succeeded.

But:

- The Soviet Union punched significantly above its economic weight.
- The Soviet economy was **more highly mobilized**.
- Soviet industry better organized for mass production.
- The state used collective farms to control peasants' food surpluses.
- Worst urban famine in history (Leningrad) did not overturn public order.

Mobilization Around the World

The national priority of air-sea power, 1943/44: air and naval armament and equipment, per cent of total in each country

Country	Period	Per cent
Japan	1944 (year)	83.2
USA	1943 (fourth quarter)	73.7
Germany	1944 (July)	65.2
UK	1943 (December)	65.1
USSR	1944 (year)	32.8

Source. Harrison (2016), adding USSR to other figures from O'Brien (2015). Figures show the procurement of air and naval munitions in each country as a proportion of the total. The measure is by value for all countries except the United Kingdom, where it is by the proportion of employees contracted to production for the relevant ministries. For all countries the value of merchant vessels is excluded; for the USA and Japan it is subtracted from the total before calculating shares. For Germany gun armament and ammunition for ships and planes is allocated to air and naval armament. Whether the same division is made for other countries is unclear.

Mobilization Around the World

Tolerance of mobilization errors: for some countries, errors were affordable, for others not.

“The [production] programme was decreed by the military without examining whether or not it could be carried out. Today there are everywhere half-finished and finished factories that cannot produce because there is no coal and there are no workers available. Coal and iron were expended for these constructions, and the result is that munitions production would be greater today if no monster programme had been set up but rather production had been demanded according to the capacities of those factories already existing.”

German Interior Minister Karl Helfferich in June 1917, cited by Feldman (1966, p. 273).

“If we continue as at present, we shall have plants standing useless for lack of equipment or raw materials, or other things. Other plants will be turning scarce materials into items which cannot be used to oppose the enemy because of the lack of other things which should have been made instead. We shall have guns without gun sights, tanks without guns, planes without bomb sights, ships held up for lack of steel plates, planes which we cannot get to the field of battle because of lack of merchant bottoms.”

US Army officers to the Army-Navy Munitions Board in March 1942, cited by Higgs (2004, p. 507).

What We Have Learned

As in World War I, the war was won in the West.

- Victory went to the side that supplied the **greatest quantity** of air-sea power.
- Superiority in military resources was based on **size** and **development**:
- Relative prewar GDP/head acted as a **multiplier** on war capacity.
- **Time** and **geography** mattered.
- Influence of all other factors was largely conditional on wealth, geography, and time.

If you wanted to wage war in the twentieth century, it paid to start with:

- A **wealthy free-market economy**.
- Or **totalitarian control**, plus indifference to the cost to your own people.

Nothing in between made much difference.

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